

Cognitive Rootedness and the Modern World

Can we get back to the degree of cognitive rootedness which was considered essential in the past?

by [Christopher Ormell](#) (May 2025)



Untitled (Alexej Ravski)

Current events have thrown many intelligent, caring, publicly-

spirited people into despair. I am an older philosopher whose earlier discoveries include finding a solution to Russell's Contradiction (dynamic contradiction), finding a hitherto overlooked mirror-image of Descartes' Cogito (a proof that predictability cannot apply to everything), and finding a flawed assumption about sets swallowed inexplicably by Bertrand Russell. He somehow convinced himself that all sets are mathematical objects. But they are obviously *not*, because mathematical objects are, by historic convention, formal and abstract (=sensuous-association free). A set of birds is commonly called a 'flock.' Such a supposed "mathematical object" can hardly "fly into, and out of, low cloud." And there is something seriously wrong with the notion that a set of cows (a herd) can count as a "*milkable* mathematical object." The only sets which can be genuine 'mathematical objects' are clearly those whose elements are also mathematical objects. This means that sets cannot be the fundamental building blocks of math, because you need to know what a 'mathematical object' *is*, before you can even begin to define a mathematical set.

I have written twenty essays in the *New English Review* since 2021 ... essays which hopefully throw new light onto the grey, mystified, oppressive, bullying aspects of today's utilitarian math (now vastly extended by global commercial activity and the power of computers).

My essays began with the object of de-mystifying math, but they have since moved-up a step, and introduced a new, unexpected, 100% abstract, 100% lucid logos—Anti-Math. This is a surprise, because math was always considered in the past to be supreme, untouchable and absolutely-absolutely unique. There was never the slightest hint that it might stand side-by-side with a hidden companion logos. But Anti-Math has now arrived, and it clearly has a capacity fundamentally to widen our cognitive perspective: it can be used to model mazy behaviours not describable by plain math. This is a sort of

thing which only comes along once in 500 years. The emergence of this new, wholly unexpected, wholly unimagined dimension of knowledge, can also—naturally and unobtrusively—serve to crystallise the conclusions which result from de-mystifying math. (Higher math need no longer be construed as essentially an aesthetic intellectual ego trip—though in its academic dress it does sometimes look like this. On the contrary, it has a genuine, much valued, much needed role to play: and it is neither to oppress, nor to impress, the human race. Its original, historic, proven and unmistakably authentic role, is *reliably to model* and hence *pathfind*, the most promising real-life development agendas for the future.)

The newcomer Anti-Math, though, is a different kettle of fish. It can potentially change our basic perception of our role in the world. It offers a counter-intuitive, illuminative, alternative way of thinking fruitfully about the world. As such, it incidentally upstages today's virtually unchallenged view of reality—which is based on a cold, oppressive interpretation of automated math. This straitjacket, backed by the elites, seems to be—inadvertently—slowly but inexorably dragging civilisation down towards a dismal, chaotic, mentally pathologic future ... one which could spell human extinction.

So, can we, in principle, escape this currently all-powerful math straitjacket? Yes, but it involves some difficult thinking, and the challenge involved in absorbing new, unfamiliar ideas.

So did the difficulty of trying to understand the baffling world in which we find ourselves, suddenly get a lot harder? On the surface, yes. But this new modelling logos (Anti-Math) comes with a hopeful long-term prospect: of a much-needed reprieve from the straitjacket, and the prospect of achieving deeper mental rootedness.

By any standards, we are presently passing through a phase of astonishingly *shallow* mental rootedness. This flimsy mental

basis is not only to be found in popular fantasy, e.g. in dark social media. The current administration, for instance, is floating and imposing large, questionable, far-fetched upheavals... We urgently need a satisfactory, considered, serious underlying basis for introducing massive scenarios. But such a basis is not only—it appears—absent: the assumptions behind the upheavals are questionable. Some of them look fanciful to the *n*th degree.

This is, by any yardstick, “guess-governance”: and the risks which come with it can’t be forgotten, or blithely brushed under the carpet.

It ignores and negates even the most minimal norms of mental rootedness, ones which were considered absolutely essential in the past.

So how did this extraordinary phase of “guess-governance” come to be accepted in a mature democracy?

Well, there has been a largely unspoken general flight from logic, reason and rationality during the last six decades. This has spread, sadly, to all corners and all levels of the Western status quo.

Schools mostly gave up trying to get their pupils to *understand* things in the 1980s. They switched to training (brainwashing) instead. This was supposed to be a “much more efficient, modern kind of instruction” (sic), but the managers—who were parachuted into schools to impose it—forgot to ask themselves what education was *basically for*. Education’s unquestioned historic rationale was to prepare youngsters mentally for understanding the baffling adult world, which they would enter after leaving school. Forcing children to learn facts they perceive as dull doesn’t do this. It tries to maximise the impression that they are being empowered, while it actually minimises the likelihood that they will better digest commercial and adult reality. After

leaving school the “brainwashing” they endured soon fades, because they quickly forget what they never wanted to remember; this leaves the youngsters totally *unprepared* for adult reality, leaving them, indeed, open to all kinds of potentially dangerous nonsense.

How could such a foolish, superficial, misreading of the point of education happen?

Well, there is a background story. A grievous, sickening, worldwide loss of core intellectual confidence happened in the 1970s. The credibility of the three previous grand pillars of wisdom (math, science and religion) simultaneously fell through the floor. So, for nearly half a century, we have been stuck with a ubiquitous, unquestioned, anti-intellectual mood. The effect is similar to that of blindfolding millions of the brightest, otherwise lively, people. It comes with an insidious notion about what counts as ‘knowledge.’ The average person now seems to think that they have all the “knowledge” they could ever need ... available in their pocket (in their smartphone). But they haven’t: because reading the answer to a question on your smartphone doesn’t deliver knowledge. To “possess *knowledge*” is to acquire the *reactive dispositions* which come with the relevant information, when it has been fully digested. These dispositions are like pre-set alerts-to-act. Once in place, they can be triggered at any moment. A person with real knowledge will react to unforeseen sudden crises intelligently, because their acquired dispositions will kick-in. Those who have only mentally registered the information as “mere information” won’t turn a hair.

In today’s parlance, we say that those who remembered the information, but did not bother to acquire the dispositions, *can talk the talk, but they can’t walk the walk!*

A lot don’t even *remember* the information, because they blithely assume that they don’t need to. They assume that it is *still there* in their pockets. Well, it is, in a way, but,

being mere information, it can't speak or prompt. It is inert. It doesn't prepare its owner in the slightest way to face the mental challenges constantly being thrown-up in a furiously changing world.

To be able visibly to show that they have acquired—the associated reactive dispositions—is a key sign that a person has internalised some recently acquired knowledge. This is not a cosmetic extra—this is the whole point of—indeed the central reason for—education. When these dispositions form, they do not come about, readymade, fully-fledged, in a flash. First, they must root. After that, they need to grow. Initially they are miles away from “being there” They only graduate to becoming the *real thing*—as trustworthy, significant, responsible, essential, alerts-to-act—when their meaning and substance has been thoroughly internalised, rooted, and integrated into the learner's unconscious, accepted, digested picture-of-the-world.

So to suppose that instant information automatically confers knowledge, is probably the worst educational delusion of our time. Accepting this as “it,” signals a lack of personal self-knowledge because it naively accepts an exceptionally shallow norm of mental-rootedness: a flimsy, substandard state, which used—in bygone times—to be regarded as superficial and misleading to the *n*th degree.

In this essay the question is: *Can awareness of the new Anti-Math logos deliver a return to something like the satisfying, secure, mature, mental-rootedness of yesteryear? Or are we rushing inexorably towards a car-crash of civilisation, because our awareness of the immense depth of reality has shrunk almost to nothing... an illusion which seems to be telling us that no hard work, little discipline, little concentration, is going to be needed?*

Anti-Math's prime contribution is that it explains physical bio-reality, or if you prefer, where scientific understanding

can potentially lead us. It offers a sense of the understanding destination which beckons. It begins with the perception that the only possible final constituents of physical matter can be that they are *long strings of absolutely random, tally-like indications*. These have the kind of implied *substance* which the single tallies of abstract math cannot match. They bring energy and activity, but they come with zero information because they are only streams of very slight (=the slightest possible) unpredictable happenings. They can be represented by repeated sudden tally-token switches (jumps), but they come with no further, deeper implication.

The \$64 question: do such things really exist?

Yes! A practical source of such random-jumping indications can be set-up with ease. A Geiger Counter is needed, and also a rapidly rotating disc painted with four differently coloured quarters shielded, so that only a quarter of the disc is visible at any given moment. Each coloured quarter signifies a different kind of tally. When the Counter clicks, the colour which is dominating the view at that precise moment, identifies one of the tally-tokens |, /, - and \. (Colour repetitions are automatically forgotten.) So such phenomena can *really exist* out there. Such ultimate streams of minimal random physical change can occur. When they are conceptualised, of course, it is as energised, active events but this "energy" and this "activity" don't need to be explained: the "energy" and the "activity" they come with, are part of what characterises them. Without this level of "energy" and "activity" there would be nothing there. These are the only "real phenomena out there" which *don't need to be explained in any way*. (If you are interested in understanding things, it is *stable patterns* which stand out, which stand in need of explanation. (Random-jumping sequences don't cry out in any way for "understanding" because there is nothing there to "understand"?)

So this is a thought experiment somewhat like Descartes', when he asked himself what was the least doubtful thing he could possibly entertain. We are asking ourselves *What is the tangible constituent of physical matter which least requires explanation?*

The most crucial feature, though, is that these jumping-random streams don't come within pre-supposed frameworks or attachments of any kind ... things like velocity, momentum, mass, time or space. Because if they did, these frameworks would still need to be *explained*, and, if so, the streams involved wouldn't be the *the true, final, conceptualisable constituents of physical reality*. It is *we, as observers* who are looking for a new level of minimal "particles"... i.e. what remains on the final rung of an explanatory ladder which starts with cells, nuclei, DNA, molecules, atoms, electrons, bosons and quarks. This is the consensus deconstructive framework we nowadays adopt to explain puzzling phenomena. But orthodox science seems content to leave the ladder unfinished ... and frankly inexplicable.

There must be a final level, the level on which the whole deconstructive ladder rests. (This is *physical reality*, it can't rest on air, its basis can't dissolve into non-existence.) We can only call a significant halt to our quest-for-understanding, when we are able to reach a level of deconstruction where everything is 100% chaotic, and pattern has completely disappeared.

So we are now near, or at, the end-game mode of knowledge. The end game can only be about the mysterious stuff which doesn't need explanation. The "stuff" involved must be both minimal in direct effect, and patternless in form. It can't be in a spatial or temporal framework of any kind.

Looking back, we are now in the 21st century and we have already come a long way since the dawn of prehistoric time.

Math originally began as a simple, rustic, modelling knack—one which used a tally like / to represent an object ... maybe a fish, a spear, a boot, or a brick. A tally-bundle like ///// could represent a catch of fish. It served as a primitive model of that set of fish.

These much-used tally bundles eventually acquired nicknames, and at some point they must have quietly turned themselves into numerals (in the Roman system /////=V, //////////=X). Numbers formed out of numerals could be processed in all kinds of different ways ... modelling what to do in many different contexts.

Progress slowly followed. It was, effectively, math, which provided the core script which held the Roman Empire together. It was only a static script, but it worked, and it offered enough confidence-building vision to succeed for more than a thousand years.

Then, in the 17th century, Isaac Newton suddenly, unexpectedly, lifted math onto a new level ... one where it could accurately model the *motions* of moons, planets, tides, machines, etc. Math could now change the world: and it was destined, a hundred years later, to underpin an emergent Industrial world.

At the time some congenial optimists hailed this as a kind of “enlightenment,” but it also had a downside: it served to legitimise oppressive uses of the newly empowered math... imposing pain and regimentation—which took forms like the Satanic Mills, the Slave Trade, and Louis XIV’s hegemony over the Gallic peasantry. Its most deadly effects began to bear down onto already downtrodden people.

After the French Revolution and its brief Napoleonic Empire, a quite new scholastic perception of the nature of math began to emerge (around 1830). Some hitherto “fanciful” ideas, like imaginary numbers, non-numerical algebras, and non-Euclidean

geometries unexpectedly surfaced ... thanks to the inventive work of Gauss, Galois and Bolyai. It suddenly became clear that such strange new concepts could be *devised out of the blue* by human creativity—not unlike the flair needed to devise new board games. The most interesting source of new math had changed. Instead of generating new ideas, slowly and subconsciously by years of exploration in contexts like oceanic voyaging, building, star-gazing, engineering and physics, they could now be devised ad hoc, out of the blue!

Math had suddenly gained a new, hyper-abstruse, superior culture.

The leading gurus of the math elite became intellectual superstars. They had become aware that math could be an amazing *creative* activity, *suis generis*. (This new, bizarre, creative math could luxuriate in the potentiality of its own thinking, delivering wholly strange, breath-taking gems of unexpected structure!)

A vein of envy may also have played a part: because some continental elites had been badly miffed by the spectacular success of Newton's calculus and mechanics. They desperately wanted some bragging rights of their own... and now these plaudits soon began to materialise via a new, higher, more abstract, "modern math mystique."

After 1830 it was possible to create new varieties of strange aesthetic math: like Hamilton's quaternions, Boolean algebra and Minkowski's multi-dimensional space. But did they smack slightly of fantasy? Might they be fantasies? They seemed to lack a robust physical rationale ... one which could accumulate gravitas ... one which could make it sound as if this new mazy math was *seriously useful*, and had its feet firmly on the ground.

But the exponents of this new fantasia found that they could breathe again. Very slowly, a new, promising rationale *did*

begin to dawn. It was based on a growing recognition that sub-atomic reality must be "very strange and utterly unfamiliar." We could obviously never experience it at first hand, or become used to it, like ordinary macroscopic reality. So this new peculiar highly abstract "modern math" must be (it was thought) the ideal way to represent it. This utterly unexpected, mysterious sub-atomic reality! This was just what the gurus of "modern math" wanted. This was their Eureka moment. A tacit "Dash for Hyper-Abstract Math" followed—a new Holy Grail of Physics began to roll. It lasted as a vivid quest for nearly 150 years. It enjoyed, at its peak, an almost universal credibility: it was widely considered to be the unquestioned way to unlock the secrets of an utterly strange sub-atomic reality.

But alas, this much flaunted, much hyped, paradigm, didn't quite ring true. (How could it, when the average young researcher was only interested in the look (the aesthetics) of their unfamiliar symbol-bashing? How could it, when it was supposed to be based on these novel sets discovered by George Boole which weren't automatically mathematic objects?) Meanwhile, through the 20th century, theoretical physicists were being left stranded again and again, stumbling in the dark ... trying to catch-up belatedly with the latest unexpected experimental facts. Eventually, in the 1970s there was a crash of expectations. Giant doubts began to loom. (They were triggered no doubt by the parallel embarrassing, abject failure of "modern math" in schools.) It suddenly became painfully plain that the much vaunted Dash for Hyper-Abstract Math had been a chimera.

The intellectual aspirations of the human race were disappearing before our eyes—leaving a threadbare, nihilistic, no-hope view of a baffling, alien, utterly unexplainable universe. A consequent post-modern pandemonium followed.

It is this pandemonium which has thrown the human race into something like corporate mental breakdown. The much vaunted

line is that *Anything Goes!* This can be interpreted as a way of saying that *We haven't a clue what to do next!* But does it really "Go!"? It would be hard to think of a sillier mantra: it plainly doesn't *Say it as it is* at all. There are millions of serious, real situations where—everyone knows— "anything" certainly *does not* "go." Every day in every town, much technical know-how (disciplined knowledge) is routinely needed and applied—to keep the show on the road.

So is there any way back to the kind of rooted, commonsense, humanistic, freewill-recognising, worldview which was sincerely believed and happily taken-for-granted ... before the post-modern pandemonium drowned us all in bottomless, nihilistic doubt? Yes, but it won't be easy. The new, exciting worldview is Total Epistemology, because a way has been found at last to conceptualise the universe in a way which makes sense. The daunting No-Go problem areas of yesteryear—i.e. the ones which were never likely to be explained—automatically disappear.

The main axioms of Total Epistemology can be summarised thus:

1. The presence of fantastic structure in the universe can only be satisfyingly understood as the product of some vast active, creative *mind*. The concept of 'mind' itself, incidentally, arises from the public performance of brains. When human beings use high-level, abstract concepts to illuminate their world, they are displaying a special kind of performance: and a capacity to stage this kind of *performance* is the essence of what the word 'mind' means. (We tend to say that a person has a "good mind" when their illuminative performance stands out as fruitful and effective.) So minds are the product of brains. This is today's crucial, central meme. But if we are looking for an infinite superbrain, the only "vast brain" we will ever know is the tacit network

created by the inter-actions of the combined individual brains of the human race.

2. We also now know (since the arrival of computers) that brainlike systems of an artificial kind can be devised using comparatively simple physical chips and networks. (These artificial brains, though, are often simplistic, erratic, and less sensitive than the best, properly informed, creative personal brains.)
3. A way has recently been discovered to impose relatively simple logical structures and stable transient behaviours onto randomness ... treated as a vast tsunami of streaming random jumping indications. The stable structures which thus come-into-being are capable of being used as scientific models. They are also, in the last analysis, initiated and sustained by the willpower of those who adopt the relevant definitions. (It is quite ironic to observe at this point that some orthodox higher mathematicians have convinced themselves that their arcane constructions "exist as Abstract Realities" (sic) –so here is an indisputable indication that mere willpower can generate a palpable feeling of real, "objectivelike" existence.)
4. It is reasonable to suppose that the secrets of the human brain will eventually be understood in this new way: as composed of highly-complex–Anti-Mathematic–biological structures imposed partly by DNA ... and partly by a growing child's inter-actions with the parental, family and the wider human inter-action.
5. So, in principle, human minds could underpin the Anti-Axioms their own brains require ... they could bring them into "real existence" by willpower. Very likely there would be by-products also arising from these Anti-Axioms ... by-products which would all add up to a vast physical

universe, composed of stars, planets, plasmas, plants, animals as well as humans.

6. But there are at present more than seven billion human brains. So it suddenly becomes abundantly clear that the vast de facto *composite networked mind* of the human race can also be the much-overlooked, hidden architect of the physical universe. This may come as a counter-intuitive shock of the *n*th degree for some readers, but it makes logical, rational sense. Part of the shock is that it comes with a corollary ... that there is a degree of “seriously hidden human involvement” in the universe out there (as we observe it): and hence how physical reality works—how it is seen by us. (A group of physicists around Neils Bohr in the 1930s espoused the idea that physical (Quantum) reality—as we experience it—is a composite which includes deep perspectives resulting from the (as yet unguessed) way our consciousness works. This anthropomorphic idea was however heavily stamped-on at the time ... by Einstein and other dyed-in-the-wool Platonists. It was an inauspicious time: Bohr’s interpretation of Quantum Theory was coming into a world full of doubt and fear. Intellectual confidence and thinking were on the floor. Negativity was in the air. It was the worst possible moment ... the Nazis were flexing their muscles, and WW2 was about to erupt.)
7. This potent idea—that there is a significant involvement of human meaning in the physical universe as we know it—is also a theme which originally underlay monotheistic religion. In Antiquity it came to be accompanied by transcendental and fantastic myths, based on the idea of an infinite supermind. There was also a built-in feudal, premiss—that we had virtually no chance of ever knowing more.

So the arrival of Anti-Math can change today's dreadfully pessimistic mood, because it offers at last a rational, lucid, disciplined scientific research programme—the kind of thing which “forms, drives and stabilises” future developments. In a word, it establishes the possibility of a return to rooted, in-depth understanding: and hence a return to balanced mental health (including a renewed Moral Order) for millions of thoughtful people—who are deeply worried about today's erratic events.

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Christopher Ormell is a mathematical philosopher whose first glimpse into the revolutionary idea of anti-math occurred when he was an undergraduate at Oxford, but who has had to refocus repeatedly, to clarify and re-clarify its wider, synoptic implications. This has taken many years. It was the only way to get the core of this mind-changing idea to be taken seriously in the wider philosophic world.

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