# The Wednesday



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Magazine of the Wednesday Group - Oxford

#### Editorial

## Philosophy and Intolerance

Intolerance is normally associated with social, religious and political attitudes and ideologies. Philosophy is thought of as immune to these attitudes and ideologies because of its claim to rational standards and methods. Its very origin is in the dialectic of various competing theses put forward by different parties. It was Socrates who insisted that it is not winning the argument but the search for truth that is the aim of a philosophical method and dialogue. His own dialogues are designed to challenge unexamined terms and assumptions about knowledge and virtue.

The point I wish to make is that philosophy is open to any thesis worth discussing, by analysis, examples and counter examples, contrasting views, showing why the point put forward is worth considering, or showing the inherent contradiction in a given position and the attempt to resolve all this. It is not the business of philosophy to fall into emotional and irrational for or against attitudes, or short-circuiting the debate by using intolerant language, or by using words which are rudely dismissive. This forecloses the debate and stops the conversation. If these attitudes are extended outside philosophy, we end up with far left, far right and fundamentalist views of all sorts that leave no room for debate and resort to violence.

Personally, I have a dislike of such language and attitudes because I think, especially in philosophy, every reasonable idea has a right to be voiced and debated. Philosophy, of all intellectual disciplines, has a relative independence of practical aims. I find myself in agreement with Rorty when he writes: 'It is unfortunate, I think, that many people hope for a tighter link between philosophy and politics than there is or can be. In particular, people on the left keep hoping for a philosophical view which cannot be used by the political right, one which lends itself only to good causes. But there never will be such a view; any philosophical view is a tool which can be used by many different hands' (*Philosophy and Social Hope*, P 23).

If someone puts forward a thesis that one considers irrational or leads to such a position, the answer to it should go through the steps of the argument for it. The first impression may be one of disliking it, even vehemently, but philosophers should have enough tolerance to get over their emotions and attend to what was said and to see where the thinking process involved had gone wrong.

There is a general assumption that intolerance is the property of political or religious extremists, but examples show that this is not the case. Totalitarian regimes were created and supported by intellectuals and philosophers, for example the former USSR. There is a religious example from Islamic history when the rationalists got the ear of the enlightened ruler Ma'mun and two of his successors to prosecute people who did not conform to their view of the Ouran. Both rationalists and their orthodox opponents agreed on the principle that the Quran was a book from God, but they differed whether it was an eternal book or was linked in its revelation to particular historical cases and needed rational interpretation. The orthodox teachers thought it was eternal, the rationalists thought it had a historical dimension. There are philosophical and exegetical consequences for the debate, but the rationalists ended up supressing their opponents by the use of state machinery.

Just to add to the list of examples, John Gray argued in one of his books that religious people are more ready to revise their beliefs than atheists. But atheist intolerance would get worse if attempts were made to eliminate all references to non-atheist beliefs and concepts. Does Spinoza's saying 'Deus sive Natura' mean he was materialist, or does he wish to say that in the absolute the real is also the ideal? It seems that liberal views are becoming infected with the dogma they were supposed to fight. Maybe it is time to move beyond labelling views negatively and dismissing them off-hand.

The Editor

#### **Philosophy**

## Hermeneutics as a Path to Self-Understanding

The art of interpretation, its manner of inquiry and its desired result, deeper (self-) understanding, flourished as 'hermeneutics' from the 18th century onwards. But its roots go back to the earliest forms of rhetoric around 2000 years earlier. This article reviews the development of interpretation and its implication for self-understanding.

#### MIKE CHURCHMAN

The thought process goes like this: humans structure their lives through language that attempts to express innermost thoughts and emotional drives; rhetoric was the earliest manifestation of the desire to structure the use of language in the most effective way, either to change minds and behaviours or to reinforce beliefs; hermeneutics grew in importance as it became accepted that multiple interpretations of the same texts are possible and valid; awareness also grew of the ontological importance of interpretation as the foundation of the 'hermeneutical truth of the self'.

#### The History

From the earliest times, rhetoric was seen as a way not only to argue both sides of a question but also to promote ethical behaviour and correct judgements. Demonstrative rhetoric focused on providing examples of good and bad behaviour, bestowing praise or blame on historic figures. Judicial rhetoric involved interpretation of laws and legal contracts such as wills introducing concepts such as 'equitability' - fairness of interpretation in the light of the writer's original intentions and context. From Cicero onwards what mattered most was not the letter of the law, but how it could be interpreted to fit different circumstances as customs and beliefs changed over time. Deliberative rhetoric was used to weigh up issues of major social importance and balance the claims of necessity against what was ideally desirable. Going back to an even more fundamental philosophical principle, rhetoricians taught that all diversity should be seen as parts of a unified whole. Both rhetoricians and grammarians were trained to look for the overall meaning of texts in order to be able to judge more effectively whether parts cohere together, or whether discrepancies needed to be unfolded and ironed out.

As the Early Church Fathers, such as Basil of Caesarea and Augustine of Hippo, began to incorporate classical thinking into Christian doctrine, these fundamental rhetorical principles of moral conduct, fairness, and understanding of the full context remained at the forefront. Interpretation was seen as a journey where,

after a great deal of wandering and encounters with strange ideas that needed to be accommodated, the reader could return home to familiarity.

Throughout the Middle Ages, historical and religious writings continued to use rhetorical guidelines to steer a path through entangled arguments over meaning and truth. This sense of continuity of rhetorical and interpretive disciplines remained immensely strong well into the Renaissance. In 1567 Flacius issued an analytical framework for interpretation stressing the part to whole relationship. He discussed the question of unity in multiplicity, sameness in otherness, and introduced the idea of circularity as the interpreter went from one meaning to another and then back again to increase understanding. For Flacius, following the ancient traditions of rhetoric, the ultimate perfect interpretation was one that balances, weighs things up, is equitable, and while struggling to determine the meaning of words, can reach beyond them to their 'spirit'.

In the second half of the 18th century, Johann Gottfried von Herder laid the foundations of hermeneutics as a mainstream aspect of modern philosophy. Central to the power of his influence was the core idea that the progress of humanity should not be seen as linear but as consisting of the continual multiplication of diverse cultures and ideas. Following him, Friedrich Schleiermacher turned Herder's ideas into a systematic method of hermeneutics, advocating a re-experiencing of the author's original experience in order to 'live inside' the author's mind. In his work, we can see the influence of a new way of thinking where the logical and the rhetorical were giving way to concepts of self-fulfilment and self-expression.

In the next generation of philosophers, Wilhelm Dilthey worked on his theory of hermeneutics as grounding for the human sciences, asking questions about what it is 'to be'. He saw life as essentially hermeneutical in that we are always having to interpret our experiences. This continual act of interpretation

is how we create ourselves. Individuals become who they are by, in his words, 'carrying themselves out'. As individuals meet resistance to their own will to power, the unique historical self is shaped by what he called the 'thought-forming work of life'.

As hermeneutics was taken up in both philosophical and literary theory, it became bound in with new ideas of phenomenology, originating with Husserl, leading to the ontological enquiries of Heidegger. Phenomenological experience was based on intentionality, a deliberate and objective scrutiny that aims to clarify what it is to be a phenomenon. Heidegger's emphasis was on hermeneutics as a way to understand our own experiences and to define ourselves through self-interpretation. Hans-Georg Gadamer and Paul Ricoeur developed theories combining hermeneutics (interpretive) with phenomenology (descriptive). The central philosophical task was to describe all experience in ways that led to a deeper understanding of others and the self.

In the second half of the 20th century, Gadamer's and Heidegger's ideas flowed into theoretical positions in a wide range of disciplines. The long-established notion of reconstructing original meanings in a text was countered by the idea that there is no unity of meaning, only multiple interpretations of the same text. Emphasis on tradition was challenged by those seeing tradition as the embodiment of power structures or unconscious biases. A new rhetoric of deconstruction set out to unpick the inbuilt structures of the old rhetoric. What now seems common to all these positions is that, for interpretation to be valid it demands the highest possible degree of self-awareness of the presuppositions that underlie our individual interpretations.

#### **Metaphors of Hermeneutics**

The practice of hermeneutics lends itself to metaphorical descriptions of the thought process. The most long-standing of these is 'the hermeneutic circle'. Understanding involves seeing the parts in terms of the whole and the whole in terms of the parts, so the interpreter continually cycles between both aspects of the text. Gadamer reminds us: 'This principle stems from ancient rhetoric.....the movement of understanding is constantly from the whole to the part and back to the whole. Our task is to expand the unity of the understood meaning centrifugally'.

Another metaphor of movement that characterises the mental striving of hermeneutics is the 'spiral of



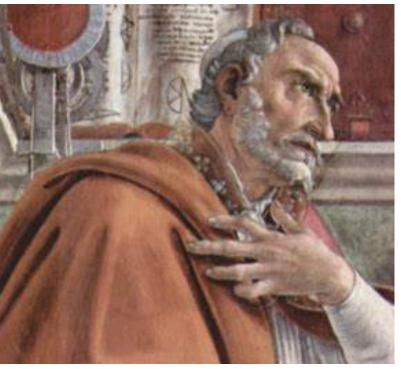
Cicero

inquiry'. Using questioning, the interpreter learns more and more and ascends the spiral, taking steps up towards full understanding. The spiral of questioning can, as Hegel pointed out, lead to a gradual improvement in the quality of thinking as interconnections between concepts multiply and as old experiences are confronted by new ones.

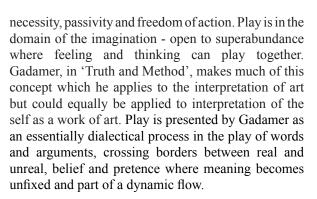
The metaphor of the 'sphere of understanding' enables us to conceive of a holistic entity wherein all meanings related to each other reside. We might see Total Understanding as one huge sphere containing lots of smaller spheres, in which dwell the realms of art, philosophy, science, religion, mathematics and so on – each with their own rules of thought and language. The metaphor of a sphere helps us see that surface and depth are not opposites but part of the same whole.

One further metaphor of importance to hermeneutics is that of 'play'. Schiller conceived of play as thought moving between ideas of reality and form, chance and

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St Augustine



We continue to be caught up in metaphors of fluidity and flux. Aquinas used the familiar metaphor of light (flow of energy by another name) that gives colour to our words. Stoics, then Christians, saw inner words as part of Divine Reason. The inner flows of thoughts and words were seen by Plato as a soul in dialogue with itself. Neoplatonists saw a 'flowing out' where there is no depletion or emptying out - on the contrary it is more like a fountain, continuously refreshed from within, leading to what Gadamer calls 'an increase in being'. Of a phenomenon Gadamer says: "By being presented it experiences.... an increase in being.... ontologically defined as an emanation of the original". Re-presentation does not reduce the ontological status of the original but enhances it - makes it even more alive.

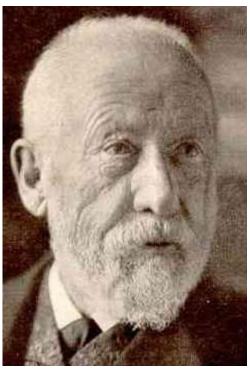


Hans-Georg Gadamer

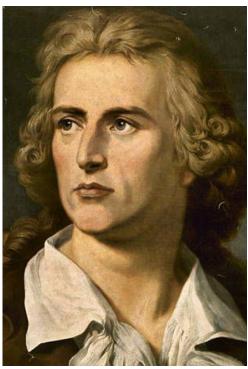
## **Towards The Hermeneutical Truth of The Self**

Gadamer is clear that hermeneutics is in a different category of philosophical enquiry from methodological, scientific construction. His focus is on individual experience. He says: 'The way we experience one another, the way we experience historical traditions, the way we experience the natural givenness of our existence.....constitute a truly hermeneutic universe.....to which we are opened'. We can see hermeneutic truth as not fixed, nor relative, but contextual, and that context is the widest possible framework within which individuals live in history, in the present, with all their hopes and expectations. We can see hermeneutical truth as a phenomenology of recognition.

Whereas scientific inquiry can rely on its methodological certainties, hermeneutics follows the winding spiral of dialectical questioning in its search for differences, where some observations are confirmed and others rejected, where understanding is constantly lost and constantly regained. In this sense, experience is exposed to scepticism, constant questioning, refusing to accept at face value, probing. Gadamer seems happy to live in a state of uncertainty speaking of 'our fruitful situation, halfway between







Wilhelm Dilthey Edmund Husserl Friedrich von Schiller

single and multiple meaning, clarity and ambiguity'. Unexpected meanings, he says, pull us up short and that's precisely when we tend to notice our tendency to expect particular meanings. The awareness of prejudices, fore-projections, biases, conditioned responses, is central to the hermeneutic method. Asking the question – 'Am I right about this?' is the logical way to explore one's own prejudices. Gadamer reassures us that we can often answer yes to that question. Not all our prejudices are misguided.

Then, as we turn our attention towards a hermeneutical form of self-understanding, we can begin to see there is no single correct understanding. The hermeneutical approach has taught us to evaluate all literary and historical texts in terms of the appropriate context. At the level of the individual this means we need to assess the text of each mental file (a metaphor for our stable mental states) in the context of the total life, just as the life itself needs to be assessed in the totality of its historical context. The practitioner of self-reflexivity has to work towards a sense of distancing while, at the same time, bringing in an element of play that explores different versions of the self. Hermeneutics is a balancing act, or an 'inbetweenness', where the familiar interacts with the strange, where the strangeness in oneself opens up new meanings previously unconsidered. As we saw with Ricoeur,

when we set out to familiarise our present self with the strangeness of our past self, we move into a new territory of understanding. This is, in itself, a form of objectivity. It's as if we were exploring the soul of a stranger. In this sense, then, within self-reflexivity, hermeneutics becomes a theory of objectification through interpretation.

The hermeneutic continuity of the inner self must function by merging contrasting experiences into the seamless unity of the complete subject – the whole existing self. The truth of human existence is based on the complete spectrum of oppositional experiences showing up in our lives as paradoxes, contradictions and aporias as well as agreements to differ, dialectical arguments, changes of mind and so forth. Scientific truth can only ever be one part of the total human truth, which embraces the poetic discourse of lived experience as well as attempts at scientific analysis of phenomenological experience. Gadamer was explicit in presenting hermeneutics as the pathway to understanding that travels through phenomenology in order to bring us to the fullest degree of self-realisation. After all, that is self-reflexivity's main ambition – to enable the achievement of self-understanding as the fundamental basis for the most fulfilling experience of life. In that sense, self-reflexivity can become not just a method, but a mode of existence.

## **Different to Caged Birds**

Different to caged birds raging against bars searching for ways out, sky-borne birds are screaming loud high above and disengaging

from mankind's belligerent noises, rising terror and the voices in some everlasting wars.

Some, whose wings are being shattered and their souls destroyed and scattered fall from skies like shooting stars.

Others, who escape the horror thrust into the higher levels where they sing to ban the devils and to harmonize their outpour.

When they reach the outer planets, they become gods reincarnates reigning in far off dimensions.

On dark nights you see them glimmer high above the full moon's shimmer waving stars in their ascensions.



Poem and Artwork by Scharlie Meeuws



Is science objective?

When we think of the scientific process as a robust process for generating knowledge, this knowledge is generally verifiable and seems to offer a productive way to get at truth. In this way, science, unlike many other areas of philosophy, seems to hold an edge. Ideas can be proposed and with the right evidence formally discarded. This is very appealing to many people bothered by ideas that seem absurd but hang around for thousands of years in other areas of philosophy.

In this way there is much to like about science for those interested in truth and knowledge, but some then go further and claim that scientific inquiry allows us to be objective. They claim that the natural world exists, so as we continue in the knowledge acquisition process, we must inevitably converge on a single explanation of that very world. As long as you believe in such a single external world - which they suggest you ought to since you are relying on observations of that world - you cannot help but become objective.

I will argue there is no objectivity in science. The social process under which scientific inquiry occurs offers no shortage of avenues for bias to enter the picture. This bias can persist for an indefinite period, if no mechanisms are taken to counteract it. But it is also unclear if we should even desire to remove some of these biases.

#### What is Science?

I am going to focus for the most part not on how scientific inquiry was historically conducted, nor how it ought to be conducted, but instead on how this inquiry is generally conducted today. This is mainly because we are talking about a social process, and it is better to center the discussion over how it actually plays out than get too caught up in how we wish the social process occurred. It is also because the mainstream process we have today has several distinct advantages over what it has replaced.

The hypothetico-deductive method of scientific inquiry is the main mechanism by which scientific inquiry is conducted. When people talk about the scientific method, they are usually referring to this process. It consists of starting with some research question; forming a hypothesis that is testable; collecting observations from the world; evaluating the hypothesis in light of this data; and then adjusting the hypothesis in light of this data; collecting more observations and so on. These hypotheses over time are reconciled with one another and theories are formed. The theories come to form models of the world and themselves become engines for further hypotheses which can be explored.

What do scientific theories look like in practice in this framework? Generally, they consist of models of the world making some probabilistic assumptions, from which implications follow deductively. We use simulation to work out these implications and tests are then used to check whether observations agree with these implications.

While sometimes characterized as a modern process, as developed and formalised by thinkers like Kuhn and Popper, it is at heart a fairly old method. Some form of





**Helen Longino** 

this method can be traced back at least as far back as Ptolemy. In many ways, alternatives to the hypothetico-deductive method like logical empiricism or inductivism are newer developments that temporarily supplanted the older method widely used today.

An advantage of the hypothetico-deductive method over logical empiricism is that it allows us to form theories about things that might not be directly observable. The theory can include unobservable portions that work to explain observable phenomena. An advantage over inductivism comes from an explicit falsification step. Inductivism, in its most basic and naive formulation, works by generalizing theory from observation. While different theories can be preferred based on how well they explain observations, its focus on confirming theories makes it less suited for rejecting hypotheses.

This explicit focus of testing and rejecting a hypothesis forms the core of how nearly all modern science is conducted. Nearly all contemporary debate about how science is conducted is within this framework. If there is an argument that gets scientists' attention, it is rooted in a concern that they are following this framework with enough fidelity. Much of it manifests in discussions about statistics and statistical methodology. This occurs because what it means to reject a hypothesis or build a theory is to do some statistical calculation and interpret the numbers that come out of them. When there is talk of replication-crisis in science it is a concern about flaws in how we do this calculation.

Popper

#### Bias in the process

I should stress that I am not advocating for a social construction of knowledge in focusing on this lack of objectivity. All theories that will be explored under the current methodology should be understood as rigorous and empirical. Actual knowledge is still being created. But we should also ask whether the same knowledge would eventually be found if the scientific community had different biases? I see no reason to believe that it would. We can imagine two parallel communities never discovering the same things even given an infinite amount of time. We have some anecdotal evidence for this as parallel scientific communities often happen to be studying the same subject with only faint awareness that the other exists. They regularly discover very different things with little indication that their paths of exploration would converge.

Where else does bias enter this scientific process? There is no shortage of places for that to occur. Scientists are people that come with their own personal biases in what hypotheses they choose to explore. Multiple theories can still agree with the observations. So what do we do with these competing explanations of the world? The process says relatively little about which ones to prefer. This is in practice one of the first places bias creeps in. There is no formal justification why someone should prefer one theory to another.

We should also strive not to be too delicate with these theories. We know that not just most of them are wrong but that all of them are wrong. We can be fairly confident that many of the theories we treat as true have

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Will there be a cure for cancer?

already been falsified or likely will be falsified soon. They are accepted not because they are true but because they are true enough or useful enough to get work done, and might later be revised to work better.

There are matters of personal taste to guide what experiments a scientist likes to do. Bias creeps in based on corporate and governmental funding sources. We learn more about those things, which others are willing to pay to explore. There are also biases that come from the gender and racial biases of the scientists themselves.

Although we may wish to mitigate or reduce the influence of some biases, there are others that we may wish to nurture. Scientific practice comes with norms and values of its own. To quote Helen Longino:

'Scientific practice is governed by norms and values generated from an understanding of the goals of scientific inquiry. If we take the goal of scientific activity to be the production of explanations of the natural world, then these governing values and constraints are generated from an understanding of what counts as a good explanation, for example, the satisfaction of such criteria as truth, accuracy, simplicity, predictability, and breadth'.

We might also prefer theories that have a certain durability. The idea originates from David Deutsch that a good theory should not require too much modification when subjected to repeated observations and experiments. We might prefer theories that are easy to test. While it is generally expected that a scientific hypothesis needs to be testable or falsifiable there are only norms encouraging us to prefer ones that are falsifiable. If an experiment requires 100 trillion dollars to conduct, is it any less scientific than one which requires ten dollars? If we prefer hypotheses that are cheap to test, what principles are we using to justify that belief?

We could argue that since science exists to create knowledge, we should favor exploring theories with a larger expected payoff. Those theories which seem more 'useful' should be favored. But these preferences are not justified by any appeal to knowledge. You have to look beyond science to say why you might think a cure for cancer is more valuable than a chemical formulation that allows cement to dry 10% faster.

Interestingly, even a pragmatic preference for theories that are more useful raises the question of for whom they are more useful. The scientific community itself decides what is considered in practice. We could argue that mitigating biases in who gets to become a scientist would meaningfully change the character of the scientific community. This inevitably means different things will be found to be useful to work on.

Is scientific practice any more objective with those changes? That is far less clear. It may be more democratic or egalitarian but it is not more objective. or egalitarian but not more objective.

#### **Poetry**

## A Train of Thought

What is here doing where I am? (words help reach out and touch) To do is to act in some way – This is the essence of the verb.

I am at present without adverb Unless I think But according to Descartes If I think I therefore am; And yet I do through thinking: The I acts or oversees an action.

So what is here doing while I am? It is connecting with my senses and with my feelings and thinking.

I am in here and here encloses me;
I am acted upon but also act.
Yet I contemplate the here —
This is also action.
Being conscious in the present here is somewhat like being at home.
This I often seek when leaving 'home'.

If I only think about it I am at home in the here Acting as me being.

Am I not therefore before I think? I think not.

I am thank you And here enfolds me – I am here in the here-am-I.

### William Bishop



#### **Poetry**

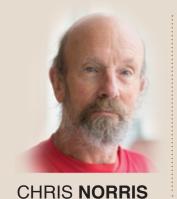


The Soul:

## Some Epicurean Reflections

**Andrew Marvell** 

O who shall me deliver whole From bonds of this tyrannic soul?
Which, stretch'd upright, impales me so
That mine own precipice I go;
And warms and moves this needless frame,
(A fever could but do the same)
And, wanting where its spite to try,
Has made me live to let me die.
A body that could never rest,
Since this ill spirit it possest.



Andrew Marvell, 'A Dialogue Between the Soul and the Body'

There is always only one question in the ethics of truth: how will I, as some-one, continue to exceed my own being?

Alain Badiou, *Ethics:* an essay on the understanding of being

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I look within for 'soul', the item you Refer to by that term, but find no trace Of it, nor of 'within', the habitat It must call home, though I've looked everywhere.

Still, as you often tell me, it won't do To take the quickest line, say 'there's no place For further talk of 'soul' or such old-hat Scholastic quiddities – that cupboard's bare!'.

Like palace revolutions, any coup
That junks the soul *tout court* just to make space
For the objector's doctrinaire diktat
Will have its own shortcomings to declare.

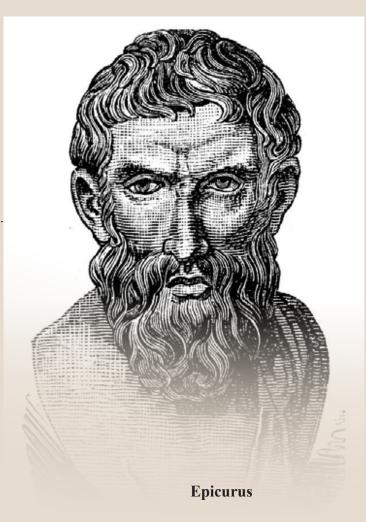
Where soul's defenders out-perform the crew Of soul-debunkers is, in every case, Where some experience says: make sense of *that* And maybe we'll concede 'you have us there'.

For it's, at minimum, the power of two That co-creates a soul or, through some grace Of self-foregoing, brings encounters at The point where naught's accomplished solitaire.

Think back: it's from alterity they grew, Those moments when the body-mind's embrace Of otherness relieved that autocrat, Sir Ego, of his strutting head-in-air.

Most often it's the recognition due To all that meets him in an other's face, All that diverts his impulse to combat That alien self, that disconcerting stare.

We're strangers to ourselves, split subjects who, As Freud remarked, seize every chance to chase A specular ideal that all the chat Of ego-soothers leaves beyond repair.



Oneself as other, alien through-and-through: Say 'I' and still it carries on apace Till every swiftly rolled-out welcome-mat Becomes the answer to a stranger's prayer.

Think, too, how badly thought can run askew When it takes false identities like 'race', 'Sex', 'nation', 'God', or 'soul', sans caveat, As shibboleths our tribe alone may share.

Call 'soul' the life-event that, at some few Rare moments, so transforms the number-base Of all our reckoning that the quickest stat-Check shows a being newly soul-aware.

Then pass its history in swift review, The soul-idea; think what a hidden ace They sprang who strained at no scholastic gnat To quell it, that soul-liberating scare!

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My point: its overtures most often steal Upon you quite unlooked-for, not by way Of spiritual awakenings often gained At life's expense but, unexpectedly,

Through music's sudden promise to reveal In you what only *that* piece could convey At *that* time, though thereafter long retained As soul's re-entry-point and true home-key.

To think soul pre-existent may appeal To dream-land navigators yet betray That craving as the same desire that feigned A far lone voyage on a nearby sea.



**Andrew Marvell** 

They erred, those others who deployed their zeal For soul's defence in that scholastic fray By bringing sharp-honed intellects long trained In subtle disputations, content-free

Though logically acute, as means to deal With any heretic idea that bodies play A joint lead-role in that which God ordained As soul's inherently mixed pedigree.

Music again: where else could beings feel More inwardly the tribute soul must pay To sense, to sound, to all that's unexplained When those ascetic postulants agree

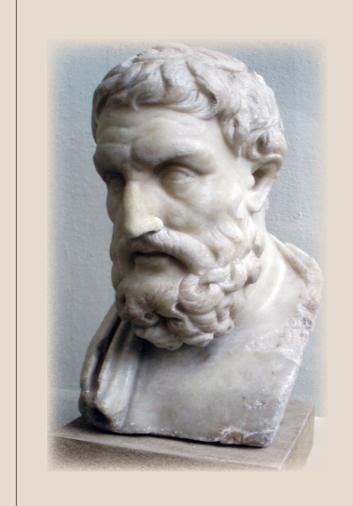
That soul requires its true believers kneel At spirit's shrine, disdain 'our mortal clay' As so much dross, and verify they've drained Their soul-talk free of all impurity.

No such diremption music cannot heal, No body-spirit rift not held at bay When music or the living soul sustained By flesh and blood puts in its saving plea

For bodies tortured on the spirit-wheel Of abstinence, or souls condemned to pray For every sense-privation that so pained Their yen for that self-thwarted unity.

Don't think 'just keep them on an even keel, Those battered craft', but 'let each moment they Flash signals or share call-signs be one gained On soul's behalf, as if some harmony

Half-heard or hinted at should unconceal, To open ears, a theme that till then lay Obscure, subdued, or tonally cross-grained, But now turns overarching melody.



**Epicurus** 

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#### Dr. AI AN XUEREB

Fractal reality

During the Easter holidays my wife and I took our children to the Luxembourg Science Centre. It is an interesting place for kids and adults. Amongst the scientific wonders, natural and man-made, exposed there are the so called 'fractals'. This concept always fascinated me, because as a lover of philosophy and of science I look for patterns, and fractals are the sovereigns of all patterns in nature. But what is a fractal?

The term 'fractal' was coined by the Polish-born French-American mathematician polymath and Benoît Mandelbrot in 1975. He himself called fractals the 'the art of roughness'. Very simply, a fractal is a *never-ending* pattern. Fractals are infinitely complex patterns that are self-similar across different scales. They are created by repeating a simple process over and over in an ongoing feedback loop. Manoeuvred by recursion, fractals are images of dynamic systems. Nature is full of fractals: trees, rivers, coastlines, mountains, clouds, seashells, hurricanes, and the like are all natural occurrences of fractals. Then there are abstract fractals – such as the Mandelbrot Set – that can be generated by a computer calculating a simple equation over and over.

This made me think that nature has some sort of basic 'DNA' - a code or language - written in its very basic structures, not only in its organic creations but in the fabric of reality itself. In these short reflections I will not go into whether this was



'Fractal reality' mixed media on canvas (60x80 cm) (2023)

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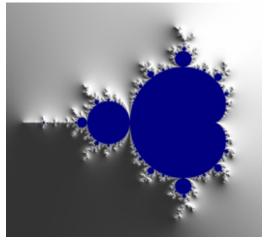
by design or whether it is just random, because we live in one universe where this is possible, out of the multitude of diverse universes we informally call the multiverse.

In a short article Ker Than explains that Stanford University cosmologist Andrei Linde and others later realized that the same quantum fluctuations that produced galaxies can give rise to new inflating regions in the universe. Even though inflation ended in our local cosmic neighbourhood 14 billion years ago, it can still continue at the outermost fringes of the universe. The consequence is an ever-expanding sea of inflating spacetime dotted with 'island universes' or 'pocket universes' like our own where inflation has ceased. Andrei Linde says that '[a]s a result, the universe becomes a multiverse, an eternally growing fractal consisting of exponentially many exponentially large parts'.

The question that pops up is whether this self-similarity may extend to the quantum world or whether it stops at the molecular level. Dario Benedetti, a physicist at the Perimeter Institute for Theoretical Physics in Waterloo, Ontario, has investigated two possible examples of spacetime with scale-dependent dimensions deviating from classical values at short scales. In his own words:

'It is an old idea in quantum gravity that at short scales spacetime might appear foamy, fuzzy, fractal or similar,' There is still room for conjecturing before any of this is proven through experiments or observation.

Inspired by all this fascinating stuff around us, I went on a quest to express this beauty in my own particular way whilst asking myself the basic philosophical question which Heidegger described as the fundamental question of metaphysics: Why Is There Something Rather Than Nothing?



Mandelbrot Set - Source: Wikimedia Commons

## The Wednesday

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www.thewednesdayoxford.com

**Published by:** 

The Wednesday Press, Oxford

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**Sort Code**: 09-01-29

#### **Poetic** Reflections

## Looking Back On Covid



A carnival that isn't one, Masked figures in the market place, Who cross the street with vizards on.

An eerie silence in each space, A stage set of deserted streets, But with no actors face to face.

Each person at a distance greets, There are no handshakes anymore, Life is a series of defeats.

Along the wide deserted shore Where once were people by the score, No one now hears the ocean's roar.

There is no doorman at the door, There are no shoppers in the store, When will our lives be as before?

We email every distanced friend: 'When will it end, when will it end, When will it end?'

## Edward Greenwood



The *Wednesday* – Magazine of the Wednesday group.

To receive it regularly, please write to the editor: rahimhassan@hotmail.co.uk