

A General Systems View of Systems In–Context

GST/n

Discovering the Genome of Language

It started with focusing on

- 1. Observations of working systems, not abstracted theories**
- 2. A physics theorem that physical change needs to have continuity,**
- 3. Found to be produced by organizational processes like “Growth”**
- 4. A study of the organization behind the flows of nature**
- 5. Emerging from their contexts – by an S-curve**

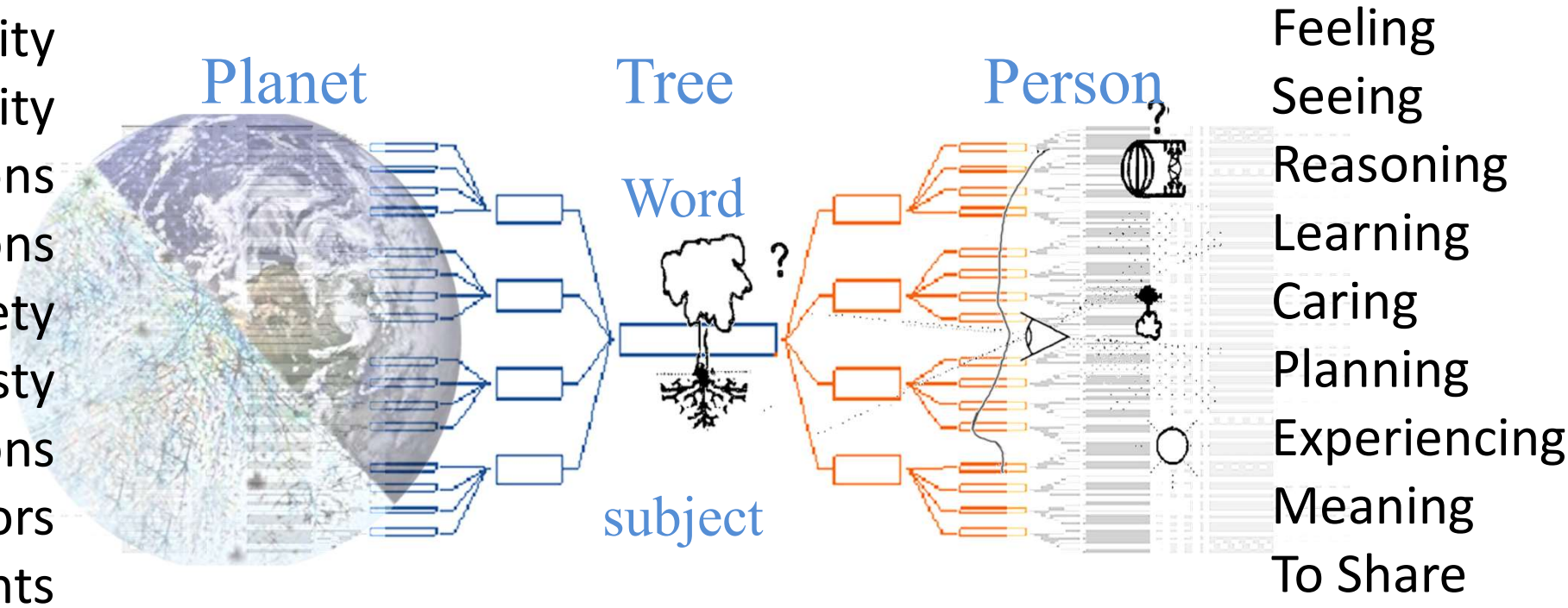
Our minds imagine what we see is there, unaware of how it reflects self-animating and organizing systems,

The genome of language

The Early Explorers, leading human exploration of the earth, curated and passed on their reified understandings

- Faceted elements of nature’s designs and our meanings
 - Recorded as cultural knowledge to share
 - Linked to commonly recognized natural forms
 - Directly connecting minds to nature

Physicality
Systemicity
Seasons
Horizons
Variety
Majesty
Relations
Behaviors
Inhabitants

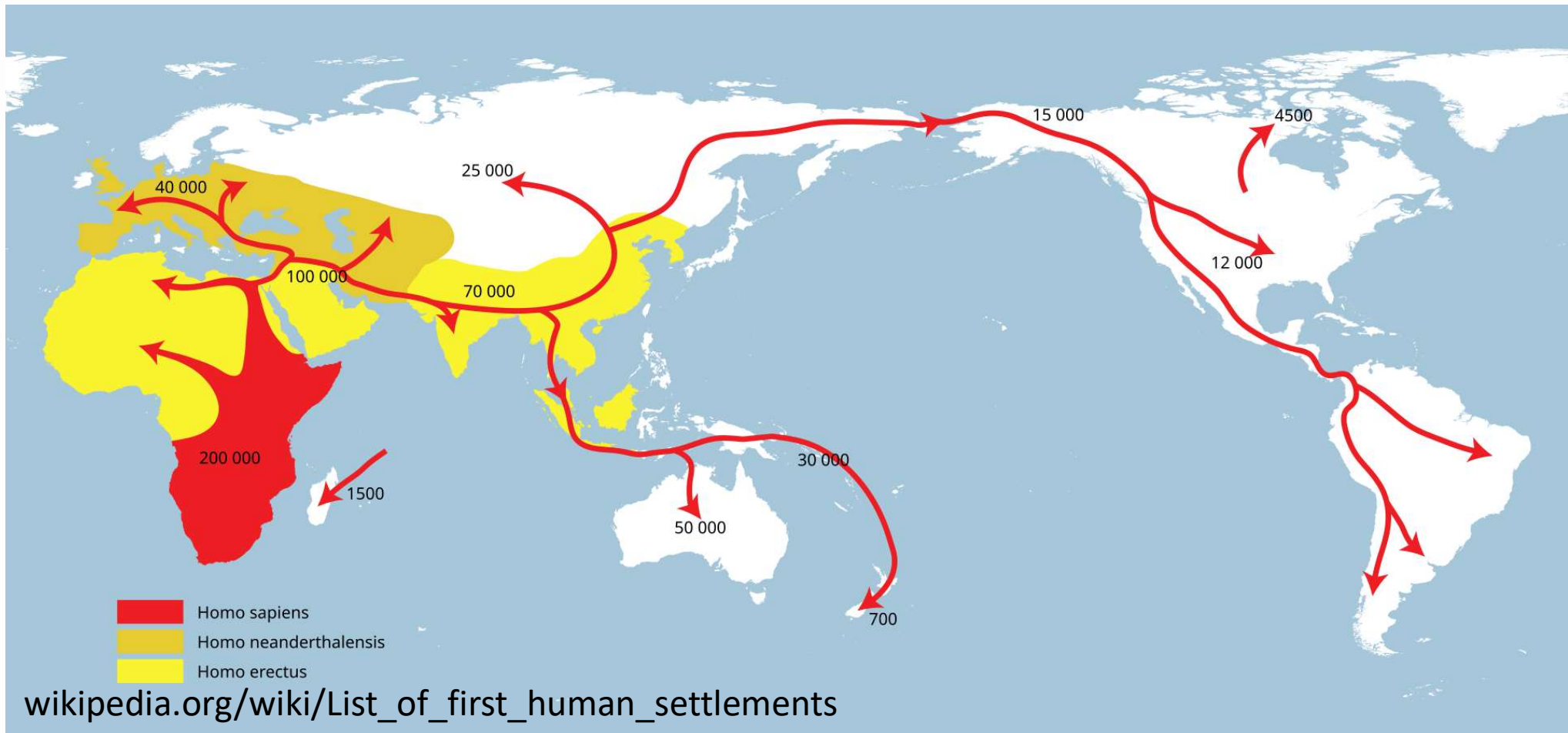


Sounds pointing to nature’s designs, shared with values added by explorers

Our long exploration of life in nature's systems

Our Foundational Indo-European Age of Travel, Craft, & Cross-Talk

H. Sapien explorers in the Mesolithic and Neolithic built the foundations of profound learning, sounds for observations, to attach useful meanings for, like scientists, exposing a vast collective intellect at the dawn of history.

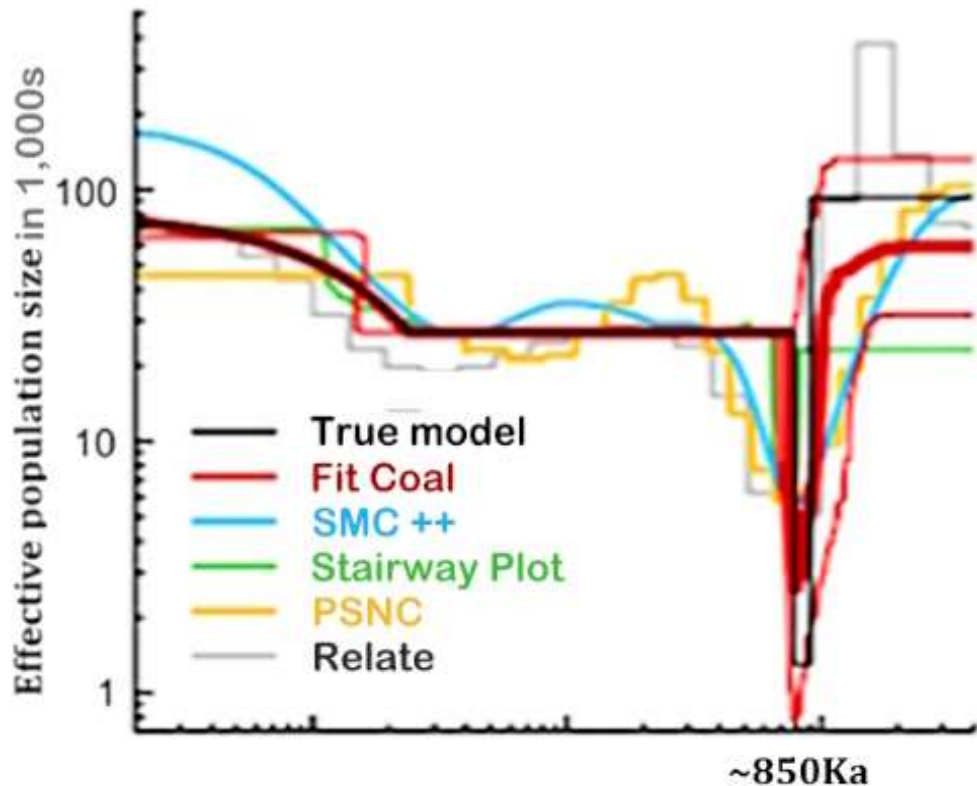


Our long exploration of life in nature's systems

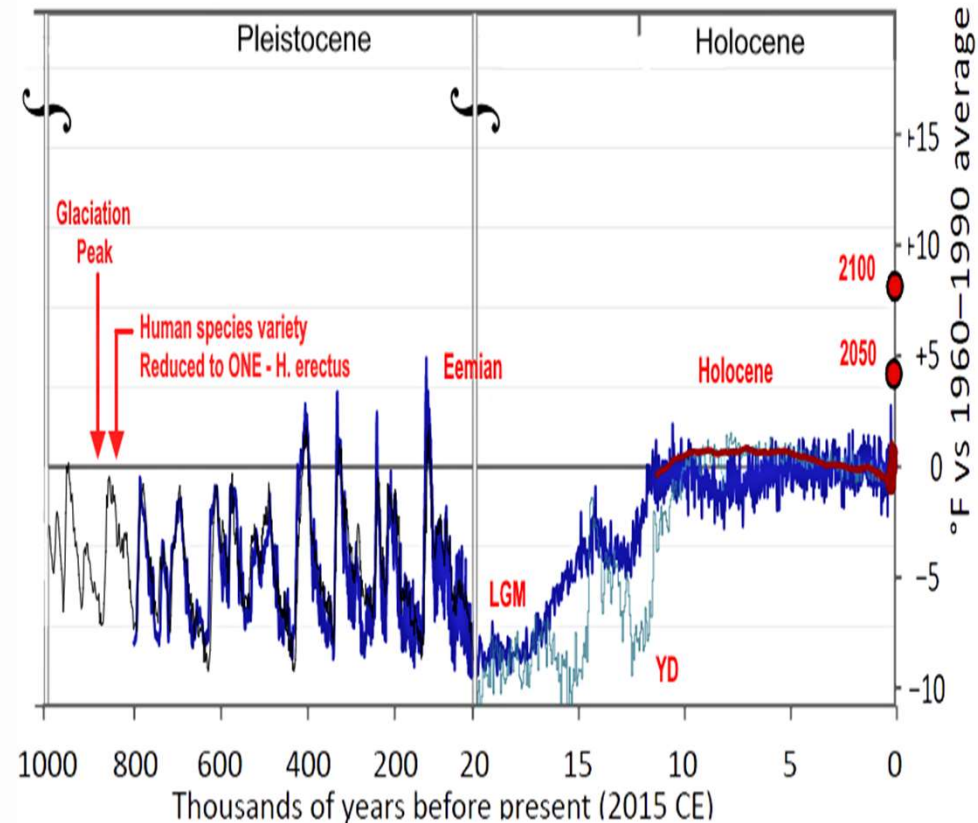
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A Great Bottleneck in Human Evolution

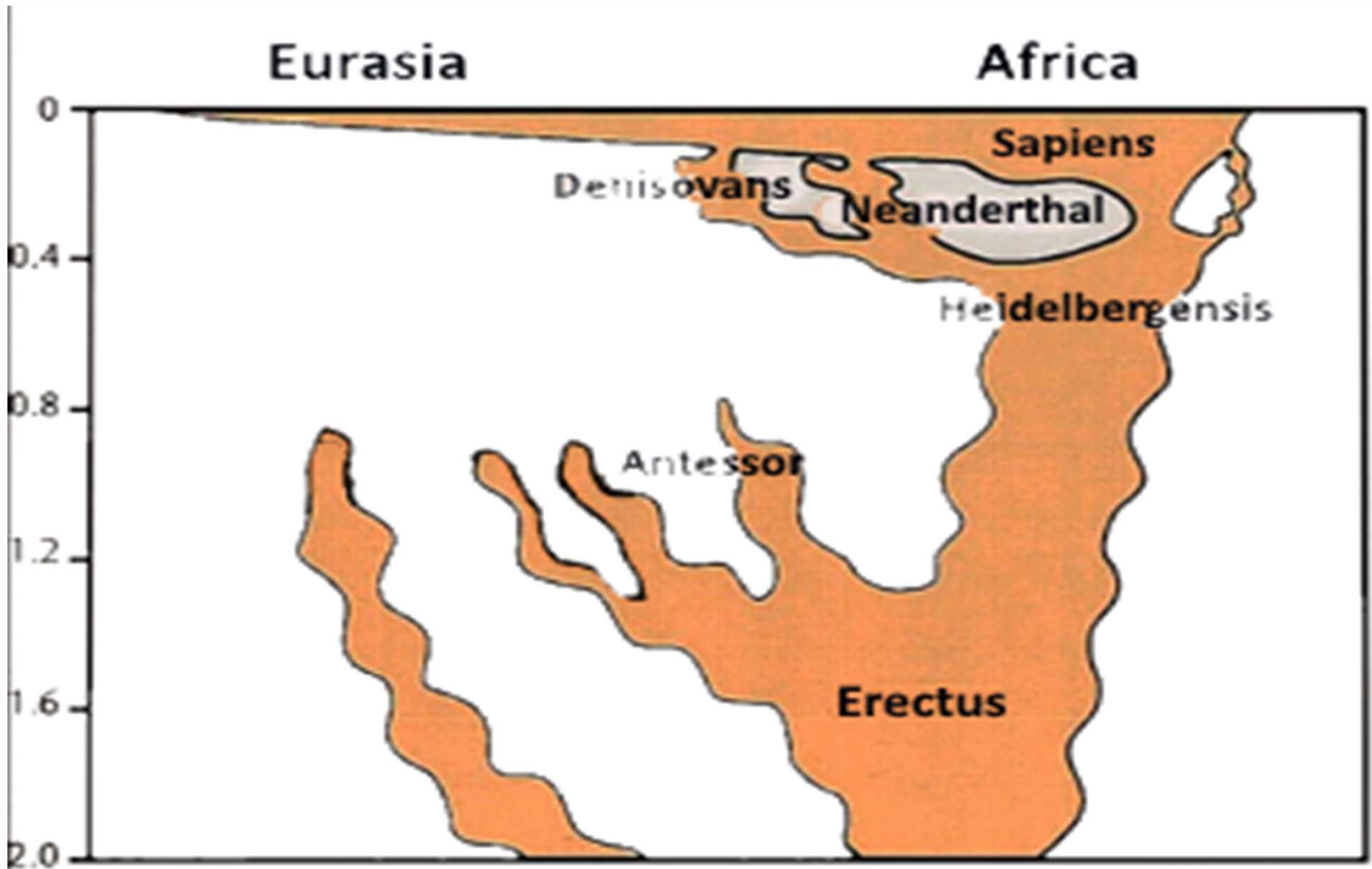


The Temperature of the planet earth



Our long exploration of life in nature's systems

The winnowing of Hominid Varieties at the Bottleneck



Stringer Graph model of bottleneck (illustration)

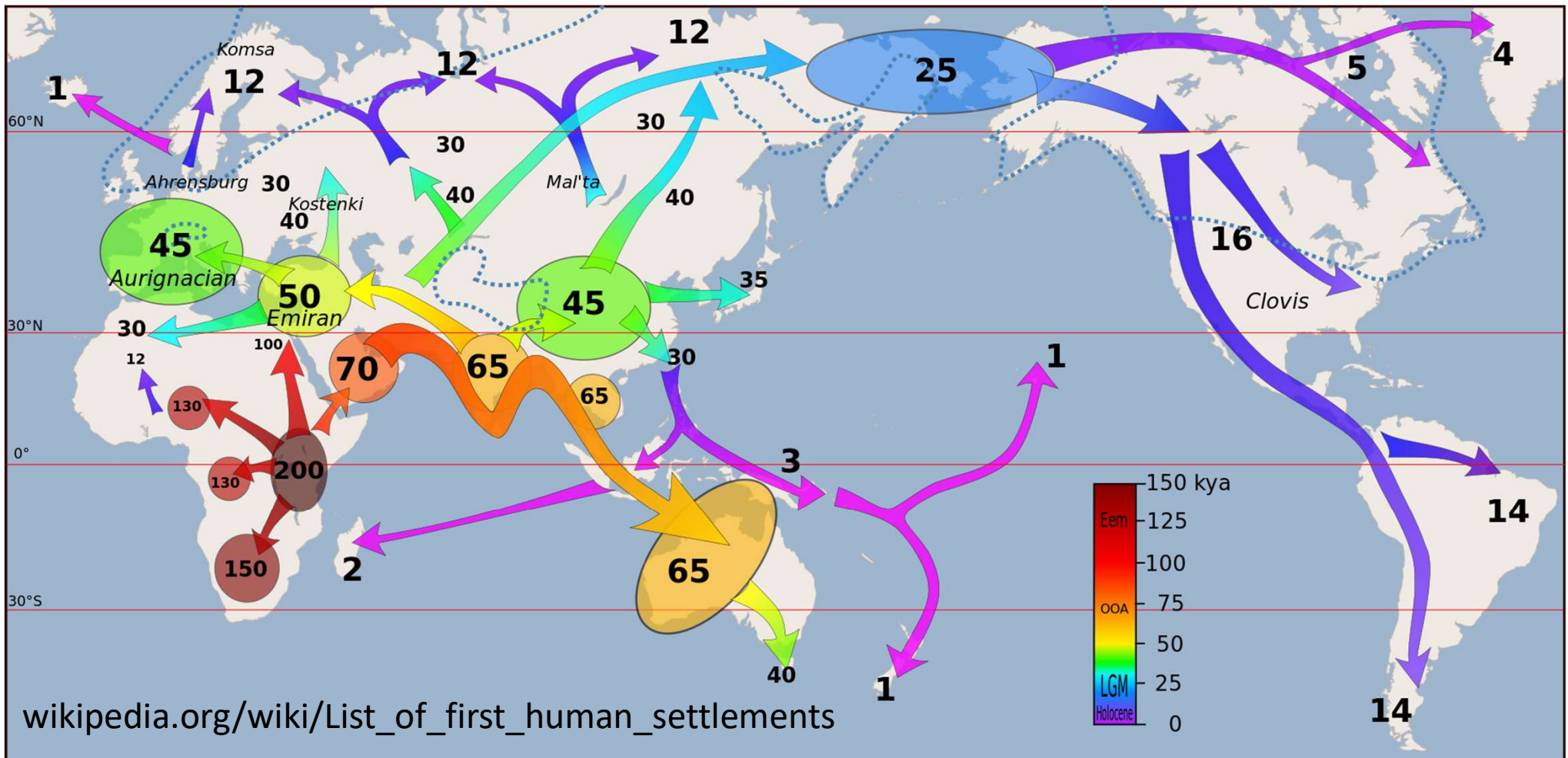
Chris Stringer (CC BY-SA)

ed-JLH 2024

Our long exploration of life in nature's systems

Our Foundational Indo-European Age of Travel, Craft, & Cross-Talk

H. Sapien explorers in the Mesolithic and Neolithic built the foundations of profound learning, sounds for observations, to attach useful meanings for, like scientists, exposing a vast collective intellect at the dawn of history.



The foundation was ~200 kyr tribal life before

The great move of the explorers north, east, and west

Homo Erectus (2ma to 200ka) is the species that survived the 900ka weaning of human life

I. 500KA ON – HOMO SAPIENS IN AFRICA

A. settlements

1. African 200ka

B. First ages of nonverbal talk, crafts, culture, dancing

II. 70KA ON – TO START OF GLOBAL SPREAD

A. One culture spread to new lands

1. Arabia 70ka, India 65ka, SE Asia 65ka, Australia 65ka

III. 50KA ON – THE GREAT SECOND WAVE

A. The Indo-Europeans

1. Diaspora culture divided as it spread to create local tongues from common origins of sign and signal meanings,
2. Sharing new ideas with their old connections, the new cues of complex language were unified by the cross-talk.

- a) Middle East 50ka, Greece, Italy,
- b) So. Europe 45ka, China 45ka,
- c) Ukraine & Southern Stepps 40k

3. Northern SteOpps 30ka
4. To the American continent 25ka 7 16ka

B. Earliest Art

1. Cave Painting by Neanderthals 45ka
2. Figurine sculpture & Jewelry also N? 40ka

IV. 20KA START OF MULTI-SYLLABLE WORDS?

A. Established related regional languages,

1. Starting to share powerful “social organization technologies” like {ma thr} and {fa thr}, and {sys tem}

V. 12KA GETTING ORGANIZED

A. End of the ice age opening the northern Stepps. 12ka

B. Rise of systematic farming 10ka

VI. 5KA – PERFECTING ADVANCED LANGUAGES

A. Blossoming of Bronze Age societies 5.3ka

1. Brilliant democracies captured by capitalism
 - a) Brilliance of early egalitarian Greek & Roman cultures
 - b) Seeming to be built on 20+ centuries of very clear thinking

B. Greek, Latin, Chinese, Hebrew, – multiple others

C. Iron age 3.2ka

1. The collapse of “Atlantis”
 - a) “Greek Dark Age”

VII. 3KA

A. Rich storytelling Homer

VIII. 2KA

A.

IX. 1KA

A. The Pheonix rising as obsessions with turning lead into gold create lead to modern science, used for our systematic multiplying impacts on each other and nature.

X. 1900 WAR AND LOST OPPORTUNITY

A. Civilization trapped by an endlessly more disturbing spiral

In travels back and forth, the networks shared the sounds and gestures that best served the collective consciousness the subjects, prefixes, and suffixes emerged, as the new way to share deep knowledge.

the suffixes,

- Add to the subject meaning tagged on the end,

the prefixes,

- Add to the meaning added at the beginning,

To add the right nuances for:

- relating to the context of the word's use?

Noun Suffixes:

<i>Suffix</i>	<i>Meaning</i>	<i>Example</i>
-acy	state or quality	privacy, <u>fallacy</u> , delicacy
-al	act or process of	refusal, recital, <u>rebuttal</u>
-e/a nce	state or quality of	maintenance, eminence,
-dom	place home being	freedom, kingdom, boredom
-er, -or	one who	trainer, protector, <u>narrator</u>
-ism	doctrine, belief	communism, narcissism,

Quality Suffixes:

Suffix	Meaning	Example
-tific	in the manner of	scientific - well-defined
-fine	make finite	define - To fix, bound, limit
-ivity	potential, bias	captivity, longevity, activity
-ow	in a manner of	narrow, widow.shadow
-ence	a contextual force	science influence presence
-lapse	slip, expire, cease	collapse, relapse,

Where in the world did ALL that come from? It's too big a design to design.

Reading natural systems in context

The communities that spread east and west of the Mediterranean appear to have all been aggressive learners, and all shared what they learned with their old networks, like:

- **Noticing changes “coming to a head”** - requires intuitively reading the suddenness (accelerations) and sensing the system's instabilities for signs of how it will turn.
- **Noticing “changes in relationship”** - anything changing from one form to another, like hesitations, interruptions, resistance, etc.- may indicate context change.
- **Noticing “ironies remaining unresolved”** - indicates patches in a stable structure that might loosen or open, like smart leaders taking dumb paths or the reverse.

Think of descriptive words, study their syllables

And other words that use the same ones

And

Practice using words making material references to natural realities and experiences

To understand and be understood!

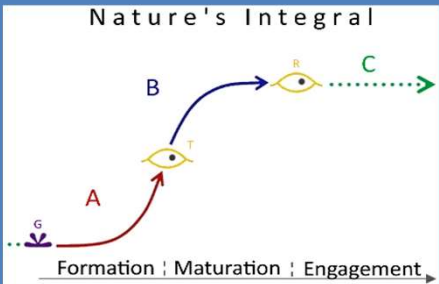
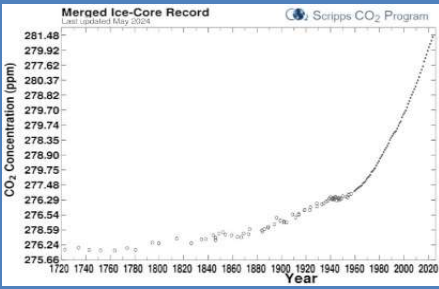
joining Abstract and Experiential Systems Thinking

Each used as a window on the other

Like the use of feeling on a subject to test reasoning and the reverse

What is the difference between abstract and experiential learning?

Comparing subject responses of each

Subjects	Abstract learner	Experiential learner	Combined
	<p>The shape is nice, but form and engagement have no scientific meaning</p>	<p>Thank you. It's abstract, but it is also the story of how everything works. Now I know to look for the changes!</p>	<p>Oh my, both say. The abstraction helped me look at the contexts and learn much more about how things work.</p>
<p>{co o p e r a t i o n}</p> <p>[com muni ca tion]</p>	<p>Interesting, I never realized words are geometries of meaning</p>	<p>I don't get it. Why look at syllables when they're just sounds put together?</p>	<p>Oh, I see. They are the most ancient meaningful sounds, put together to make rich pictures</p>
	<p>This is a data curve with huge scientific meaning. It is the clear path to our future, but it must change somehow, too, but who knows how.</p>	<p>Oh, it's so frustrating that nobody in charge seems to see how we're destroying the planet so fast.</p>	<p>This is in everyone's experience and works out fine if you just change from making to caring for things. Might we do that?</p>

With language at first firmly anchored to observation and experience

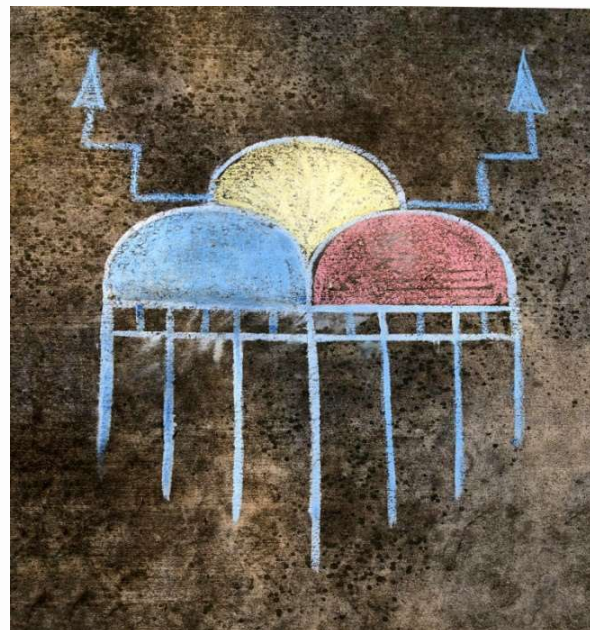
Play with abstractions was likely, not misleading,
perhaps beautiful and poetic.

But when abstractions proved as unusually powerful as magical thinking

Like lending tokens of wealth to creative people, making both rich

Passions separating people from nature took over

Growth to Collapse



Growth to War



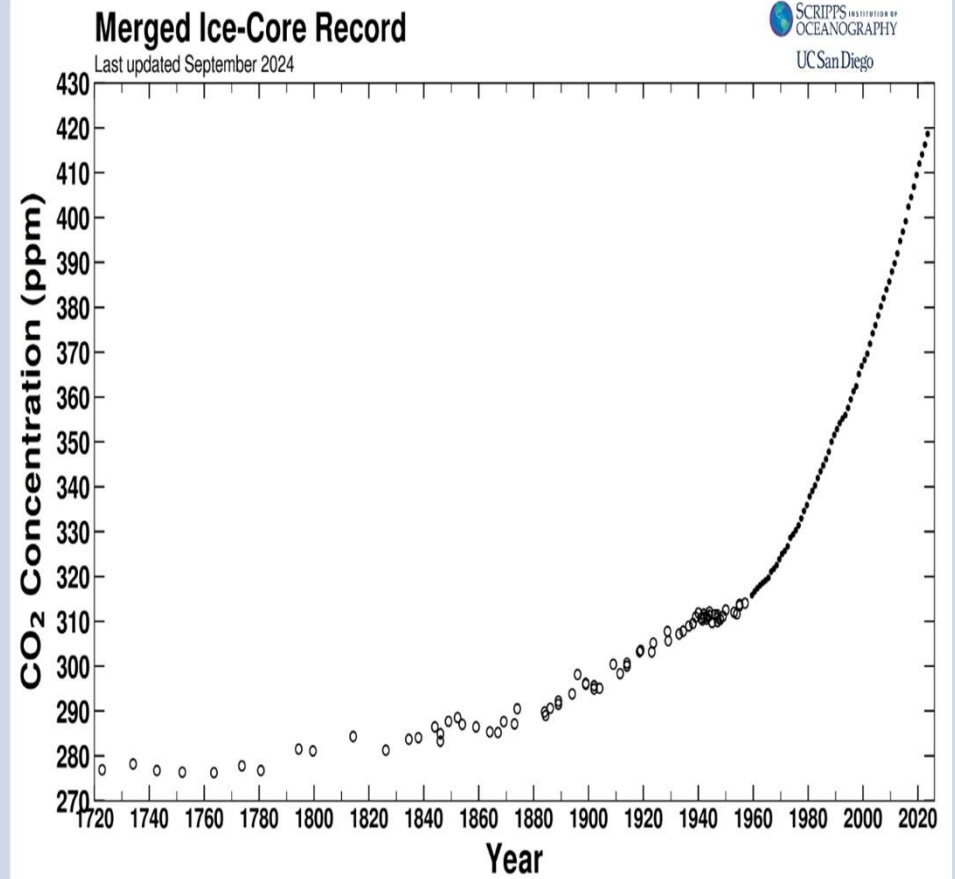
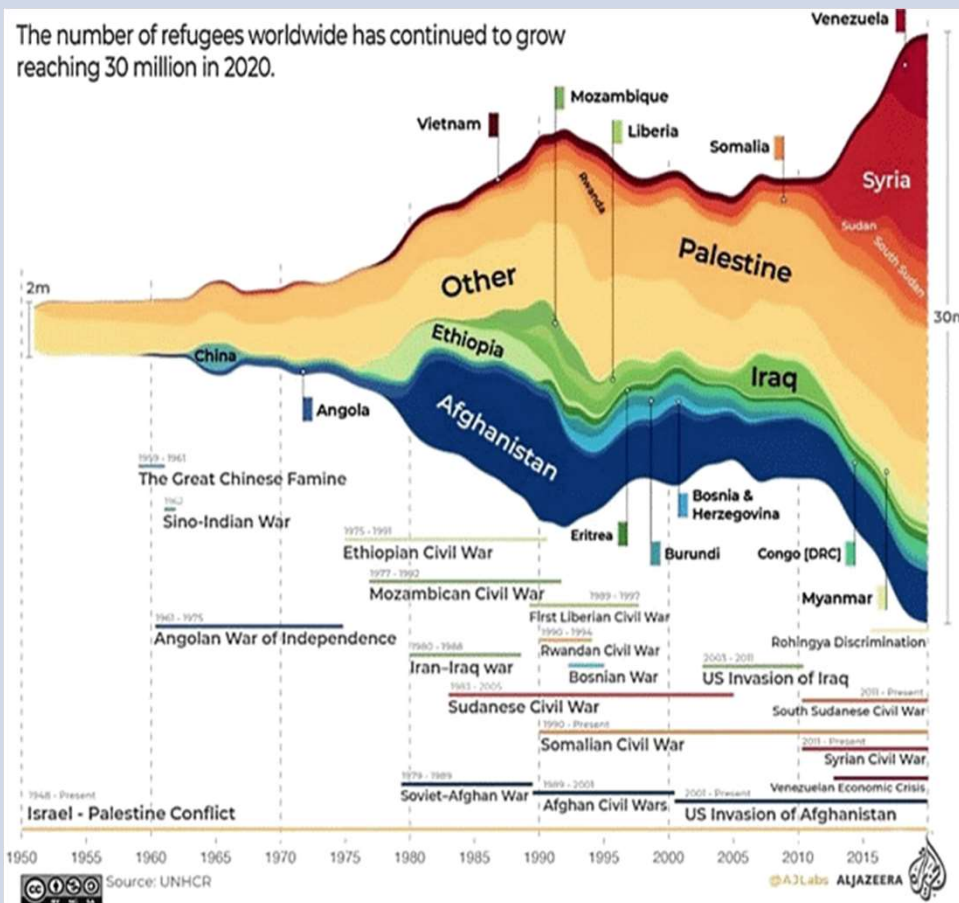
Two of today's transformations in search of profits

Many of us recall the pattern of new waves of migration, wars, famines, and failing states. What else do we recall? What other pressures added to it? What are its side effects and burdens it spread all around?

What caused the layers to build on each other? Which ones would spread all through the global system? CO2 has exploded the whole time we said we were reducing it, rising ever faster. Where is the blindness?

Global migration is accelerating still.

The number of refugees worldwide has continued to grow reaching 30 million in 2020.



Contextual, Conceptual + Each Having Their Say would imply

Three New Scientific Methods

Each working on their own And Together – Some assembly required

Abstraction reconnecting with rich contexts (ending their blindness)

Experience discovering how local patterns fit and add up to big ones

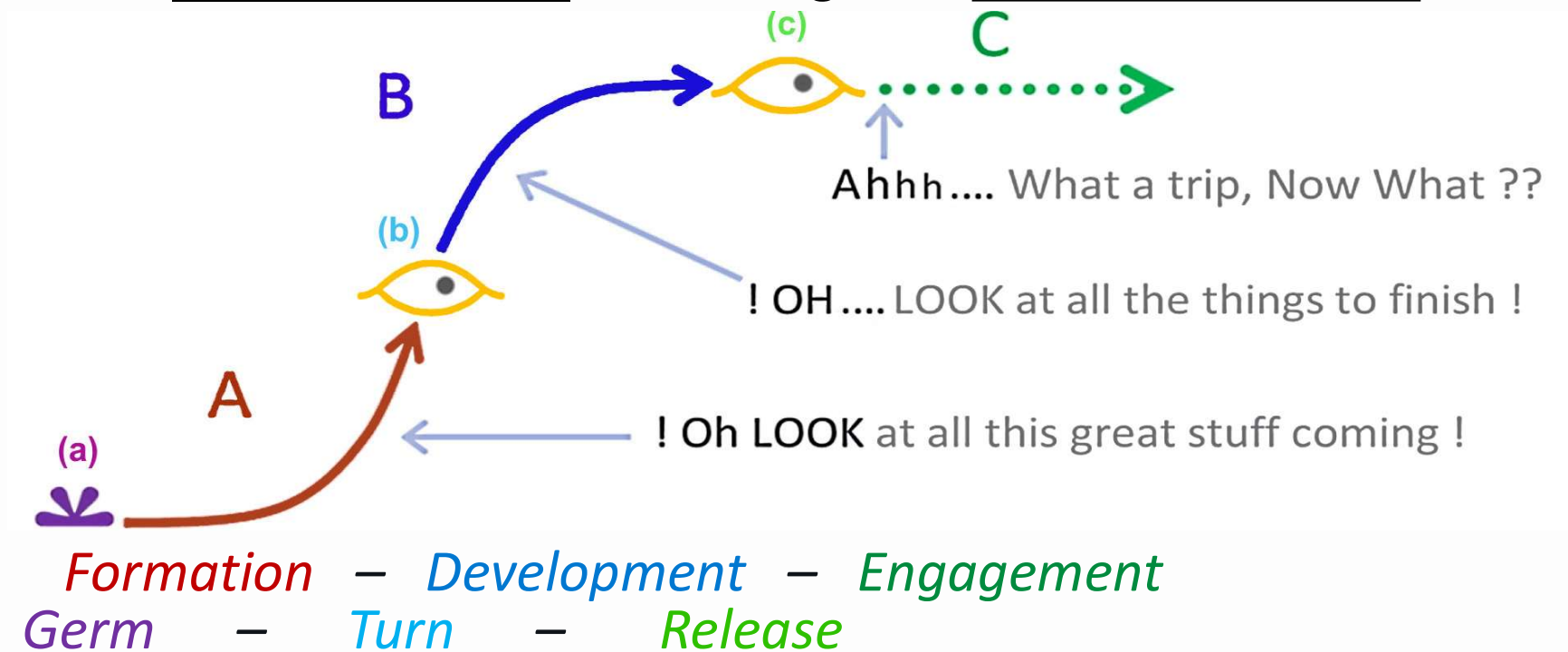
- For theorists, the most radical step may be simply taking an interest in a subject's contexts, system self-animation, and opportunistic behavior.
- Science finds so many useful rules, why be concerned with contexts?
 - We rely on systems, and systems rely on their Contexts
 - Contexts are also what cause systems pushed to their limits to so misbehave
- Nature is so very “lively,” doesn't it make sense to make that a subject, It's where so many things go wrong, shouldn't we study it?
 - How full of surprise nature is, after long silences responding energetically as things spring to life. What's not to like?
 - Don't they self-animate by exploding their resources, what could go wrong?

Reading natural processes guided by abstractions

Nature's Integral

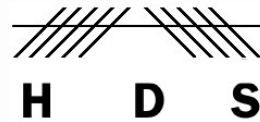
A germ (a), followed by formation **A**, its turn (b), for development **B**, seeking perfection (c), and release for engagement **C** toward reaching its full potential.

an Inside-World connecting with its Outside-Worlds



— Growth as an exploratory process of emergence & adaptation —

New Science for Natural Systems



Resource Links, Additional Topics Below

ISSS 2024 Slide Set and Paper

<https://synapse9.com/ISSS-24>

Contact & Research

<https://synapse9.com/signals/>

but

What taught us today how to understand all this
all the complexity of life's patterns and processes?

It seems to be language!

but where did such rich languages come from (?) to sometimes give any of us such deep insight into such incredibly diverse situations we may have never seen before?

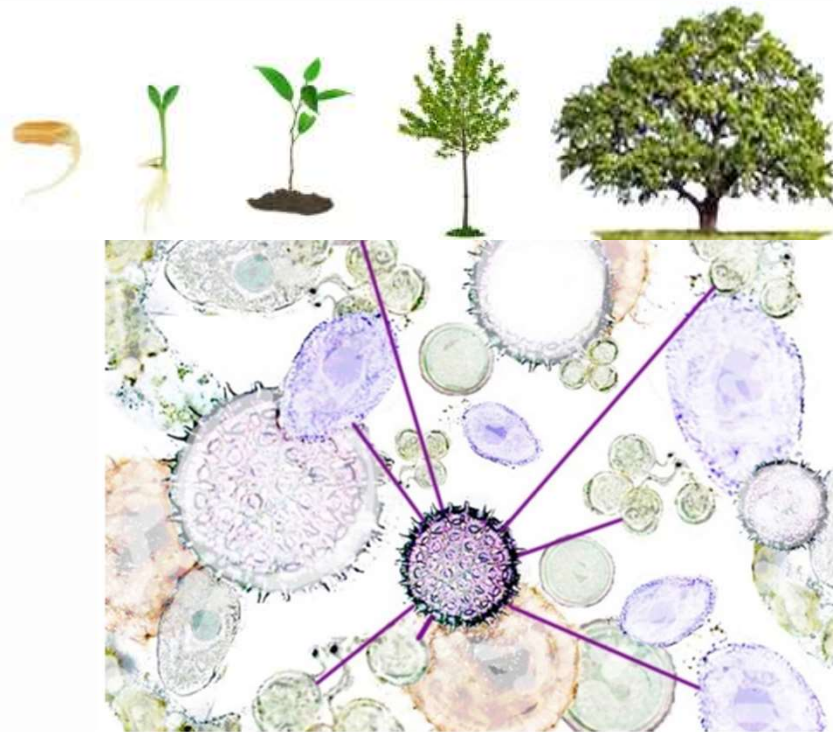
What IS the magic behind it?

Isn't it too big a design to design?

Reading life's designs and changes emerging

Where do you see “animating seeds of growth”, creating
“centers - with connections,”
the central home-world creation process and design of life?

The animating center coupling with its context
capturing resources, building its organization to grow to its limits



- Natural growth first multiplies the patterns of the seed, diversifying and expanding to its initial limits of its initial resource.
- And after that explosive growth there is a change in plan, to perfecting the design as its limit to growth

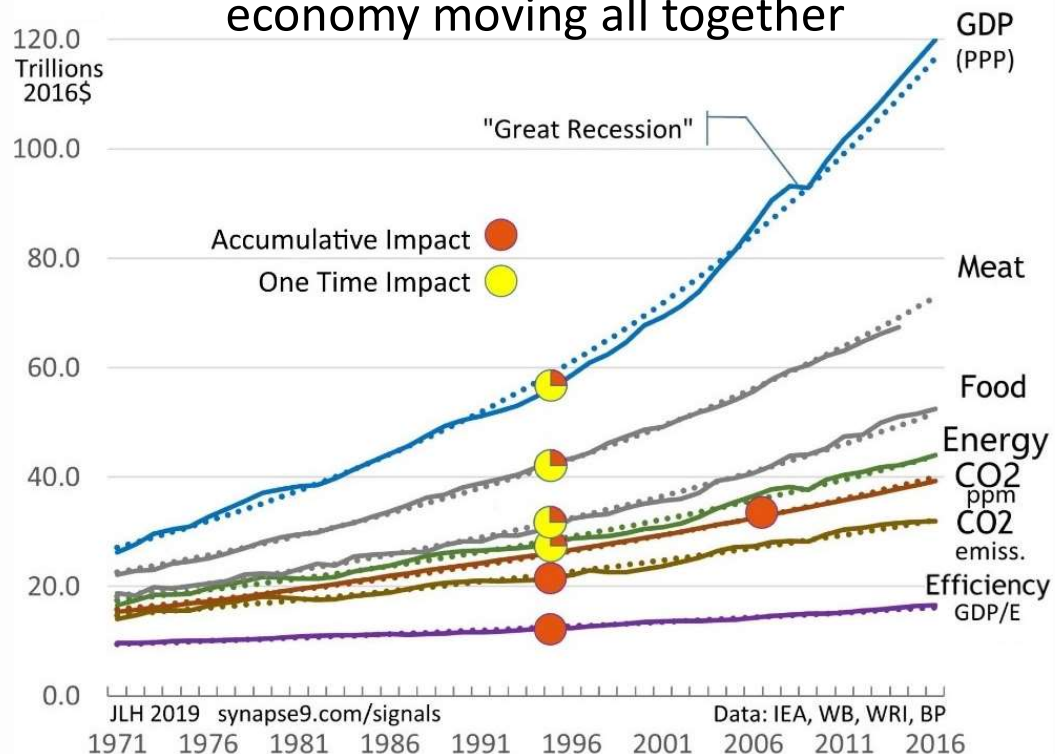
Think of the center as an **inside world** connecting with its **outside world**

Reading the Economy's Design, Centers, and Connections

Growing from centers of wealth and innovation all seeking the same thing, creating diverse branches all designed to fit together to extend the original design and work as a whole, aggressively scouring the Earth for anything it can use

... but not self-limiting, so less able to chart its future or sense threats to itself and its planet than a snow flakes or a slime mold.

Growth constants of the world economy moving all together



- Note how the curves move all together, with long term growth constants showing local variations are compensated for by the whole.
- The earliest data of rapid modern growth was atmospheric CO₂ (line3) growing exponentially with energy use since 1880, extending the growth of the first technological revolutions.

GST/n – A General Systems View of Systems In-Context

Weaving Abstract & Contextual Systems:
Telling Them Apart – & – Aligning Their Parts

And a bit of the materiality that could change our world's course

It seems that civilization is beginning to collapse because, as Keynes and many others have noticed, investing in endless compound growth is pushing all our systems to the limits of their coherence and resilience, so they misbehave. — We all know that happens to any system pushed too far already.

The needed materiality is

- 1. Taper off compounding to slow the collapse, and 2.*
- 2. Ramp up investing our time and resources in other things*

to profit from the care of our cultures and our world

What do models and natural growth do differently?

Hint - Virtually everything people create successfully requires it!

What signs or signals help you read the systems around you?
How DO systems change from growing old to adapting to new patterns?



- The rapid growth of a lasting new relationship is exciting but ends in confirming it is worth perfecting
- It's the same for the birth of a child nature's recognition that the fully formed but very undeveloped new life is worth perfecting.
- So for perfecting human development should we just start spending on caring for what we have?

Think of the center as an **inside world** connecting with its **outside world**

Added Topics

- | | |
|--|----------|
| 1. Forces and Guiding of world change | 4 slides |
| 2. Noticing and Steering systems demo | 4 slides |
| 3. Workshop exploration | 3 slides |
| 4. What makes and keeps systems whole | 8 slides |
| 5. Properties and behaviors of whole systems | - |
| 6. System self-governance and steering | - |
| 7. System stability and adaptability | - |
| 8. System transformations | - |
| 9. Language as our first systems science | - |
| 10. Hestian culture as our model for home | - |
| 11. Concepts, Contexts: Blinders to reality | - |

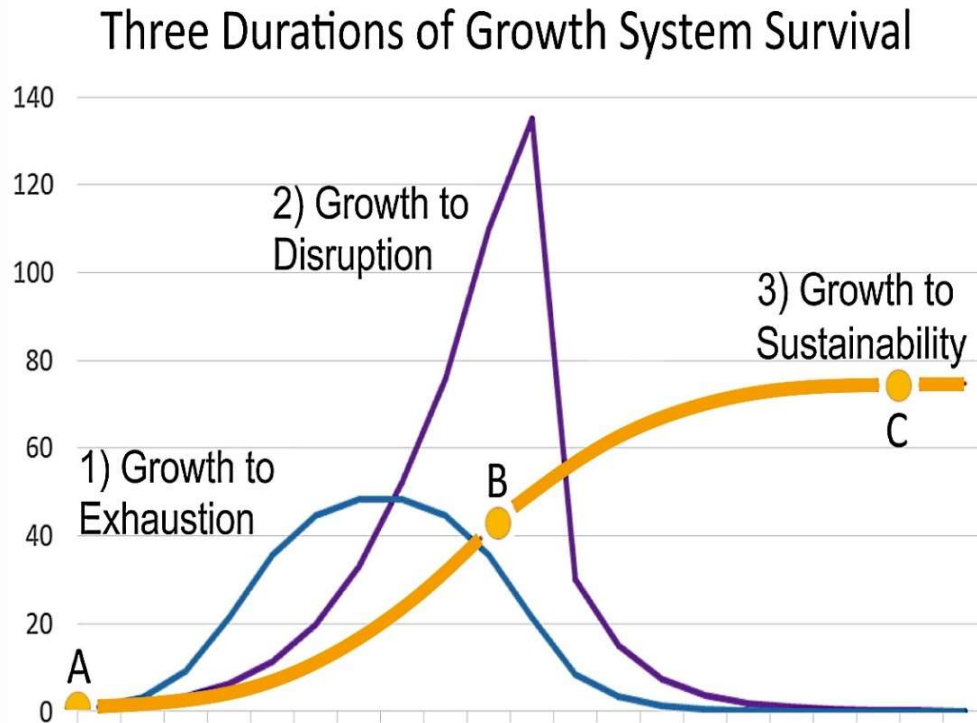
For # 5 to 11 see the paper - <https://synapse9.com/ISSS-22/>

Growth's three types of paths and outcomes

We generate systems of all three kinds

— In our own lives, we almost always choose type three —

Guided by: sensing and responding to signals flowing through the organizational connections that make systems whole.



1. Growth ALWAYS triggers a whole system change in internal or external relationships
2. There are three main types 1) failing to find new resources, 2) failing to limit the exploding demands of growth, 3) to using to care for what growth built.
3. Today our internal and external crises are multiplying, as a type 2) system.
4. Most threatening are the system congestion, dissention, and confusion.

People aware of their contexts react, others not

— So, what is there to learn about? —

We could adjust our rules to estimate profits to the whole

Environments felt and experienced



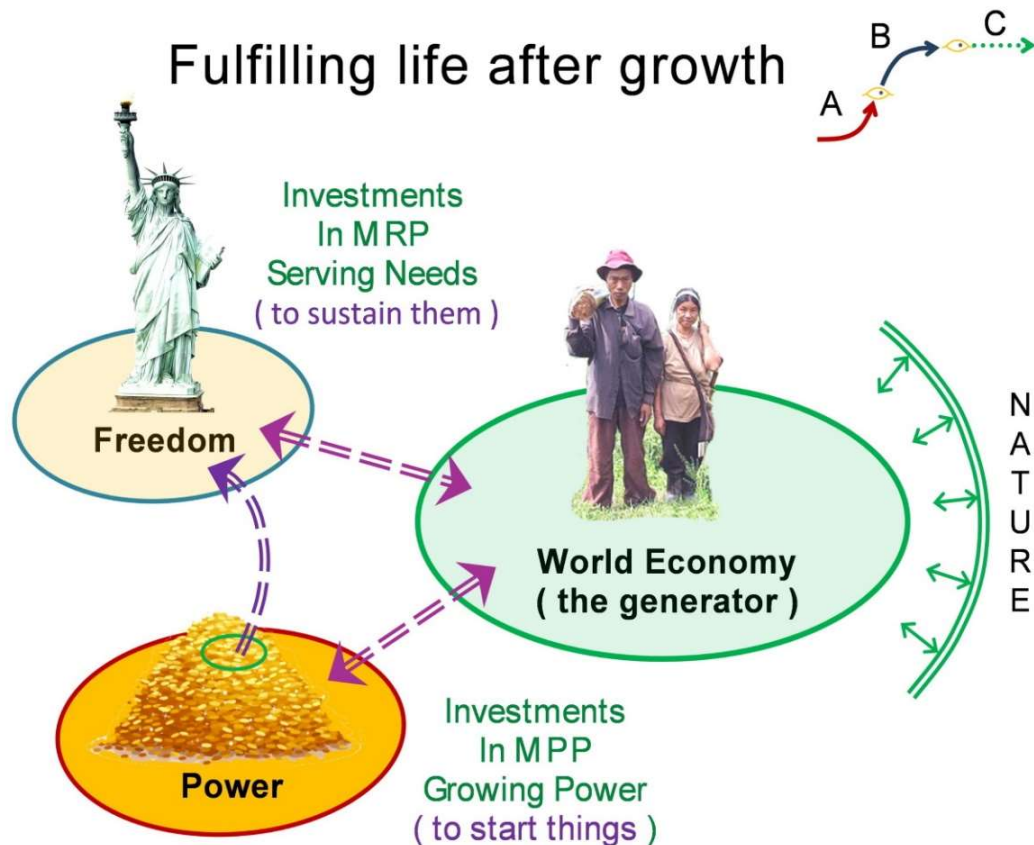
Unfelt worlds, remote controlled?



1. Homes are sensitive to what's changing all around them, local neighborhoods too, and businesses to change in their industries, so they all adapt to each other.
2. The financial decisions that steer how the economy develops are generally based on financial models for system remote control, actually held completely harmless in defining sustainability. <https://tinyurl.com/yc745be8>
3. These are deeply embedded cultures, so unless the error of elite managers spreads, and wounds their pride, is a whole system change likely.

Lots of forces are moving to care for the needs we just need to *expertly* take them much further

— Part of what’s holding them back how to define the problem — while we seek limitless power blinds everyone to it causing the growing world crises.



1. Moving resources **from growth going to the care of what growth built** is how natural systems do it.
2. The system still needs profits for resilience to shocks and making collective choices about needs.
3. *Sustainability* and *Impact Investing* already do that, but neither would change the system.
4. So it’s really necessary for the elite managers to feel the threat to themselves and every one else.

We respond to and steer systems all the time.

— Sometimes from outsides, Mostly from insides. —

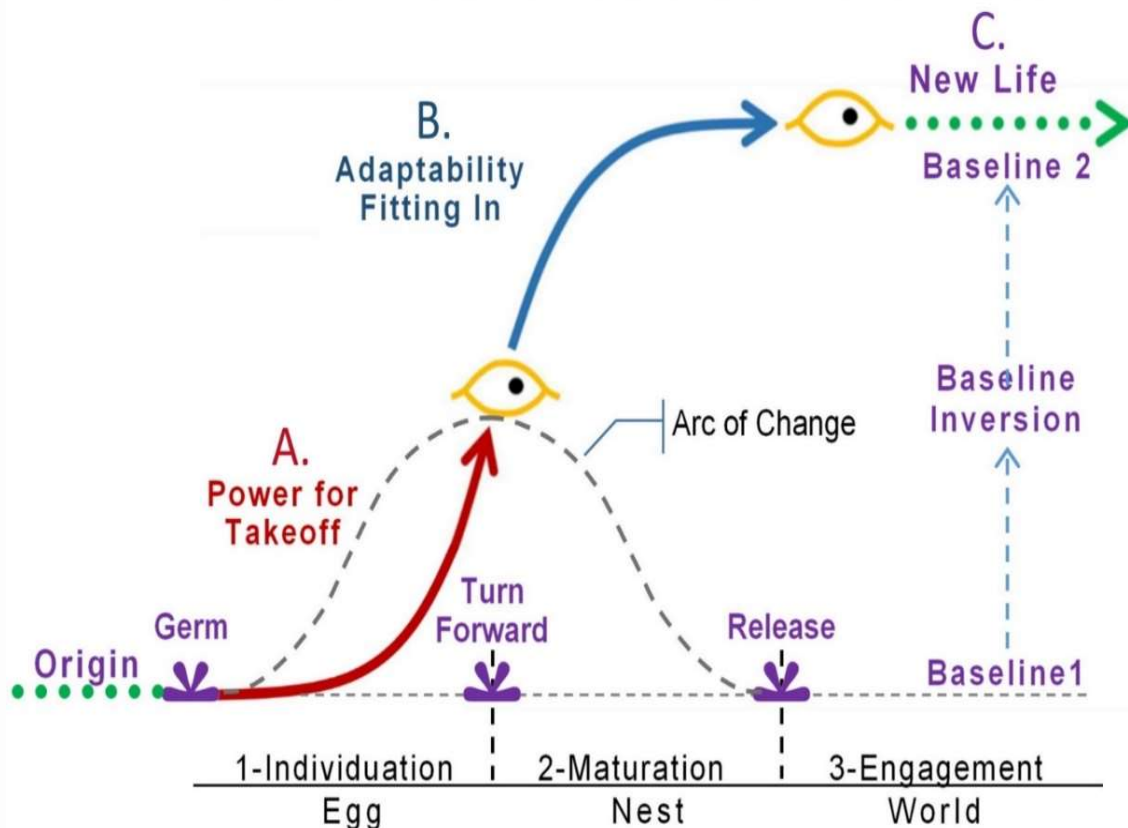


1. Relationships of all kinds take very careful attention, foresight and hindsight, mostly non-verbal gestures.
2. An artist, designer or creative team doing their work, shapes their vision of the whole, starting from a inspiring notion, follow it to the end.
3. A cook collects ingredients, laying out the main parts, adjusting the plan, then moves to the fine parts, arrangements and serving the perfect meal.

Noticing and responding to systems.

— But what do we usually respond to as we guide our paths? —
It's usually the meaning of changes in context, of where developments are going

The Growth Path of Individual New Lives



All systems have interior and exterior worlds

1. Moving resources from growth going to care of what growth built is how natural enduring systems work.
2. The system still needs profits for resilience to shocks and making collective choices about needs.
3. *Sustainability* and *Impact Investing* already do that, but neither would change the system.
4. So it's really necessary for the elite managers to feel the threat to themselves and every one else.

How to use data to explore the complex system world

...

The Environmental View

1. Look at the data then the environments reflected
2. Ask what's changing and where its going – stories of:
 - Places, Cultures, Current events, Short and Long term

The Process View

1. Think of what's emerging and how the stages are expressed
2. The egg, nest, world stages, - ,
 - Easy, Rough – Inside inspirations & Outside pressures
 - New relationships discovered

Research strategy for exploring the complex system world

A short list

- Initial ideas – all the many functionally **coordinating dualities**
 - All the things nature can do with gravity, land, and water
 - The individual environ system & internal-external partnerships / yin & yang
 - Complex relations inside and out, w/ a history of - characterize
- What holds them together
 - Design
 - Distributed Ledgers
- A simple model, as a life story arc of developing relationships
 - Internal and external system evolution
 - The many arcs of pinnacle long success - **Both** long prosperity **And** service
 - The other arcs – not finding the long grouve
- To be sure of observations make sure one's question lead to new information
 - The learning new information each time you ask a 'settled' question

A Natural Systems Workshop is an Exploration



- Systems generally have many kinds of internal and external relationships
- Have many pathways of internal and external communication
- Go through many transformations during their lives



So, before one can understand any feature, structure, or event, it takes looking at them from all sides

Column 1	Column 2

Make notes while listening to others for what else to ask and bring up

3 - Workshop questions

Q1. But, How do we notice what is brand new ?

- What told you it was not just new to you, and what else followed from it
- Think about what else might have come before
- What might you not see that will come after?

How many can we name, and say something interesting?

A new friend smiled	I didn't get a call last week
No one is responding	My partner was so angry
My friend needs help	I smell something, I hear something

Make notes while listening to others for what else to ask and bring up

Q2. Our world is changing, but how and why?

- Relationships, Politics? Family and friends
- Longer changes: The Climate? The Societies?
- Our relation to nature? Our relations between societies?
- An ever faster expanding and more demanding economy?

How many can we name, and say something interesting?

What were things like Before? — What will they be like After?

- | | |
|---|--|
| <ul style="list-style-type: none"> • Think of changes you could describe • First explore the timeline of a variety of small changes | <ul style="list-style-type: none"> • Do one in as much detail as you can Then explore longer term ones you have data or contacts to consult on |
|---|--|

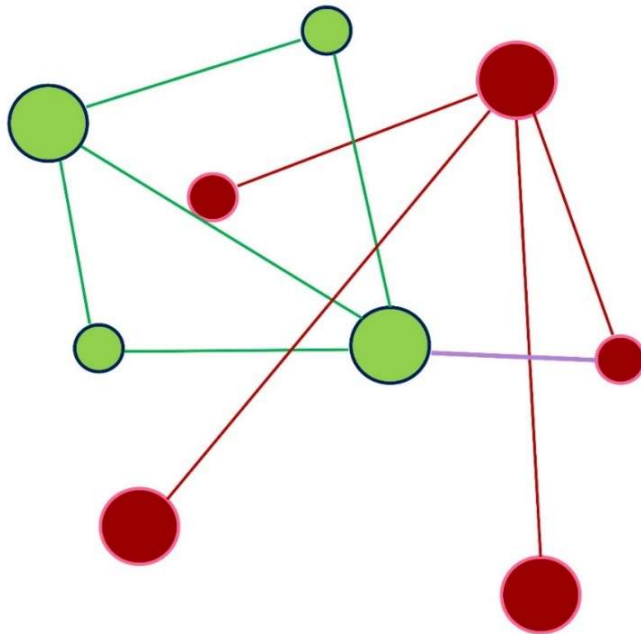
Make notes while listening to others for what else to ask and bring up

Homes makes things whole

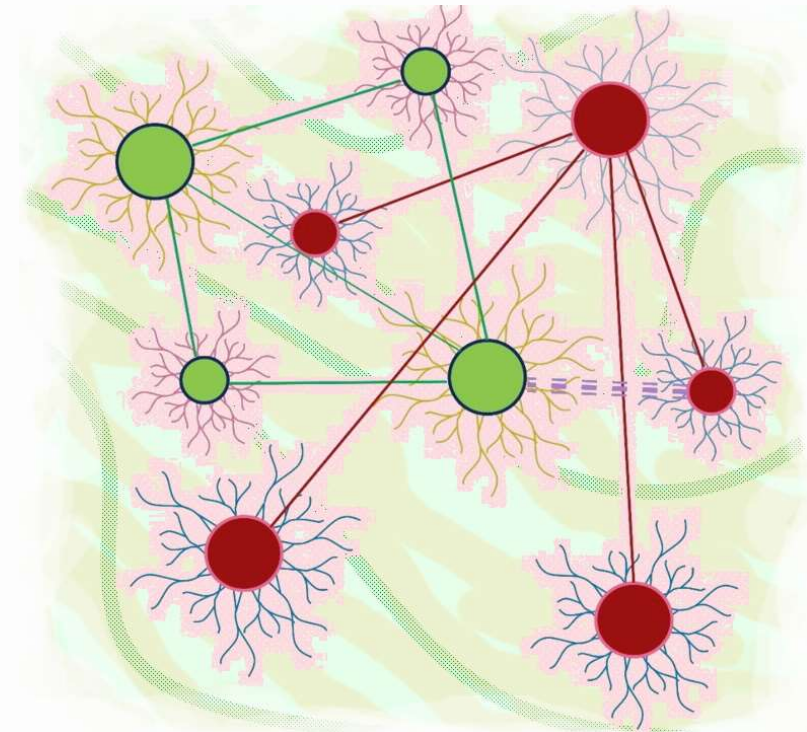
Integrated with contexts and private centers “with connection”

Links alone are abstract and without contexts and the relationships
That create giving meaning to and energizing each whole

Conceptual Network
of just the connections



Natural Systems
of hubs w/ hives inside in context



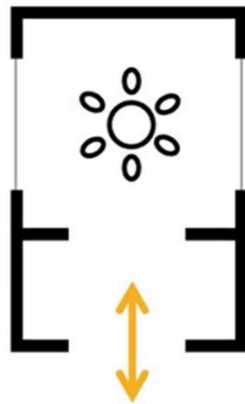
Abstract concepts without context v. Sustaining homes providing meaning

The Basic Shapes of Homes

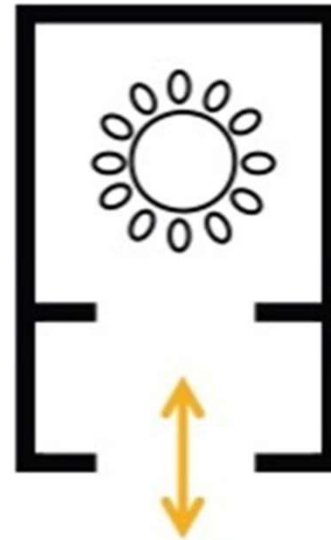
Centers with connection: the design of nature
Internal cultures with access to external needs



Hut



Home



Town Hall

- Each center – intimate connection inside, push & pull and collaborative relationships outside.
- The gates regulate contact with collaborative, threatening, and push & pull connection

Guided by individuals reading signals from their worlds

Human design builds things whole

How did we learn to so skillfully replicate it?

And then SO TOTALLY neglect it?

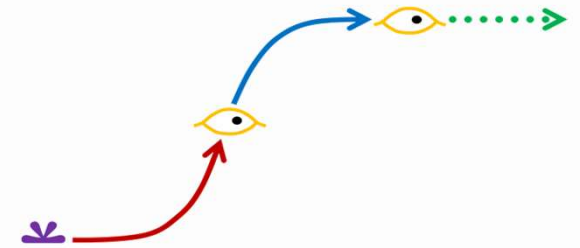
In designing our use of the earth?



- Each stage linking with the last to serve and enable the next
 - inspired buy the buyer, to fit family needs, a plan developed by the architect and builder, coordinated with the site, neighbors, and county,
 - site work, foundations, framing, utilities, enclosure, interiors, finishes, landscape, furnishing, and move in.
- People so often start with visions of a whole and fashion parts to make the work whole.
- Where did we get the Un-wholly Frankenstein idea of endlessly multiplying wholes? Was it our conceptual thinking, detached from its contexts?

Guided by perfection: a natural self-limiting teleology of design

Natural design builds things whole



- Growth is accumulative design, adapting replications of the initial seed pattern to remain whole – biological cell, energy process, organization spark, first crystal
- Development is from simple to complex, an exploratory process of fitting parts for their emergent properties, making frameworks to fill in and perfect.
- A successful growth the path is one of increasing scale and organization for new environments – then limiting scale and adaptation for a climax environment.
- The main pattern is the “egg-nest-world” – living systems & cultures, technologies & religions, all held together by the emergent properties of their designs

Guided by perfection: a natural self-limiting teleology of design

Tensegrity of push and pull with emergent properties
rigid and flexible for mobility, polycentric for mutuality,



- Masts and sails
- Personal relationships
- dance,
- war, traffic,
- aligned wheels,
- Families & communities

Guided by versatile capabilities navigating environments

1. Distributed “common ledgers” for making things whole

Shared **Maps** of Living System Designs

- **Common Language** – every speaker inherits an authentic copy of its roots and usage – requiring – users to recognize each other’s meanings, coordinate new meanings which may or may not last, maintain root meanings – a very long-lived flexible structure
- **Common Cultures** – Including native, racial, societal, regional, community, family, business, professional, generational, religious, social, etc. – range of very and less reproduceable, includes ways of knowing and living, the origin of incommunicative “silos” unable to understand each other – maintained by much the same peer to peer “recognition” and “coordination” bonding of members as common languages.

Providing BOTH reproductive integrity & coordinated development

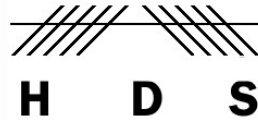
2. Distributed “common ledgers” for make things whole

Shared **codes** of living system design

- **Common Genetic codes** – a distributed systems design map in each cell – faithfully replicated except when accidental or opportunistic changes are kept rather than corrected – anchoring the most persistent inherited root ways of working – evidently capable of progressive whole system change for punctuated species change.
- **Common Legal & Economic codes** – Distributed standards of cooperation and working – inherited and evolved from founding inspirations – actively validated and coordinated in responding to new experience – transformative when the opportunity presents.
- => **Evolutionary Governance** allowing whole system transformation when an innovation elicits a coordinated whole system response like a need for “survival” first requiring growth, then requiring versatile perfected design and stability.

Providing BOTH reproductive integrity & coordinated development

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