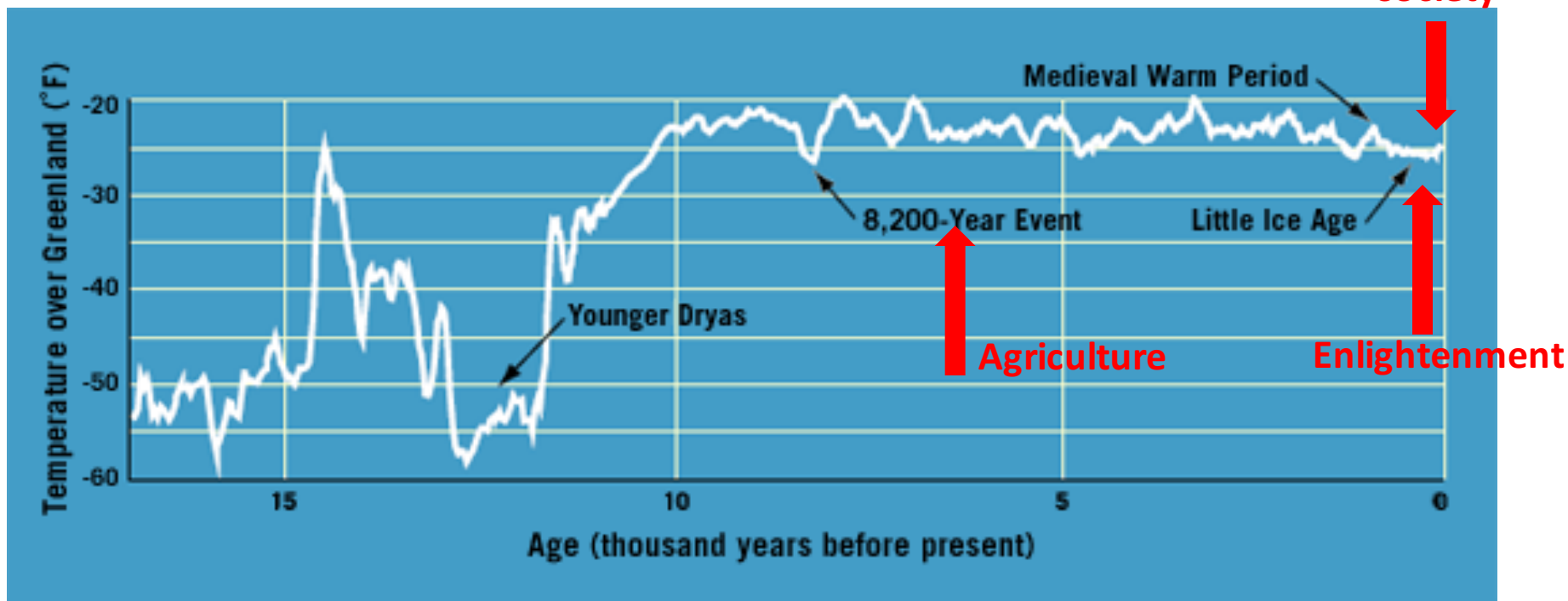


Toward Greater Resilience in a World of Possibility

An initial attempt at synthesis

3 Premises

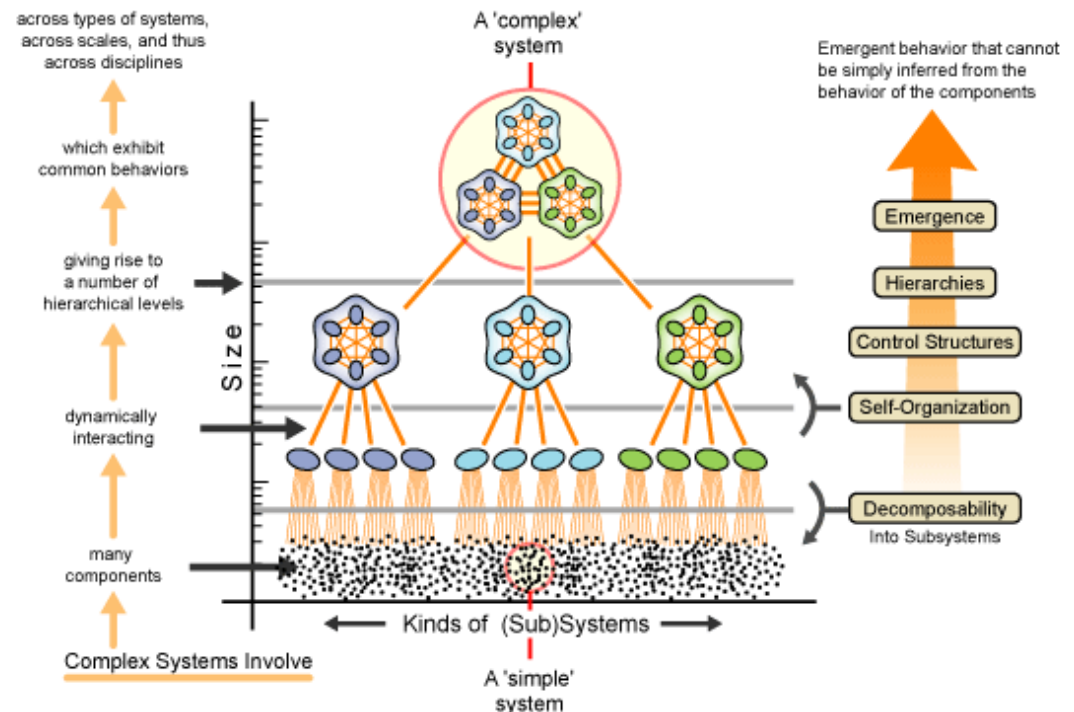
- **The Jose Maxim:** We've been co-evolving for a very long time



3 Premises (cont.)

- **The David Principle (a.k.a. the meta-process):**
We exist and – somewhat surprisingly – persist in complex adaptive systems, even though we couldn't design it if we tried and have failed over.

Characteristics of Complex Systems



3 Premises (cont.)

- **The Roger Sr. Secret:** Let's get over ourselves, we're not exceptional in this; although as long as we think so, we will do ourselves in.
P.S.: In fact, we seem to be well on our way.



So You All Came to Help...

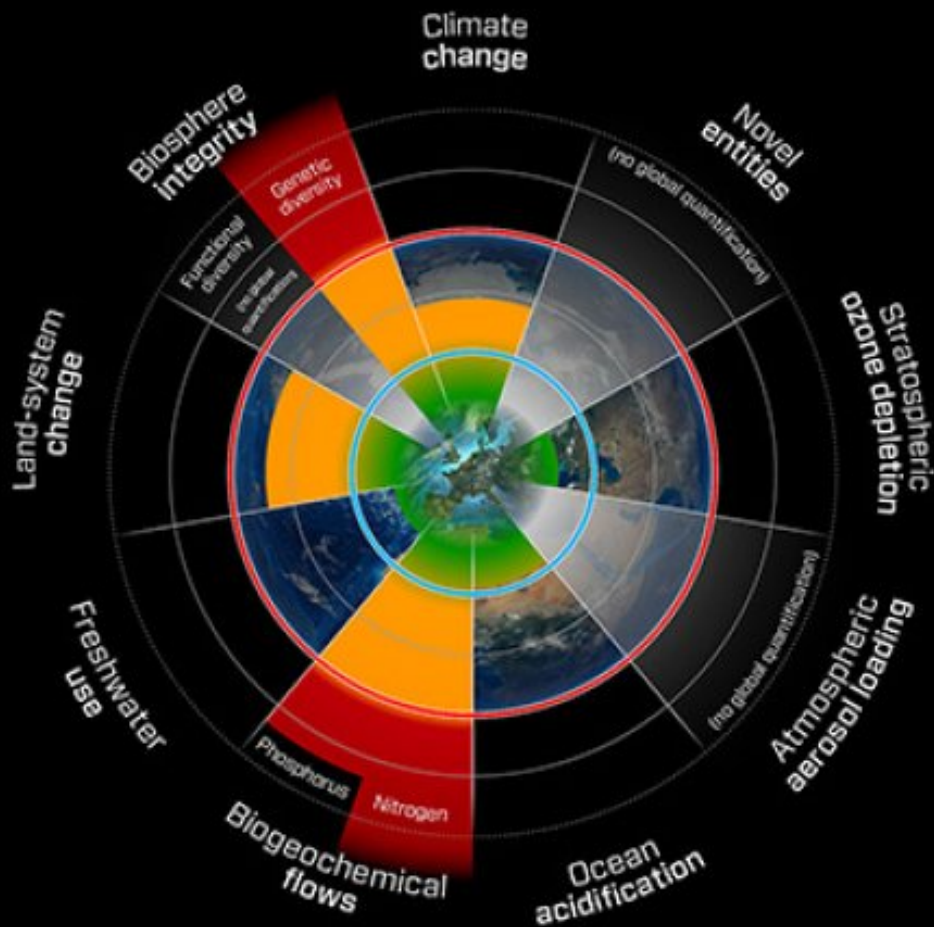


... With the Pickle We're in

- In the highly unusual climatic stability over the last few thousand years,
 - Humanity has built a remarkably stable set of systems that
 - Have produced great many benefits (at least for some, and they are now vested in them),
 - along with a bunch of predictable risks,
 - but also lots of social and environmental “externalities”, which now threaten to undo that stability
- We're moving out of a “World of (predictable, controllable) Probabilities” into a “World of (highly uncertain, complex) Possibilities”

Planetary Boundaries

A safe operating space for humanity



- Beyond zone of uncertainty (high risk)
- In zone of uncertainty (increasing risk)
- Below boundary (safe)
- Boundary not yet quantified

Within a safe operating space for humanity

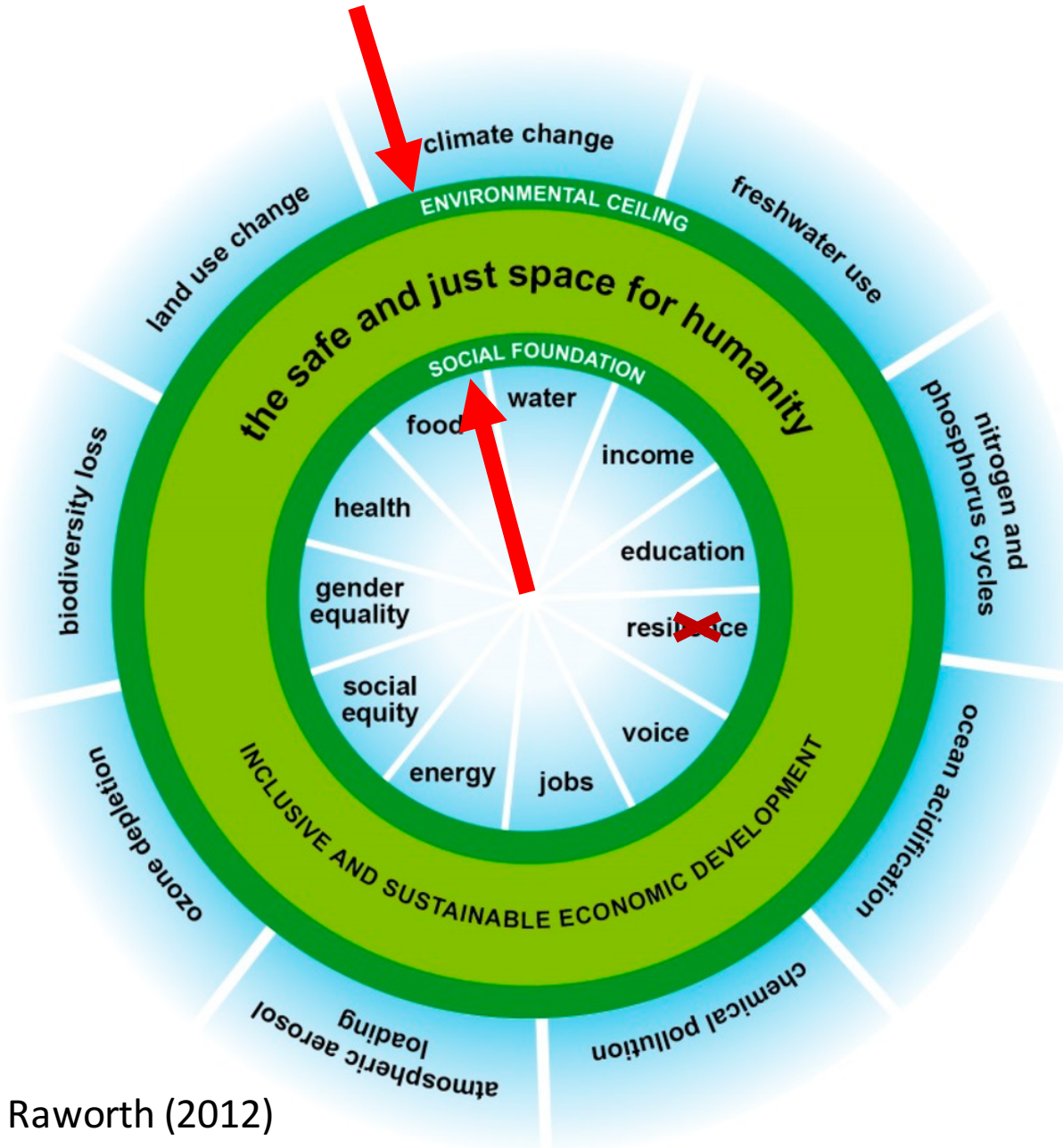
Considerable urgency in addressing environmental concerns, destabilization.

Governments should take responsibility for (global) public goods

A role for all levels of government, all sectors, all actors

Rockström et al (2009)
Steffen et al. (2015)

Safe and just operating space for humanity



In addition to planetary boundaries: a set of minimum societal conditions is needed to ensure human dignity.



Highlights the interconnectedness of social and environmental concerns and their distributive consequences

Normative Proposition 1

Humanity should stay within the “safe and just operating space”

Normative Proposition 2

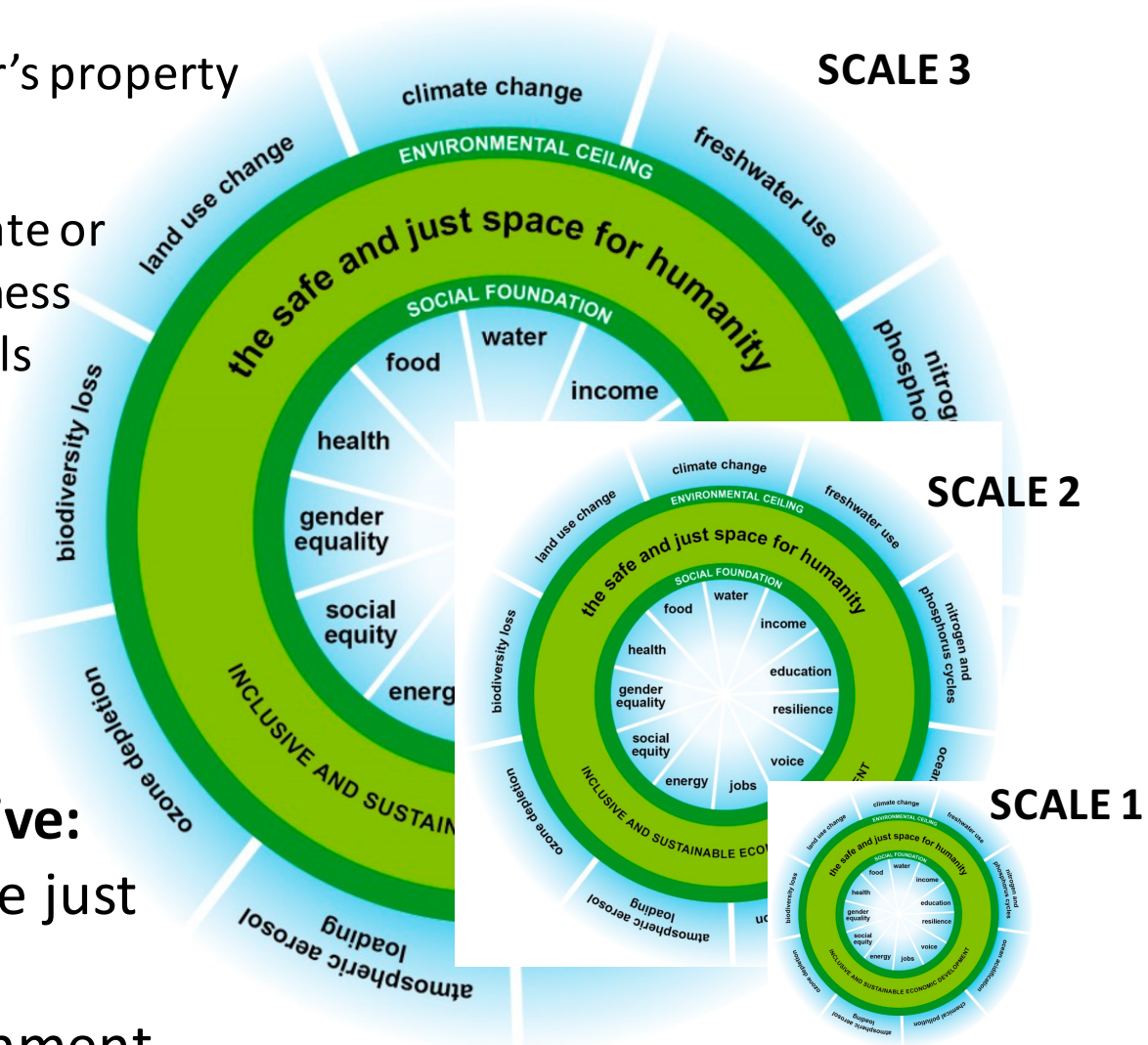
The “safe and just operating space” circumscribes the acceptable limits of the “World of Possibilities” that we are now in and will be in for the foreseeable future.

- Unacceptable/undesirable to go beyond planetary boundaries
- Unacceptable/undesirable to go below social foundations

The Triple Gandhi-Thomas Moral Imperative:

1. Do no harm to your neighbor's property
2. Help each other in need
3. Build systems that compensate or correct for the shortsightedness and self-interest of individuals (or the system below)

With Craig Allen Corrective:
Bounce forward to a more just
and prosperous society...
... and a healthier environment



Hypothesis 1

- Risk management still works for some, but is increasingly inadequate for a growing number of, threats in this destabilized “World of Possibility.”

Hypothesis 2

- Building resilience is more likely to ensure persistence in the “World of Possibility.”

23 ppts and 13 session later



Insight 1: United in Passion – Divided in Epistemology

Resilience as...	Focus is on...	What we care about	What we ask about	What we search for	Locating our Values
SYSTEM TRAIT or CONDITION	System as a whole	System functions & services (e.g., diversity)	What makes a system resilient?	Leverage points to nudge the system to more desirable states	A priori neutral on outcome(s) (theory)
PROCESS (or set of processes)	Actions or decisions	System functionality/ performance (e.g., flood system acts as advertised)	What can we do to reduce impact/losses and speed up recovery?	DS tools and actions that help to plan, prepare, absorb, recover, adapt	Normative about “best practice” assumed to lead to desirable outcomes
OUTCOME (or set of outcomes)	Actors	System improvement or persistence (e.g., well-being, thriving)	What system/ community do we want to build or keep (despite shocks and stresses)?	Tools, resources, governance mechanisms, coalitions, to assess, plan, implement actions	Normative about outcomes; explicitly or implicitly value driven

Etc.

Follow-up Task 1

- Refine the “Susi matrix” with the insights gained from break-out group discussions, but caution against making it overly complicated

Everything should be made as

SIMPLE

as possible, but not

SIMPLER.

—ALBERT EINSTEIN

Lead:
Susi, James

Insight 2: *“For every complex problem there is an answer that is clear, simple, and wrong.”*

- H. L. Mencken

Matrix may serve various purposes (good & bad):

- As a map for orientation
- As a boundary object to start a conversation
- As a mirror to stimulate self-reflection
- As a guide to refine one's work
- As a tool to confuse
- As a boundary object that stymies conversation
- As an occasion to criticize and ignore alternatives
- As an opportunity to double down on one's approach

The Seager Charge

“Communication across our [disciplinary, theoretical, epistemological and normative] differences is laborious.... we all want to reduce the transaction costs of these dialogues, but let's caution against it.
It is not a semantic rabbit hole; it's the work we must do!”

The Linkov Alternative: Ignore Seager


- The World of Possibility is unpredictable – let's quantify it anyway!
- Heroic attempts in the basement, sorting out what research approaches we have to do so



Photo by U.S. Army Corps of Engineers

Dr. Igor Linkov with a 14th century plague model

Insight 3: There is a Place for Risk & Resilience Analysis in the “Process” Paradigm



Risk and Resilience in the face of Global Change

30 November – 5 December, 2015

A. Jovanovic

Date: Dec. 3, 2015

Responses from (e-mail):				A. Jovanovic (jovanovic@risk-technologies.com)			
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COMPARISON Risk vs Resilience Analysis							
	RISK ANALYSIS			RESILIENCE ANALYSIS			
	Tier 1: Screening	Tier 2: Intermediate	Tier 3+: Detailed	Tier 1: Screening	Tier 2: Intermediate	Tier 3+: Detailed	Comments, examples, explanations
BASIC ELEMENTS							E.g.: The elements considered in most types of applications/systems
Complexity of approach / use	low	intermediate	high	low	intermediate	high	
Model of the actual system behavior	implicit	simple explicit, basic	complex as-needed, realistic				
Data	nominal data	as-is, acquired for the need of the analysis	as-is, best-available + extrapolated				
Methods	qualitative, simple	semi-qualitative	quantitative				

“building a bridge between two shaky shores”

Follow-up Task 2

- Fully answer the question in which circumstance, for which systems, and with what tools to assess risk and when/where/ how to assess system resilience

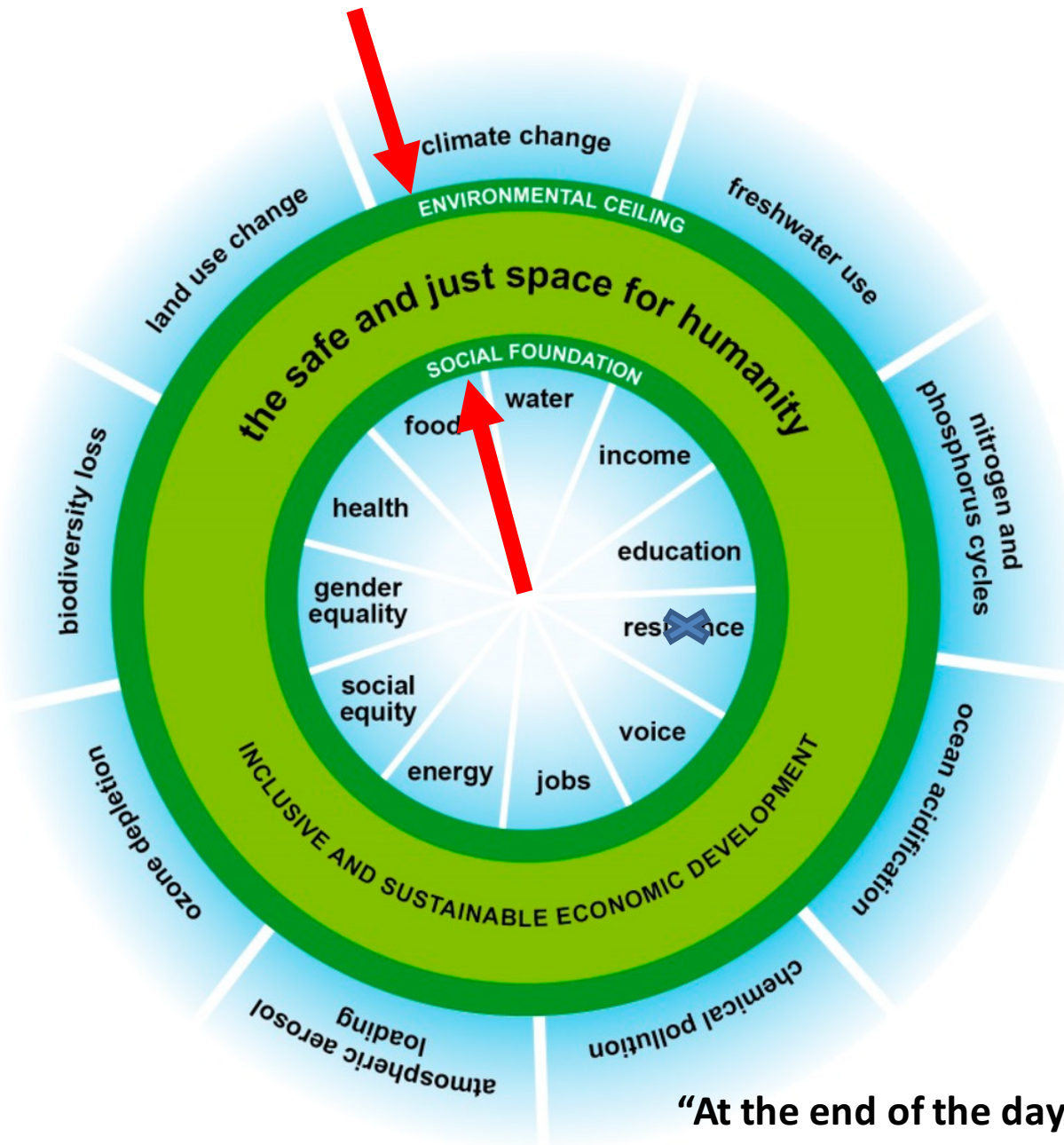


Lead: Igor

Insight 4: We can't "Hyde" from Reality

- There is only so much time, so many windows of opportunity, so much money to get anything done
- Change is accelerating
- We live in systems of systems
- There is no "Department of Heat and Floods"
- We've had decades of incremental dismantling of infrastructure, institutions
- We need another toolkit like we need cancer
- Strategic incrementalism, opportunism, and intentionality is the best we can do most days

First-order Advice for the Resiliently Perplexed



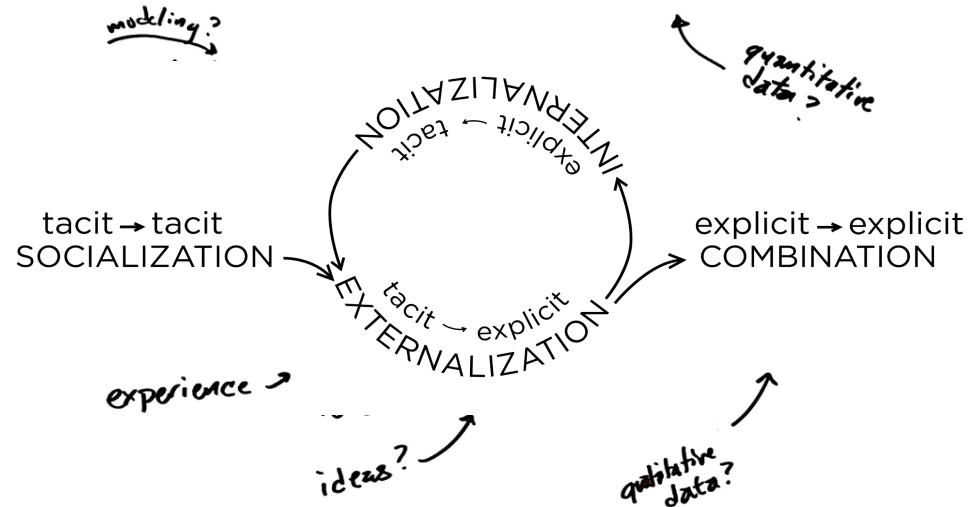
- Widen the “safe and just operating space” wherever you sit
- That work is inherently transformative, normative, & political
- Navigating the “World of Possibility” can be both scary and enticing, opportunity-rich

“At the end of the day, we must reduce human suffering”

This-one's-for-you-Billy Answer:

Navigating the “World of Possibility”

- **Start:** You can, will, must start from wherever, whenever you are
- **Direction:** Vision desirable futures
- **Compass:** Moral & scientific
 - DO not add to exceeding PBs
 - ADD to lifting SF
 - Think beyond one system, across scale and time
- **Capacities:**
 - Sensing and meaning-making
 - Build /maintain adaptive capacity in people, groups and systems
 - Invest in innovation, imagination, creativity
 - Communicate and collaborate



- **Systems:** Build them
 - Flexible
 - Connected
 - Redundant
 - Modular/Diverse
 - With ample feedback loops

Follow-up Task 3

- Prepare summaries of practice guidance on selected challenges
 - Communication
 - Building adaptive capacity
 - Getting started with building resilience



Leads: Susi & James

The Baja Offer on Collaboration to Researchers

- If we collect it, will you come?
- If you have a hypothesis, we will test it.

Metric: A Measure of Portuguese Charm

- You have to start from theory...
(...even though we don't have a decent theory;
sorry, we can't talk with each other, it's a mess)

Back to: Seager Charge

The Kasperson Upshot



Well, it's not perfect, but it's a good start.