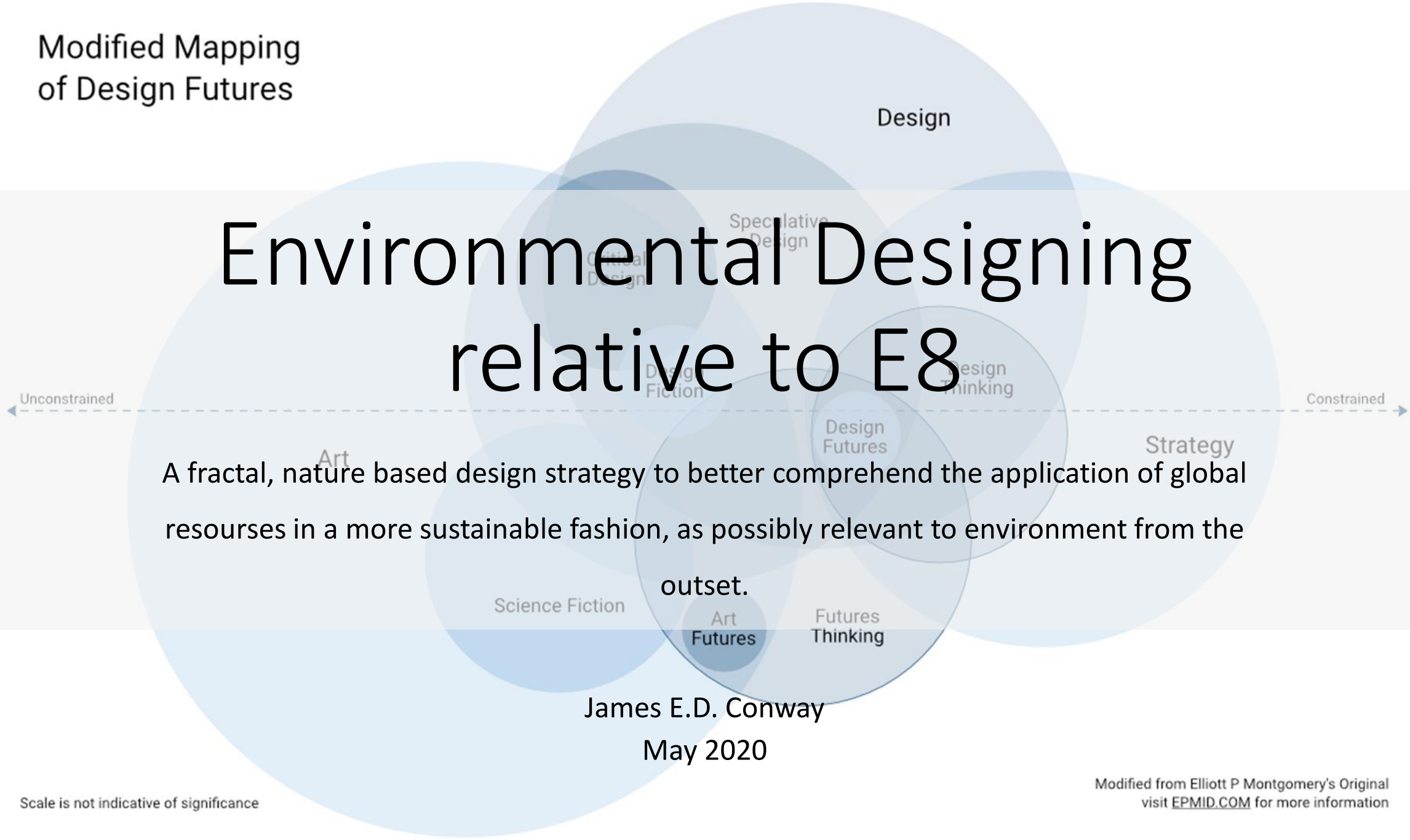


Environmental Designing relative to E8

A fractal, nature based design strategy to better comprehend the application of global resourses in a more sustainable fashion, as possibly relevant to environment from the outset.

James E.D. Conway

May 2020

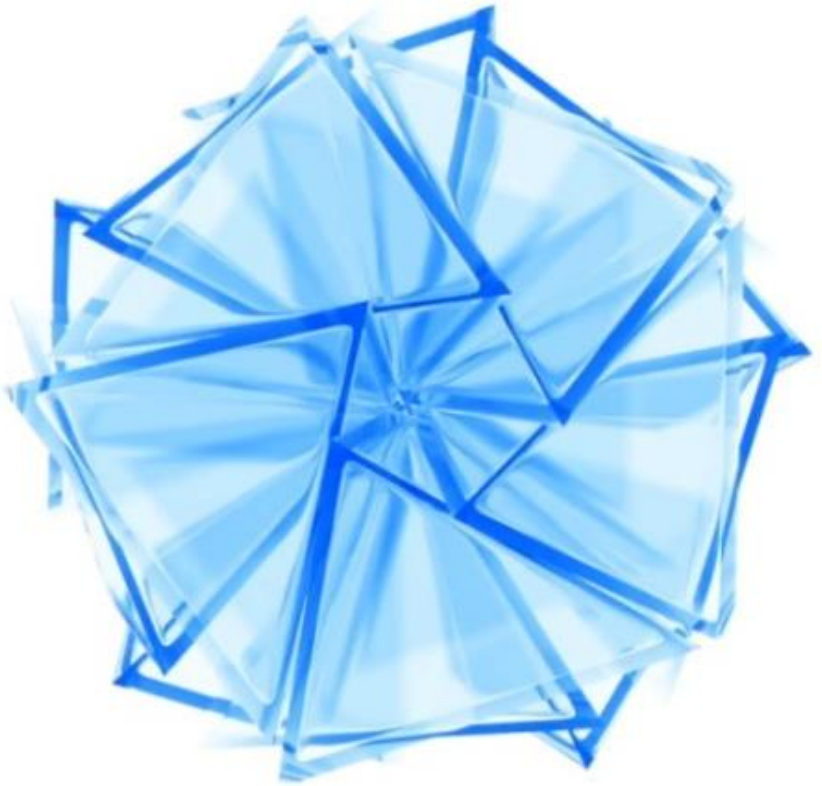
Introduction

The last decade has seen many scientific improvements towards a comprehensive “theory of everything”, and yet very ‘few’ dedicated towards the environment in which we live, in the now.

Such so, I revisited particle physics, adapting "E8" based methodology into a "new" quantum based, environmental design approach.

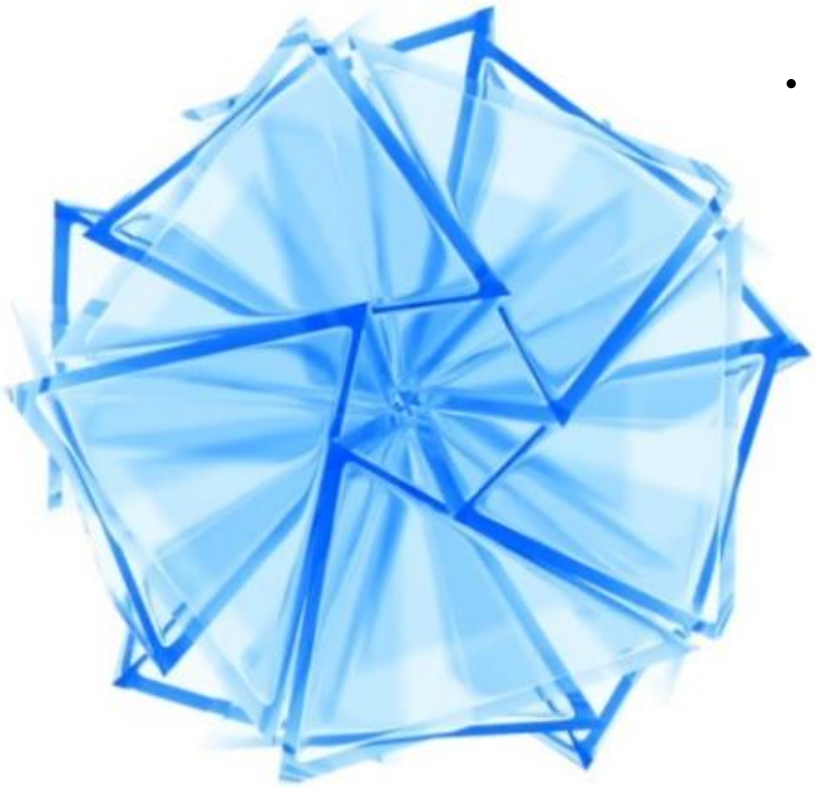
What I hope to achieve; is to develop a more harmonious environmental design strategy as it relates to living spaces (urban/ sub-urban/ rural), through municipal level structures and climate/ environmental impact models, as a possible strategic design 'standard' for current global policy makers and spatial development professionals - regarding the practical USE of Nature Based Solutions (NBS) as a SOLID construction/ spatial regeneration platform.

It may WELL seem far-fetched, possibly even unimaginable, that I go as far as pre-atomic structure to fully comprehend that "strategy"... But the "result" will be a ‘Foundation level’ practical relationship system, for an environment that we currently find so difficult to relate to harmoniously.



Process

- Pipeline practicality
- Quantum practicality
- Dimensional shadowing explained
- Pipeline Vs Quantum
- The Quantum designed Reality
- 3D ~ Conventional design strategy
- 3D ~ Interwoven design strategies.
- 3D state architecture Vs Software architecture
- Anthropocentric development.

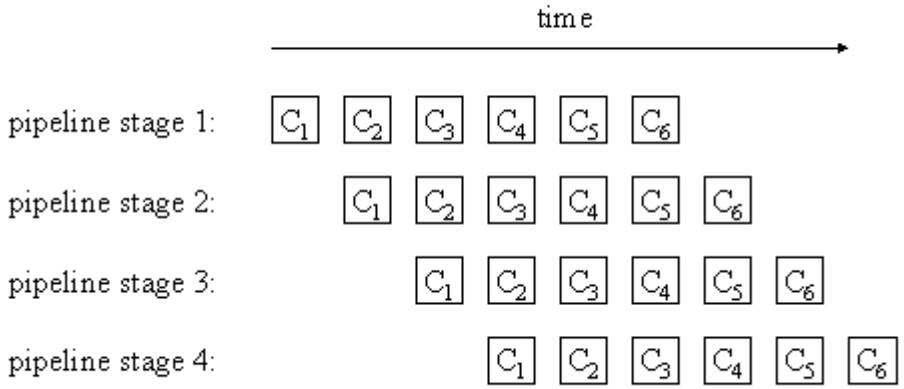


- The Post-anthropocentric Design REVOLUTION
- E8 Holistic thinking pattern in 3D
- A 3D design reality shift
- Modified Mapping of Design Futures
- Futures Mapping as Holistic Proposals
- E8 Information
- E8 Causality loops
- Energy
- A Pixelated reality
- E8 Golden ratio

Pipeline production pattern

Each of the sequence of calculations is performed by having the first stage of the pipeline perform the first step, and then the second stage the second step, and so on. As each stage completes a step of a calculation, it passes the calculation-in-progress to the next stage and begins work on the next calculation.

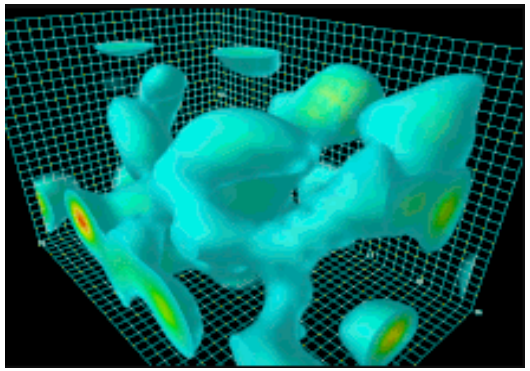
- Assembly line pattern sequentially essentially identical calculations
- Broken down into the same sequence of steps, or"pipeline", one stage for each step
- All stages potentially executing concurrently.

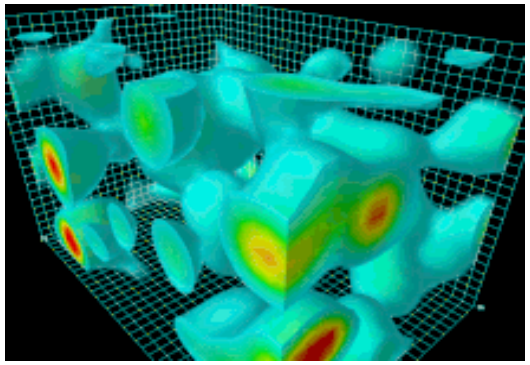


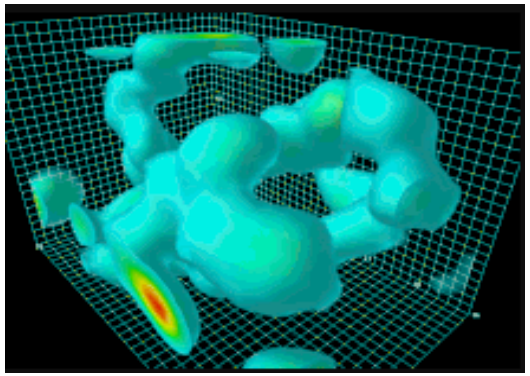
- Assembly-line analogy (pipeline)
- Goal to manufacture a number of cars
- Manufacture separated into sequence of smaller operations (e.g., installing a windshield).
- Different worker assigned operation
- Car built up by performing the sequence of operations
- Each worker, however, performs repeat operation on a succession of cars.

Quantum production pattern

Quantum Fluctuations







- Calculations are performed simultaneously of each other, relevant to a series of possible design outcomes, relevant to the time and space that they occupy.
- Calculations are directly relative to spatial design “realities” as they represent the boundaries of existence of the implied model, as relevant to it’s structural environment.
- Each calculation is relevant to separate (but intrinsic) sets of “Quanta”, for each design input, as that input is relevant to the holistic placement of the proposed design idea, within an “environment”.
- Each calculation ‘set’ is relevant to the lifespan of a design in reflection of it’s application, relative to the time and space that it occupies – representative of its environment.
- Each calculation ‘set’ is representative of its environment, relative to the time and space that it occupies – relevant to the lifespan of a design in reflection of it’s application (as development over time of the application itself within that environment set).
- As each stage completes a step of a calculation, it passes the calculation-in-progress to the next stage and begins work on the next calculation in relation to the first as a possible result of the second.
- The calculation process is self-aware and self-manifesting, thus said to be derived consciously of it’s environmental relationships, if not itself (over time, place and evolution), thus “Consciousness”.

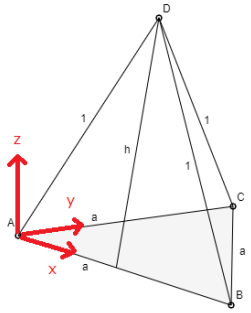
Dimensional shadowing explained

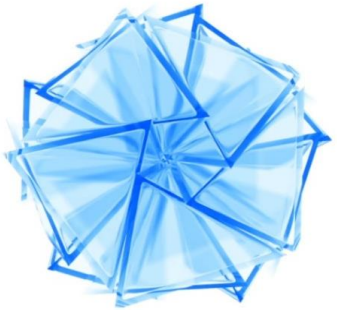
A “shadow” (as we recognize it) occupies a three-dimensional volume of space, not usually visible until projected onto a reflective surface. A light fog, mist, or dust cloud can reveal the 3D presence of volumetric patterns in light and shadow.

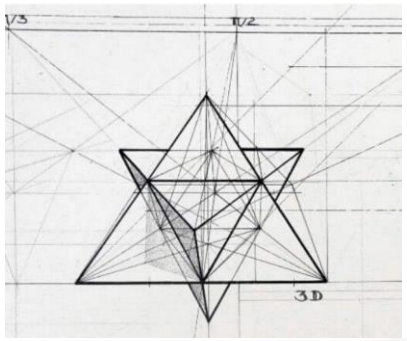
- Image right demonstrates a 3D image represented by a 2D shadow cast upon a reflective surface.
- Mathematically we can express that a 3D reality, is extruded of a 2D image.
- Therefore that a 4D reality is extruded of a 3D image and so-on.
- Thus: A 3rd dimensional “image” is a shadow of a 4th dimension reality, as a 2nd dimensional “image” is a shadow of a 3rd dimensional reality.
- That recognition explains that in order to create a “correct shadow” of a higher dimensional reality, one must; design and build the intended extrusion prior to recognition of it’s shadow.
- Therefore: One cannot create a “correct” 3D relationship to any object perceived of the 3D environment, within (or respective of) that particular environment.
- To design within the 3rd dimension, we need to create “shadows” of more complex relationships as extuded of our 3D ideas, projected into higher dimensions.

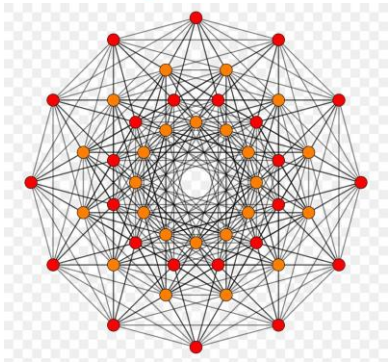
Pipeline vs Quantum

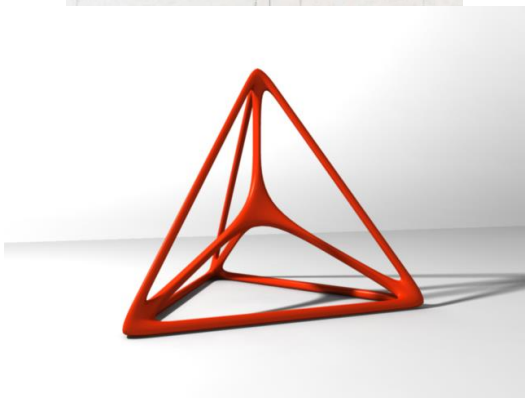
- Overriding Quanta set, idea relevant.
- Single aspect predominance.
- Determined.
- Only 3D relative.
- Individual.
- Newtonian.
- Random ratio.

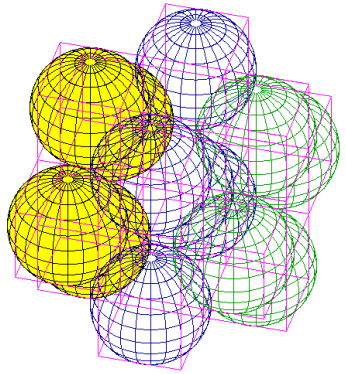




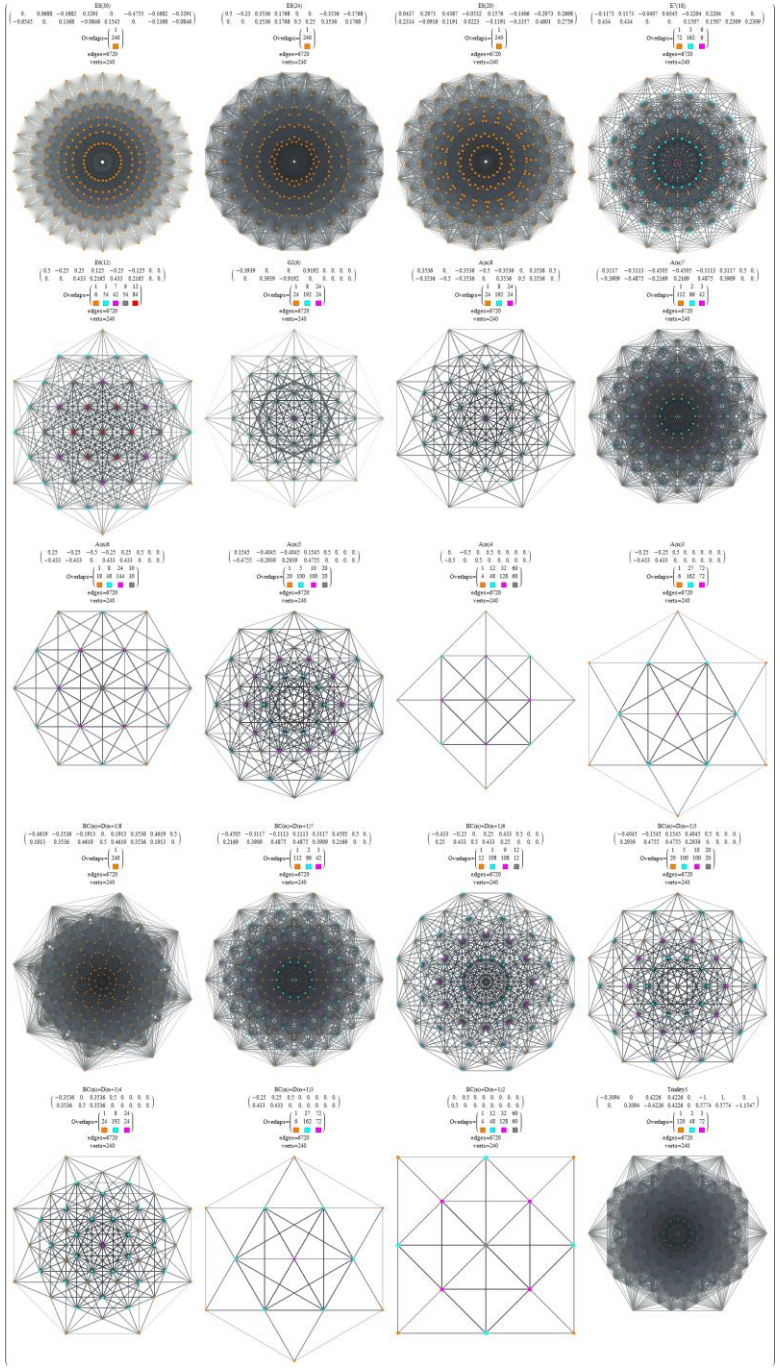






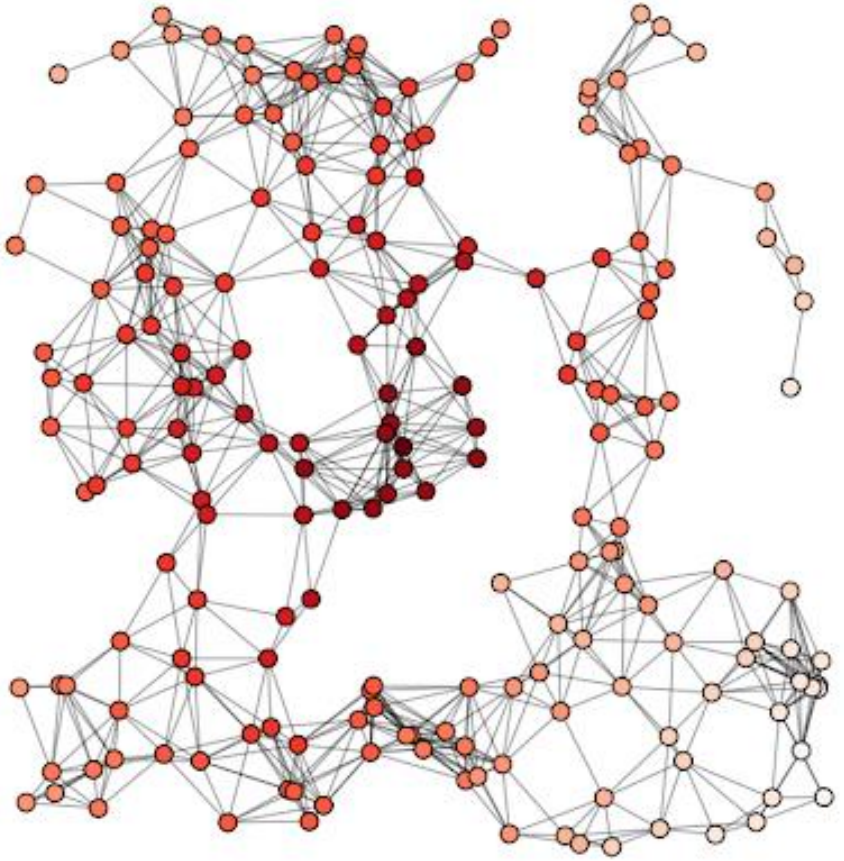


- Multiple sets of inter-related Quanta.
- Causality loops.
- Non-deterministic.
- Consciousness.
- Pixelated.
- E8 Crystal.
- Golden ratio.

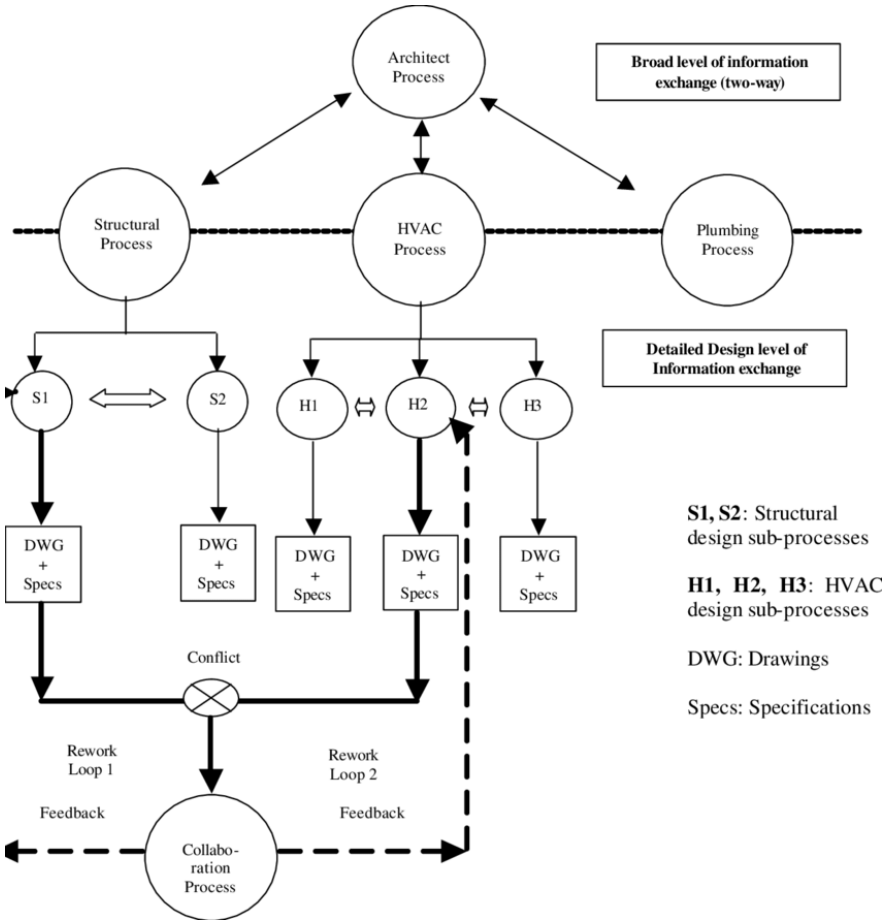


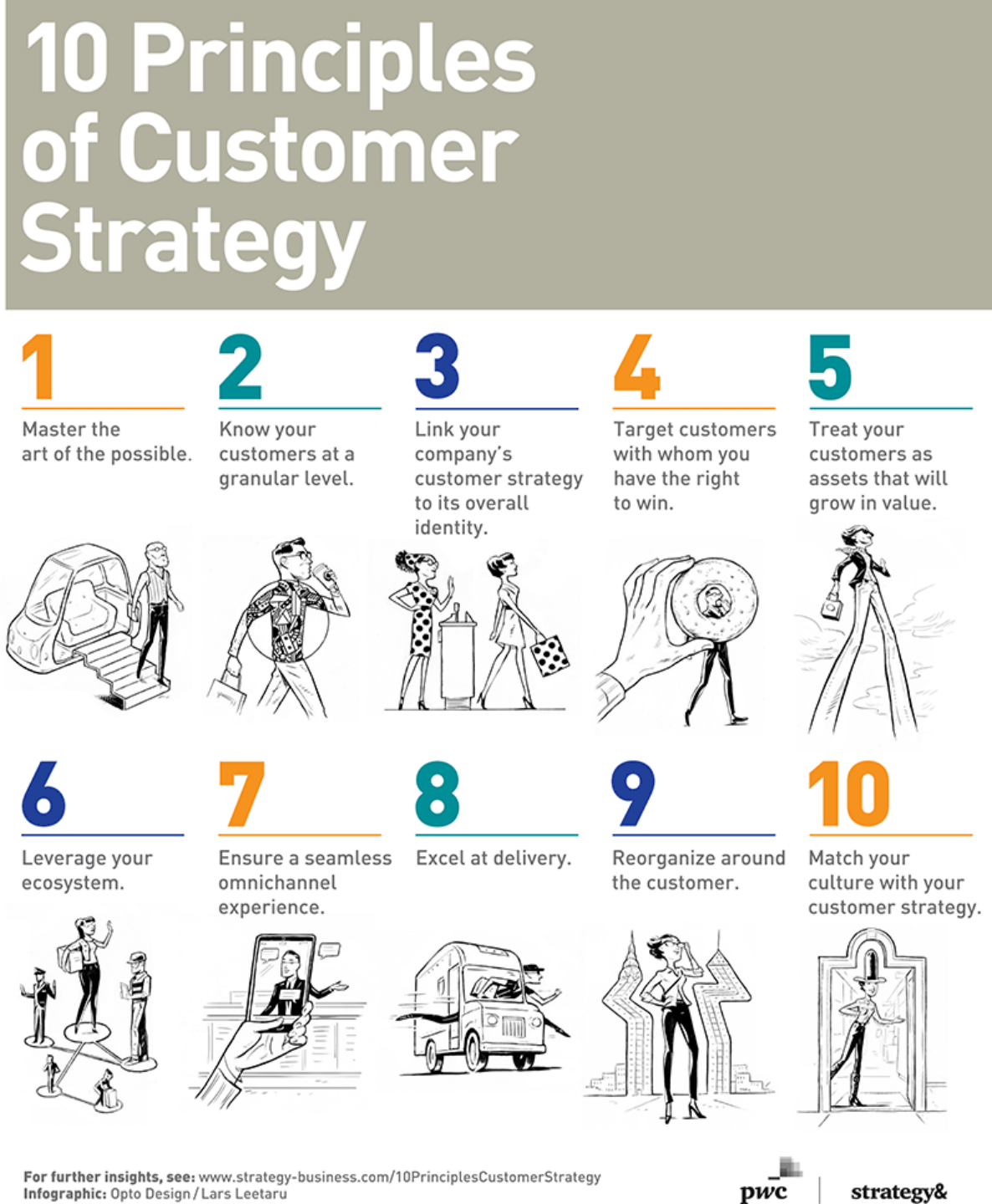
The Quantum Designed Reality

- Information.
- Causality loops.
- Non-deterministic.
- Consciousness.
- Pixelated.
- E8 Crystal.
- Golden ratio.

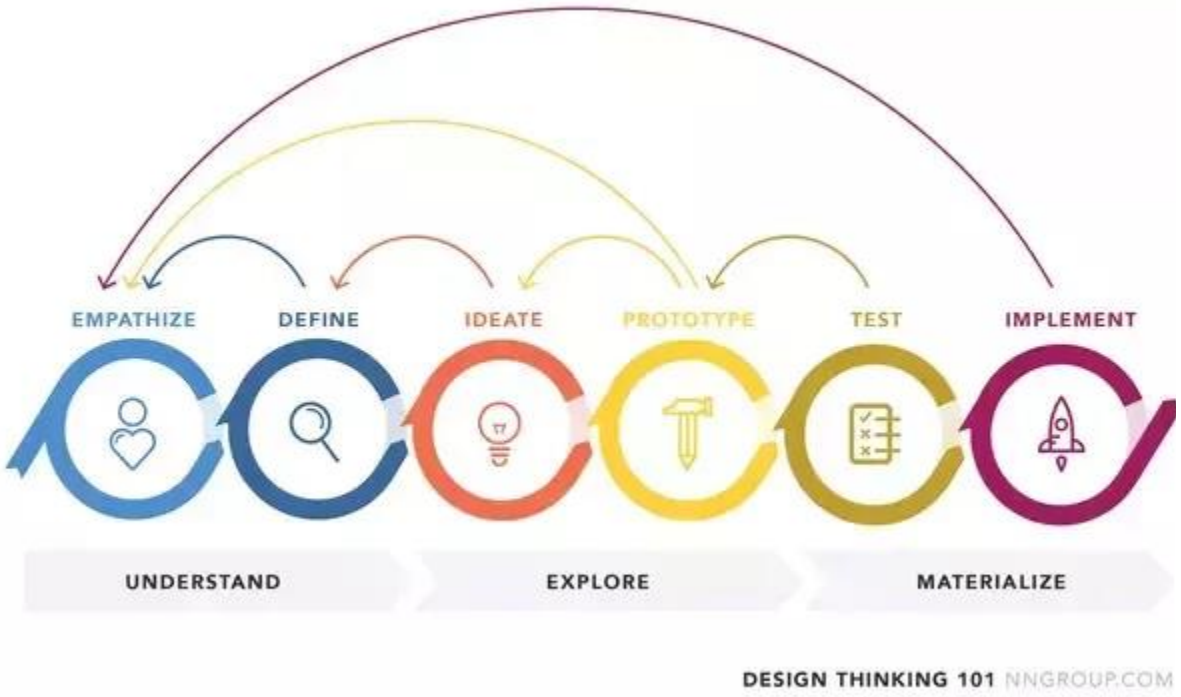


3D ~ Conventional design strategy



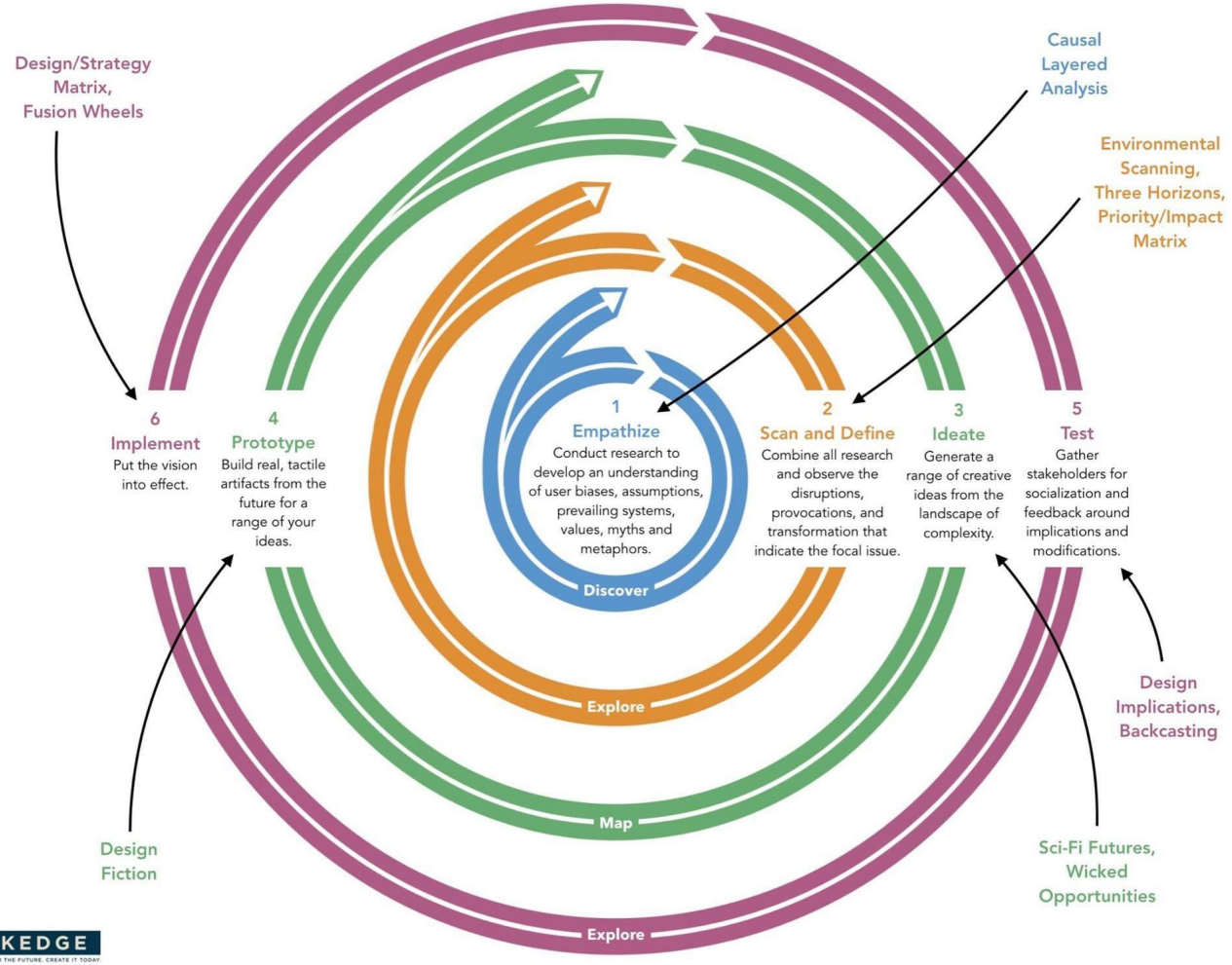


3D ~ Interwoven design strategies.



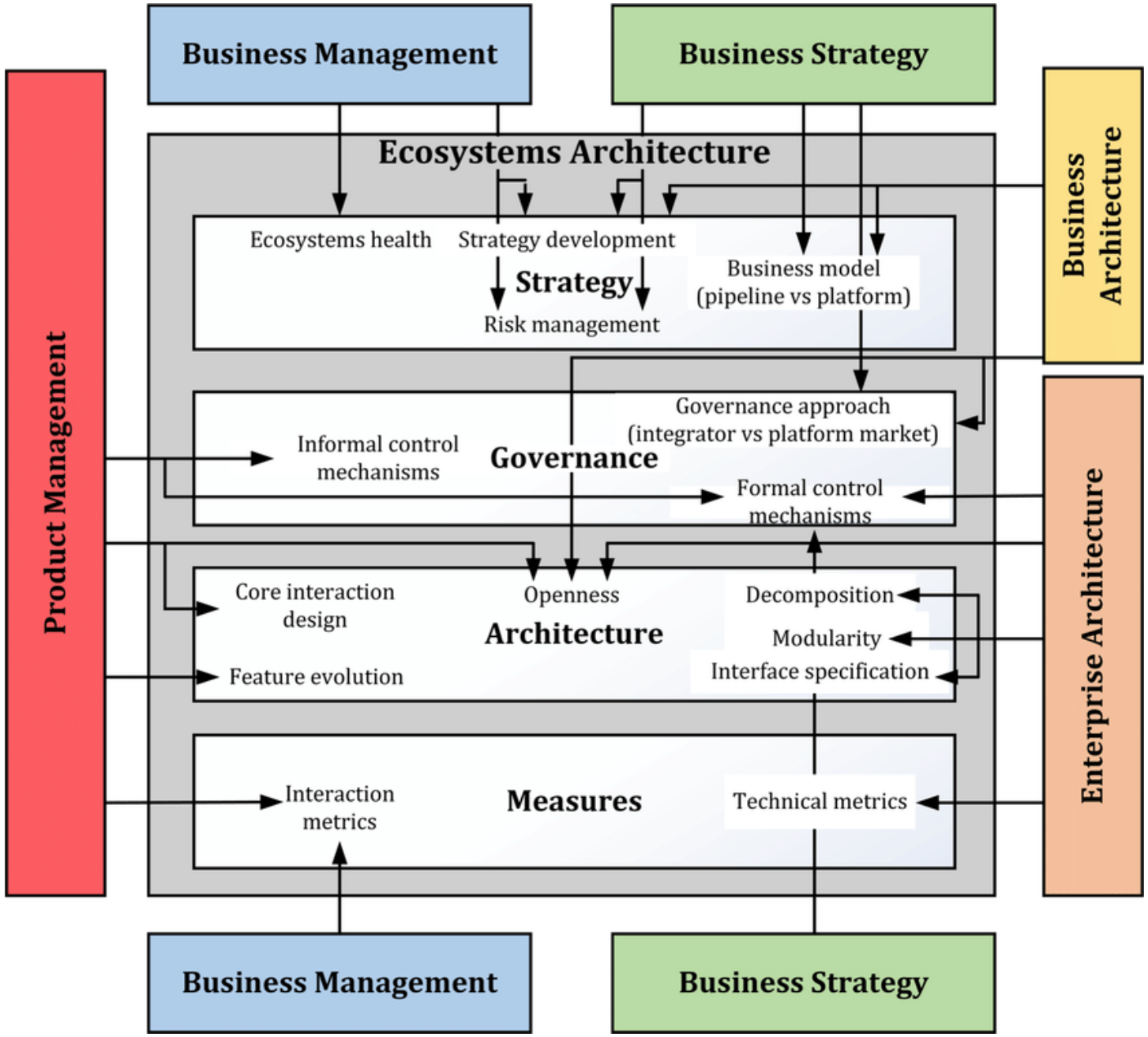
Design Futures

Design Thinking Empowered By Futures Thinking

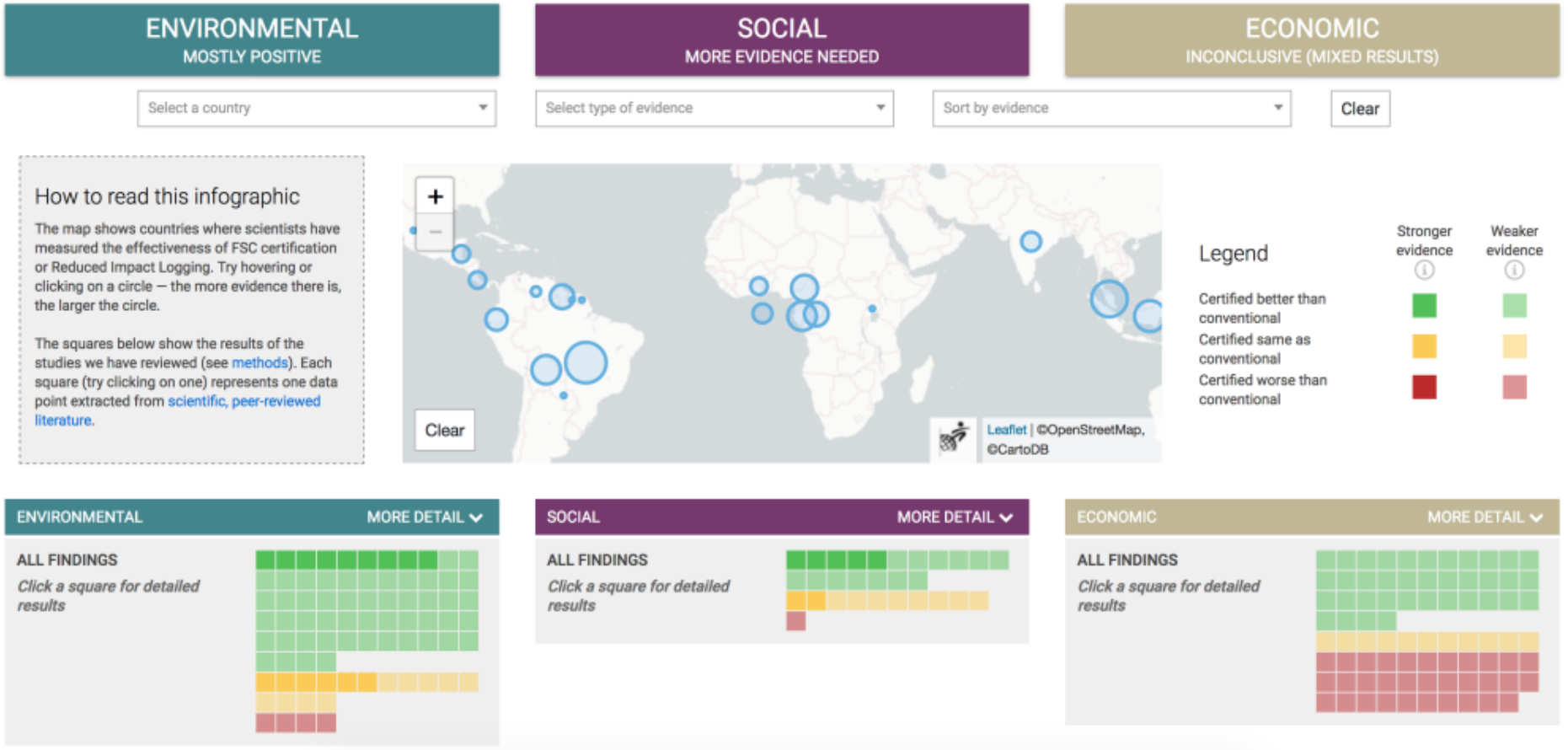


3D state architecture Vs Software achitecture.

The Business Ecosystem model is increasingly pursued by today's organisations seeking higher flexibility, adaptability and scalability. Supported by highly variable cloud-based software ecosystems, this modern business model has the potential of massive business value creation compared to the traditional pipeline model.



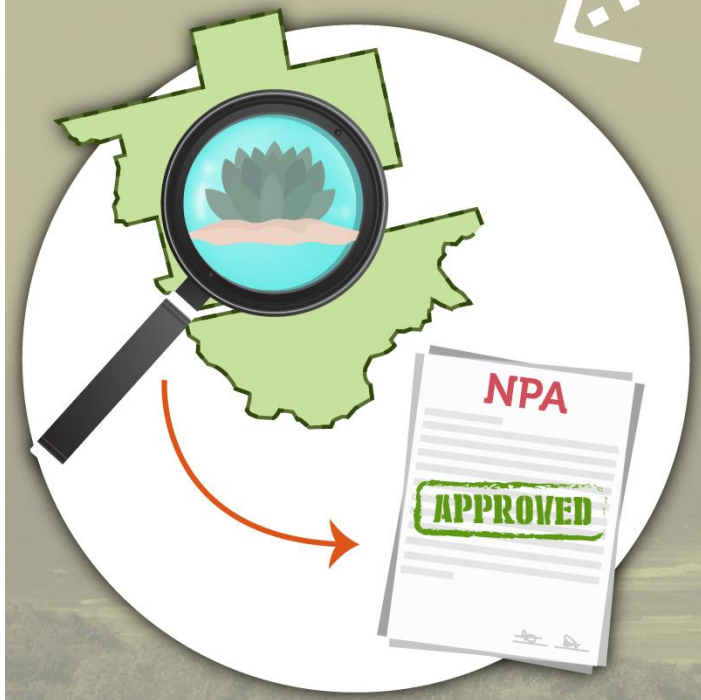
Plenty of research, accepting the relevant geo-social fields.



But that research methodology remains anthropocentric

Our Conservation Strategy

Terra Peninsular



Land Protection

Adaptive Management

Community Engagement

1. Existing knowledge

2. Set of assumptions

3. Statement of hypothesis

4. Testing by collection of empirical data

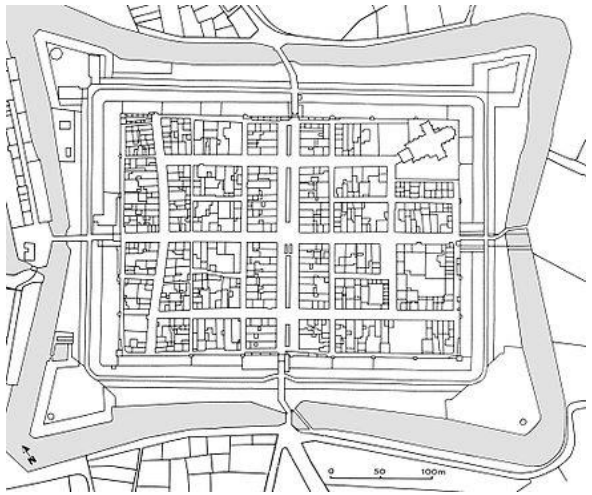
5. General principles

6. Development or revision of theory

7. Modified assumptions

8. New knowledge

Conventional Environmental design strategy observes humans as distinguishable from nature



Therefore it can only lead to theory collapse...

And along with that, societal collapse!

Possibly even 'Civilization' collapse

As long as people are encouraged to accept that they are separate of nature

~

they will not understand how dependent they are

~

upon nature to survive

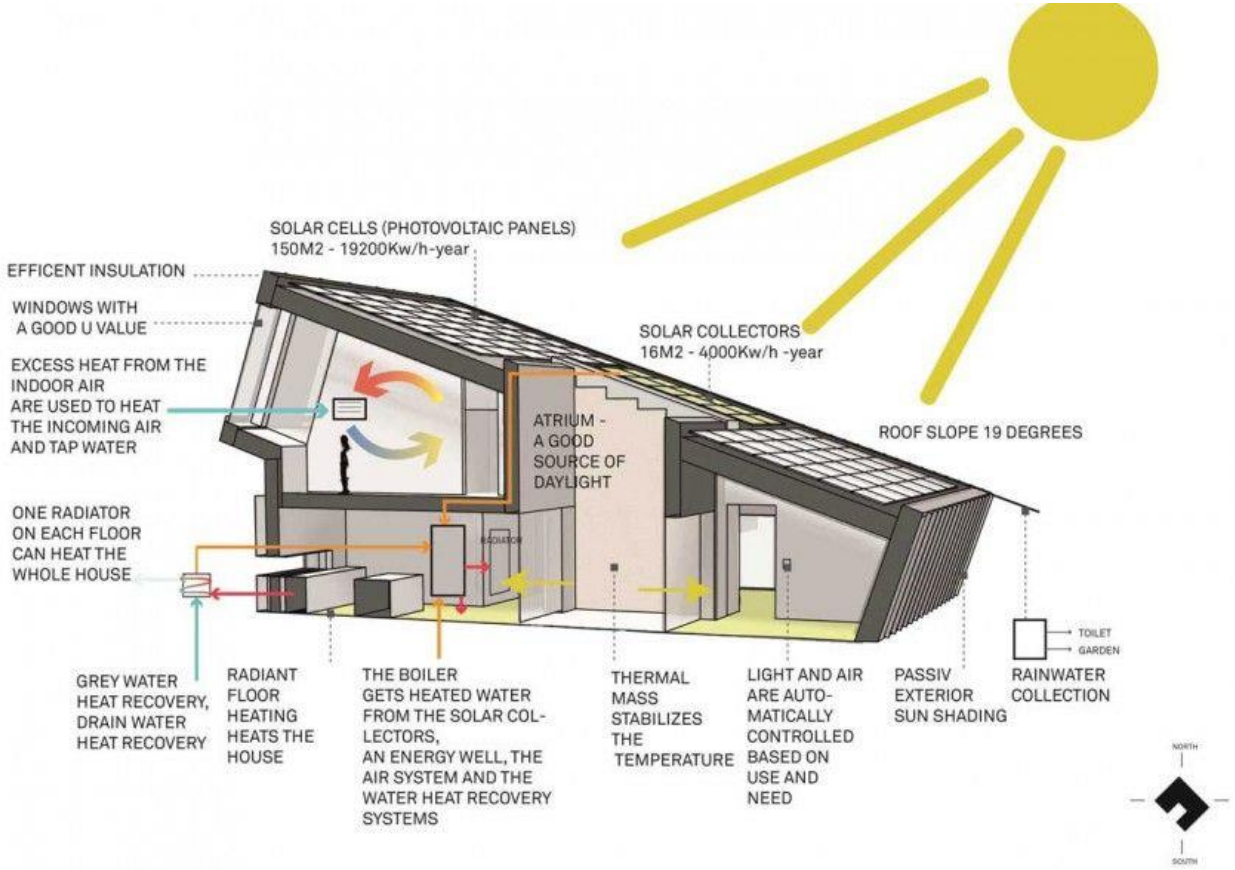
~

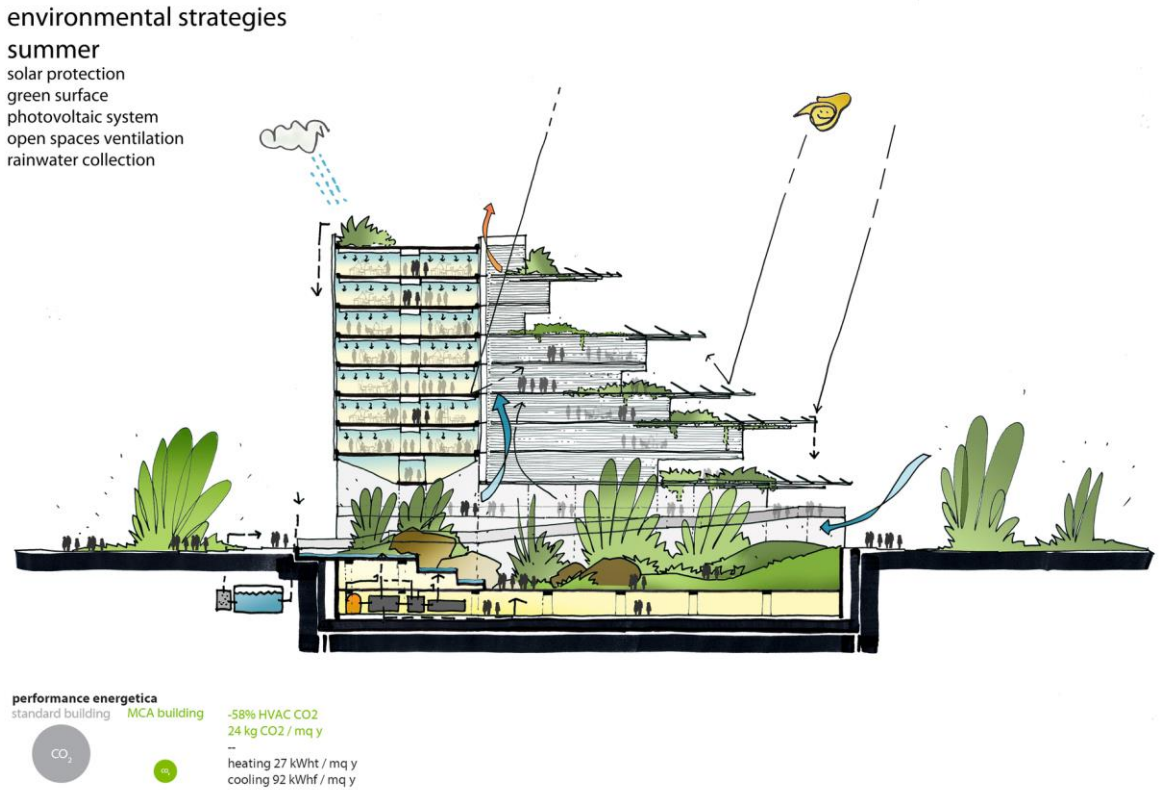
Nor what that will entail in reality.

Anthropocentric development.

- Environmental design and planning is the moniker used by several Ph.D. programs that take a multidisciplinary approach to the built environment.
- Typically environmental design and planning programs address architectural history or design (interior or exterior), city or regional planning, landscape architecture history or design, environmental planning, construction science, cultural geography, or historic preservation.
- Social science methods are frequently employed; aspects of sociology or psychology can be part of a research program.
- The concept of "environmental" in these programs is quite broad and can encompass aspects of the natural, built, work, or social environments
- The more fractal an environment becomes (in terms of possible thinking patterns) as applied to the increasing field inclusion (as mentioned above), the LESS possible it is to adapt those things equally (or proportionally equal) to eachother within a "pipeline" design process.
- Although that process APPEARS fractal in it’s composition, it only has 1 direction; a forward motion. thus it is not.
- A "truly" sustainable design process may even be invisible to us, simply due to the "observable" nature of the 3 dimensional space that we recognize as reality… in our currently divorced perception with Nature.

Conventional “environmental” strategy fails at the “mass” scale as it’s material usage is unsustainable.

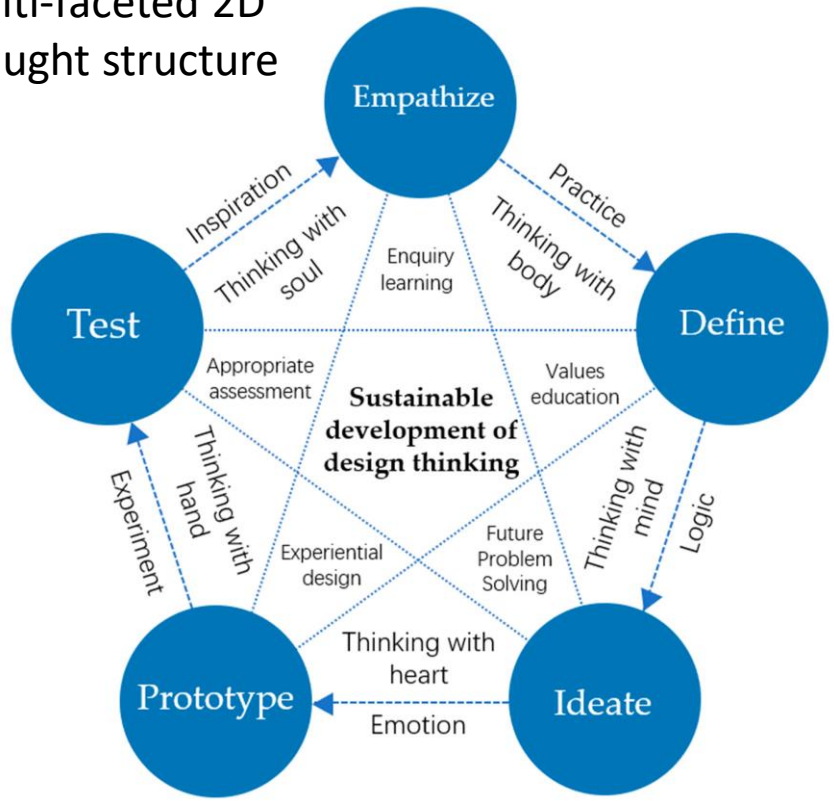




The architectural thinking patterns ARE however moving in the right direction.

Holistic thinking patterns in 2D

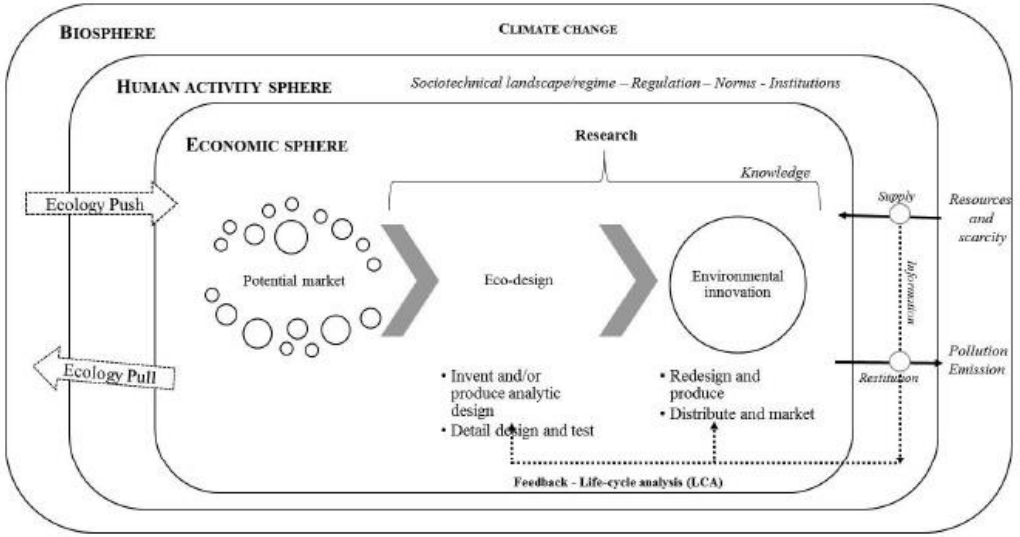
Multi-faceted 2D thought structure



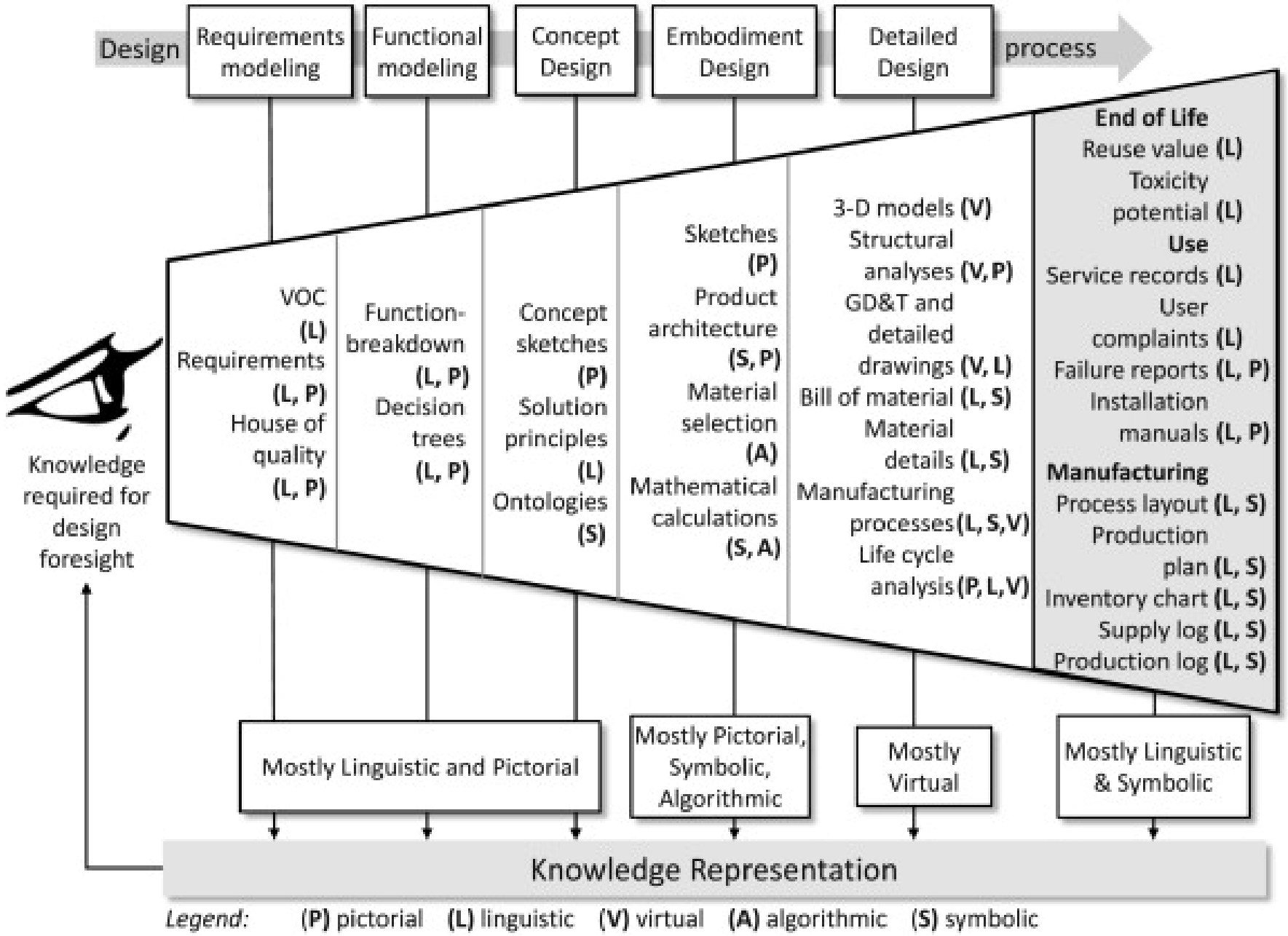
No matter HOW it is approached

Is unlikely going to solve the problem

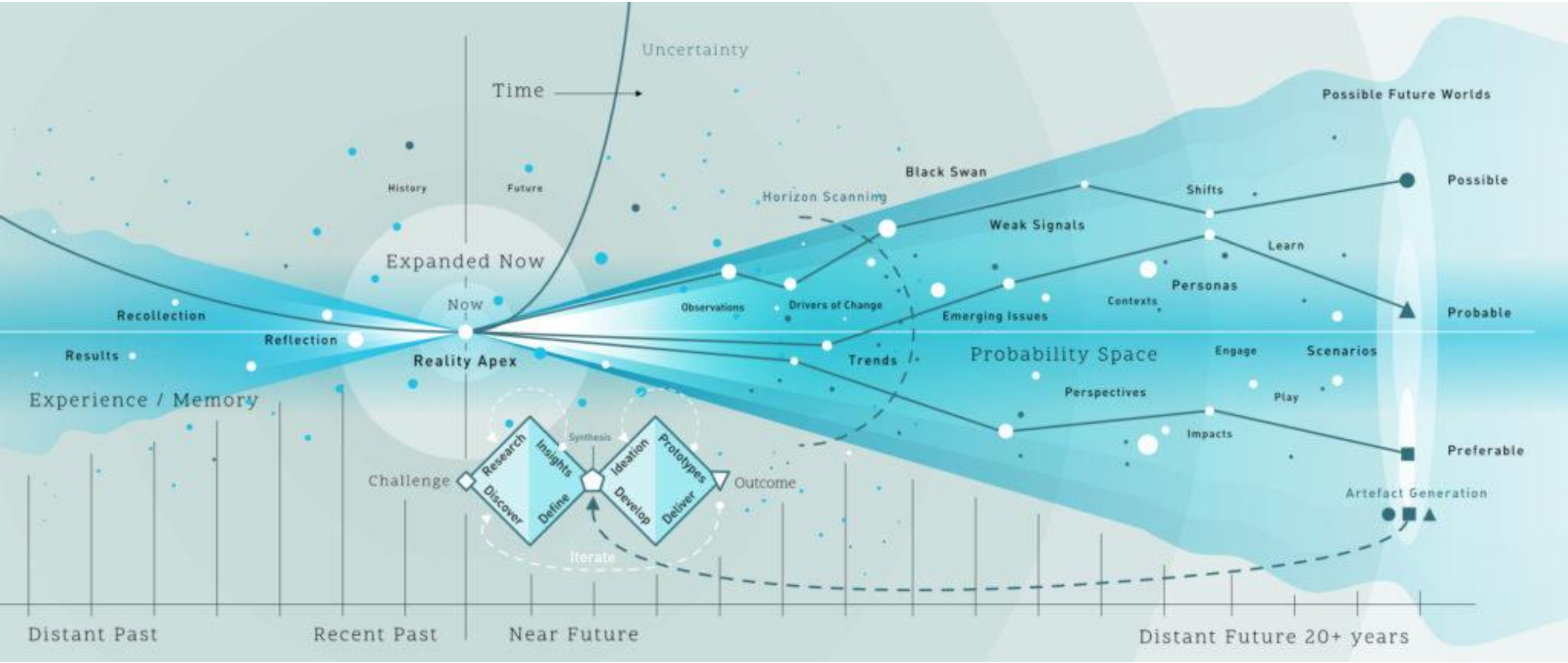
Represented within a 3D environment



Vizualizing environmental design in terms of spotlight theory, as it might include an information causality loop.



Visualizing the future as a reflection of the past

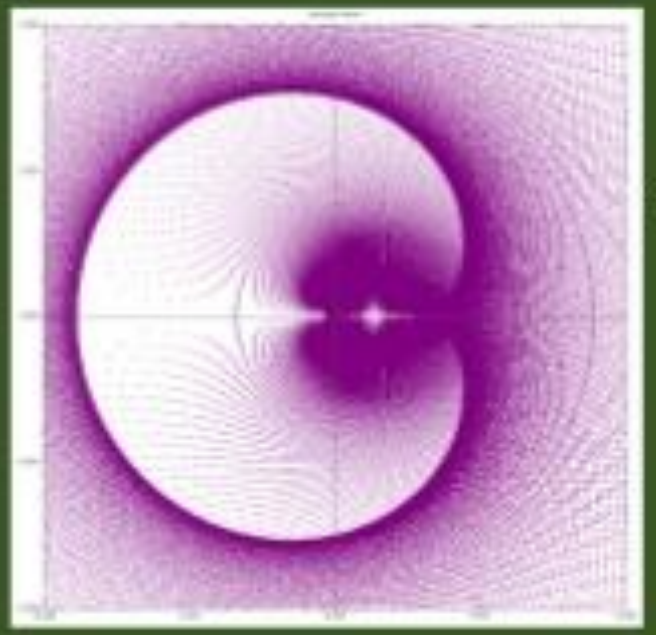


Reality Causality Loop?

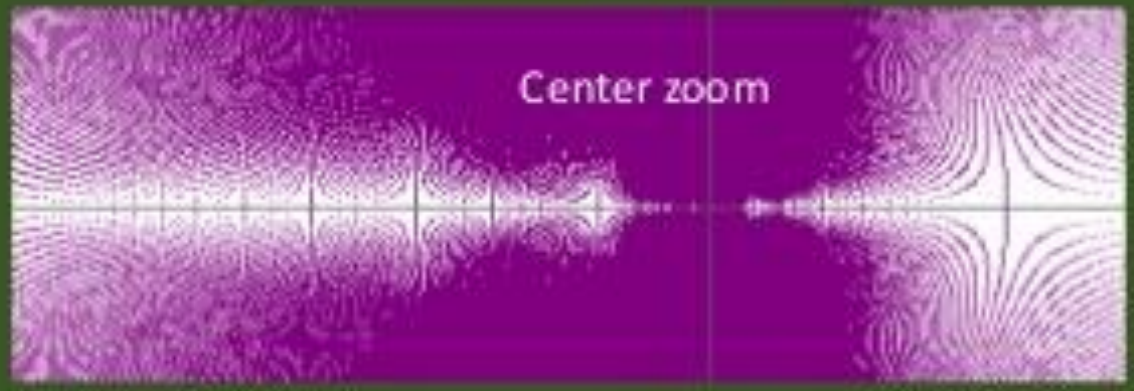
Information

We discovered a fractal pattern in the discrete Fourier transform of Fibonacci chain intervals.

The box-counting dimension is about 2/3.

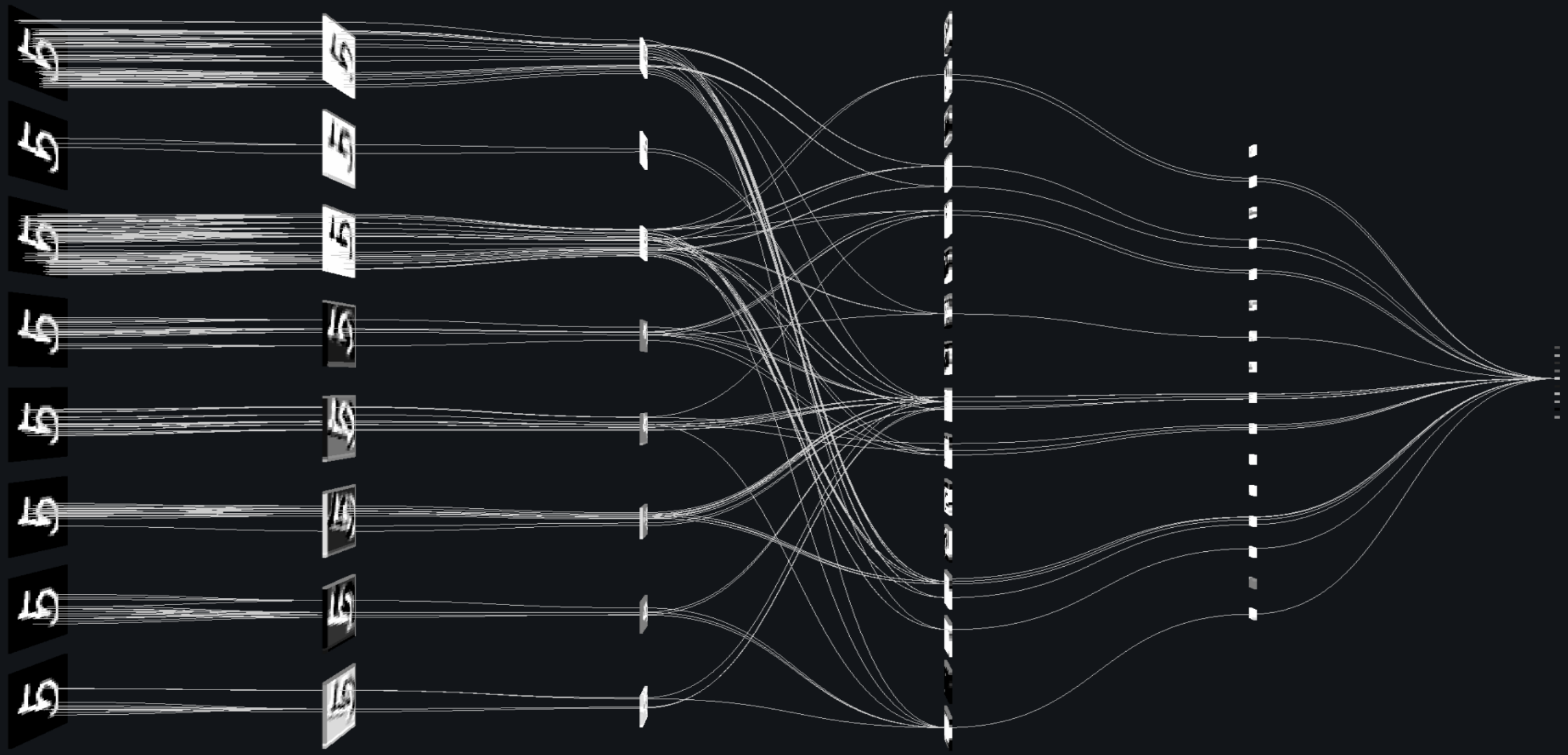


25 iterations



☑ Information ☐ Causality Loops ☐ Non-determinism ☐ Consciousness ☐ Pixelation ☐ E8 Crystal ☐ Golden Ratio

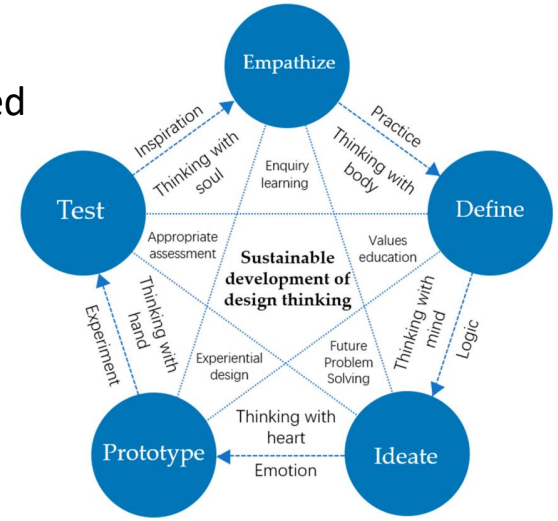
QUANTUM
GRAVITY RESEARCH



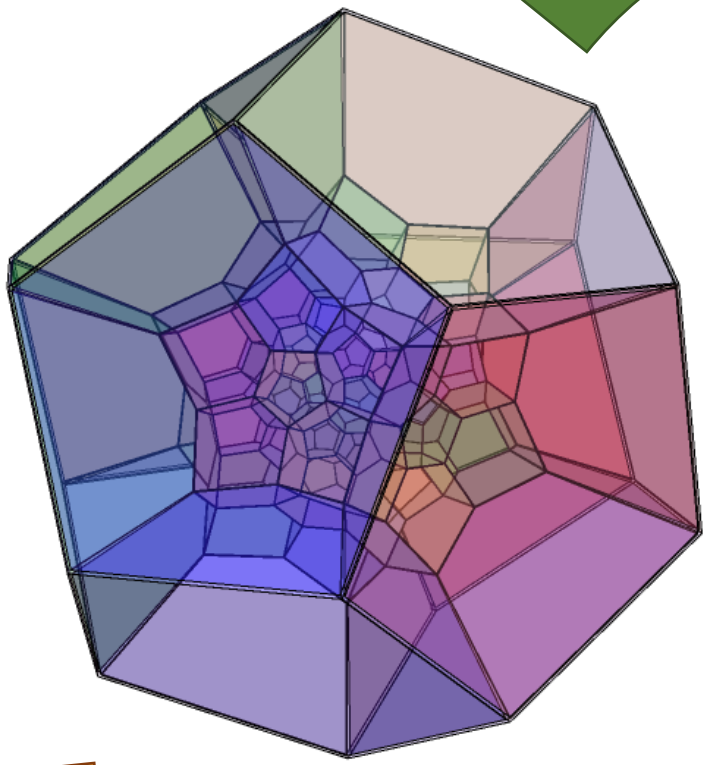
The Post-anthropocentric Design REVOLUTION

E8 Holistic thinking pattern in 3D

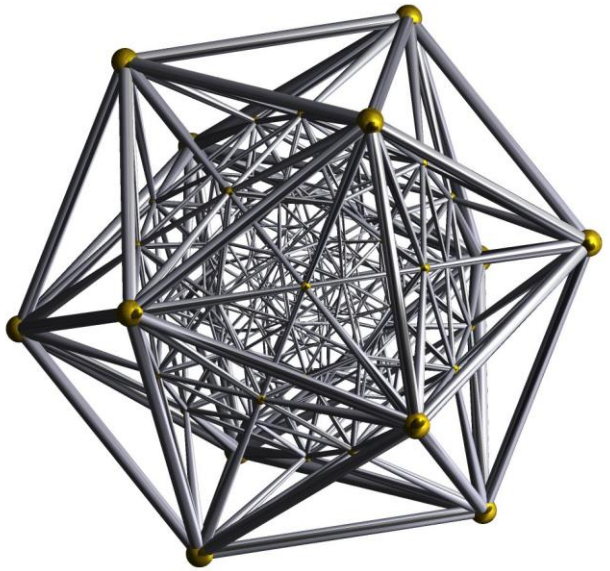
2D multi-faceted idea structure

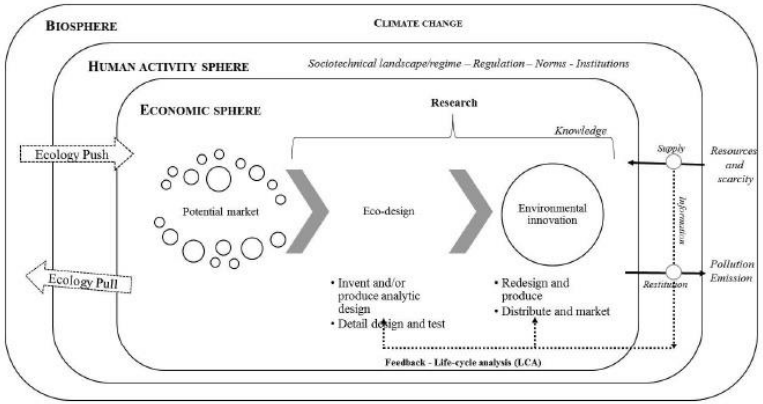


8D multi-faceted relationship structure



4D multi-faceted reality structure

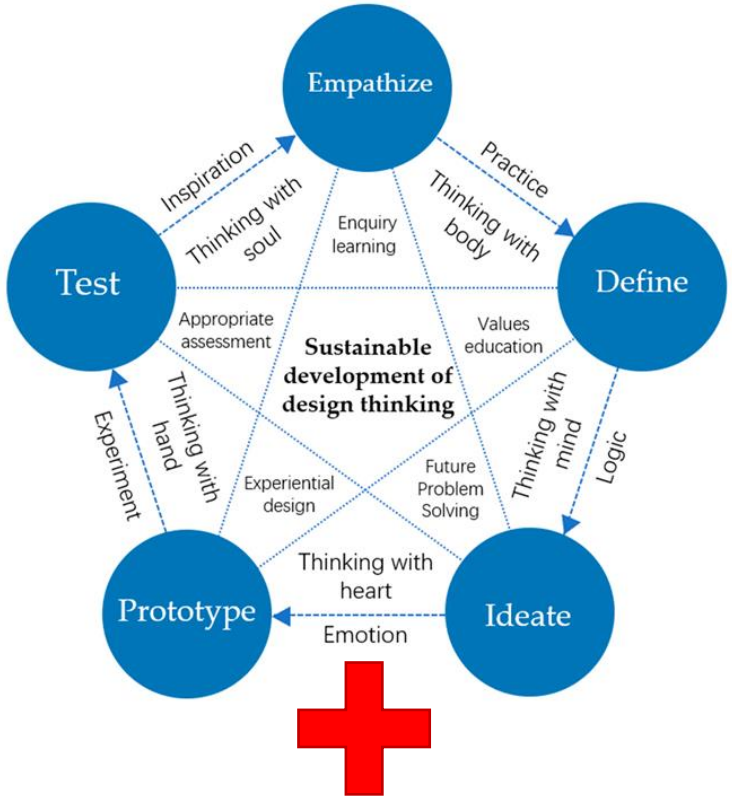


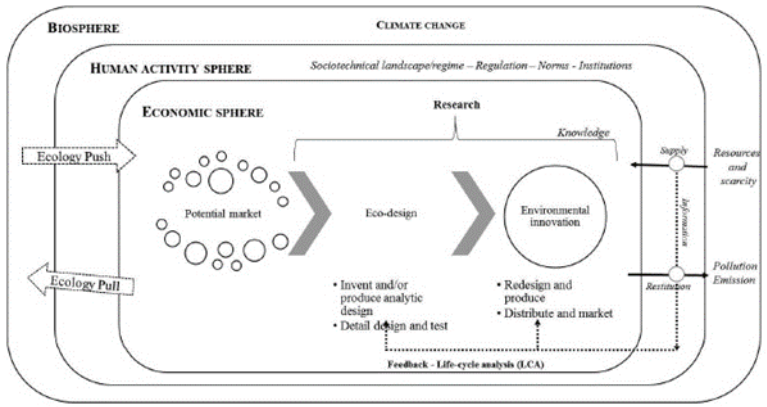


3D multi-faceted ecological environment structure

3D, AI informed, binary Building block

A 3D design reality shift





Information

Causality loops

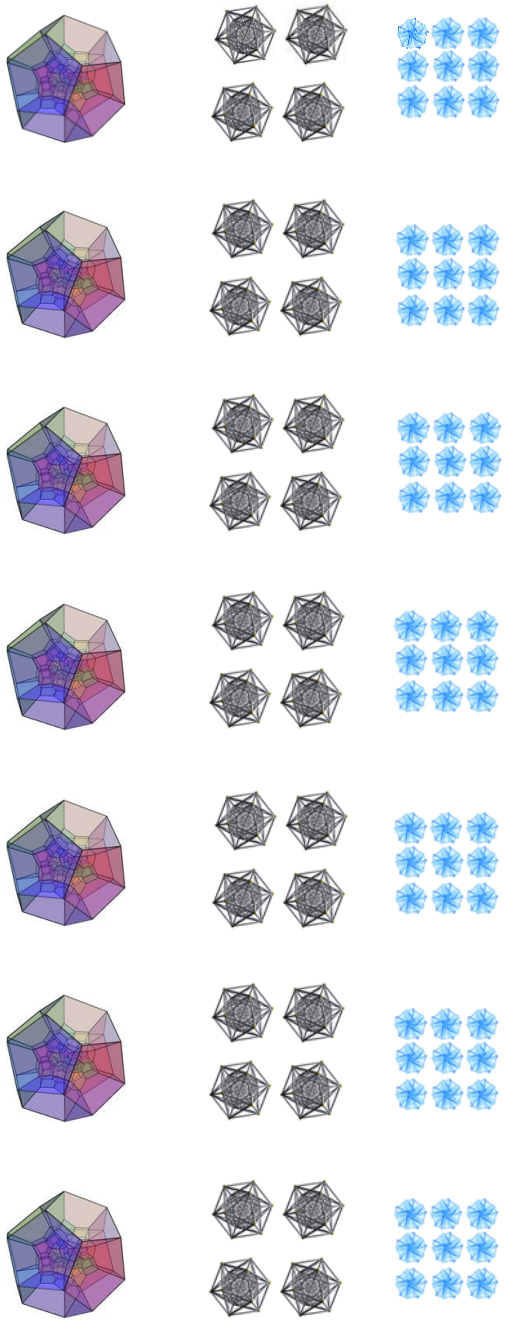
Non-determinism

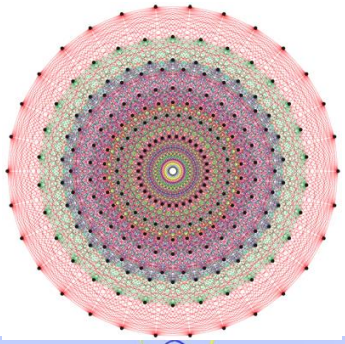
Consciousness

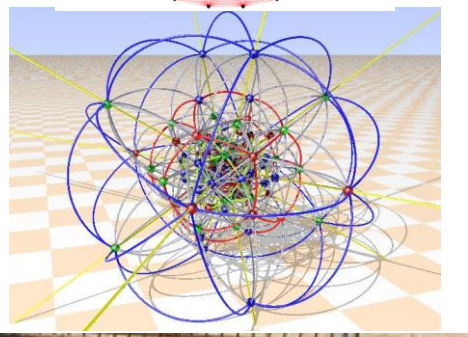
Pixelation

E8 Crystal

Golden ratio

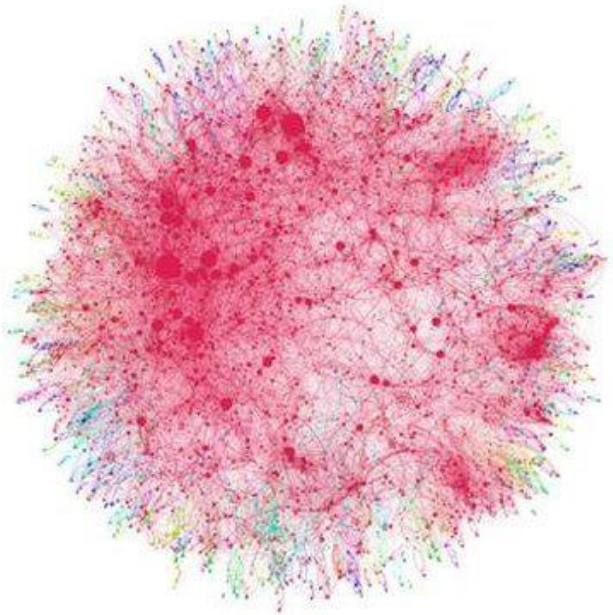


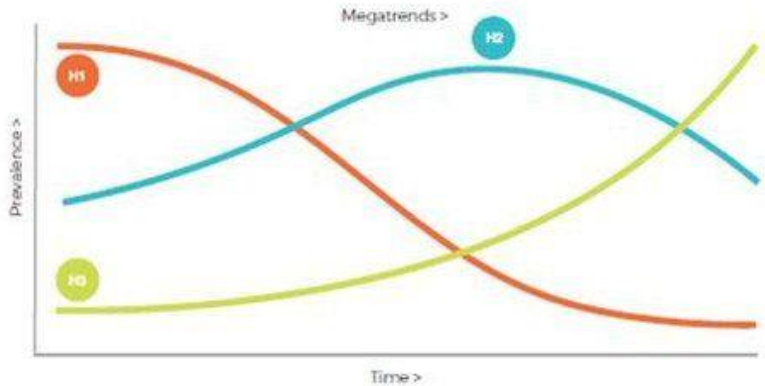


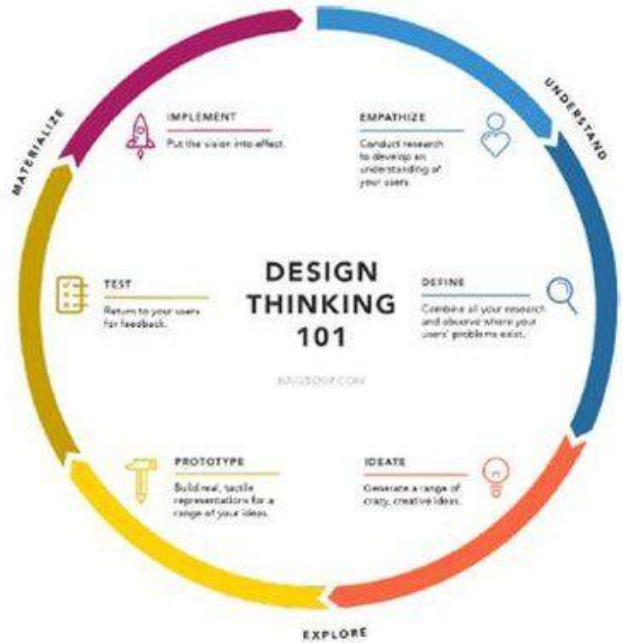


SYSTEMS, FUTURES & DESIGN THINKING

May 24, 2017 · MakerBay PMQ







SYSTEMS THINKING helps shift our mode of thinking or perspective – to see the bigger picture, the complex environments that our businesses operate in, and how everything is connected.

FUTURES THINKING helps businesses to probe a range of plausible futures, link to the present and apply strategic interventions.

DESIGN THINKING is the creative process that designers use to solve complex problems. It is human-centric and relies on prototyping + testing to explore design challenges of all sizes.

the purpose business

The “End of Life“, a peripheral observation?

How do we "best" include entropy?

Material lifespan?

Material degradation?

Deliberate material or plant degradation?

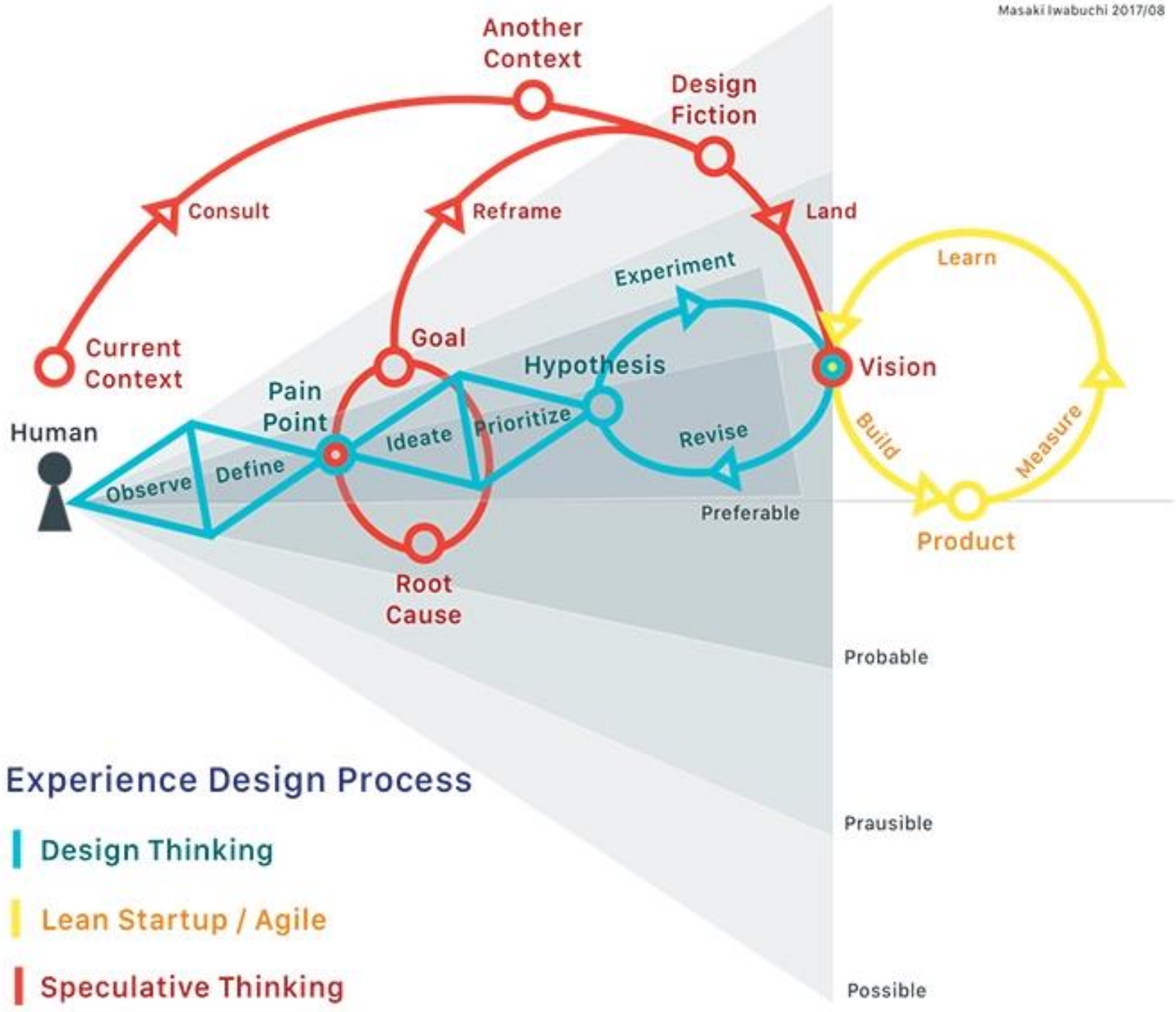
Material reuse?

Material recycling?

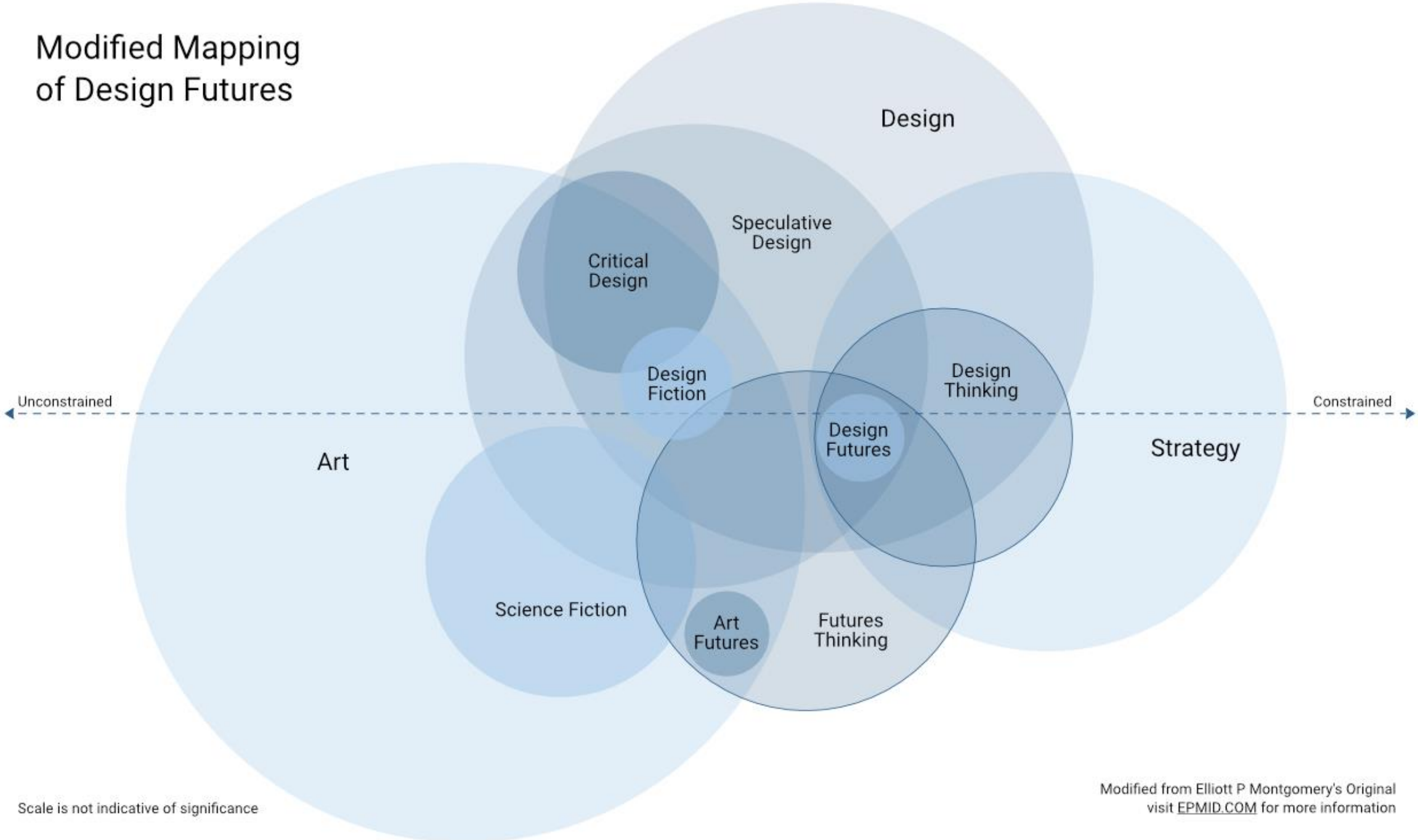
Plant matter recycling?

Energy transformation from one state to another (bio-decay/ bio-renewable-energy production... Etc)?

Vizualizing environmental design in terms of spotlight theory, as it might include peripheral observation and inclusion.



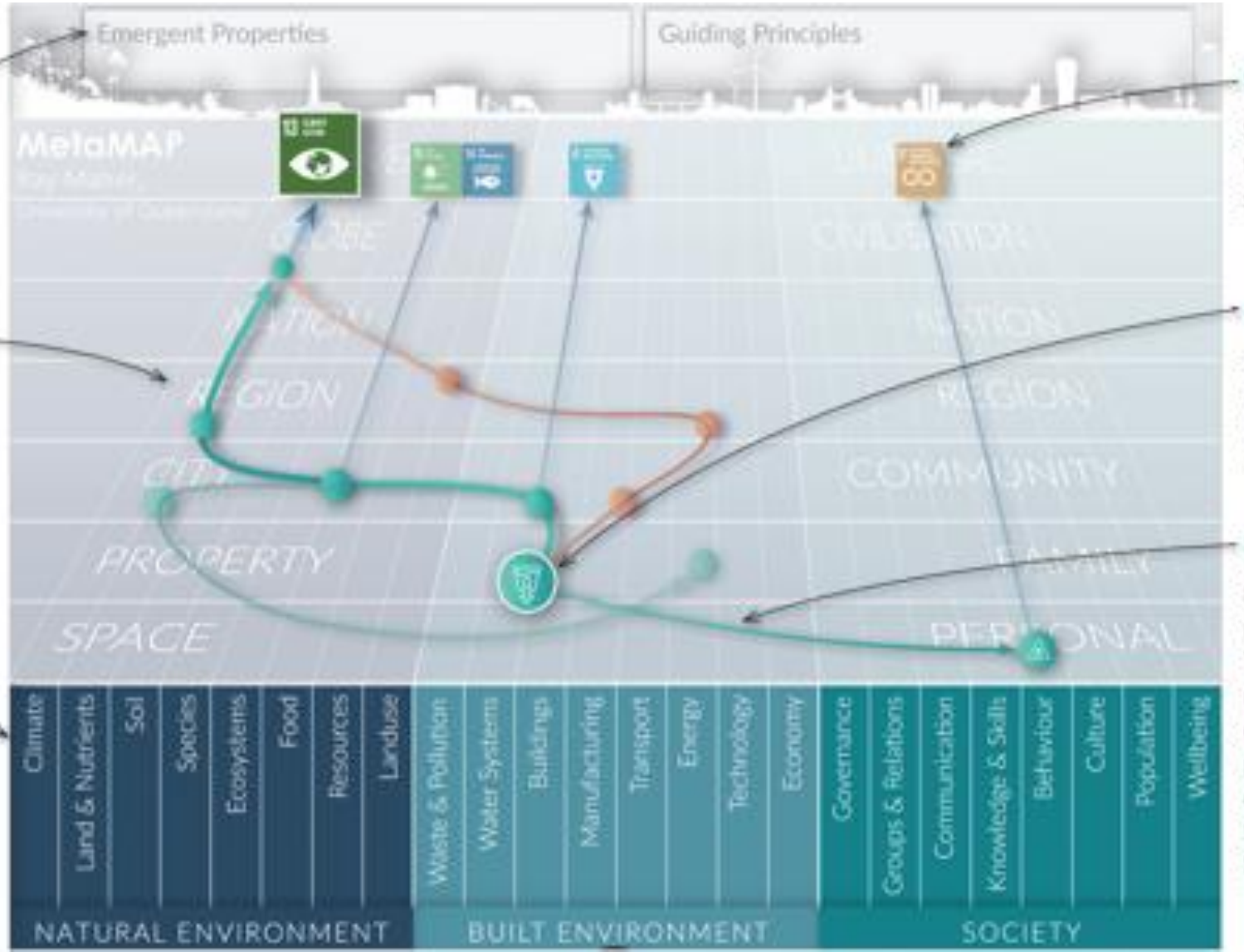
Modified Mapping of Design Futures



Scale is not indicative of significance

Modified from Elliott P Montgomery's Original
visit EPMID.COM for more information

Futures Mapping as Holistic Proposals



Emergent properties

These zones prompt users to consider higher-order phenomenon such as 'Sustainability', 'Resilience' or 'Feed-back loops'.

Y-axis Scale

Concepts are located according to their scale - smallest at bottom up to largest at the top. The scale is indicative, not definitive. This may represent spatial scale (left) or scales of social organisation (right).

X-axis Categories

Categorises different aspects of our social-ecological system grouped as Natural Environment, Built Environment and Society.

Sustainable Development Goals

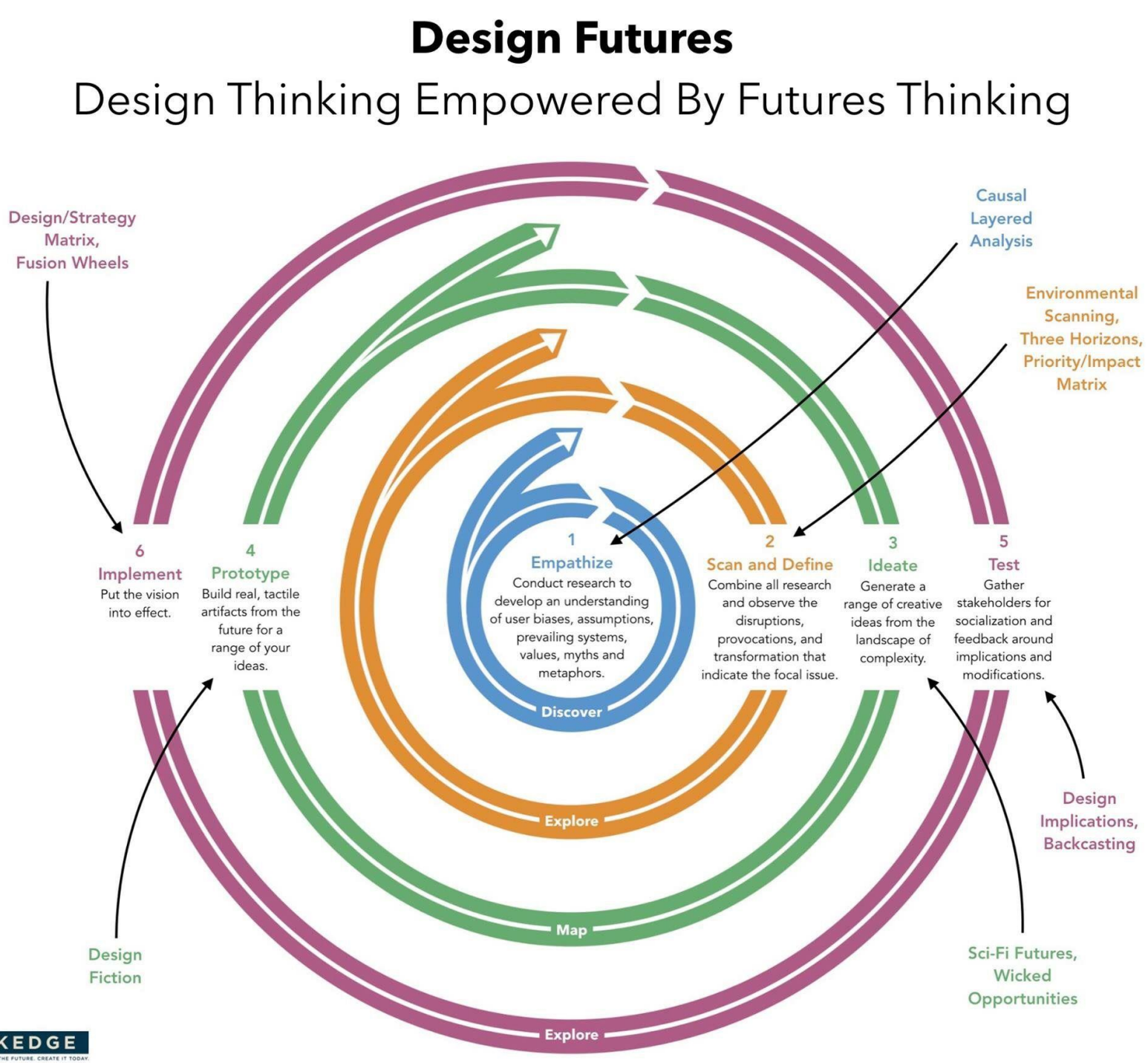
SDGs can be located on the 'Landscape' to help users identify where their system can help to achieve SDGs.

Concept

Each icon represents a noun- a concept added by users. These could be general (e.g. forest) or specific (e.g. rate of nutrient cycling).

Link

Each link represents a verb- a relationship between two concepts. These are coded to represent types of relationship e.g. increases, decreases, causes. These links can be existing or potential and could unfold across a defined length of time. Each link can be tagged with a link type e.g. Ecosystem Services.



Information

Causality loops

Non-determinism

Consciousness

Pixelation

E8 Crystal

Golden ratio

E8 Information

ROOTS

- At the root of emergence theory's formalism is a concept quickly taking hold in the theoretical physics community—that all of reality is made of information.

MEANING

- What is information? Information is meaning conveyed by symbols. Languages and codes are groups of such symbols that convey meaning.

RULES

- The various possible arrangements of these symbols are governed by rules. The language user makes free-will choices regarding how to arrange the symbols, in order to produce meaning, according to these rules.

APPLICATION

- Fundamentally, then, the existence of information must therefore imply a "chooser," or some form of consciousness, in order for it to be actualized.

E8 Causality loops

THEORY

- Causal loops gravitate as is a theoretical problem pattern in which a sequence of events (actions, information, objects, people) is among the causes of another event, which is in turn among the causes of the first-mentioned event.

COSMOLOGY

- In February 2016 the direct measurement of gravitational waves was announced. This provides us with a new method for exploring the universe—signalling that a shift in our understanding may be on the horizon

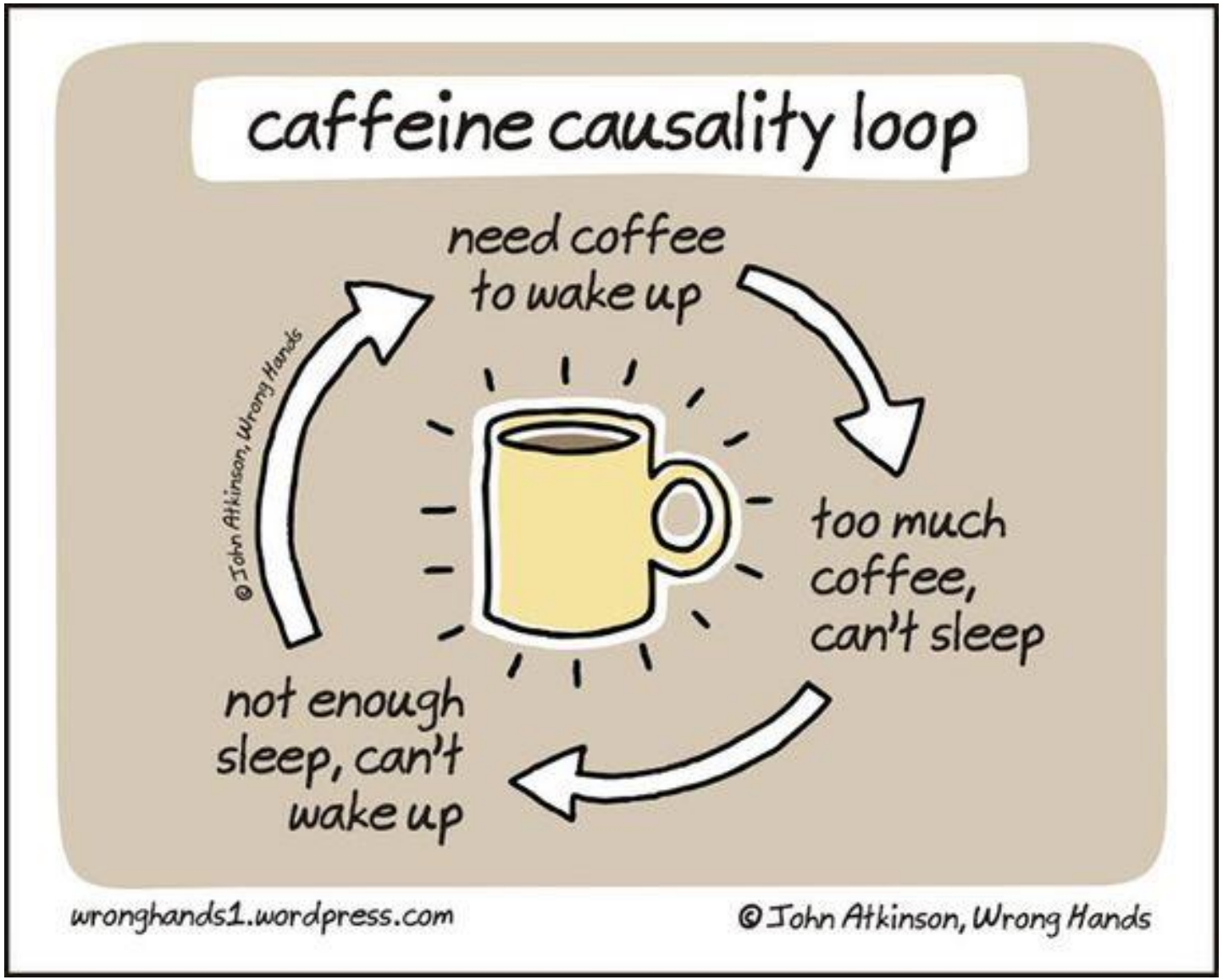
DYNAMIC TRIANGULATIONS

- Near the Planck scale, the structure of spacetime itself is supposed to be constantly changing due to quantum fluctuations and topological fluctuations. CDT theory uses a triangulation process which varies dynamically and follows deterministic rules, to map out how this can evolve into dimensional spaces similar to that of our universe.

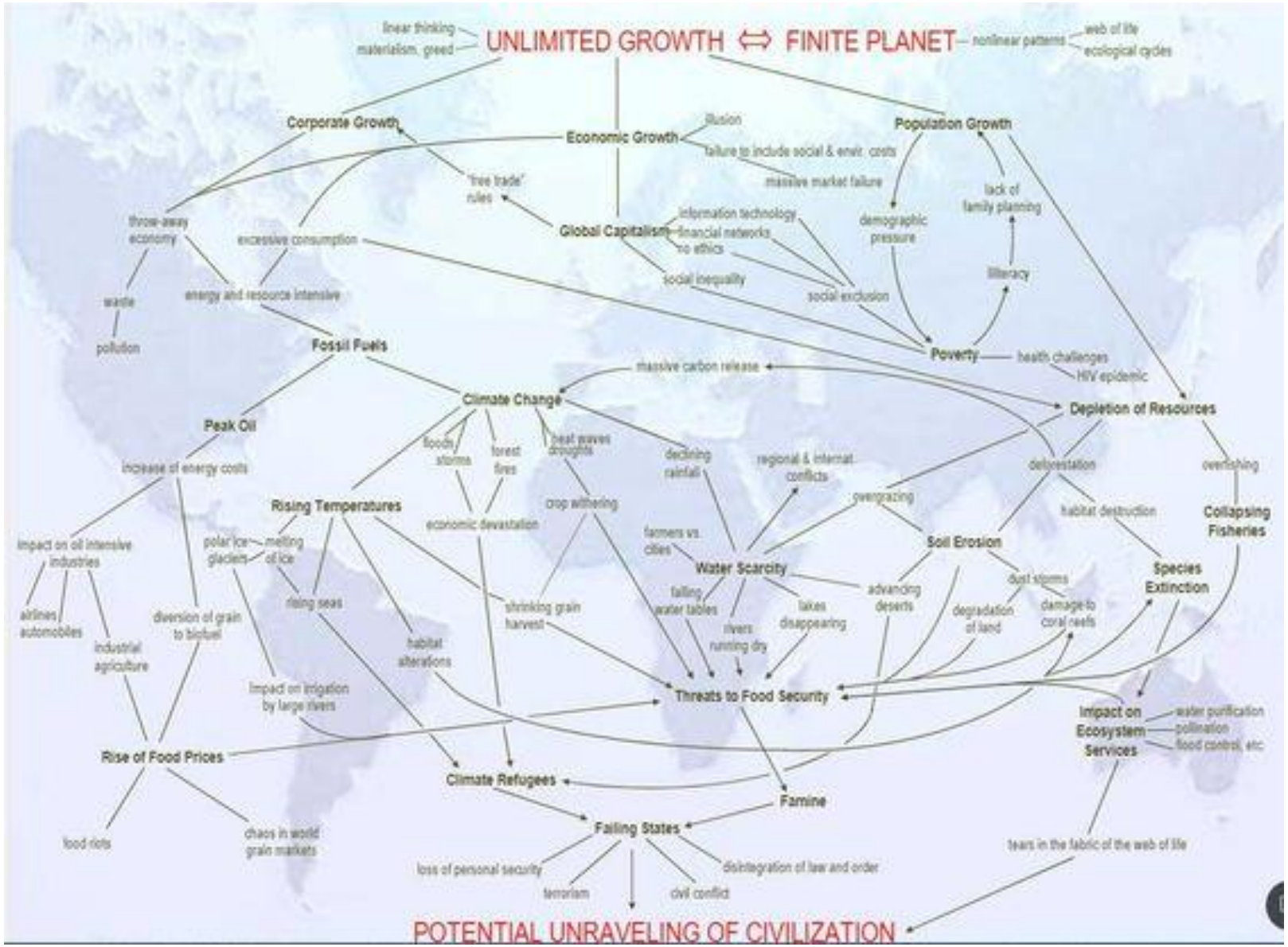
DEFORMATION SYMMETRY

- Some materials exhibit strong coupling between mechanical deformation and local degrees of freedom in the material. In liquid crystal materials, freedom can be controlled by various ambient fields, giving rise to programmable shape-shifting objects.

Fractal scale Causality Loop



Global scale Causality Loop



Energy

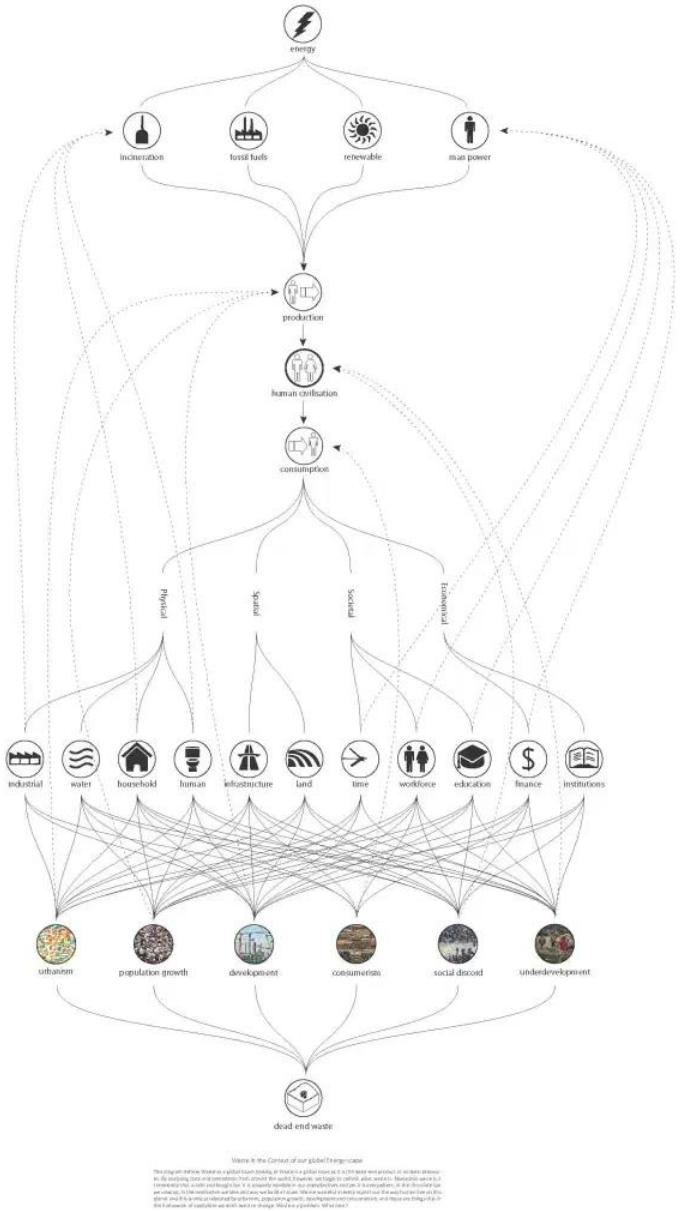
Incineration, Fossil fuels, Renewable, Manpower.

Production
human civilization
consumption

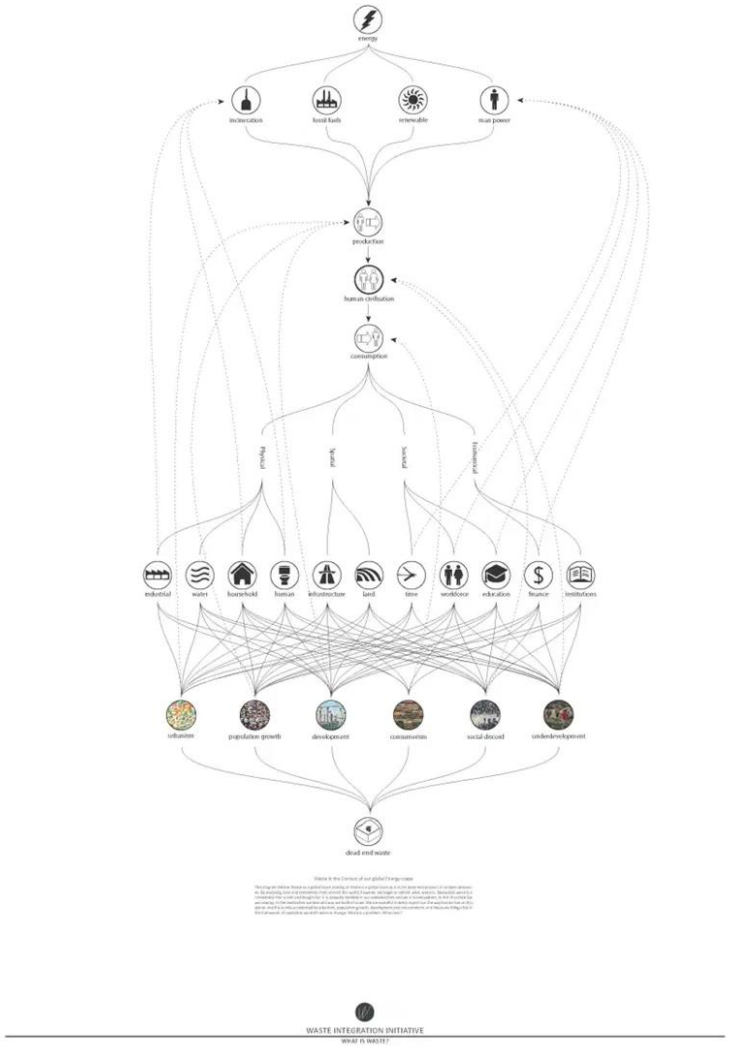
Physical	Spatial	Societal	Economical
Industrial Water Household Human	Infrastructure Land	Time Workforce Education	Finance Institutions

Urbanism, population growth, development, consumerism, social discord, underdevelopment.

Dead end waste.



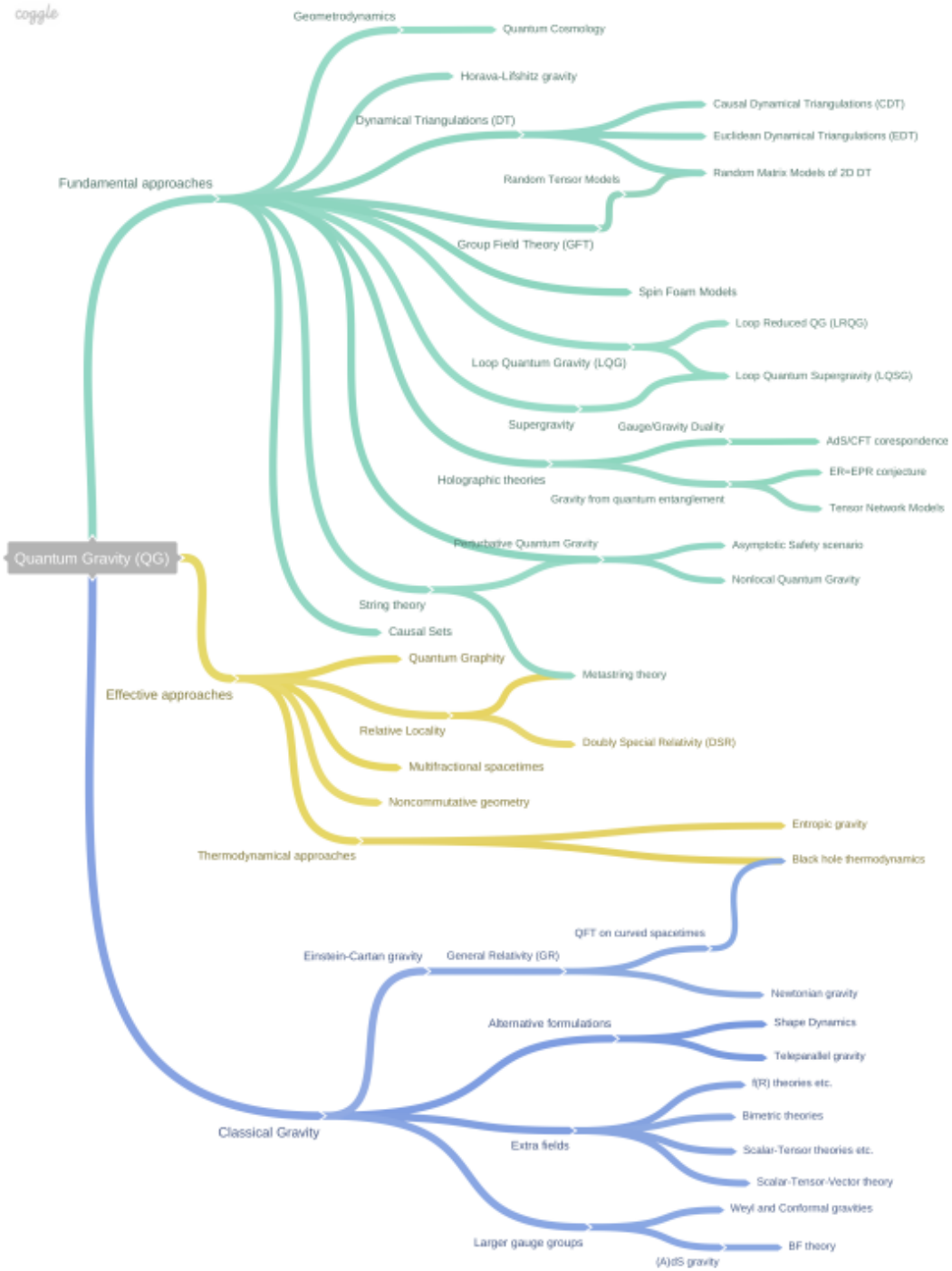
A Pixelated reality



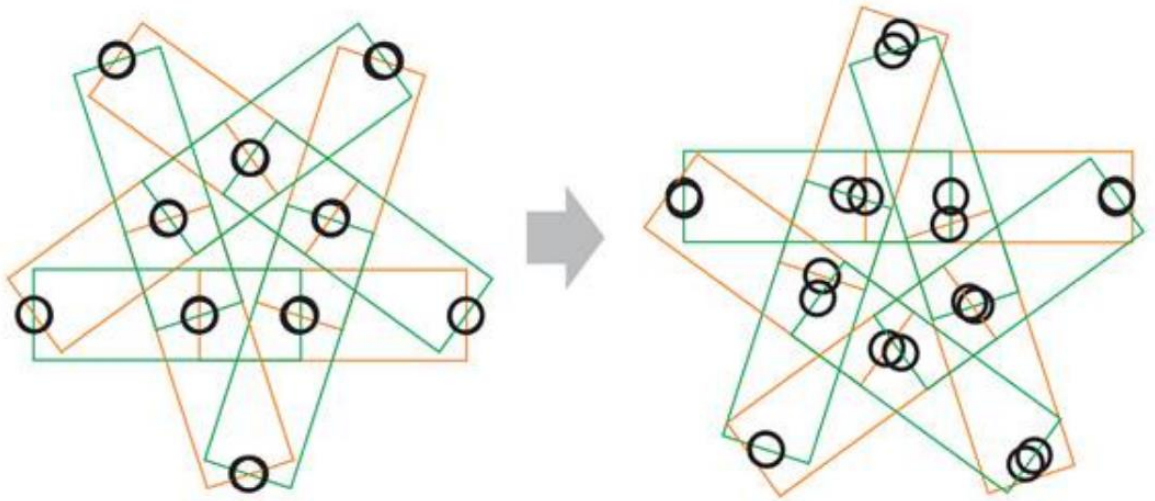
4th dimensional possibilities mapped in 3 dimensions

Nikola Tesla said;

“If you wish to understand the Universe think of energy, frequency and vibration.“

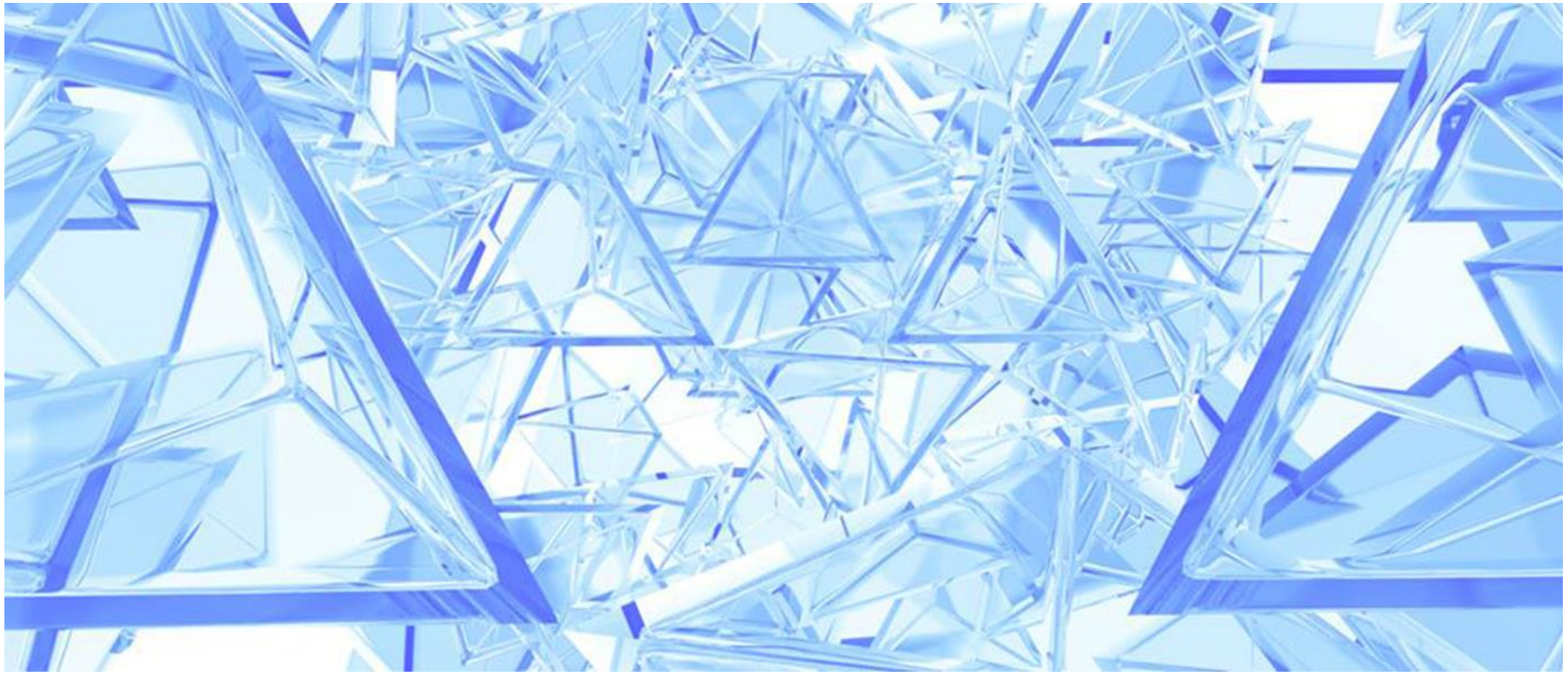


E8 Golden ratio



- To optimally network 1D two-letter codes in 2, 3 and 4 dimensions, we must use the Fibonacci chain with the two letters as 1/ϕ or the connectivity breaks down. An infinitesimal deviation from the golden ratio spacing renders the object (1) not a quasicrystal because arbitrary closeness of nodes will exist and (2) a non-code because there will be an infinite number of 1D symbols as lengths and (3) not a quantum topological network because non-local influence where an action on one point influences other non-local point on/off states breaks down.
- We know that the reason for this is because, in the universe of all ratios closed under multiplication and division, only ϕ possesses fractal self-similarity. The above diagram on the left shows a network of five short Fibonacci chains, where nodes overlap perfectly due to the fractal self-similarity of ϕ. To left, we see how a small deviation from the golden ratio spacing destroys the connectivity rank by lowering the average near neighbour valance magnitude and introducing arbitrary closeness between nodes.

Turns out you actually are the center of the universe.



Thankyou.