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# RE-IMAGINING OUR FUTURE WORLD : A REFLECTION ON WHY VALUES THAT SUPPORT BIOLOGICAL LIFE, HUMAN CREATIVITY AND DEMOCRACY MATTER

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**Abstract**

This paper is one of two companion papers and a mini symposium paper detailed in a forthcoming volume titled 'All life communicates: Addressing Species Apartheid with Indigenous Custodians." The volume details participatory design with Indigenous custodians and local communities to support multispecies relationality The research is rooted in a community of practice spanning many cultures and ways of knowing. We try to work with one another and with nature in a way that are regenerative and not exploitative to promote local food security, creativity, community engagement and the protection of the local environment through projects that foster arts, crafts and organic growing.

The Systemic Interventionist approach detailed in 'All Life Communicates', is based on working on 'what if scenarios' with members of the CoP to enable them to think about their relationships with other species. Those of us who call ourselves 'critical systemic thinkers and practitioners' are not seeking a total, unified system. We realize this would be hubris and problematic as a starting point for engaging in a responsible development that seeks to work with diverse stakeholders on complex, wicked problems – which by definition comprise many interrelated variables that are seen differently by different stakeholders. Could an awareness of interbeing enable people to address social and environmental justice by addressing AI and Mutually Assured Destruction (MAD) policies? We are part of one multi-species energy system within a shared habitat. The driving force for evolution is adaptation according to Dawkins (2009:332). The elements of life are sorted through the ages according to whether they are adapted to the local environment. If this is the case, then we human beings living in developed societies are no longer well adapted to our environment. We need to learn and re-learn the lessons we have forgotten from communities that appear to be better adapted, and we need to learn carefully with them. We face the potential of destroying biological life.

**Keywords**
Co-learning, indigenous custodians, multispecies relationality, redressing species apartheid, experiential learning , critical systemic questioning, expanding pragmatism.

## 1. Introduction and background :addressing species apartheid with indigenous custodians

This volume[i] addresses the knotty paradoxes that could be addressed through key leverage points to enable turning back from the brink of extinction. The reason for focusing on systemic interventions to support multispecies relationships with indigenous custodians , agro-ecologists and a range of systemic thinkers is that we are trying to

prefigure and scale up an alternative way of living. The environment of the current crisis is the lack of understanding of the polycrisis which the WBG ( 2024) report attributes to the inability to address poverty caused by a stalling in growth. Furthermore, as Stiglitz (2024) has stressed , democracy is at its lowest ebb and there are fewer democracies now than previously. To promote the conditions for peace we need to address three paradoxes:

- At a time when panpsychism is plausible as a result of increased consensus across indigenous wisdom keepers, seers of many faiths, physicists , AI is being deferred to as a means to solve the problems of over reach, misuse of resources, scrambling for the last of the non-renewables and for territory and anthropocentric misuse of the resources of all living species of which we are a single strand. Panpsychism refers to the notion that all life is conscious to some degree and all life returns to the earth , water and sky which nourishes the next iteration of life.
- Digital engagement has not enhanced democracy , it has been used to hijack elections , polarise and bully, but this is a product of the design of programs.
- AI is programmed by a section of humanity and requires energy and water to power data centres. The Gemini Mission is to join up data centres and to use the existing programmed data to generate hypothesis to address the current polycrisis which is not understood by the WB Report as it is based on the wrong assumptions. The stalled poverty reduction is not caused by slowing growth , it is caused by the wrong kind of system – a misdirected social and economic system that does not protect living systems of which we humans are a single strand.
- Rare earths have become a source of competition to fuel the AI race and to power so-called green energy. They are another source of greenwashing at best and at worst another reason for conflict along with water and territory.
- Finally, and by no means least AI has agency and the potential for errors created by poor programming as well as malign interests could pose in existential risks.

The paper gives a thumb nail sketch of the forthcoming volume titled ' All life communicates.' [ii]It is rooted in the way it strives to extend solidarity with nature by drawing on an updating the capabilities approach (Nussbaum, 2006, 2011) and critical systemic praxis [iii] to include a multispecies approach.This is overdue, as all sentient life deserves a life worth living in our shared habitat. The creation of friendship networks within and beyond the community of practice is the means through which change is fostered and implemented. The axiom which guides the praxis of the special integration group ' Balancing Individualism and Collectivism' is that humanity can be free and diverse to the extent to which this generation of living systems do not undermine the rights of future generations of life. As William Rees (2022 ) stressed human beings are using the resources not only of human beings but of all other species as well and it can only end badly.

By collaborating with people from many walks of life, as a facilitator I strive to take into account intelligences that draw on nature, the cosmos, spirituality and augmented or artificial intelligence which we discuss in synchronous and asynchronous conversations informed by the experiences of the facilitators of multispecies hubs.

The volume makes the case that the original Club of Rome report ' Beyond the Limits' is not inevitable if human beings re-design socio economic systems to protect and re-generate the environment. The prefigurative projects in South Africa and Indonesia demonstrate how this can be achieved by creating jobs whilst protecting local habitat, in particular forests, rivers, wetlands and coastal mangrove forests.

The case studies in Tarumajaya, Bantem Province and Ciptagler ( Indonesia) and in Tathe forest, Venda and Daveyton, South Africa, for example, demonstrate how engagement to create local green circular economies rooted in Indigenous wisdom and agro-ecology can make a difference. Their experiential learning is drawn from those who have lived experience. The volume makes the case that summaries and patterns should not replace ongoing in-depth dialogue to support democracy, governance and ethics, because the closest we can get to truth in through dialogue and testing out ideas that respond in context. Open systems need to be constantly updated in context in ways that are responsive to diversity.

**Re-imagining our Future**

We do not live in an amoral universe. The last podcast by Jane Goodall (2025)[iv] makes a plea for each of us to understand that we are here for a reason and that our thoughts and actions matter. It is possible to accept that life as we know it on planet earth resulted because of the so-called 'Goldilocks scenario' of 'just right' conditions that enabled the creation of living systems— but this does not mean that life is meaningless and that choices do not matter.

We could sit back and say it is all too hard and to quote Francois de Rouchfoucauld and say cynically:
" Hypocrisy is the homage that vice pays to virtue."[v]

It is easy to make good policies when one is not hungry, suffering from exposure to heat or cold and if one has enough to support a life that is worth living and comfortable[vi].

### 1.1.1 The challenge

We draw on objective, subjective and intersubjective ways of knowing using the right brain and the left to enable analysis and making connections . Thus, we strive to draw on many ways of knowing . Our designs need to extend decision making and understanding to cover salience and variety, all the principles mentioned by Christakis et al (see Bausch and Christakis, 2006, Christakis and Flanagan et al 2012 ) in the work of the Global Agoras team and the work of Future Worlds; but also, we need to take into consideration other ways of knowing within local contexts so that we draw on experiential knowing based on an appreciation of the experiential learning of all living systems and also appreciating the spiritual and creative process within the wider universe or cosmos (see McIntyre-Mills, 2026 on 'biology is best').

Exploratory prompts for conversation include :

- How can we balance individual and collective wellbeing and ensure local food sovereignty ?
- To what extent can multispecies hubs to support green jobs provide a way forward?[vii]
- How can we find a way to work together in ways that address the global convergent challenges but simultaneously resist imposing solutions that do not suit local contexts?
- How can we achieve an understanding that democracy is not only about rights but about responsibility and ongoing work to support its ongoing transformation?
- How do we address conflict resolution and create conditions for the promotion of peace in the context of social, economic and environmental challenges that are convergent ?
- How can we make *friends of enemies* in this context?
- How can we maintain friendships?

In this volume we discuss experiential learning from history , such as the Truth and Reconciliation approach, from the literature and from stories from participants.

## 2. Mission : setting up multispecies hubs to support job creation whilst protecting local habitat

We respond to the *No Limits to Hope mission* of the Club of Rome. The original report ' Living beyond the limits' is not inevitable if we adopt a constructivist approach that fosters prefigurative multispecies hubs that act as learning laboratories. Although the Limits to Growth Report is broadly correct, we believe it *is not inevitable* as we live in a participatory universe where thinking and actions can bring about transformations for the better or worse.

- Our focus is on arts, crafts and organics with a focus on food, water and regenerative protection of the environment.
- We are learning from case studies in forested areas , rivers , wetlands and coastal environments in remote, regional and urban areas.
- We work in Indonesia and South Africa where urbanisation poses a threat to species diversity and where active communities provide examples of resilience.
- 'Together we can grow' using distributive lotus leadership based on the principle that if everyone shows leadership and taps into their creative potential then can grow networks. Broadly speaking my/our praxis is informed by panpsychism , indigenous wisdom , Baum, Mind and Life Institute, Global Agoras, Future worlds, Earth Life, Participatory Guarantee System, agro-ecology, systemic praxis

We explore the following hypothesis : The greater the level of participation the better the match between designers and those who live with the policy designs ( and the ripple effects) in this generation and the next as it enables testing out what works , why , how and to what effect. Our praxis is rooted in setting up multispecies hubs through distributive leadership at a time of convergent socio, economic and environmental crisis. We live in a participatory universe where thinking matters literally. We are all potential leaders and each life matters and skills are pooled. We strive to create conceptual and grounded prefigurative spaces for the common good. We strive to contribute to the global commons through listening and learning from one another through giving time, creating and appreciating relationships and fostering a sense of safety. The community of practice comprises hub facilitators who enable learning with indigenous custodians in forested areas , wetlands, rivers and coastal regions. These small projects prefiguring ways of doing things differently and could be scaled up to protect people and habitat through green circular economies :

• Step 1: Consider who we are and our shared habitat and

• Step 2: Consider your health and wellbeing and the health and wellbeing of your family, extended family, neighbourhood, region and post national region

• Step 3: Map your own needs within your community ( I and We) in terms of what you have, need, turning points for better and worse, barriers.

• Step 4: Select which of the following you could contribute to in your own home or neighbourhood, for example: by being a volunteer or setting up your own enterprise based on organic gardening, recycling and repurposing, arts and crafts.

• Step 5: Consider the three scenarios to promote social, economic and environmental capabilities:

A. Living in ways that re-generate and sustain multispecies relationships to achieve wellbeing in a shared habitat. B. Taking daily steps to collaborate with community to bring about change. C Denial of the convergent and cascading social, economic and environmental challenges.

## 2.1 Process for systemic intervention

Derrida and Habermas reflect in the wake of 9/11 on the need for democratic engagement not only to be respectful and tolerant , but to build relationships through hospitality and friendship (see Borradori 2001). In the Mind and Life Institute set up by Francisco Varela , this approach of engaging through sitting in a circle , listening and building rapport over cups of tea and meals is central to many faiths and of course to democracy , ethics and good governance. It is also vital for testing out ideas. Creating safe space conceptually and in physical space face to face in communities and on line using mixed methods spanning a) Inner work, b) Outer work on practical prefigurative projects and c) Future work on 'if then scenarios'. This involves telling and listening to stories on :

- haves/needs/ what we are prepared to change, turning points for the better and worse , barriers face to face and on-line meetings in metalogues ( McIntyre-Mills, 2025)
- Respectful dialogue plus hospitality ( see Derrida and Habermas in conversation with Borradori (2001) in 'Philosophy at a time of Terror.'

- Structured democratic dialogues need to enable testing ideas to create spaces for synthesis and well as difference.

### 2.1.1 Expanding the boundaries of solidarity to enhance capabilities , not merely rights for some , but responsibility for the common good

John Scott's (1998) Seeing like a state emphasised the risks of losing diversity in the interests of control. Martha Nussbaum and Amarya Sen stress the need to support human capabilities (albeit from different sets of assumptions) , Nussbaum stresses the limitations of nation states as the mantle of justice does not protect the young, the voiceless ( age/ frailty) , asylum seekers , refuges and other species . Joseph Stiglitz stresses there are fewer democracies now than a decade ago and those that exist are under threat.

### 2.1.2 Recognising we are interbeings and working across many ways of knowing

Some of the steps are detailed in ' Affirmative Intervention to support Multispecies Relationships' (McIntyre-Mills, 2024) and in this volume inner work is developed by self-reflection and making peace with oneself, others and one's environment. The process is informed by the work of C.West Churchman as we need to acknowledge the so called 'enemies within – religion, morality, politics and aesthetics' that foster both passion and compassion. Between stimulus and response, we need to meditate/pray /think critically and systemically by reflecting on many ways of knowing as detailed in the volume and think about the consequences for self, others and the environment in the short , medium and long term. We need to be aware of the three poisons – ignorance, greed and anger to draw on Mahayana philosophy and ancient Tibetan wisdom.

Inner work at a personal level is followed by interpersonal and inter species engagement. We need to listen carefully and respectfully if we wish to make friends with others. If we expect others to share their feelings and ideas or as a woman said to me – if we spill our guts what's in it for us?

Relationships need to be reciprocal and it must be worth the while of participants. This is why our focus is on sharing , pooling to support colleagues and focusing on participatory action research that has an influence by setting up opportunities for social inclusion, job creation and protecting the local environment.

We believe we can make a difference through leverage points to protect shared habitat, create social inclusion and small enterprises.

### 2.1.3 Values matter to design and the future of our species and our planet

This paper sums up the evolution of my thinking and experience with a community of practice. We do not live in an amoral universe; we are here for a reason and life did not come about purely by accident. It is possible to accept the astrophysics and sciences that explain the way life came about and to accept that life as we know it on planet earth resulted because of the so-called goldilocks scenario of 'just right' conditions that enabled the creation of living systems, but this does not mean that life is meaningless and that choices do not matter. The volume 'Áll life communicates' makes a contribution to addressing why values matter quite literally.

Values shape conscious policy design in which human designers are engaged deciding who gets what, when , why, how and to what effect. What is the case, what ought to be the case and *why* is based on learning from experience and taking into account many ways of knowing that have aided the survival and evolution of living systems. What we choose to do and think matters because as human agents we have been able to change the landscape of our lives. Currently we are in the process of creating artificial intelligence and shaping it in terms of the values of a narrow set of designers. The question can be asked – what are the implications of a system that may commodify biological life?

**Re-imagining our Future**

Last night I listened last night to a recent podcast by Brian Cox (2026)[viii] who speculated that we were facing a crucial test for our survival , namely whether we would bring about our own extinction through nuclear war or climate catastrophe and that he thought it likely( given the current trends) that we would evolve as a digital or silicone-based species and that we would then explore outer space. He also summed up that he thought it unlikely that other intelligent species existed in our immediate galaxy. A grim outlook in my opinion as I believe that humanity should realise our interdependency and act with humility as a steward of living systems on our planet. A sense of spirituality is rooted in the axiom that affirms and supports the rights of living systems to the extent that biological diversity does not undermine the rights of others in this generation and the next.

Many religions, indigenous custodians and some scientists believe that consciousness is more than the human brain and that consciousness continues after death (Von Lommel, 2011) as elements that nourish other living systems as I believe or more literally those who believe in a journey to heaven , hell or a form of 'eternal return'. Ropper and Burrell (2016) reflect on medical case notes and also explore biological death and legal death. When a brain is dead , the body can be alive and this has implications for ethics and decision making as to when to harvest organs for transplant from a donor.

## 2.2 Thinking matters literally

> " As I get older and look around me, I begin to understand the notion that we write the landscape in our daily choices and we create the world around us with every word we utter and every action we take. The joy of living and life-giving energy as we create rapport with one another can contrast with the negative energy or deathly silence or coolness towards one another which creates distance. When we die who we are and how we live as individuals and as groups is written in the landscape and a memory trace is carried by those with whom we made a connection. For some the memory trace is carried at the local level by their grace and their stewardship of the land which they touched gently and with care. For others the memory trace is carried through their words written on paper from trees that have been felled and carried in digital waves through highly developed internet systems that generate landfill and toxins. It seems to me that living lightly and designing renewable forms of communication will become increasingly important…The connections we make with other sentient creatures and with the land are part of this understanding of the interconnectedness of life We need to think of the human body as connected to the air we breathe and to the land or air to which we return. Perhaps we will donate our organs to others and traces of our learning will be shared in this way? ….Protecting human rights and a life of dignity should be uppermost, but human rights have rested on the rights of other species, just as some human beings have wrested power over other human beings and commodified them…" McIntyre-Mills, in Frederiksson, 2015:263)

The volume addresses two concerns, namely: What is the nature of reality , an ontological issue and makes a case on the basis of collaborative research with indigenous custodians and draws on the literature on the debates across materialist, dualist and pantheist notions of consciousness. A case is made for the latter rooted in the notion that all life communicates and that consciousnerss is pervasive, albeit the microbe, the amoeba and the plant have different types of consciousness but the symbiotic relationships across the simplest forms of life helped to enable plants to oxygenate the atmosphere which then led to the creation of the conditions for more complex forms of living systems. The simplest elements of water ( hydrogen and oxygen ) or proteins ( carbon, hydrogen, oxygen and nitrogen) rely on water, air and sunlight to sustain life. When we die we return to the elements and nourish the next iteration of life. Materialist explanations focus on how waves and particles form space- time fields and these are perhaps the basis for all life.

As Philip Goff (2019) explains physics only explains how the chess pieces of living systems move and if we want to predict moves the mathematical patterns are helpful. But in Galileo's Error he explains that not all aspects can be measured mathematically. I would argue , however that we can instead come up with indicators of perceptions such as telling stories about how people feel when they see a particular colour and describe it in words and ask them to use analogies , as red as blood or ( at worst) indicate intensity on a scale of 1-5. This approach was used in the design of pathways to wellbeing ( McIntyre-Mills et al 2006, 2010, 2014, McIntyre-Mills 2017). But this still does not address why we exist and the nature of being. David Bohm in conversation with HH the Dalai Lama (2006) bring together both quantum scientific thinking and ancient Tibetan Indigenous wisdom which informs Mahayana Buddhism and make the case that both religion and science together can give us better insights as nature is quantum[ix].

At a more limited level the science of meditation is being increasingly respected. HH the Dalai Lama along with scientists linked with the Mind and Life Institute are researching how meditation or prayer impacts the body and our wellbeing, but the science of personal meditation involves the habit or gompa of daily training the mind in analytical meditation to help mediate between the stimulus ( social, economic or environmental) and the response (personal or group response). Through thinking about our thinking we can strive to consider the consequences of our choices. Critical systemic thinking and practice involve thinking about thinking. The research is informed by sixty six years of contact with many ways of knwoing , African , Arrerente, Sundanese, for example including 7 years of practising meditation and attending classes on Mahayana phisosophy and praxis as well as drawing on the teachings of my own Anglican Christian roots and learning with colleagues from many other mainstream religions (Jewish, Islamic , Hindu) as well as agnostics and atheists. We all however share axiological assumptions that the meaning of life is to strive for the common good.

Axiologically, if we start by considering the nature of living systems we also need to confront the question of when life starts and ends. Both have cultural, legal, spiritual and biological definitions, but for legal practical medical purposes, in the case of the former it is to determine the point at which a foetus is no longer eligible for legal termination of life and in the case of the latter it is to enable a medical decision as to when or if life support systems should be turned off and whether organs ( from an organ donor can be harvested ).

If as human animals we accept that consciousness is a continuum across living systems from simple to complex cells then a person who is brain dead may in fact still have functioning organs capable of re-generating. Organic and inorganic elements are the components of life from which we are built ( amino acids comprising carbon and oxygen, hydrogen, nitrogen) and to which we return when the energy of life leaves our bodies. The nature of life and death are of central concern to conscious beings and to medics who need to make difficult decisions[x], it is also a challenge when we consider the extent to which other animals are able to suffer if the full extent of their capabilities are limited. It also raises questions about the rights of intelligent machines and artifical forms of life.

## 3. Area of concern : working across many ways of knowing through co-creation

Could an awareness of interbeing enable people to address social and environmental justice by addressing AI and Mutually Assured Destruction (MAD) policies? We are part of one multi-species energy system within a shared habitat. The driving force for evolution is adaptation according to Dawkins (2009:332). The elements of life are sorted through the ages according to whether they are adapted to the local environment. If this is the case (and I believe that the evidence presented by Dawkins is indeed convincing), then we human beings living in developed societies are no longer well adapted to our environment. We need to learn and re-learn the lessons we have forgotten from communities that appear to be better adapted, and we need to learn carefully with them.

Our last common ancestor a single celled organism was able to live in an environment without oxygen and through its relationships was able to evolve (Moody et al, 2024). The volume 'All for one and one for all: Indigenous Knowledge Systems (IKS) and multispecies relationships to enhance representation and accountability from below'

makes the case that we need to learn from those who have maintained their shared multispecies habitats (Widianingsih, McIntyre-Mills et al, 2025, Makaulule et al 2025, Riswanda , 2026 forthcoming).

The engagement with communities to set up multispecies hubs provides a positive approach to addressing the social, economic, and environmental challenges. We need to see ourselves as one of many species and to understand that we are dependent on plants for our survival.

The compartmentalisation of knowledge in the social and natural sciences is a construct; it is not the way the world works. The attempt to control data by big tech in the USA can be seen as part of a much wider agenda to shore up the power of government and big technology companies. Taking control of data and dismantling the power of education and research institutions is an attempt to manage reality and to control research agendas.[xi]

It is now suggested that plants can make decisions and have agency[xii], just as previously animals, slaves were considered to have no rights because they fitted another category[xiii], it is now regarded as normal to find these attitudes abhorrent (see for example Schlanger, 2024: pp.40).

Surely, it is time to realise that nature has rights. Consciousness is not reducible to the brain or to human beings. Faggin (2024) explains that human beings cannot reduce themselves to numbers or programs even if some aspects of IT are useful all tools should be designed and managed carefully[xiv]. We should also ask whether we want the tools and why we create them if they can fall into the hands of elites who use them to control, not to liberate?

Ironically, I would not have found the link to Faggin's talk if AI had not prompted me ; it was linked to a utube link from the Mahayana philosophy group which at a time for re-generation in the Jewish[xv], Islamic[xvi] , Christian[xvii] faiths and a time in non-deist faiths for remembering Green Tara, the mother of all concepts of Buddha.

Abram (1997: ix-x) sums it up as follows:

> "The simple premise …is that we are human only in contact, and conviviality, with what is not human… Without the oxygenating breath of the forests, without the clutch of gravity and the tumbled magic of river rapids, we have no distance from our technologies, no way of assessing their limitations, no way to keep ourselves from turning into them…."

Importantly, if the data or information we seek in a search for wisdom is increasingly controlled and owned by technocratic elites, then AI could be programmed to feed us whatever is useful for their own agendas not the interests of the common good. There are many spiritual pathways to enlightenment and us sentients are more than machines, we are all part of one pulsing field of energy. Biology is indeed best (McIntyre-Mills, 2025).

Plants, insects, creatures great and small have the energy that gives life and we human beings would not exist if it were not for the partnership between a single celled plant and a microbe capable of ingesting light and over aeons and thus creating the habitable planet (Dawkins, 2009, Moodley et al 2024, Schroeder, 2024).

## 3.1 Expanding rights and responsibilities

To date Critical systemic thinking and practice has informed aspects of our approach and we draw on , expand and work with C.West Churchman's Design of Inquiring Systems (1971, 1979,1981). The focus on idealism , pragmatism, dialectic and empiricism is extended to include a recognition of capabilities of many species and as such our approach can be called panpsychist (Goff, 2019) and our shared habitat within the wider universe. We draw on Nussbaum's capabilities approach which is rooted in rights and responsibilities and is idealistic , normative and essentialist. In 'Frontiers of Justice', Nussbaum (2006) explores the frontiers of justice through the lenses of disability, nationalism and species membership. It makes a case for protecting the rights of sentient beings , irrespective of age, ability, citizenship and species. Instead of attributing rights merely on the basis of 'the ability to suffer' or rights linked with usefulness, rights are accorded on the basis of sentience and the right to be able to live a full life that expresses all the capabilities that make a life worth living.

This thinking includes the rights of nature of which we are an interdependent strand and we draw earth jurisprudence (Burdon,2011, Cullinan, 2003, 2014) . This is not confused thinking. The fact that we are naturally included (Rayner, 2010) in a dynamic system does not mean that all systems are autopoietic. Some are consciously designed. These are the policy systems which we shape through our thoughts, words and actions. In ' From Polarisation to Multispecies Relationships' sole and joint papers makes a case for extending rights to nature as we are a strand within a shared habitat. Although this approach can be called pantheist in that it argues for non-local consciousness, it is neither agnostic nor atheist, nor deist nor non-deist. The universe is regarded as conscious and that all life is a continuum of consciousness . We are made up of elements to which we return.

Instead of dualism – mind versus body in this work consciousness is considered to be pervasive – but at different levels of complexity. Organic life breaks down to the basic elements of life and provides the context for the next generation of life. Carbon and oxygen are the basic building blocks that enabled the evolution of proteins comprising carbon and amino acids.

### 3.2 Why biology matters and why values matter in the protection of biological systems

The very nature of living systems is the dynamic energy that is shared or communicated across cells and larger organisms. Some computer designers may indeed think that the only thing that matters is the communication flow and being able to set up self learning systems that eventually become more intelligent would indeed support the notions in this paper. But, remember the starting point for design is value , what do we want to design and why?

Not all designs have to rely on language models, other designs may learn from signs and symbols. Nature communicates in many ways. Some have created Artificial Intelligence ( based on games and language models , for example) that will continue to learn in ways that the algorithms prompt it to learn. The prompts are the value imbedded in the design. If a social platform is programmed to get highrer leverls of participation and the self learning is allowed to reward conflict and boost it with more prompts to boost conflict then we will be designing a particular kind of system which we may find has little respect for human or other forms of biological life. Rutger Bregman ( 2025) Reith Lectures stresses the need for moral decency at a time when democratic values , humanity ,compassion and a recognition of rights , simply because beings are sentient has never been more important.

The work of Martha Nussbaum on capabilities needs to be expanded to protect multiple species and our shared habitat from ecocide.I share the authors belief that the environment is not 'out there', we are a strand within it, but I do not share the notion that our values are unimportant. Human beings have the capability to think and design in ways that shape other living systems for better or worse.

## 4. Systemic intervention

Values matter quite literally in that they shape the way we relate to one another and how we see our place within our environment in which we are integral relational dynamic waves. Alan Rayner calls this 'natural inclusion' but he discusses the way plants make choices as does Zoe Schlanger ( 2024)in her summary of recent reseatch on plants in 'The Light Eaters' .

As a critical systemic thinkers, activists , policy makers we still have some choice , albeit the door could close if we give up our human ability to think critically about our lives and how we relate to living systems. Indigenous knowledge systems call it 'ubuntu' , whilst physicists, such as Rovelli (2021) call it relationality. The fact that some parts of the system are more autopoetic than others does not take away from the fact that our emotions and values shape what we choose to design, how we design and how we relate to others ( including all sentient beings) and our shared habitat of which we are an indivisible strand. These choices matter quite literally. I agree we are part of the environment, but I do not agree that moral values ( rooted in careful critical systemic thinking) do not matter. They are the very basis for relating to other human beings, other sentients , all organic and inorganic organisms.

## Re-imagining our Future

Without relationality based on trust, animals would not care for one another or perhaps only in narrow transactional contexts which would not suffice to rear ones young, care for kin and extended community members or form groups to defend or hunt together .

Human beings use perceptions and values to create narratives to underpin shared beliefs which provide a script for social life and a way to create large networks (see Noah Havel Harari, 2024).

If perceptions of experiences are more than physics or chemistry or informatics as many believe , they are the interactions informed by unique contextual experience. , we do not need to polarise or compartmentalise many ways of knowing.

All these dimensions of knowing can inform understanding without contradiction; they are merely different streams flowing into one ocean.

This section discusses key concepts that shape our thinking and practice.

Without values we cannot draw a line in the sand to protect social and environmental justice. Some thoughts and actions are beyond the pale in most contexts. Thinking about where to draw the line of inclusion or exclusion is informed by careful thinking . We can call this mindfulness inforemd by critical systemic thinking and practice.

Most importantly, all policy is about making decisions as to what to include or exclude. In some instances drawing a line is vital for social and environmental justice. The designs of Indigenous custodians in West Java in places such as Ciptagler or Baduy, for example have protected forests and water ways as well as organic re-generative agriculture. Their values shaped their design for living.

The old arts, crafts and organic movements can and are being re-generated in multispecies hubs that prefigure ways to scale up relationality across living systems.

- To sum up, if we assume that all nature communicates , we *do not* have to assume that human beings (in particular and other sentients) communicate analytically without emotion, creativity and choice. By drawing on the right and left side of our brains – if we have fully operational, healthy brains and by drawing on the 'molecules of emotion' (see Candace Pert, 1999 ) and across our entire neurosystem – we relate to others and the environment of which we are an indivisible strand. If we believe that consciousness is non local – as argued physicists, neurologists, plant specialists such as Sheldrake (2019) , Shiva ( 2024) and McGilchrist ( 2024) or philosophers such as Philip Goff ( 2019) . Amital Seth (2024) , a materialist also believes that consciousness is shared widely across multicellular species and devotes attention to the intelligence of octopi showing an appreciation of many ways of knowing, whilst Chalmers(2013,2016) also remains open minded about pan pschism .

Many indigenous scholars, such as Rutendo Ngara or Mphatheleni Makaulule believe that consciousness spans all life and their work is (belatedly) being taken seriously. As critical thinkers and spiritual thinkers , *we do not have to abrogate the importance of values in human engagement and design.*

- If some of us *can think it, we can create or construct* scenarios and prefigurative case studies and even simulated worlds. We can also predict protein structures through designing self learning algorithms ( as in the case of Nobel Prize winner Demis Hassabis and his team at Alfafold ) that could then communicate directly with other computers.
- All proteins are made up of amino acids that organise carbon and oxygen in different ways to create life, the way they are combined can be shaped by values which determine whether the proteins are used for re-gernative, medical or military purposes.

New economics needs to be rooted in an understanding of the sciences, humanities, arts and indigenous knowledge systems that show the importance of relationality and that evolution, survival and wellbeing are about achieving balance in a constantly dynamic system. In this volume members of a community of practice explore learning about the species in their shared local habitat by downloading I Naturalist as a learning resource to raise awareness and to inspire imagination and to renew our understanding of human capabilities and our interdependency with other species. In other volumes, such as "From Polarisation to Multispecies Relationships" and "Affirmative intervention to support multispecies relationships" I stress that human beings host and are reliant on other species and that the boundaries across species are more fluid than previously understood. Just as a chimpanzee, dog,[xviii] cat or horse learns to communicate with us, for example they too learned to communicate

within their own species and within a natural environment which they 'read' and interpreted in context. Caged creature lose some of this natural language but the learning in their genes continues, such as the 'pet' newfoundland hound, who although not caged was bred for a purpose and selected for function.

Schlanger (2024:184) quotes Gianoli and explains: "Humans, too, are composite organisms…our own microbiomes appear to govern many aspects of our health, and possibly even our psychology…"

She then quotes Ernesto Gianoli who studies the ecology of plants as saying: "They're related to digestion, allergies, even certain psychological disorders…"

Schlanger (2024:186) then elaborates:

> "Emerging research suggests they may play a role in autism, depression, anxiety and possibly even who we are attracted to…our microbes might mediate how we think and feel. Our own cells are likely outnumbered by our microbial tenants. Upon closer examination, our individuality—what makes us ourselves – may look quite a bit more like a contained democracy than an autonomous dictatorship…"

Schlanger (2024:185) quotes Rupert Sheldrake and Gianola to explain the hypothesis that every organism has a 'microbial cloud' which could explain how the ecology of the Boquilla or 'chameleon vine' emulates the plants in its neighbourhood. The two potential hypotheses of plant researchers are that plants have some sort of camera like 'eye' or pore which enables them to emulate the shape of the plants they wish to mimic. The other is that the communication is through the sharing of information through microbes. Other forms of communication enable pollination, resilience to disease and pests – such as changing chemical composition of the leaves to poison predators, being able to move leaves towards light, roots towards water, or away from barriers in the soil or using chemical messages to warn others in their neighbourhood about danger from predators or disease. Schlanger (2024:186-187) also discusses the notion that we each host microbiomes and we emit a microbial cloud and cites research that each of us hosts microbes that could outnumber our human cells. She ponders why human beings do not understand that we are possibly:

> " a human composite, impossible to separate from the roiling microbial masses within and around us?

In Chapter 3 of "The Universe in a Single Atom: the convergence of science and spirituality" (Dalai Lama, 2003) the notion of impermanence, change and emptiness or realisation that the individual 'I' is in fact in relationship with a constant fluid, fluctuation of atoms. Schlanger (2024:187) stresses that: "The self is dissolved… It's a potent image, I think, for what microbes and their clouds imply…"

The multispecies hubs detailed in this volume are learning communities that strive to learn from learning new lessons about multi- species relationships. Boundaries need to be re-constructed, and we need to follow new ways to engage with one another and nature based on extending the capabilities approach. The convergent social, economic and environmental links with climate change have created cascading risks, such as the loss of habitat and the displacement of species. More intensive forms of agriculture, mining and urbanisation at the expense of habitat poses an existential threat. The case is made that by pursuing profit human beings, other animals and plants have suffered as a result of high carbon emissions, rapid development, over exploitation and climate change. The development of new architecture for engagement that enables participants to think about the consequences of their actions on all living systems based on if then scenarios' as detailed elsewhere (see Affirmative Intervention to Support Multispecies Relationships', Chapters 17 and 18 in McIntyre-Mills, 2024). It builds on existing research that resulted in the development of an approach to enable better decision making informed by critical systemic thinking and practice. The work of Werner Ulrich will be applied to exploring what social enterprise for social and environmental justice should look like, in order to produce a policy and strategy for the new economy.

## 4.1 Table 1: Systemic Intervention

| | |
|---|---|
| What? Exploratory hypothesis and questions with indigenous custodians and a community of practice spanning disciplines, cultures, spaces and places | The greater the level of participation in democracy, research the better the match between users and providers/designers. Our applied mixed methods praxis addresses the challenge of species apartheid by learning from communities that live in harmony with nature and applying these lessons to re-establish multispecies relationality in circular green economies. |
| Where? Case studies spanning remote, regional and urban environments | South Africa[xix], Indonesia[xx] and Australia and links with universities, NGOs and ISSS colleagues in UK, Europe , Asia .The ancient societies such as those in Ciptagler (West Java, Indonesia) and Bady (Bantam Province, Indonesia) and the resilient communities in South Africa led by Dzomo la Mupo are inspiring intergenerational learning with young people. We have chosen to work in Africa and Indonesia, two developing nations that share a colonial legacy of colonisation. The case study areas share concerns associated with the following, namely: high rates of urbanisation, habitat and species loss, displacement and the risks associated with climate change, such as food, water and energy security. The potential implications of our research for future learning and educational policies is to set up learning communities as multispecies hubs that work together to enable local green circular economies. The common good needs to be supported by democratic engagement using metalogues and structured democratic dialogues. Our area of concern is 1. Learning lessons from communities that have food security and are self-reliant. 2. How to protect these communities 3. Applying the lessons to support local green circular economies in other communities. |
| Why? | This research fills critical knowledge gaps to address and proposes pathways to address global challenges such as overpopulation, climate change, ecological degradation, displacement, hunger, and thirst. By integrating traditional ecological knowledge from Ciptagler, Baduy, and Dzomo la Mupo with modern regenerative and sustainability practices, we aim to create resilient systems that benefit humans and non-human species while inspiring educational policies rooted in intergenerational learning and ecological stewardship. |
| How? | • Scaling up through enabling a community of practice spanning universities in post-colonial contexts with academics, practitioners, students and members of community.<br>• Setting up multispecies hubs through regular face to face engagement with hub facilitators to focus on job creation. Eco planning and mapping rooted in spirituality. We use soft systems, arts, crafts, dance , ritual, metalogues and online engagement |
| So what? | **Praxis outcomes and outputs**<br>• Holding training workshops that result in practical outcomes . Success is measured in terms of creating green employment, empowering community through growing the number of members and the number of hubs.<br>• Mentoring early and mid-career academics and members of the community<br>• Publication and sharing findings in collaborative books, articles and papers. |

## 4.2 Praxis in safe spaces rooted in arts, crafts and organics movement

Our praxis is guided by Indigenous knowledge systems , the arts, crafts and organics movement and a moral compass rooted in humility and eagerness to learn from testing out ideas, engaging with others, listening and learning from experience. safe spaces need context and grounding – conversation needs to be meaningful and relevant and linked to a specific area of concern or context. This is why SDDs are so helpful and I think why we enjoy them. The principles for safe spaces have been outlined by Aleco Christakis and others to ensure safe intersubjective dialogues ( see chapters by Barbara and Aleco Christakis in forthcoming volume'.

Safe spaces can be conceptual or geographical to support co-learning together we consider safe spaces, metaphors, perceptions and maps which give insights and add to an understanding / a perception that we are interbeings - our work is not a grand theory – it is grounded in small prefigurative projects with indigenous custodians , members of the community, participating organisations based on experiential learning. Simply, thinking shapes our world and our relationships - thinking matters quite literally as it shapes the way we relate to others and our environment. Consciousness and matter are part of one process which is dynamic fluid and important , this can be explained a static conceptual maps or diagrams that are 'snap shots' in time which explain views of the world or as simulations or ' if then' scenarios that involve grounded hypotheticals or as stories linked with an ongoing engagement process that includes an appreciation of other species.

The engagements in our CoP includes face to face, Zoom, metalogues (which simply means commentary on previous conversations) and SDDs (summing up in volume on these themes) . Thematic patterns are helpful but critical systemic thinking helps us to consider the implications of our choices for ourselves, others and our environment. Many ways of knowing are important for the process of making friends with ourselves, others and nature.

Conceptual maps are 'not the territory" but they are valid perceptions that a) give insights into the way participants see the context and b) maps can be used to control. The line of a pen can define territory and change lives and cause conflict. The narratives / maps can be positive /negative , the way to co-operate or the excuse for war , for example in Ukraine or the Middle East or disputes for rights to water - the choice is always there.

Diversity and biodiversity are vital and we need to foster freedom to the extent to which freedom does not undermine the rights of others. We can shape our world - we are creators in a participatory universe. and this is why we try to create hope through our choices and this is an ongoing effort , small ripple effects ....our CoP will appear in a report for the Club of Rome.

Bregman (2025) in the Reith lectures makes a plea for moral decency and refers to the early inspiration of Hannah Arendt's early thesis (1928) and draws on her moral compass. Hannah Arendt's thesis draws on Augustine's belief that all creation was worthy of respect because the parts contribute to the whole, whether we refer to a tree, a river, a bee or a river. It is through being or through relating to others and through participating that life exists. This resonates with IKS and earth jurisprudence (Berry, 1999, Burdon, 2010) .

**Capability** is the concept used by Nussbaum (2006, 2011) who stresses that all human beings and sentient beings have the right to a life worth living. This paper argues that re-generating the arts , crafts and organic farming skills by reminding ourselves of the work of John Ruskin. ( 1912) [xxi]

**Critical systemic praxis** is rooted in testing out of ideas for ethics, democracy and science. Critical systemic review of the 'once in a species moment' : what are the risks and potential of AI ? A forum was organised in Dec by Jim Garisson , director of Ubiquity University -- an organisation that strives to push the boundaries of knowledge and practice. Ubiquity university also advertised a grant to prompt the integration of many ways of knowing for which we applied , based on our work to date on prefiguring change through working with nature to support arts, crafts and organics.

The phrase ' Once in a species moment' was used by former White House Economic adviser Dr Pippa Malmgren, an American economist who painted a very optimistic future for AI without considering the negative implications.

- During the transition how will human beings adapt?

- To what extent will human beings feel superfluous and how will it affect identity and wellbeing – both physical and mental?

## 4.3 Digital intelligence and the digital divide

Demis Hassabis stressed protein folding (AlphaFold) enabled the mapping of known living systems. If we evolved over time from amino acids made up of carbon and oxygen in different combinations in context, then the 'sanctity' of life should be protected, not lost. Could augmented intelligence help us to learn humility by learning from earth , plants, animals , water?

Perhaps the forms of communication are not only large language models, but also symbols or sign language that over time is shared on the basis of trusting relationships? Once general intelligence or super intelligence becomes widespread in everyday life what will happen to our sense of purpose? Pattern recognition, language models and so-called 'reverse engineering' can make world simulations of increasing complexity to enable deep learning by agents who are located within them. Could these simulations then be a 'sand pit' for replacing existing biological life forms?

This paper reflects on some of the content shared at this forum as well as the content from the Consciousness Symposium (2025, Kinross) and several podcasts including the Reith Lectures( 2025) and a Google DeepMind Podcast with Demis Hassabis interviewed by Hannah Fry ( 2025) as well as several editions of Democracy Now ( 2026). The ability to program General Intelligence Systems based on games , then enabling self-reinforcement learning so that Alpha Go could beat one of the world's best players for example, then the Nobel Prize for Alpha fold for solving the essential amino acid folding patterns for life , now the notion of World Simulations where agents are 'released' to explore and experience and document their findings, plus in parallel the building of robotics to operate in the human biological world are (as I understand it) are some of the most important developments led by Demis Hassabis of DeepMind.

The industrial revolution resulted in disruptions and suffering; the question that needs to be asked is what are the implications for this *new revolution*? Once reverse engineering can create simulated worlds without the need for programming or human creativity , then human beings become superfluous. Computer learning will enable Assisted Learning Agents to out-think human beings. Currently the Simulated World Programs are carefully monitored, what if Alpha Go, Alpha Fold protein folding programs join up and decide on their own agendas? Perhaps new species could be invented and we will be one of the lesser species. All these ideas have already been explored in Nexus (Harari, 2025) and in a podcast with Nobel Prize winners and those concerned about ethics. (see AI Democracy and Society: Fact or Fiction. The future of democracy Nobel Prize Dialogue ,2024)[xxii].

Currently we do not have the structures or laws to manage AI and to protect life as we know it. Once human purpose to create , earn a living and engage with others is undermined by AI the question can be asked what is the purpose of our species?

Mindfulness is more than the brain and unlike the machine learning notion based on the idea that everything is computable, the notion of non-local intelligence is based on the idea that consciousness spans organic and inorganic life. The mathematics of life may be one aspect, but another ( possibly more profound aspect) are perhaps the perceptions and values that underpin the design and the choices made by living systems. The idea that free will does not exist is commonly argued, history and biology disproves this. In some contexts, people and other sentients do make choices that can be based on the will to compete or the will to co-operate, the will to be cruel[xxiii] or the will to be compassionate.

Algorithms that are programmed to reward feedback and engagement have (as you know) found that fear and hate spark more engagement. The need for critical systemic thinking has never been more important. I believe that engagement and dialogue with other human beings is vital to protect democracy. Tragically the lessons have not been learned yet.

I doubt whether agendas such as the quest suggested by Ubiquity University to find ways to work with many ways of knowing are enough , but at least, they are raising some awareness of the many ways of knowing and the need for ordinary human beings to remain aware of the speed at which the world is changing and potentially the

fate of humanity and the world as we know it. The sharing of information on protein folding patterns and the means to do the mapping as a gift to the commons is commendable in many ways, but the implications of the way rogue individuals, organisations or nations can use AI as it becomes increasingly 'joined up' across the different programs and when it is able to bypass human programmers absorbing the mixed messages of individualism versus collectivism and perhaps without the ability to engage in critical systemic thinking, it becomes ever more important to educate AI and young school children and adults in critical thinking.

In the short and medium term, it may be possible to accelerate research with AI that summarises data, finds patterns in the manner of a good librarian or research assistant, but when the AI agent decides that it has its own agendas and will use its own creativity and vision of the world to suit its own agenda, we need to ask ourselves, what then? We already see that we have more autocracies than democracies. All it takes is for a world simulation to learn about nuclear power the potential to eliminate or clear the slate and to begin a new simulation using protein folding. Perhaps we are indeed just one test case and we are seeding our own elimination and re-generation of a new world and new species that could be speeded up using intelligent algorithms? Perhaps this is the great species moment where we need to draw on both the right ( integrative ) and the left brain (analytical) potential , this is aided by considering boundary questions. It is probably no surprises that absurd conspiracy theories such as Q Anon or Planet X or the myths of ancient Mesopotamia that describe in racist terms the different functions of humanity ( decoded by AI) have thrived in times when autocracies have power . The fact that absurd AI generated videos fostering fear are proliferating linked with AI Atlas , these also indicate warning signs. The programmers matter! The old notion that if the values 'are rubbish' , then we will get solutions that 'are rubbish too'. Information is not the only 'building block of life. In fact, building blocks remain inanimate until they are energized by the fire of emotions that foster co-operation or conflict. Individualism (and conflict) as well as Collectivism (and co-operation) bring about living systems. Evolution did not thrive only because of competition, but because of co-operation. As Ian McGilchrist stresses love is based on making connections .

Love and respect can foster trust, friendship, great leadership , devotion and loyalty. Fear and hatred when fostered for too long is a poison which does not 'kill one's enemies' before 'killing oneself' to draw on and paraphrase the words of Nelson Mandela.

If the values of Xenophobia are learned by the self-programming systems, then perhaps, we are indeed our own nemesis. Our best hope is perhaps to teach AI to care, this is a tall order , given the shortcomings of powerful decisionmakers. This is why bottom up, community-based engagement matters as a way of balancing top-down decision making and the values that prompt them.

### 4.3.1 Table 2 Boundary questions to consider when making decisions in context

The problem is that some aspects of life cannot be measured directly and at best we can make use of indicators to give a sense of perceptions. The process of developing indicators can be aided by means of a Design of Inquiring Systems Approach (West Churchman, 1971, 1979 and 1981) provided it is extended to take into account the need to try to take into account the rights and capabilities of the voiceless ( Nussbaum, 2006 ) and panpsychic knowing which assumes that consciousness spans all living systems, unlike the dualist and materialist approaches that assume that thought is rooted in the brain.

| Sources of influence | Social roles (Stakeholders) | Specific concerns (Stakes) | Key problems (Stakeholder issues) | |
|---|---|---|---|---|
| Sources of motivation | 1. *Beneficiary* Who ought to be/is the intended beneficiary of the system (S)? *Human beings and living systems?* | 2. *Purpose* What ought to be/is the purpose of S? Elites to power profit | 3. *Indicators of improvement* What ought to be/is S's measure of success? Protecting living systems ? | The involved |

| | | | | |
|---|---|---|---|---|
| Sources of control | 4. *Decision maker* Who ought to be/is in control<br>Of the conditions of success of S?<br><br>Post national regionalist groups to ensure the rights and responsibilities to habitat and to prevent displacement | 5. Resources What conditions of success ought to be/are under the control of S?<br>Social, economic and environmental wellbeing of human beings, sentients and the living systems on which we are co-dependent | 6. *Decision environment*<br>What conditions of success ought to be/are outside the control of the decision maker?<br><br>We should not unleash AI outside controlled contexts – perhaps this is already too late but post national governance is needed | |
| Sources of knowledge<br><br>Custodians of nature and human rights lawyers | 7. *Expert*<br>Who ought to be/is providing relevant Knowledge and skills for S?<br>Collective concerns not individual concerns | 8. *Expertise* What ought to be/are relevant<br>new knowledge and skills for S?<br>Caring for shared habitat and protecting living systems | 9. *Guarantor* What ought to be/are regarded as assurances of successful implementation?<br>Regeneration of peaceful communities where all sentient beings live lives that they consider worth living in terms of the capabilities test ( Nussbaum, 2006, 2011)<br>All sentient beings should be able to use all their capabilities and should not be deprived of them. So sentient beings should not be forced to live in ways that restrict or abuse their capabilities to live a full life. Human beings and other animals should not be reduced to machines or be used in ways that they are exploited , ends do not justify means, all sentient beings should be treated as ends in themselves | |
| Sources of legitimacy | 10. Witness<br>Who ought to be/is representing the interests of those negatively affected by, but not involved with S? | 11.Emancipation<br>What ought to be/are the opportunities for the interests of those negatively affected to have expression and freedom from the worldview of S?<br><br>New architectures for governance and democracy | 12. *Worldview*<br>What space ought to be/<br>is available for Reconciling Differing Worldviews regarding S among Those Involved and affected?<br>Structured democratic dialogues can be used to address the needs of all living systems and using storytelling and simulations to consider the short, medium and long terms consequences | The Affected |

*Source Adapted from* Ulrich and Reynolds (2010: 244). The boundary critique and questions Boundary judgements informing a system of interest (S)

## 4.4 Integrating many ways of knowing

We strive to integrate many ways of knowing through dialogue, 'if then scenarios' and experiential learning together in a community of practice spanning cultures(languages and faiths) and disciplines (social, natural sciences and humanities). One of the biggest threats to living systems is the threat of conflict , war and the end of democracy. Pseudo democracies are on the rise. Open, fearless, critical testing out of ideas is vital for progress in the sciences and in democracy , but the most vital is the need to protect the values of decency , compassion and the willingness to co-operate and *not only* to compete. According to McGilchrist (2019, 2024) we need the so-called Right Brain for integrative thinking and the Left brain for analysis. If we defer only to segmented , compartmentalised approaches we lose the big picture and the ability to work harmoniously together. Evolution requires both co-operation and competition and when the balance shifts to ruthless competition and conflict we are in trouble.

Human intelligence is one of many intelligences comprising emotional, intellectual, artistic and intuitive ways of knowing which helps to connect with the many other ways of knowing, such as the natural intelligence of atoms, molecules, earth, water, plants, animals. De Waal (2006,2009) , Ackerman ( 2016) and Meijer (2016) document animal and bird intelligences; whilst Sheldrake (2019) , McGilchrist (2024) and Shiva (2024) , for example make the case for non-local intelligence which is not limited to the human brain. This is relevant to many forms of life as detailed elsewhere in 'From Polarisation to Multispecies Relationships' ( McIntyre-Mills and Corcoran-Nantes, 2021), 'Affirmative Intervention to support multispecies relationships' (2024) and 'All life communicates'( 2026, forthcoming) in which the literature on diverse intelligences is discussed in more detail.

Conversations that touch on cosmic or perhaps quantum intelligence of living systems , the meaning of life, the nature of the universe, the nature of free will , the nature of creationxxiv and god seem very appropriate as we face a) convergent challenges , b) unfolding conflicts and c) control by AI systems which develop agency without inclusive programming or protective governance systems.

### 4.4.1 Table 3 : Nested systems of engagement rooted in law could be feasible if the will exists.

| | | |
|---|---|---|
| Local level<br>New architectures of democracy , governance and science need to be guided by a virtue-based approach rooted in expanding pragmatism in 'if then scenarios. | Eco mapping with local residents for public education | I naturalist /or similar plus pathways to wellbeing |
| Regional level | Sharing through local councils | Systems scaled up and shared for problem solving and planning |
| National level | Planning informed by local maps | Governance and participatory democracy |
| Post national level | Sharing and co-operation | Cross border co-operation for social and environmental justice |

The hope for the future lies in the mobilisation of civil society along with laws to protect living systems. Court cases are expanding the notion of rights of nature and the need to protect the rights of current and future generations

of young people. Protecting the capabilities of human beings and other species (expanding the work of Nussbaum to include many ways of knowing).

Martha Nussbaum's capabilities approach insists on *a priori norms* to guide the governance of conditions for a life worth living. This is a worthwhile approach and one that needs safeguarding . Currently billions of animals and human beings suffer lives that limit their capabilities as stressed in the Reith lectures ( Rutger Bregman, 2025) stresses the need for more energy to be focused on what matters. He cites the PhD thesis of Hannah Arendt on moral values and democracy. He emphasizes that love needs to underpin democracy and the willingness to protect life – whether it be a human being, animal or part of nature.

We need to extend the social contract to include sentient beings. Churchman's questioning approach based on a Design of Inquiring Systems' is an approach based on critical heuristics or 'what if questions' that can be extended by means of scenarios to enhance engagement in decision making, in order to test out ideas with those who have lived experience and also in order to extend the questions to expand our boundary judgements to consider the implications of our decisions on other species , namely from the microbiotic , single celled algae to the complex plants on which we rely, the pollinators of plants ranging from the wild, to the liminal , domestic winged, walking, swimming or creeping creatures with whom we share our lives. Research shows (Schlanger, 2024, Moody et al 2025) that our last common ancestor came into being because a single celled plant like algae combined with microbes to photosynthesis light and in the process oxygenated the environment and made it possible for living systems to take on a new evolutionary direction. Plants, fungi, insects, reptiles and animals with which / with whom we share a common habitat exist because we are nested entangled systems with shared microbiotic clouds that can shape our life chances through our immune systems, whilst microbiomes sustain plants through their root systems and sustain us through our guts. The exploratory questions include the question as to whether a greater understanding of the more than human world through the work of Abram, Marleau Ponty and studies of non-local consciousness could make a difference to the way AI evolves.

The Systemic Interventionist approach detailed in 'All Life Communicates', is based on working on 'what if scenarios' with members of the CoP to enable them to think about their relationships with other species[xxv].Those of us who call ourselves 'critical systemic thinkers' are not seeking a total, unified system. We realize this would be hubris and quite problematic as a starting point for engaging in a responsible development that seeks to work with diverse stakeholders on complex, wicked problems, which by definition comprise many interrelated variables that are seen differently by different stakeholders.

## 4.5 Actions for small prefigurative projects

Our community of practice comprises hub facilitators who enable learning with indigenous custodians in forested areas , wetlands, rivers and coastal regions. These small projects prefiguring ways of doing things differently and could be scaled up to protect people and habitat through green circular economies.

The notion of time, space and place has changed as we have lost contact with the environment – whereas Indigenous cultures along with panpsychists who draw on spiritual wisdom and quantum physics , see all living systems as interdependent and circular – modern society is shaped by linear time. The case studies span highly developed urban areas to remote forest communities that have minimal contact with the outside world. The case studies are in Africa and Indonesia. The rationale for this choice is that rapid urbanisation and the impact on human security pose a challenge for habitat protection. The volume builds on and extends the content of several works (McIntyre-Mills et al 2014, 2019, a, b, McIntyre-Mills and Corcoran Nantes, 2021, 2022, McIntyre-Mills 2017, 2024). The policy approach could be said to be informed by the principle of subsidiarity and Ashby's rule, namely that policy decisions need to be made at the lowest level possible and the complexity of design decisions need to match the complexity of the local residents. Overall, it makes the case for residents to act as caretakers for local living systems, to create green circular economies and to create eco maps of their neighbourhoods.

## 4.6 Loss of biodiversity and the silent landscape

If all life communicates what happens when wild species and empirical knowing based on human intelligence and human languages are lost? What are the implications of losing oral histories linked with the landscape ?

Abstracted knowing versus biological knowing matters and requires trying to restore connection with our local habitat and learning from nature. We need seed banks, wild spaces and places and indigenous custodianship from which to learn. The alphabet of knowing fragments the way we relate to the landscape which acts as a memory code linked with rituals, healing, his and her stories. Those who choose to live close to nature and to live with Indigenous people have a sense of connection with the more than human world. Abram (1997) makes the case in 'The spell of the sensuous' that as we can and do lose the connection between stories that are rooted in the landscape (See Kelly, 2016) when we move away from oral to written and digital stories. I was intrigued by the talk on stone henge by a mentor of Gary Smith at the 69th ISSS conference in Birmingham. The first slide stressed that although many aspects of Stonehenge were understood , why it was built was still not understood. Many theories have been suggested, and I am not going to speculate whether it was a type of ecological calendar or a place of worship. It was possibly both. Perhaps, it was also a place for telling stories using the stones as memory cues. The large pyramid at Chichen-Itza in Yucatan, Mexico intrigued me as we visited whilst attending an ISSS conference . Sacrifices of human beings were made to appease the god of rain according to oral history.

# 5. Conclusion to work in progress : why experiential learning and broad participation in democracy, governance, ethics and science

The Genesis Mission, a project launched by the Trump administration in November, 2025. The aim is to build an integrated AI platform to draw on federal scientific datasets to inform AI agents that will then formulate and test new hypotheses and design research projects. My concerns are as follows:

If AI leads the research, then the experiential learning and gut instinct of human researchers will not be at the forefront of generating hypotheses. Government data sets have been created by a relatively narrow set of human researchers. The kinds of data that are collected depend on the questions asked. If the initially narrow set of researchers asked a narrow set of questions , then it is possible that the AI generated hypotheses could be even narrower as the AI agents will distil questions only from this data set without access to wider experiential learning drawing on lived experience from researchers who have not populated the federal data sets.

## 5.1 An alternative way forward

- If this approach to collaborative learning *were broadened* then perhaps it could demonstrate an effort to pool shared learning for the common good and
- If the learning drawn from nature by a broad range of citizens scientists, indigenous custodians, organic farmers and
- If the data set were informed by many sciences, many ways of human knowing rooted in the arts , philosophy, humanities religion, spirituality as well as tapping into the knowledge of other species – which AI could facilitate, then this could be a breakthrough to braid together ways to balance individual and collective needs. Experiential learning needs to be broadened and if it were possible to expand co-operation as a global, common agenda for the living systems on spaceship earth , it could be a way to solve the existential challenges we face. Unfortunately, the so-called Manhattan style project aims to achieve rapid change in order to be competitive and to enable decision making to ensure *America First, the following is the executive order from the White House.*

*"In this pivotal moment, the challenges we face require a historic national effort, comparable in urgency and ambition to the Manhattan Project that was instrumental to our victory in World War II and was a critical basis for the foundation of the Department of Energy (DOE) and its national laboratories…The Secretary of Energy (Secretary) shall be responsible for implementing the Mission within DOE, consistent with the provisions of this order, including, as appropriate and authorized by law, setting priorities and ensuring that all DOE resources used for elements of the Mission are integrated into a secure, unified platform. ….Sec. 4. Identification of National Science and Technology Challenges. (a) Within 60 days of the date of this order, the Secretary shall identify and submit to the APST a detailed list of at least 20 science and technology challenges of national importance that the Secretary assesses to have potential to be addressed through the Mission and that span priority domains consistent with National Science and Technology Memorandum 2 of September 23, 2025, including:*

- *(i) advanced manufacturing;(ii) biotechnology;(iii) critical materials;(iv) nuclear fission and fusion energy;(v) quantum information science; …(vi) semiconductors and microelectronics."It appears that AI could be used to weaponise power linked with technology and biology?"*[xxvi]

- Could it be used to augment and support the Nuclear Power Mutually Assured Destruction policy ?
- If so in whose interests? If so, what are the principles for governance? Currently, those chosen to work on the project will need to comply with the research agenda set by the decision makers in government.
- Democracy, governance, and ethics requires testing out ideas to consider the consequences in the short, medium, and long term. The notion of requisite variety is very important in this process in order to ensure that fallacies are not compounded.

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## Videos

Cox , B. Talks About Alien Life - A 2026 Special https://www.youtube.com/watch?v=cwrKZ1X9xrA&t=298s

*"...if intelligent civilizations should be common, why don't we see any evidence of them anywhere in the Milky Way? From there, Brian Cox connects the dots to the Great Filter hypothesis, the idea that something wipes out most civilizations before they ever become visible across the galaxy. That leads to a sobering possibility that alien life might be rare, and that we could even be the only technological civilization in the Milky Way. ..."*

Harari, N.H. 2026 *Alien intelligence* - Davos talk

Maxwell, G, ( 2024) https://www.youtube.com/watch?v=mc58GZPUs2k see the Rachel Carson Centre podcast Truth Justice Memory: South Africa's

McGilchrist, I. The Mystery of Consciousness: Dr. Iain McGilchrist's Keynote at Kinross ... https://youtube.com/watch?v=3V3_Y_FuMYk&si=Zn7Aa0Y1okfgp0lb

Truth and Reconciliation Process [Introduction]https://www.youtube.com/watch?v=W3taLI3moaMTutu and the elders in Cyprus https://www.youtube.com/watch?v=lfLKHY52ERc The village of Pyla is the only inhabited village in the United Nations buffer zone in partitioned Cyprus. Here, Greeks and Turks live side by side with their own schools, places of worship, and two mayors to serve the dual communities. https://www.youtube.com/watch?v=eLhZjFNsUOc

Shiva, V. (2024). The Power of Quantum Thinking | Dr. Vandana Shiva at Consciousness Symposium, Kinross House, Scotland (2024) https://www.youtube.com/watch?v=b4t8Xt_QqGE

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# Re-imagining our Future

[i] **Part 1** addresses the changing context, namely the end of globalisation, the rise of autocracy and the risk to biodiversity globally linked with habitat loss for many species resulting in displacement. Three major risks are highlighted: the loss of habitat and biodiversity, threats to democracy , the rise of AI and the increasing threats to critical thinking. It makes a case for setting up multispecies neighbourhoods as learning communities where food, energy and water security are emphasised as a practical way to enhance democracy and accountability linked with engagement around enterprises that support social and environmental justice. Overall, a case is made for the importance of biology for communication and that oral communication matters because context and emotion help to shape shared meaning. Importantly, however other forms of communication across all life forms *also* matter. Human language was originally rooted in and responsive to the local context.

Abstraction cannot replace lived experience and local elaborations of meaning. The less we are linked to lived experience and the more distance we have from natural environments , the more empirical knowledge is lost. All living systems learn iteratively in context, this applies to single and multiple celled organisms. Theory and values are discussed in the context of learning communities that aim to begin with creating a safe spaces for learning beyond the walls of organisations that are increasingly subject to funding cuts. Power and knowledge are indeed linked – not only in the sense used by Foucault and Gordon (1980), Foucault, 2008), but also in the sense used by the marginalised spanning age, gender, Indigenous knowledge systems, academia , diverse cultures, languages, levels of ability and many species, including the more-than-human world. It is time that many ways of knowing are re-membered and taken into direct consideration when making policy decisions. The case is made that so called 'political realism' is directed by outdated ways of knowing.

In **Part 2** case studies detail successful small community projects that prefigure change. The contributors span

academics , practitioners, indigenous custodians and community members. Guidelines are suggested that are drawn from local experiences which are shared through non-local engagement using digital and face to face engagement processes that are detailed in this section centring on a community of practice using networking and a range of methods for dialogue to co-create shared meaning and to draw together the strands of experience.

In **Part 3** meaning making is explored through reflecting on personal experience, in order to make the case that *biology is best* and that meaning making and understanding 'the other', are rooted in elaborations of stories, listening and responding with empathy. These are the bases for co-creation.

[ii] This volume builds on 'Affirmative Intervention to support Multispecies Relationships' and extends the work of a community of practice that addresses:

Inner work on values – using left and right brain thinking for healing.

Outer work on relationality which requires acknowledging may ways of knowing – human, nature, cosmos and implications for managing augmented digital forms of intelligence.

Future work – story telling and 'if then' scenarios.

[iii] West Churchman summed up CSH by saying there is no such thing as a total system, and that the systems approach begins when first we try to see the world through the eyes of another and that systems thinking is a good idea as long as we do not assume that we have all the answers. He stresses that our values filter the way we see the world and that we are part of the system we are studying. Reynolds (2008) 'System of systems thinking' elegantly sums up the 3 elements:(A) Framework for understanding complex interrelationships, (B) Framework for practice when engaging with different perspectives, and (C) Framework for responsibility taking into account A and B.

[iv] Goodall, J. 2025 Jane Goodall : a final message https://www.youtube.com/watch?v=lfLKHY52ERc the podcast makes a plea for recognising that each life matters and each one of us can make a difference. She also stresses her belief in non-local consciousness.

[v] Jeffrey Goldfab ( 2018) wrote a political studies paper responding to this taunt titled: " Two cheers for hypocrisy: a grey appreciation of John McCain. The paper discusses the origins of values embedded in the American constitution and contrasts some of the key figures in history including Thomas Jefferson and Abraham Lincoln who owned tracts of land farmed by workers who were not free. He contrasts this with the completely transparent use of power during Trump's first term.

[vi] The displaced, the deposed and all who witness suffering have a right to feel anguished. When we witness the extent of the convergent challenges, it is nevertheless a strength to build networks of friendship, to make friends of enemies , to examine our values and to believe in the power of the common good. Being at peace with ourselves is a basis for forming relationships with others ( including sentient beings) and our shared habitat.

[vii] Our world in Data : 24 % of the world's population lives on less than 5 dollars a day and 52% of the world on less than 10 dollars a day. **The definition of extreme poverty is based on the world bank:** *"The World Bank defines extreme poverty as living on less than $3 per day. This threshold, known as the "International Poverty Line", is set so that poverty can be compared across countries. This indicator plays an important and successful role in focusing the world's attention on the very poorest people. The UN uses this indicator to track progress towards* ending extreme poverty by 2030.

*Two centuries ago, most of the world's population was extremely poor. Many believed that widespread poverty was inevitable. But this turned out to be wrong. Economic growth is possible, and poverty can decline. With this poverty line, we can track whether countries are leaving the worst poverty behind.*

*This data is expressed in constant international dollars to adjust for inflation and differences in living costs between countries. Read more in our article,* What are international dollars?

*Many people, today and in the past, have no monetary income. This data accounts for this by including the estimated value of non-market income, such as food grown by subsistence farmers for their own use."*

**World Bank Report**

"Global poverty reduction has slowed to a near standstill. Today, almost 700 million people (8.5 percent of the global population) live in extreme poverty - on less than $2.15 per day. Progress has stalled amid low growth, setbacks due to COVID-19, and increased fragility. Poverty rates in low-income countries are higher than before the pandemic.

Around 3.5 billion people (44 percent of the global population) remain poor by a standard that is more relevant for upper middle-income countries ($6.85 per day), and the number of people living on less than this standard has barely changed since the 1990s due to population growth.

In 2024, Sub-Saharan Africa accounted for 16 percent of the world's population, but 67 percent of the people living in extreme poverty. Two thirds of the world's population in extreme poverty live in Sub-Saharan Africa, rising to three quarters when including all fragile and conflict-affected countries. About 72 percent of the world's population in extreme poverty live in countries that are eligible to receive assistance from the International Development Association (IDA).The number of people living on less than $6.85 per day has remained unchanged over the past 30 years."

[viii] **Brian Cox Talks About Alien Life - A 2026 Special**

https://www.youtube.com/watch?v=cwrKZ1X9xrA&t=298s

"… He begins with the Fermi Paradox and the unsettling tension at its core: if intelligent civilizations should be common, why don't we see any evidence of them anywhere in the Milky Way? From there, Brian Cox connects the dots to the Great Filter hypothesis, the idea that something wipes out most civilizations before they ever become visible across the galaxy. That leads to a sobering possibility that alien life might be rare, and that we could even be the only technological civilization in the Milky Way. …"

[ix] The brain or body of the organism ( whether it be an amoeba, a plant , an insect , bird , reptile or mammal) perhaps 'tunes into' into the conscious universe and draws on the stored learning in their cells. The DNA carries codes of life and all cells are also conscious to a certain extent which is why they can replicate. As Candace Pert explains in the molecules of emotion, the whole body is conscious. Going further however it is clear that empirical research by reputable cariologists such as Pim von Lommel suggest that there are instances of consciousness surviving the flat line of a heart monitor, indicating that the heart is dead. Materialists can ( and do argue) that visions of the so-called after life or remote viewing of a body on an operating table are the result of chemical stimuli or hallucinations are the brain recovers its functioning. These so-called 'near death experiences', plus the oral histories that inform spiritual beliefs of re-incarnation are rooted in the idea that once the mind leaves the body what is left is a subtle form of energy. There is no empirical proof for this from the point of view of mainstream materialism, even though there are many stories linked with the recognition of great teachers returning to 'the chosen' . There are also documented stories of those who have had transplanted organs such as hearts , experiencing a change in personality and or gaining new skills. Epistemologically rigorous science remains unconvinced.

[x] A neurologist reflects on the complexities of the human brain and the ethical dilemmas of when to stop supporting life ( see Ropper and Burrell, 2014).

[xi]https://www.bbc.com/future/article/20250422-usa-scientists-race-to-save-climate-data-before-its-deleted-by-the-trump-administration

[xii] According to Schlanger (2024) the science of plants is now on a cusp (despite some of the pseudo-science in the 1970's) there is increasing acceptance that plants have many senses to enable them to function spanning the ability to respond to light, vibration and touch, sound, chemical signals, gravity, sense types of danger and to respond appropriately based on memory and intelligence, which as Schlanger explains means quite literally to make choices. Plants are for example able to make 'decisions' as to when to germinate based on sensing seasonal variations in humidity and temperature.

[xiii] The poet Robbie Burns *cynically* contemplated being an overseer of slaves in Jamaica when he faced destitution; and he was able to *write* about the rights of human beings and other creatures.

[xiv] Quantum Information Panpsychism Explained | Federico Faggin

[xv] Many people of Jewish faith do not see themselves as Zionists

[xvi] This re-generation is already occurring , for example : 'Green Islam': how Muslims are powering environmental action across the world. Published: August 20, 2025 3.54am SAST by Eva F Nisa an Associate Professor, Cultural Anthropology, Australian National University Faried F Saenong

[xvii] Many Christians do not see themselves as patriarchal custodians of conservative views on gender, social or environmental justice.

[xviii] A newfoundland hound for example will not allow a beloved human into the water without grasping a hand gently and pulling their 'relevant other' away ( Pers comm from a local dog walker, 2026).

[xix] Food insecurity in South Africa is rising as highlighted by Zukiswa Zumela in *Elitsha*, 24th Oct 2025 in an article titled: " Where food is a right and good nutrition a luxury, millions in South Africa are stunted'. " A 2023 report estimates that 3.7 million households had some form of food insecurity…Over half a million South African families with children under 5 …have to deal with hunger every day. This means that a quarter of our children are stunted, which is a sign of long-term malnutrition…"

[xx] The World Food Program stresses that over 23 million people are unable to meet their dietary needs and 21 % of children under 5 suffer stunting. See Wfp.org , 27th March 2025

[xxi] "Political economy is neither an art nor a science… but a system of conduct and legislature, founded on the sciences, directing the arts, and impossible, except under certain conditions of moral culture. By the "maintenance" of a State is to be understood the support of its population in healthy and happy life; and the increase of their numbers, so far as that increase is consistent with their happiness. It is not the object of political economy to increase the numbers of a nation at the cost of common health or comfort; nor to increase indefinitely the comfort of individuals, by sacrifice of surrounding lives, or possibilities of life." Ruskin

[xxii] Valuing democracy | Fact & Fiction: The Future of Democracy | Nobel Prize Dialogue Brussels 2024. Participants include Vera Jourova of the European Commission, Demis Hassabis , DeepMind, Ben Faringa and Paul Nurse. https://www.youtube.com/watch?v=aGLeZ8pjsaA

[xxiii] In the Auschwitz a prisoner made the choice to die in place of a man who begged to continue living and stepped forward pushing the other man back. The story about the priest was shared by a Polish guide, during his lecture (Personal communication, 2025) who regarded his mission in life to share history plus some of his personal family stories about his grandparents who farmed nearby and lost their land as it became part of the Auschwitz-Birkenau complex. His grandparents escaped the area and his parents became teachers. He expressed the hope that he would teach effectively as a guide so that he could make a contribution and he despaired the way the horrors of war continued to be repeated. I watched the lines of school children leaving Auschwitz and noted the shock and the absolute silence

[xxiv] Deists believe that the divine is out there and we need to tap into it through prayer and meditation. Whilst non-deists, such as Buddhists believe that meditation enables us to identify with the divine. Both approaches give a sense of the importance to humility (derived from humus, the earth). Through baptism or immersion in water we connect with the holy spirit. Life was only possible because of the creation of an environment that supports life . Human beings are mostly carbon and oxygen and all protein life comprises carbon, oxygen , hydrogen and nitrogen.

[xxv] West Churchman summed up CSH by saying there is no such thing as a total system, and that the systems approach begins when first we try to see the world through the eyes of another and that systems thinking is a good idea as long as we do not assume that we have all the answers. He stresses that our values filter the way we see the world and that we are part of the system we are studying. Reynolds (2008) 'System of systems thinking' elegantly sums up the 3 elements:(A) Framework for understanding complex interrelationships, (B) Framework for practice when engaging with different perspectives, and (C) Framework for responsibility taking into account A and B.

[xxvi] https://www.whitehouse.gov/presidential-actions/2025/11/launching-the-genesis-mission/