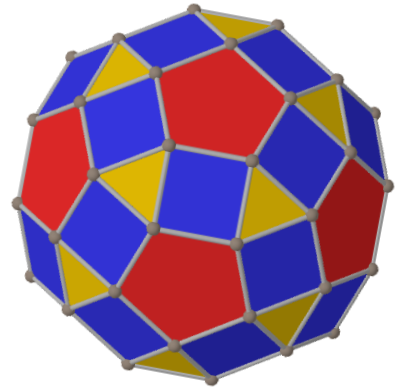


'Sustainable Development and Other Paradigms and Concepts in the Context of Contemporary Civilizational Trends – Global and Local Dimensions' Conference



The Sustainable Development Paradigm Misalignment?

*From environmental crisis to climate crisis
to polycrisis to metacrisis*



Edmond Byrne

Sustainability Institute | Chair Professor of Process & Chemical Engineering,
University College Cork, Ireland



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10-11 September 2026

1

Multiple Successive Crisis Awakenings..

Environmental Crisis (1960's)



Climate Crisis (2000's)



Polycrisis (2010's)



**Metacrisis
(2020's)**



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2

Multiple Successive Crisis Awakenings..

Environmental Crisis (1960's)

- ❖ The 'Sustainable Development' Paradigm
- ❖ The 'Integrative'/'Complexity'/'Relational' Paradigm
- ❖ Paradigmatic Critical Misalignment? → Precipitating Crisis
- ❖ Contemporary and future trajectories?...



Metacrisis
(2020's)

Environmental Crisis!

Environmental Crisis

1962



'Silent Spring' Is Now Noisy Summer

Pesticides Industry
Up in Arms Over
a New Book



Rachel Carson Stirs
Conflict—Producers
Are Crying 'Foul'

By JOHN M. LEE
The \$300,000,000 pesticides industry has been highly irritated by a quiet woman author whose previous works on science have been praised for the beauty and precision of the writing.
The author is Rachel Carson, whose "The Sea Around Us" and "The Edge of the Sea" were best sellers in 1951 and 1955. Miss Carson, trained as a marine biologist, wrote gracefully of sea and shore life.
In her latest work, however, Miss Carson is not so gentle.

fending the use of their products. Meetings have been held in Washington and New York. Statements are being drafted and counter-attacks plotted.
A drowsy midsummer has suddenly been enlivened by the greatest uproar in the pesticides industry since the cranberry scare of 1959.
Miss Carson's new book is entitled "Silent Spring." The title is derived from an idealized situation in which Miss Carson envisions an imaginary town where chemical pollution has silenced "the voices of spring."

'In her new book [*Silent Spring*, Rachel Carson] tries to scare the living daylights out of us and, in large measure, succeeds. Her work tingles with anger, outrage and protest.'

New York Times, 27 September 1962



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5

Climate Crisis!



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6

Climate Crisis

2006

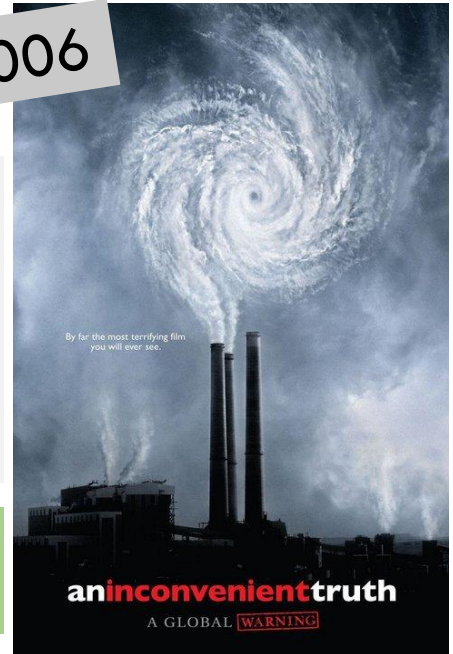
'..this one book, which was somehow different. I never forgot it.

Silent Spring connected the basic lesson of stewardship I learned in my childhood with a new lesson: that human civilization was capable of seriously harming the environment in ways it simply hadn't been able to in the past.'

Al Gore, **An Inconvenient Truth**

'Al Gore may have done for global warming what **Silent Spring** did for pesticides.'

James Hansen, NASA Climatologist



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7

Multiple Crises:

**Climate / Environmental / Geopolitical /
Migration / Technological Disruption /
Concentration of Wealth and Power / Social
Instability**



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8

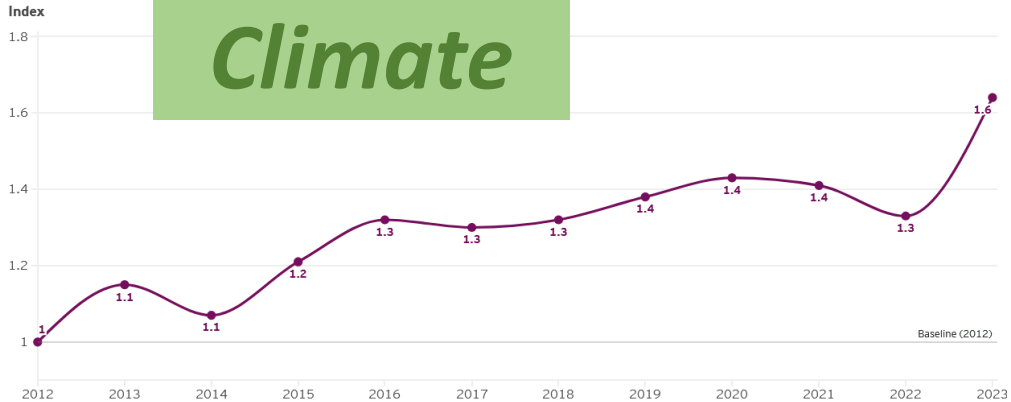
Climate Related Disruption Increasing..



Climate Disruption has steadily climbed due to rising temperatures, sea levels, and the impact on natural disasters.

1 of 4

Climate Disruption Index



Note: Climate Disruption Index is a composite of change in global temperatures (land and sea), mean sea level change, number of billion-dollar natural disasters, and global fossil fuel carbon dioxide emissions. Indexed to 2012.

Source: EY (2024)

9

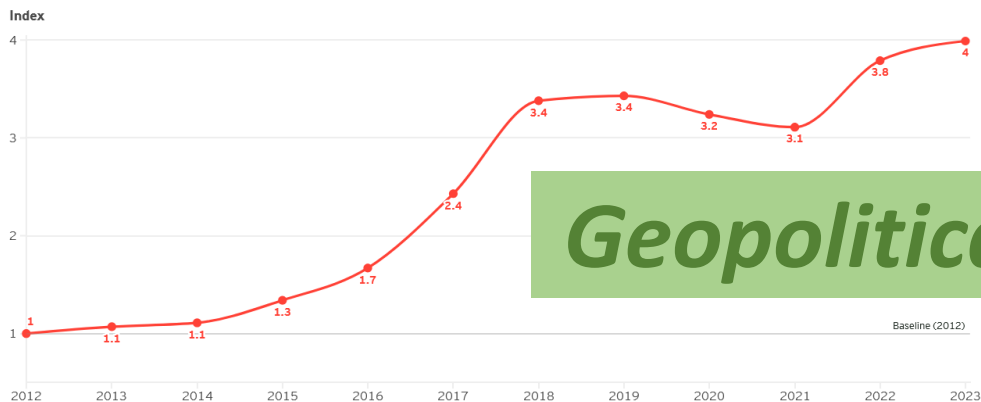
Geopolitical Uncertainty Increasing..



Geopolitical uncertainty has accelerated due to factors such as global trade disputes, armed conflicts and forced migration.

2 of 4

Geopolitical Uncertainty Index



Note: Indexed to 2012. Composite of political violence, geopolitical risk, forced migration, global income inequality, cyber attacks, and the World Uncertainty Index.

Source: EY (2024)

10

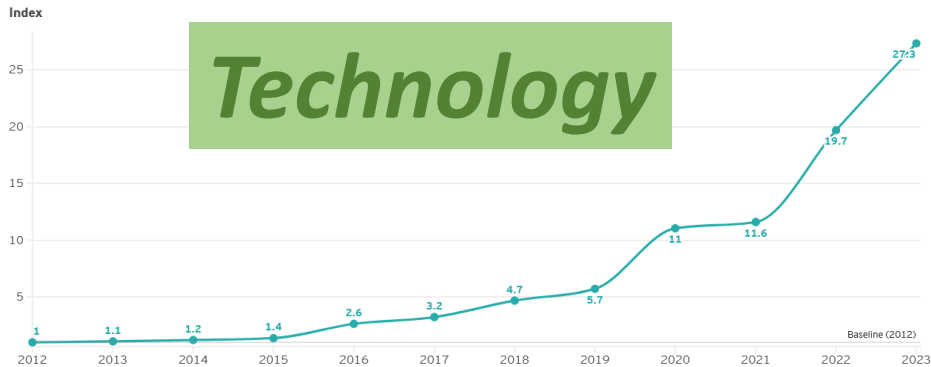
Technology Disruption Increasing..



Technology disruption

has accelerated with the rise of internet usage, computing power, and adoption of artificial intelligence.

Technology Disruption Index



Note: Indexed to 2012. Composite of amount of data produced, share of the world population using the internet, computational capacity of the fastest supercomputers, number of cyber attacks, mentions of job loss due to AI, ChatGPT usage, and number of AI ethical incidents and controversies.

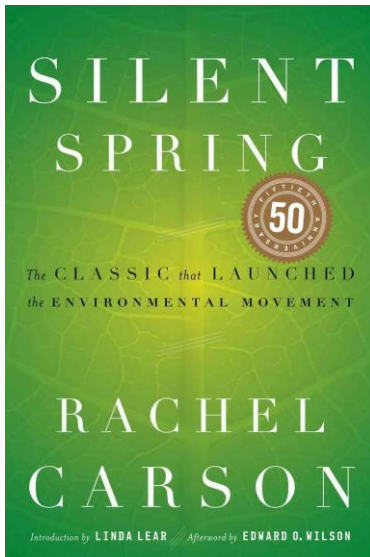
Source: EY (2024)

11

Joining the dots...
Deep Interconnection!

12

Interconnection: Environmental Crisis



1962

*'The history of life on earth has been a history of **interactions** between living things and their surroundings.'*



Rachel Carson, Silent Spring



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13

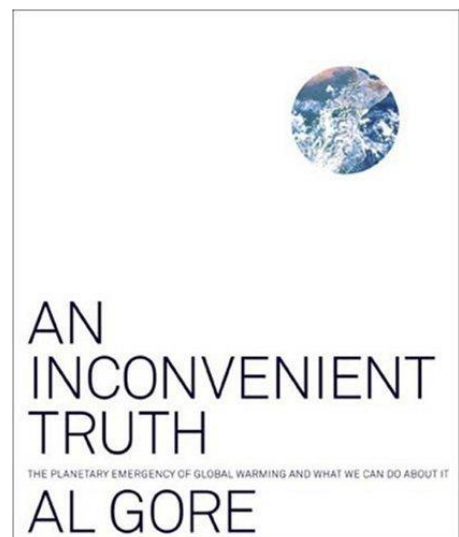
Interconnection: Climate Crisis

2006

*'Our capacity for analysis sometimes leads us to an arrogant illusion: that we are so special and unique that **nature** isn't **connected** to us.'*

*But the fact is, we're **inextricably tied**.'*

Al Gore,
An Inconvenient Truth



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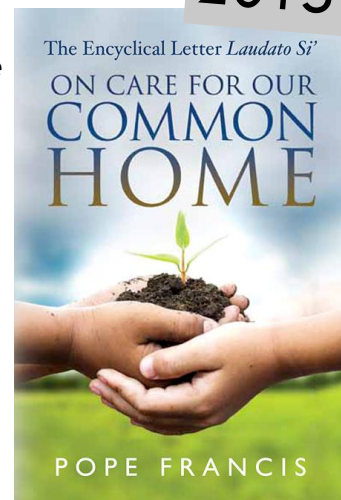
14

Interconnection: Ethical/Moral Crisis

2015

'It cannot be emphasized enough how **everything** is **interconnected**. Time and space are not independent of one another, and not even atoms or subatomic particles can be considered in isolation. Just as the different aspects of the planet – physical, chemical and biological – are **interrelated**, so too living species are part of a **network** which **we will never fully** explore and **understand**. ...It also entails a loving awareness that we are **not disconnected** from the rest of creatures, but joined in a splendid **universal communion**.'

Pope Francis, Laudato Si'



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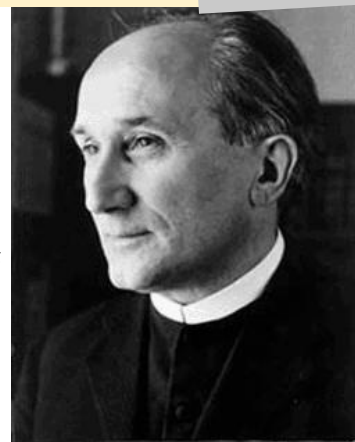
Interconnection: Ethical/Moral Crisis

2018

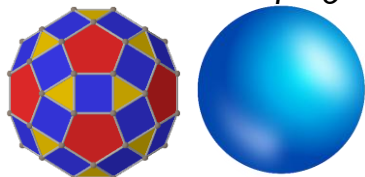
"The master of oppositions, of **bipolar tensions**, as we might call them, is Guardini, who teaches us this path of **unity in diversity**. What's happening today with fundamentalists? Fundamentalists lock themselves up in their own identity and don't want to hear anything else. ...We must not seek **synthesis**, because synthesis can destroy everything; we must tend towards the **polyhedron**, towards the **unity that preserves all diversities, all identities**. The master in this field – because I don't want to commit and act of plagiarism – is **Romano Guardini**"

Pope Francis

The Path to Change; Thoughts on Politics and Society
with Dominique Wolton
(Pan Macmillan, 2018) p.11-12



Romano Guardini,
German-Italian Catholic priest,
academic, philosopher and
theologian (1885-1968)

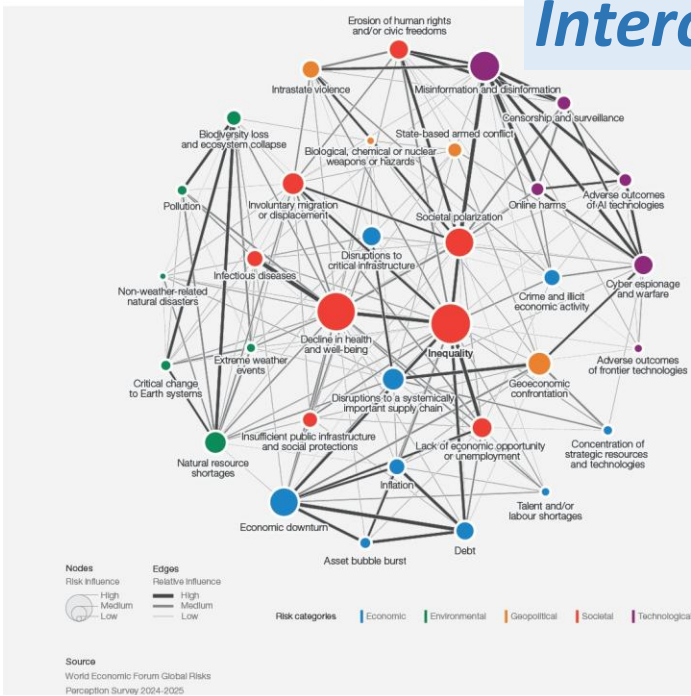


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FIGURE D Global risks landscape: An interconnections map³

Interconnection of Crises

WEF Map of Global Risks

As we enter 2025, the global outlook is **increasingly fractured** across **geopolitical, environmental, societal, economic** and **technological** domains.

2025

WEF, Global Risks Report 2025

17

2024

Megatrends

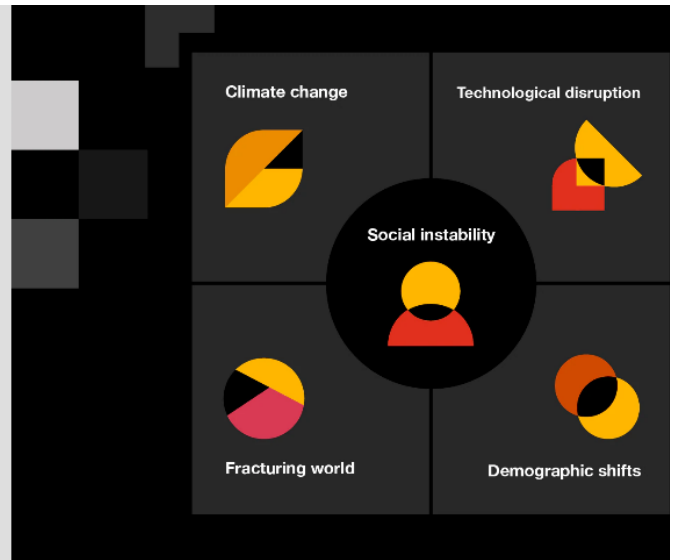
pwc, September 2024



18

The five Megatrends have already and will continue to change the world for many years to come. Each one of them implicates existential questions and has the potential to bring humanity to a tipping point. But it's the interaction between these Megatrends that makes them particularly hard to deal with. Each Megatrend is exacerbating the social challenges the world faces, and the magnitude of the social challenges makes it difficult for societies to come together and fight the negative effects of climate change, technological disruption, demographic shifts, and a fracturing world.

**There is no equivocating:
Humanity is in a race against time.**



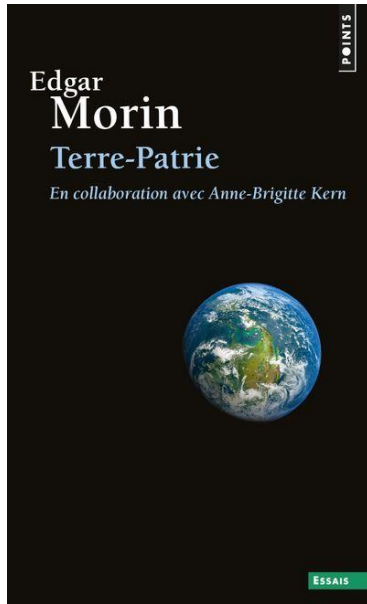
pwc, Megatrends, September 2024

19

What to make of it?...
Polycrisis!

20

Polycrisis

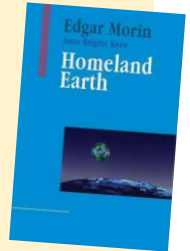


1993

'The Polycrisis'

'There is no single vital problem, but **many vital problems**, and it is this **complex intersolidarity** of problems, antagonisms, crises, uncontrolled processes, and the **general crisis of the planet** that constitutes **the number one vital problem**'

Edgar Morin and Anne-Brigitte Kern
(Terre-Patrie 1993; Homeland Earth, 1999, p.74)



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Polycrisis



2016

European Commissioner President Jean-Claude Juncker, 21 June 2016, Athens

'This European Union has faced its **worst economic, financial and social crisis** since World War II.

And it is still struggling with the consequences. I have often used the Greek word "**polycrisis**" to describe the current situation.'

Juncker, J.-C. (2016, June). Speech by President Jean-Claude Juncker at the Annual General Meeting of the Hellenic Federation of Enterprises (SEV). 21 June 2016. Athens.

Retrieved from https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_16_2293

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FINANCIAL TIMES

COMPANIES
TECH
MARKETS
CLIMATE
OPINION
LEX
WORK & CAREERS
LIFE & ARTS
HTSI

2022

Opinion
Global Economy

Welcome to the world of the polycrisis

Today disparate shocks interact so that the whole is worse than the sum of the parts

ADAM TOOZE
+ Add to myFT





Financial Times,
28 October 2022

23



WORLD
ECONOMIC
FORUM

Join us
Sign in

This is why 'polycrisis' is a useful way of looking at the world right now

Mar 7, 2023

2023



24

Polycrisis+

underlying Crisis of Meaning?



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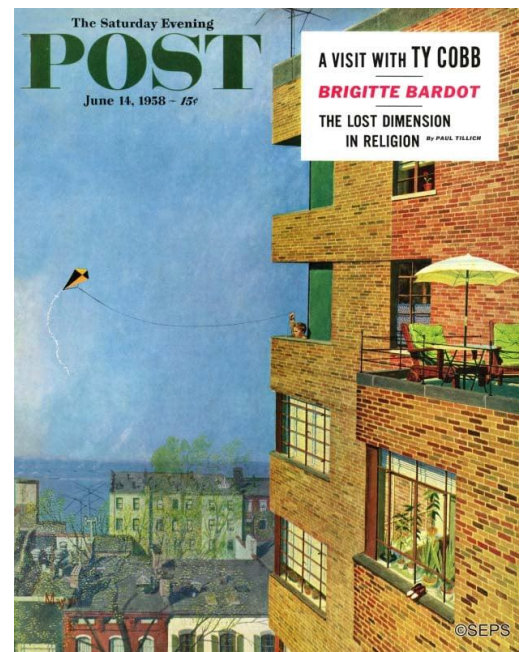
25

'The decisive element in the **predicament of Western man in our period** is his loss of the dimension of depth. Of course, "**dimension of depth**" is a metaphor. It is taken from the spatial realm and applied to man's spiritual life. What does it mean? It means that **man has lost an answer to the question:**

What is the **meaning** of life?'

Paul Tillich

The Saturday Evening Post, 14 June 1958

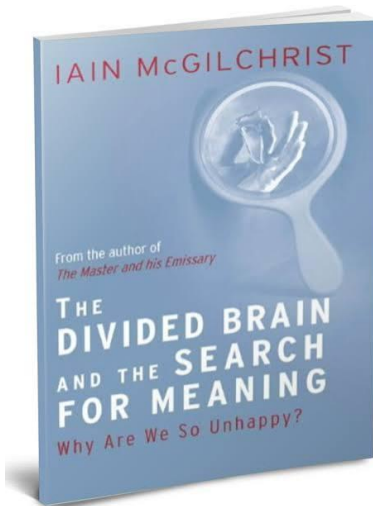


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Neuroscientist/Psychiatrist Iain McGilchrist (2012, p.20) puts it that:
*'meaning emerges from **engagement** with the **world**, not from abstract contemplation of it.'*

The **dominant modern paradigm** however would suggest that:
*'the **quest** for meaning is itself **meaningless**'*
 (McGilchrist, 2012, p.4)

McGilchrist, I. (2012) The Divided Brain and the Search for Meaning. Yale University Press.



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Crisis of Meaning/Moral Crisis..

2007



*'My fellow Americans, people all over the world, we need to solve the climate crisis. It's not a political issue; it's a **moral** issue. We have everything we need to get started, with the possible exception of the will to act. That's a renewable resource. Let's renew it.'*

Al Gore (2007)

'An Inconvenient Truth', Best Documentary Feature Academy Award Speech

http://www.dailymotion.com/video/x1b2xx_al-gore-oscar_fun (ex 0:51)



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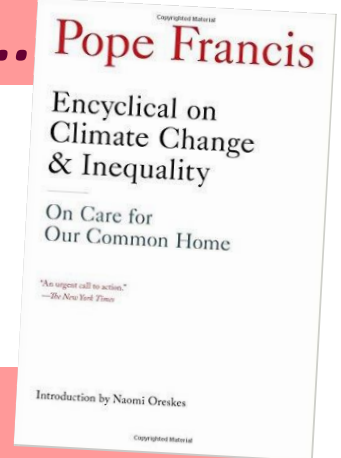
28

Crisis of Meaning/Moral Crisis..

2015



Naomi Oreskes.
Photograph by Kayana Szymczak



'Sometimes a book catalyzes thought into action.

Uncle Tom's Cabin did this, and so did **Silent Spring**.

Like these works, **Pope Francis's Encyclical** is a call to action that insists we embrace the **moral** dimensions of problems that have heretofore been viewed primarily as **scientific, technological, and economic**.'

Naomi Oreskes, Professor of the History of Science, Harvard University



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Crisis of Meaning/Moral Crisis..

2015

'.. A market economy without a **moral** framework inevitably becomes a profound danger to itself; the intoxicating forces of greed are unleashed without moral restraint and overwhelm our innate sociality, goodness and compassion.

The **global market economy** today largely **operates outside of any guiding moral framework**. Some business leaders reject even the most basic norms of honesty in business transactions. When they cheat their counterparts, they sneer that their counterparts are big boys who should take care of themselves.'

J.D. Sachs, 2015.



Jeffrey Sachs,
Economist, Professor of Sustainable
Development, Columbia University



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Crisis of Meaning?.. ***METACRISIS***



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The Metacrisis is a Crisis of Meaning

2024



Ernesto van Peborgh

Follow

7 min read · Aug 3, 2024

*“The metacrisis is a **systemic crisis** that **transcends** the **sum of its individual crises**. It is **not merely a polycrisis**, but an **emergent property** that is **greater than the sum of its parts**.*

*This crisis encompasses a **profound crisis of purpose** and **meaning**.”*



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Polycrisis vs. Metacrisis

2023

“Poly might help us to stand back and see what is ‘out there’ in perspective, but that is not enough. Just standing back to see the big picture risks delusion, because it is a partial view pretending to be whole.

Meta highlights that we also need to look within ourselves to psyche and soul, and also beyond, for a renewal in our worldview or cosmovision which has a direct bearing on prevailing ideologies and social imaginaries.

The heart of the matter is that this deep limitation is not allayed, but compounded by ‘polycrisis’, which merely amplifies the limitations of a crisis mentality.

Unlike metacrisis, which in principle shows us a way within, between, and ultimately beyond crisis, polycrisis leaves us stuck there.” Jonathan Rowson (2023)



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The ‘Sustainable Development Paradigm’



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1987

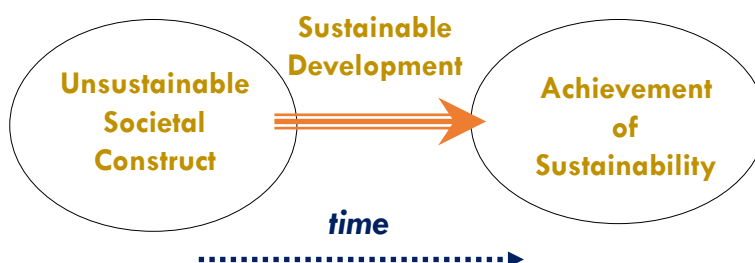
Sustainable Development

Brundtland Commission; 'Our Common Future':

*'Sustainable development is **development** that meets the **needs** of the present without compromising the ability of **future generations** to meet their own needs.'*

Sustainable Development

The terms '**sustainable development**' and '**sustainability**' are often conflated and used interchangeably, though many would consider that **sustainable development** represents a progressive **journey towards sustainability**.



Multiple Successive Crisis Awakenings..

Environmental Crisis (1960's)

Doing SD since 1987
(/Brundtland)

Climate Crisis (2000's)

Polycrisis (2010's)

Metacrisis (2020's)

..why then is **everything** continually just getting worse?..



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IUCN (International Union for Conservation of Nature):

The Future of Sustainability

Re-thinking Environment and Development in the Twenty-first Century

2006

'The idea of sustainability dates back over thirty years. ..mainstream sustainable development thinking was progressively developed through the World Conservation Strategy (1980), the Brundtland Report (1987), and the United Nations Conference on Environment and Development in Rio (1992).'

'The concept was coined explicitly to suggest that it was **possible** to **achieve economic growth** and industrialization **without environmental damage**.

...In **implying everything sustainable development** arguably ends up **meaning nothing**.

...Often sustainable development ends up being **development as usual**, with a brief embarrassed genuflection towards the desirability of sustainability.

...the evidence is that the global human enterprise **rapidly becoming less sustainable** and not more.'



The Future of Sustainability
Re-thinking Environment and Development
in the Twenty-first Century



Report of the IUCN Resourced Thinkers Meeting, 20-21 January 2006
www.iucn.org



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2008

Sustainable Development

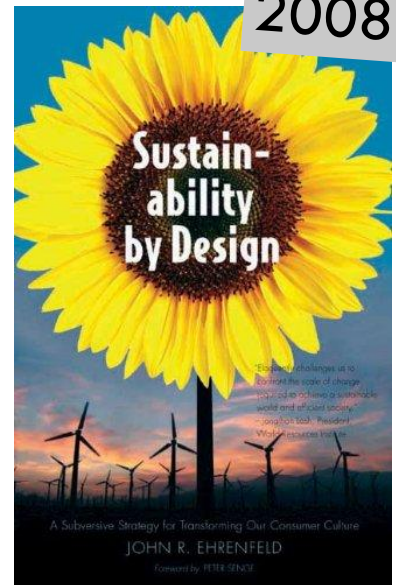
'is **not** actually **a vision of the future**'
but 'merely a modification of the **current process**
of **economic development**'.

It is '**part of the problem**, not the solution [as it]
shift[s] the burden away from more fundamental
actions'

John Ehrenfeld

Sustainability by Design

A subversive strategy for transforming our consumer culture
(Yale University Press)



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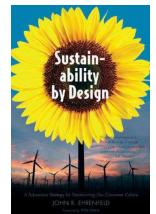
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'Almost everything being done in the name of sustainable development
addresses and attempts to **reduce unsustainability**.
But reducing unsustainability, **although critical, does not and will not create**
sustainability.'

John Ehrenfeld



'Sustainability is not the obverse of Unsustainability' (Ehrenfeld)



=



+



(Reductionist 'paint by numbers')
Instructions: Remove everything that
is not a horse (or a 3D print out?)

'Sustainability'
(e.g. a unique work of art)

'Unsustainability'



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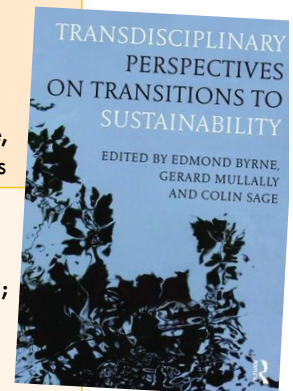


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The 'Integrative' / 'Complexity' / 'Relational' Paradigm

41

	Seeks certainty/control	Recognises inherent uncertainty
Materialistic	Modern (Reductionist) <i>Associated with:</i> Reductionist Science; objective 'value free' logic/rationality. Techno-optimism. Individualistic autonomous self. Certainty Unique Truth: via Reductionist Science	Postmodern (Deconstructivist) <i>Associated with:</i> Deconstructivism, Scepticism, Ineliminable Uncertainty, Relativism. Subjective self-expression; each a unique being. No Certainty No (Unique) Truth: Pluralistic tolerance, multiple diverse narratives
Beyond materialism (spiritual, transcendent, emergent)	Traditional (Premodern) <i>Associated with:</i> Working within and though natural cycles, bound up with irreducible mystery and enchantment. Certainty Unique Truth: via unique Divine Created Order (mediated through sacred texts and customs)	Integrative <i>Associated with:</i> Transdisciplinarity, Recognition of: irreducible complexity; deep Interconnectedness. ongoing process evolution No Certainty (Full Complex) Truth: Integrative, Relational, Process, Contextual, Contingent. Both physical/material and numinous/spiritual.



Consecutive Paradigms/Worldviews on Reality, after Annick de Witt (Byrne, 2017, p. 56)

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What does 'Sustainability' look like by the 'Integrative'/'Complexity'/'Relational' Paradigm?

	Seeks certainty/control	Recognises inherent uncertainty
Materialistic	Modern (Reductionist) 'The Machine Model' GeoMechanical View: change by Control e.g. CO ₂ emissions	Postmodern (Deconstructivist)
Beyond materialism (spiritual, transcendent, emergent)	Traditional (Pre-modern)	Integrative Living Earth Model: Earth as Relational Interconnected Whole 'Organism' ...also Enchanted and Sacred



What does 'Sustainability' look like by the
'Integrative'/'Complexity'/'Relational'
Paradigm?

What does 'Sustainability' look like by the 'Integrative'/'Complexity'/'Relational' Paradigm?

'Sustainability is the possibility that humans and other life will flourish on Earth forever.'



John Ehrenfeld (2008)



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What does 'Sustainability' look like by the 'Integrative'/'Complexity'/'Relational' Paradigm?

Flourishing

*"nothing more than a state recognized when one says,
'All my cares are being satisfied,
at least for the moment.'"*

John Ehrenfeld, *Flourishing* (2013, p.104)



46

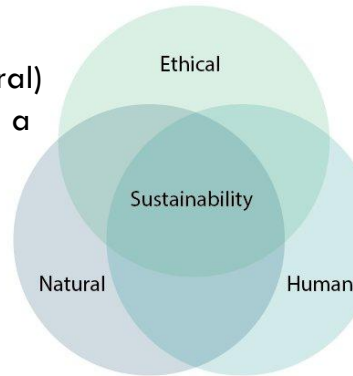
What does 'Sustainability' look like by the 'Integrative'/'Complexity'/'Relational' Paradigm?

'Tao of Sustainability'

Ehrenfeld (2008): Qualitative property of 'flourishing' is required for sustainability.

Flourishing can only be achieved when critical domains of **care** are addressed simultaneously:

- **Care** for **Oneself** (human domain)
- **Care** for **Others** (ethical domain)
- **Care** for the broader **World/Nature** (natural)
- In 2013 ('Flourishing') Ehrenfeld suggested a
- 4th domain; **Care** for the **Non-material** aspects of reality (spiritual/numinous/transcendental/connective)
- NB: No economic domain!



What does 'Sustainability' look like by the 'Integrative'/'Complexity'/'Relational' Paradigm?

Psychiatrist/Neuroscientist **Iain McGilchrist** on the human need for belonging:

Human need 'to **Belong**':

1. 'A stable **Community** in which you **belong**'
2. '**Nature** – that you **belong** in Nature.'
3. '**Belief** in a **world beyond** this to which we also **belong** – belonging in a **Spiritual** realm of the cosmos'



'We are cast adrift in a world which is **unNatural**, **unSpiritual** and **incoherent** from a point of view of its **Social structure**.'

Iain McGilchrist on what we need '[to have a fulfilled human life](#)'

What does 'Sustainability' look like by the 'Integrative'/'Complexity'/'Relational' Paradigm?

'It cannot be emphasized enough how **everything** is **interconnected**.

...It also entails a loving awareness that we are **not disconnected** from the rest of creatures, but joined in a splendid **universal communion**.

...We urgently need a **humanism** capable of **bringing together the different fields of knowledge**, including economics, in the service of a more **integral** and **integrating** vision.'

Pope Francis, *Laudato Si'* (2015)



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attribution: paintingvalley.com

'Taoist philosophy ..sees humanity as part of a larger web of life, emphasizes the **interconnectedness** and the intrinsic value of all living beings, and human responsibility for the planet.'

Liang and Segalas (2024)*

*Sustainability, 2024 (16) 6165.



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Paradigm Formation:

How we tend/attend to the world around US..

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Left Hemisphere



The '**Emissary**' is analytical, detail-focused, and prefers linear, mechanistic view of the world

Excels in language processing, logical reasoning, and the manipulation of symbols and abstractions



"Closes down to a certainty"



Inclination towards **narrowing down**, categorising, and seeking control (while useful, can lead to a *reductive understanding of complex, interconnected problems*)

Right Hemisphere



The '**Master**' embodies a holistic, integrative mode of thinking

Adept at processing emotions, recognising faces, and interpreting art and music



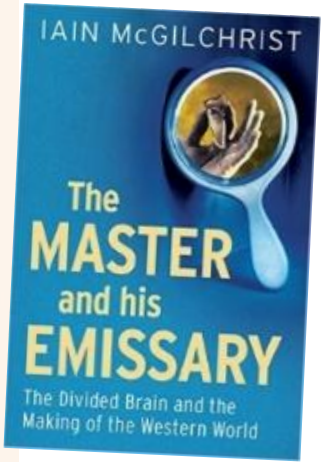
"Opens up to a possibility"

"Understands uniqueness"



Perceives the **world in its fullness**, appreciating the interconnectedness and complexity of life - where empathy, nuance, and the ability to hold multiple perspectives coexist





McGilchrist's **The Divided Brain** as illustrated by *The Soulful Systems*:
<https://chusana.substack.com/p/decoding-daniel-schmachtenberger>

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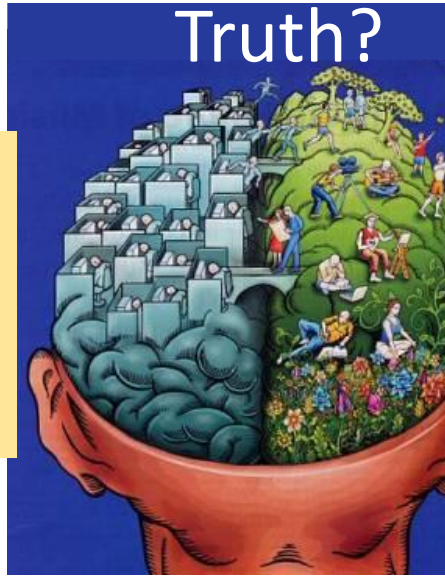
Left Hemisphere

Truth as narrow/unique:
‘objective’
decontextualized static
‘facts’,
established uniquely via
(reductionist) ‘Science’
('Scientism')



Iain McGilchrist, *The Matter with Things*, v.1, p.384 (2021)

Truth?



Right Hemisphere

Truth as:

ongoing evolving **process**,
seeking **meaning** through
(subject-object) **relationship**,
obtained via **contextualised**:

- Scientific rationality (explicit), *but also*:
- Intuition (*implicit*),
- Emotion (*implicit*)
- Imagination (*implicit*) and
- Experience (*implicit*)

e.g. taste, beauty, goodness, love.

Truth **not** a free-for-all, individual whim,
but uncertain because it is full, complex.



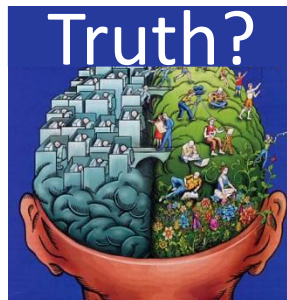
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Truth?



*“Scientific processes cannot be **free from assumptions or values**;
..its advance **requires imagination**, as well as **serendipity** – not
merely the stolid adherence to a procedure.*

*..In science, we need to **balance** what **each hemisphere** provides, not
just the contribution of one, be it left or right.”*

Iain McGilchrist, *The Matter with Things*, v.1, p.429-30 (2021)



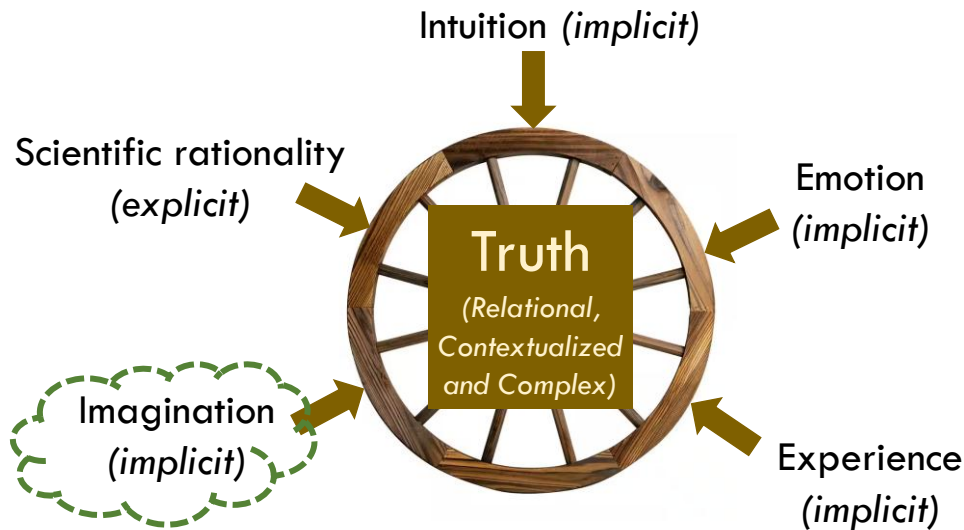
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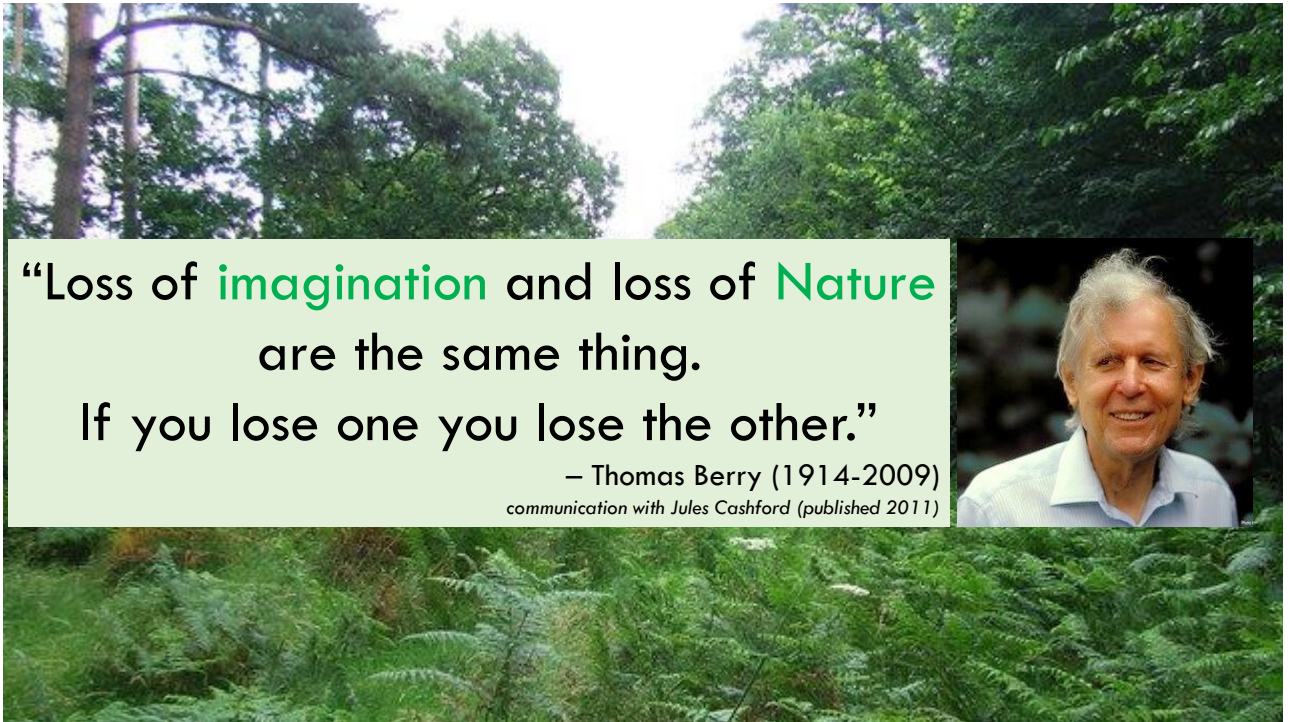
54

What does 'Sustainability' look like by the 'Integrative'/'Complexity'/'Relational' Paradigm?

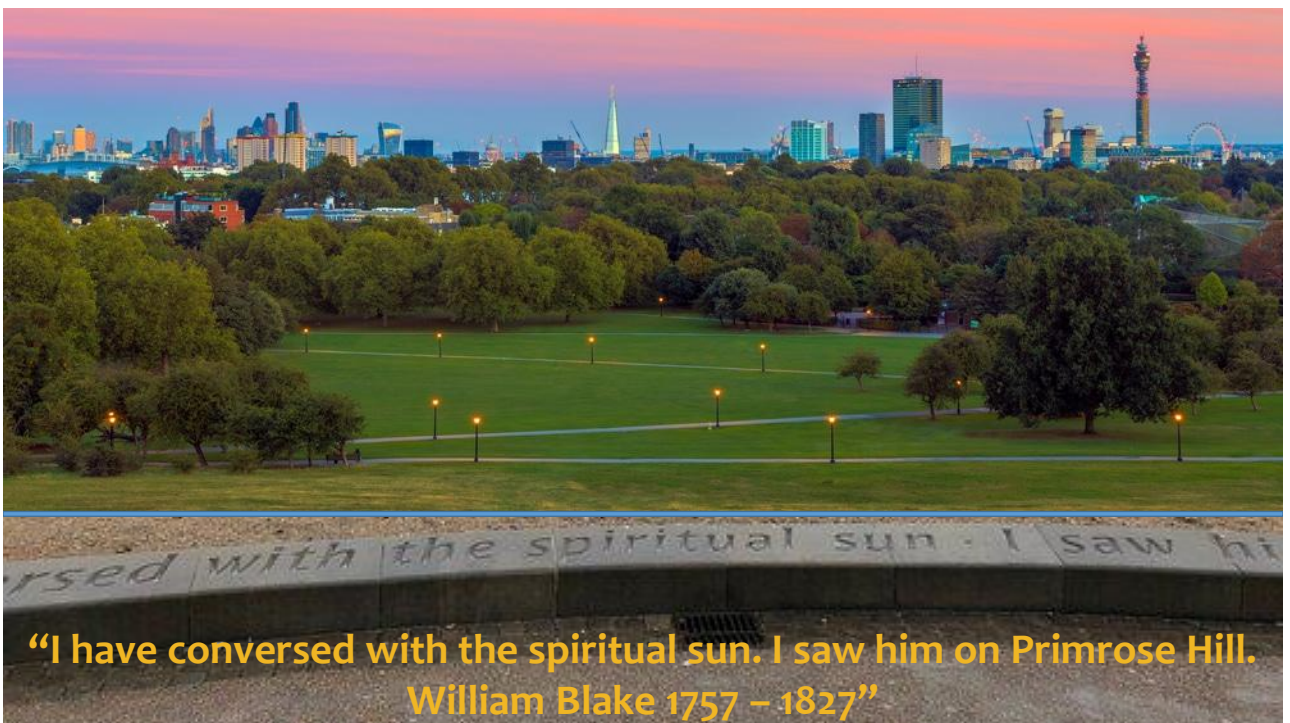


'The tree which moves some to tears of joy is
in the eyes of others only a green thing that
stands in the way.
...Some scarce see nature at all.
But to the eyes of the man of imagination,
nature is imagination itself.'

– William Blake, *communication with Reverend John Trusler, 1799*



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'Practical Method'

Explicit, Reductionist/Algorithmic, Hubristic, seeks Power through Control

Roots: 'The Dào (Essence) domain':
'Deep Awareness of the Essence, Laws and Relational Nature of the World'

Implicit, Relational/Holistic, Contingent, seeks Flourishing through InterConnection

'The Dynamic Tree' Taoist metaphor
(Liang and Segalas, 2026)

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What does 'Sustainability' look like by the 'Integrative'/'Complexity'/'Relational' Paradigm?

'I think that the **picture of the world** that we now live in, which contains so many apparently **separate crises** that we've invented the term '**a Metacrisis**' to overarch the whole set of problems.

I think these are all, if you like, explicable in terms of a world in which we **pay attention** and only to what the **left hemisphere** can tell us and **neglect** what the **right hemisphere** can tell us.

This was not always so. But we now are so **focused on material acquisition, on the getting of stuff**, that **we have forgotten** that the business of life depends on many other things and it is the things that are forgotten that **enrich life** and **make it worth living**'



Iain McGilchrist (2024)

On The Paradox of Living, Finding Awe, and The Drivers of The Mental Health Crisis.

<https://www.youtube.com/watch?v=DtvUNZdq3To>

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Paradigmatic *Critical Misalignment?* → Precipitating Crisis



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"The major problems in the world
are the result of the difference between
how nature works and the way people think."



Gregory Bateson
(1904-1980)

(Nora Bateson (2015) An ecology of mind – A daughter's portrait of Gregory Bateson
<https://vimeo.com/ondemand/bateson/116614772>)



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How Nature works? The Science of Ecology..

Across Ecosystems, Cooperation precedes Competition

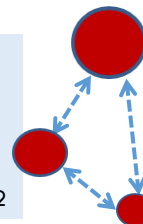
(contra Dawkins/reductionist worldview)

Robert Ulanowicz:

[In considering/modeling **ecosystems**], researchers should..

'pay more attention to processes (flows) than to objects'

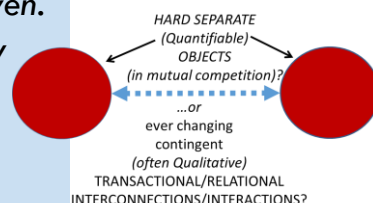
Computational Biology & Chemistry (2004), 28, p.322



'Like growth, the existence of competition is assumed as a given.

..[But] competition cannot arise, unless mutualities are already at work at the next level down. ..It is mutuality that is fundamental and out of which competition ultimately derives.'

Zygon (2013), 48(1), p.84



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Misalignment? The Metaphor of Moloch

Maximises **GOAL** of **Modern Paradigm**:

Competitive Accumulation of Wealth/Resources,
seeking Control and Power via Individualistic
Consumptive Growth.

GOAL of **Integrative Paradigm**:

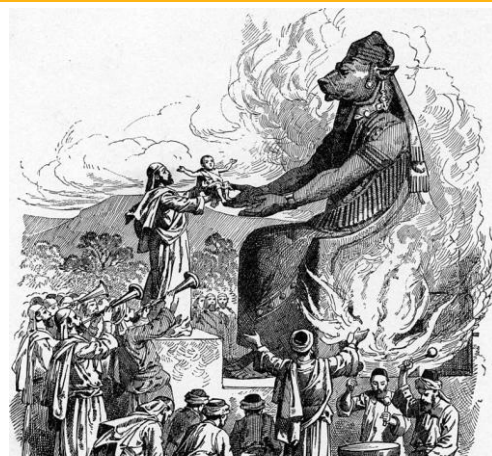
Qualitative systemic inter-relational meaningful
flourishing (personal, community, societal, ecological,
spiritual), within recognised limits. Sense of Belonging.

Side Effect of Paradigmatic Misalignment:

('unintended' consequences)

METACRISIS

*Crisis of Meaning,
Destruction of Nature/Basis of Life.*



Moloch

Metaphor for results* of (systemic/societal) Goal Misalignment
(*...though nobody wants!)



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Paradigmatic Misalignment: The 'Zombie Apocalypse'?

Zombies in Western Culture A Twenty-First Century Crisis

John Vervaeke, Christopher Mastropietro, and Filip Miscevic (2017)

'A **worldview** is two things simultaneously:

- (1) a **model of the world** and
- (2) a **model for acting in that world.**

'The worldview is the cultural analogue of an ecology. Just as there is the possibility for an **ecological crisis**, there is also a possibility for a **Worldview crisis**. The **zombie apocalypse** represents such a crisis.' (pp.33-34)



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Paradigmatic Misalignment: The 'Zombie Apocalypse'?

Zombies in Western Culture A Twenty-First Century Crisis

Vervaeke et al. (2017)

'We hunger for meaning in the normative void of a **collapsing worldview**, starving of an empty mind, facing **Famine in a culture of excess.**' (p.45)

'The zombie is a multi-vocal analogue for the **contemporaneous domicides** occurring in the **personal, social, political and spiritual systems** of the present. We may speculate without great imagination that this gradual **onslaught of meaninglessness** will—in the absence of a new sacred canopy—continue to threaten and infect us for the foreseeable future.' (p.86)



'The Four Horsemen, from "The Apocalypse"
Albrecht Dürer (1498)



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Paradigmatic Misalignment: The 'Miserable' young?

From Miserable Pedagogies to Anthropocene Intelligence for Universities in the Meta-Crisis

Stratford et al (2025), *Australian Journal of Environmental Education* (2025), 41, 1154–1170

'The misery **young people** are experiencing within the **meta-crisis** is compounded by a **mainstream context** that typically **fails to engage** with enough depth on the causes and solutions to these **interconnected crises**.

This is especially relevant in the context of the meta-crisis as the **"hope"** that some might otherwise pin to **mainstream sustainability** seems misplaced because so many of the features within this field **lack** the **theoretical depth** and **transformational energy** to even slow the momentum of **neoliberalism's reverence for the market** and its associated **contribution to the meta-crisis**. [For example,] while achieving the 17 [UN SDG] goals themselves is seriously in doubt (United Nations, 2024), of greater importance is that the goals reflect an **unsustainable neoliberal imperative for economic growth**.'



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What to do? ..Develop 'Anthropocene Intelligence'?

From Miserable Pedagogies to Anthropocene Intelligence for Universities in the Meta-Crisis

Stratford et al (2025), *Australian Journal of Environmental Education* (2025), 41, 1154–1170

'**Anthropocene Intelligence*** emphasises an ecological outlook that connects **natural, social,** and **psychological eco-systems**.

From the epistemological approach of Anthropocene Intelligence then, the **"meta-crisis"** is a long-awaited **realisation that the world has always been interconnected**.'

***Anthropocene Intelligence** comprises:

- Biophysical limits
- Multidimensional care and well-being
- Agency, Subjectivity and Meaning
- Beyond traditional Western epistemologies
- Interconnection and systems
- Actual places
- Ecological pragmatism



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Contemporary and Future Trajectories?...



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The 'AI Era': Hyper concentration of wealth and power

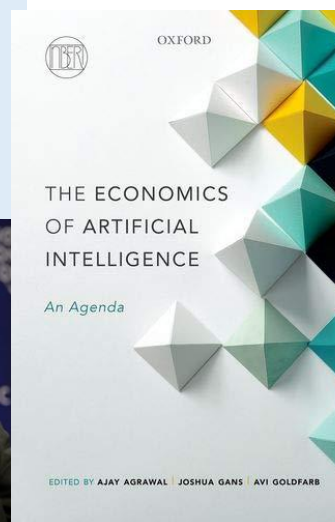
AI may be accompanied by either **'massive increases in human inequality'**

and/or

'AI entities, living for themselves, absorb (i.e. "consume") more and more of our resources.'

Eventually, this may force **humans** to cut back on their consumption to the point where their real income is so low that they **decline in numbers.'**

(Korinek and Stiglitz, 2017)



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“The ‘Singularity’ has arrived”!

2026

AT LONG LAST

Sam Altman Announces That the Singularity Has Arrived

"I've been waiting for this my whole life."

By Frank Landrymore / Published Jul 27, 2026 12:01 PM EDT / Add Futurism



Elon Musk
@elonmusk

We have entered the Singularity

9:00 AM · Jan 4, 2026 · 3M Views

BUSINESS INSIDER

EXCLUSIVE Zuckerberg-Trump Call Jobs, Jobs, Jobs AI Bans in Schools Power Hours



Stripe says the singularity has arrived. told investors about it.

By Kelsey Vlamis + Follow



Stripe executives, including John Collison and Patrick Collison, told investors the singularity is here. David Paul Morris/Bloomberg/Getty Images

Aug 10, 2026, 10:46 PM GMT+1

2 min



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AI and competitiveness: Shaping Europe's digital future

May 2025

Written by Lucy C. Grinin - Amazon's Vice President for EU Public Policy

AI & SOCIETY (2025) 40:257-261

<https://doi.org/10.1007/s00146-025-02267-0>

EDITORIAL

The end AI innocence: genie is out of the bottle

Karamjit S. Gill^{1,2}

2025
Springer Nature 2025

AI's here; The genie's out of the bottle:
Get with it!?
(..or get left behind!)

23 JAN 2025 NEWS HEADLINES

Embracing human-centred AI to unlock EU competitiveness

ARTIFICIAL INTELLIGENCE



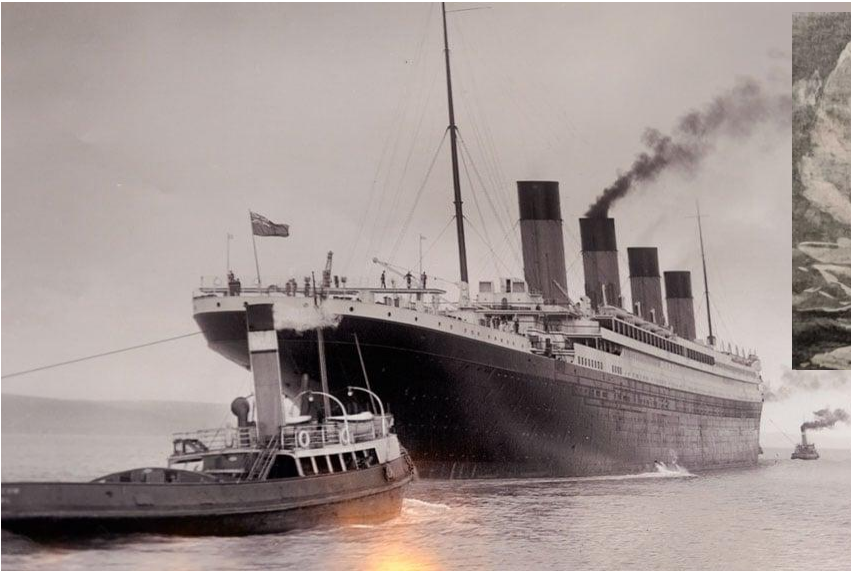
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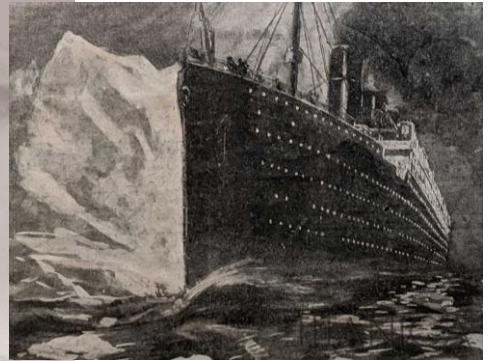


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AI: Accelerating [towards the] Iceberg!



attribution: Shutterstock



attribution: paintingvalley.com



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Science
Media Centre
All Ireland

IRELAND CITED AS A CAUTIONARY TALE IN UN REPORT ON AI'S ENVIRONMENTAL FOOTPRINT – EXPERT REACTION

04 June 2026



The Irish Times, 7 Sept 2026

The Irish Times,
4 June 2026

'We just don't want them': Hundreds gather in a Kildare town over data centre plans

Noise issues in Clondalkin are a cautionary tale – but it's not too late for Naas, town meeting hears



Mark Zuckerberg (left), Jeff Bezos (center) and Elon Musk (right) were described as increasingly bond-villain capitalists at a meeting in New York on Thursday about a proposed data center campus in the state. Photograph: Julia Demaree Weissman/AP Photo/Blomberg

The Irish Times, 4 Sept 2026

A new [UN report](#) has described Ireland as a “cautionary tale” of what happens when the rapid growth of Artificial Intelligence infrastructure outpaces energy planning.

Noting that data centres now account for 21% of our metered electricity demand. The report argues that AI's global environmental impact extends beyond energy use and carbon emissions, highlighting growing pressures on water resources, land use, critical mineral extraction, and eventual e-waste.

'essentially Bond-villain capitalists'



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B B C

AI safety leader says 'world is in peril' and quits to study poetry

4 days ago

Liv McMahon, Technology reporter and Otilie Mitchell



'**The world is in peril.** And not just from AI, or bioweapons, but from a whole series of **interconnected crises** unfolding **at this very moment**¹. We appear to be approaching a threshold where our **wisdom must grow** in equal measure to our **capacity to affect the world**, lest we face the consequences. Moreover, throughout my time here, I've repeatedly seen **how hard it is** to truly **let our values govern our actions**. ...I feel called to writing ..that places **poetic truth** alongside **scientific truth** as **equally valid ways of knowing**, both of which I believe have something **essential** to contribute when developing **new technology**.'

¹Some call it the "**poly-crisis**", underpinned by a "**meta-crisis**."

the world, and we need to let our values govern our actions. I've seen these crises and throughout

Mrinank Sharma MEng (Cambridge), DPhil (Machine Learning) (Oxford)
Anthropic [resignation letter on X](#), 9 Feb. 2026

of my particularities. I want to explore the questions that too many of us avoid. Where would say "have no right to go away", the questions that Rilke implies us to

ANTHROPIC

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'They're playing with our lives': AI worker quits Anthropic

Updated / Wednesday, 9 Sep 2026 19:10

'Jacob Coxon, aged 27, spent the past three years pretraining AI models, first at OpenAI and then, this year, at its rival Anthropic ..."Neither company is acting responsibly. They are racing straight to self-improving superintelligence and gambling with our lives,

"The people building AI earnestly believe that it could kill us all by the end of the decade," he said in a post on X. **"This is not a marketing stunt."**

Anthropic safety executive Evan Hubinger **supported** Mr Coxon on X. **"We really do earnestly believe AI could kill all humans!"** he said, adding that he estimated that risk at more than 10% over the next decade. Mr Hubinger said Anthropic is **"trying its best"** but **does not yet have a plan** to ensure an AI system that surpasses human capabilities would obey its creators.'

<https://www.rte.ie/news/business/2026/0909/1590913-anthropic-researcher-quits/>



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Artificial Intelligence and Care of Our Common Home Conference

Roma, 5 December 2025

'The advent of **artificial intelligence** is accompanied by **rapid** and **profound changes in society**, which affects essential dimensions of the human person, such as **critical thinking**, **discernment**, **learning** and **interpersonal relationships**. ...Human beings are called to be **co-workers** in the work of creation, not merely **passive consumers** of content generated by artificial technology.'

The ability to access **vast amounts of data and information** should not be confused with the ability to **derive meaning** and **value** from it. The latter requires a willingness to confront the **mystery** and **core questions of our existence**, even when these realities are often **marginalized or ridiculed by the prevailing cultural** and **economic models**.' Pope Leo XIV (2025)



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Life or the Machine? Becoming better humans..

'The **opposite of life is not death – it is the machine** – so focus your energies there!

We don't need to be more machine like. We need to be **better humans**, and none of that [AI] will help us become better humans.'

'So it is a servant or a tyrant? Well its always presented as your servant, but I might point out that any harmful innovation you like to name was, without exception, presented as for your benefit.'

Iain McGilchrist,

'The Future of Humanity' Lecture Royal Institution, London, 26 October 2024.



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AN EPOCHAL SHIFT

The turbulent AI era is here. The choices we make now are critical.

We need a plan to ensure that the good outweighs the bad.



By Bill Gates published on Wednesday, Aug 26, 2026

Home

<https://www.gatesnotes.com/home/home-page-topic/reader/a-turbulent-ai-era-and-critical-choices-to-make>



‘Even under the best circumstances, the transition to this new **AI era** will be one of the **most turbulent times in human history**.’

‘I believe **we need time** to prepare for the period of **social, political, and economic upheaval we are about to enter**.’

‘If someone had a credible plan for **slowing down AI advances** globally, **I would likely support it**.’

‘However, I don’t think that’s going to happen. The geopolitical and economic incentives are pushing too hard to go **full speed ahead**.’



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‘GatesNotes’ (26 August 2026)

‘I’m also worried about **AI’s impact** on **education**.

‘One preliminary survey suggested that heavier AI use was associated with **less critical thinking**. The effect was stronger for **younger people**. This would be the worst possible time for humans to lose their critical thinking skills.’ – ‘in an era of **deepfakes** and **misinformation**’

‘As people who spend their lives thinking about **what it means to be human, religious leaders** can play a **key role** in this. I was fascinated by Pope Leo XIV’s encyclical on AI, “On Safeguarding the Human Person in the Time of Artificial Intelligence.” It lays a strong foundation for the work that needs to be done.’

‘The transition to AI comes with three big risks.

- Many **jobs will disappear** forever.
- AI will empower people (and perhaps AIs) to do **more harm**.
- AI could stunt our kids’ development and replace **human relationships**.’



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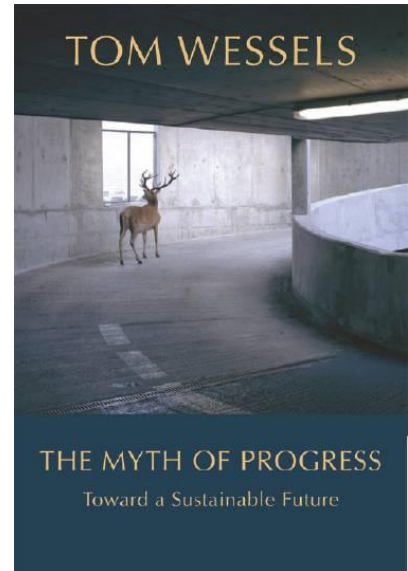
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Grounds for Hope? ...Connection over Consumption

'As the **global economy grows** and **consumes ever-increasing amounts of energy and resources**, entropy throughout the globe will accelerate. The feedback from this mounting **entropy** will eventually **destabilize** and curtail economic growth.

..How many empires and civilisations have collapsed because they grew past the means to sustain themselves? Its not a matter of whether this **current economic system** will fail; it is simply **a matter of when it will fail.**'

Tom Wessels (2006)
The Myth of Progress, p.114



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Grounds for Hope? ...Connection over Consumption

'Although I am not optimistic about the coming decades, am not pessimistic either. I have **hope** that we will be able to **transition into a new socioeconomic system based on sustainable principles**. Luckily due to bifurcation in complex systems, a cultural **paradigm can shift quickly**.

It is also my hope that people will come to realise, as **Black Elk** so eloquently points out, that it is through **connection**, not **consumption** that will allow us to **thrive**.'

Tom Wessels (2006)
The Myth of Progress, p.114



Heháká Sápa Black Elk (1863 – 1950)



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'Sustainable Development and Other Paradigms and Concepts in the Context of Contemporary Civilizational Trends – Global and Local Dimensions' Conference



The Sustainable Development Paradigm Misalignment?

*From environmental crisis to climate crisis
to polycrisis to metacrisis*

<https://www.ucc.ie/en/dsis/>



Acknowledgements: with thanks to DSIS research collaborators Dr. Ger Mullally, Prof. Maggie O'Neill, Bob Grumiau, Simone Koll O'Rourke & Dr Ian Hughes.



Edmond Byrne

Sustainability Institute | Chair Professor of Process & Chemical Engineering,
University College Cork, Ireland



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(post script...)

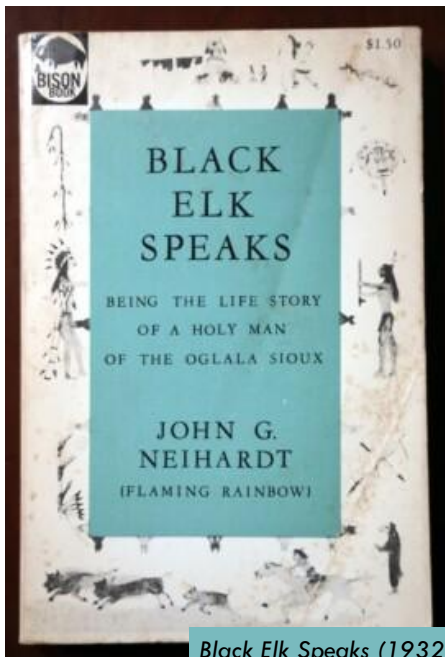


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Black Elk Speaks (1932)

“I wish I could stand up there in the flesh **before I die**, for there is something I want to say to the **Six Grandfathers**.” So the trip to **Harney Peak** was arranged, and a few days later we were there.

Harney Peak,
Black Hills,
N. Dakota, USA.

On the way up to the summit, Black Elk remarked to his son, Ben: “Something should happen to-day. If I have any power left, the thunder beings of the west should hear me when I send a voice, and **there should be at least a little thunder and a little rain.**”



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‘We who listened now noted that thin clouds had gathered about us. A **scant chill rain began to fall** and there was **low, muttering thunder** without lightning.

With tears running down his cheeks, the old man raised his voice to a thin high wail, and chanted: “In sorrow I am sending a feeble voice, **O Six Powers of the World.** Hear me in my sorrow, for I may never call again. **O make my people live!**”

For some minutes **the old man stood silent**, with face uplifted, **weeping in the drizzling rain.**

In a little while the sky was clear again.

The End.’



Black Elk (1863 – 1950)



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