



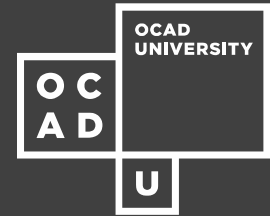
2014

Design methods for systemic design research

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Design Methods in Systemic Design Research

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System Theory > Design practice.

- What we're calling systemic design may be unique in its position to an existing body of theory.
- Not that we actually use it in practice.
- We use *working* theories every day – don't often refer to system (or social theory) in practice.
- “Theoretically-informed,” taking a pragmatic turn in design work
- More likely to borrow the theory inherent in *methods*.

Before methods, contexts.

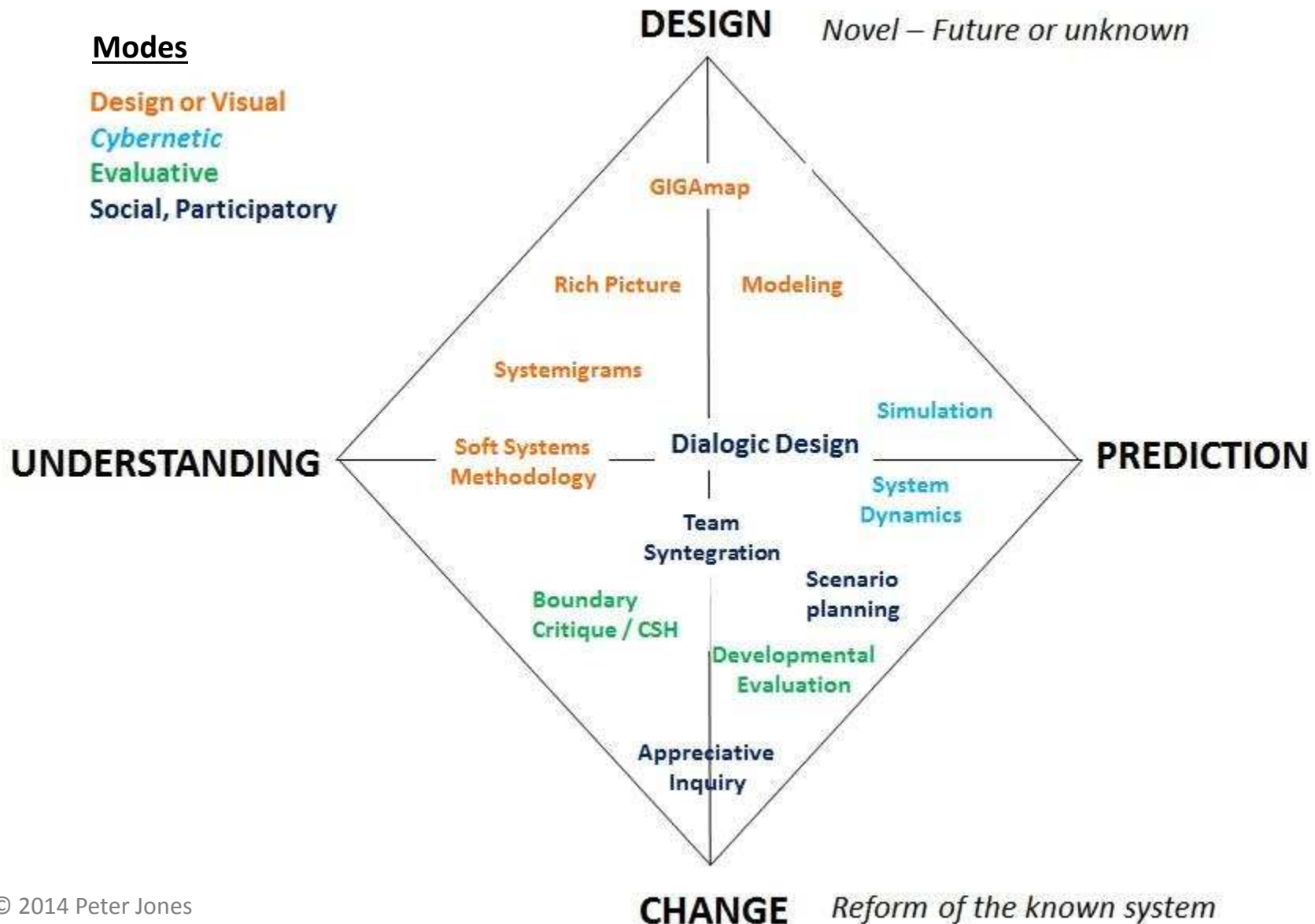
- Systems science has preferred theories for system *description* (explanation), *prediction* (control), & *intervention* (change).
- Contributions of modern design disciplines - industrial, information, service design – are marginal at best.
- “Design” as problem solving, or a process of system design
- Social systems design as a template for design thinking in complex socially-constructed domains.
- Which are (in Anthropocene) nearly everything.

Integrating systems *thinking*.

We tend to adopt system thinking *as method*.
As we did with management practices .

Shortcut theory : **Principles > methods**

Systemic design methods by intent



10 Shared Design Principles

“The primary aim the two systems of thought share today is enabling organized high-leverage action in increasingly complex and systemic problems as design situations.”

Design Principle

1. Idealization
2. **Appreciating Complexity**
3. **Purpose finding**
4. Boundary framing
5. **Requisite variety**
6. **Feedback coordination**
7. System ordering
8. **Generative emergence**
9. **Continuous adaptation**
10. **Self-organizing**

Guidance for complex systems design from systems, **cybernetic** & **complexity** principles.

Foundation for practitioners to enhance engagement and evolve better practices.

Elicited from systems theoretic concepts, but no net-new theory.

Elements to form net new frameworks enabling integration of other concepts for specific design contexts.

Design methods associated with principles

Principle

1. **Idealization**
2. **Appreciating Complexity**
3. **Purpose finding**
4. Boundary framing
5. **Requisite variety**
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10. Self-organizing

Design Methods

Framing, Iteration, Backcasting
Sensemaking, System sketching
Inquiry (5 Whys), Prototyping
Critical probes, Strange-making
Co-creation, Function analysis
Modeling, Interactive Testing
Structuring, Pattern making
Future creation,
Multiple reasoning modes
Co-creation, Facilitated design modes

We might also observe *design of*: **Time (4)**, Space (3), **Information (3)**

(Some) *systemic methods*

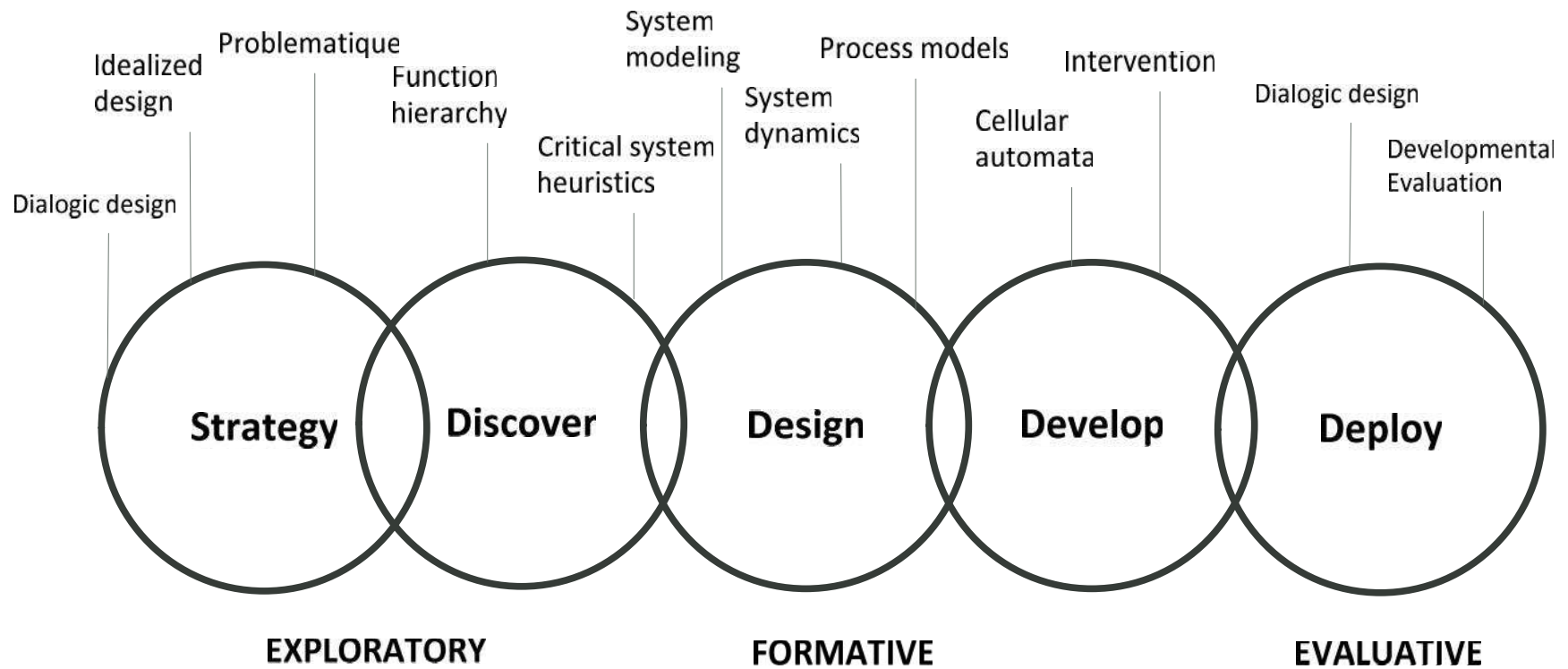
Principle

1. Idealization
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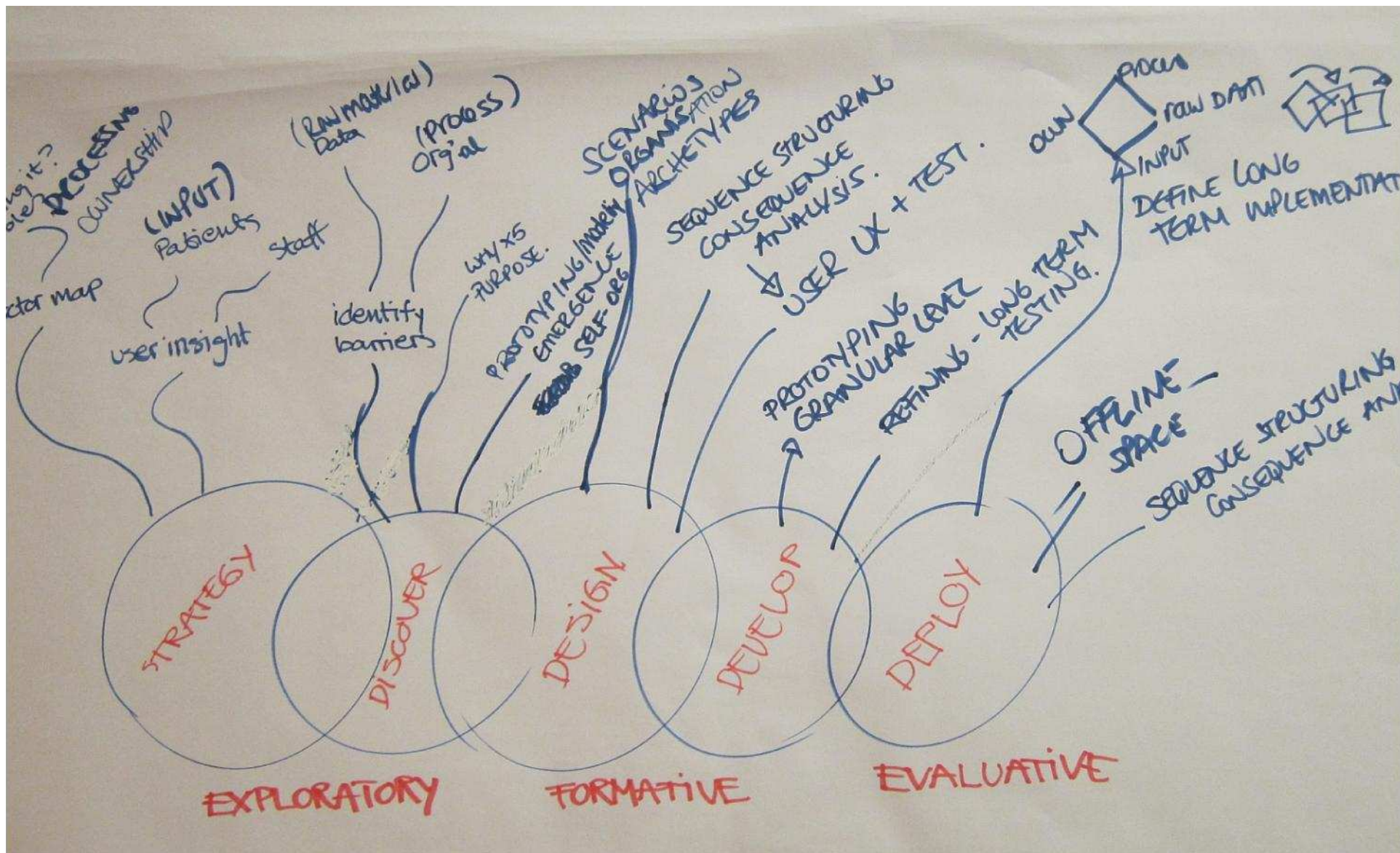
Systemic Methods

Idealized design
Problematique
Function hierarchy
Critical system heuristics
System modeling
System dynamics
Process models
Simulation
Intervention (leverage points)
Dialogic design

Possible system methods in design process



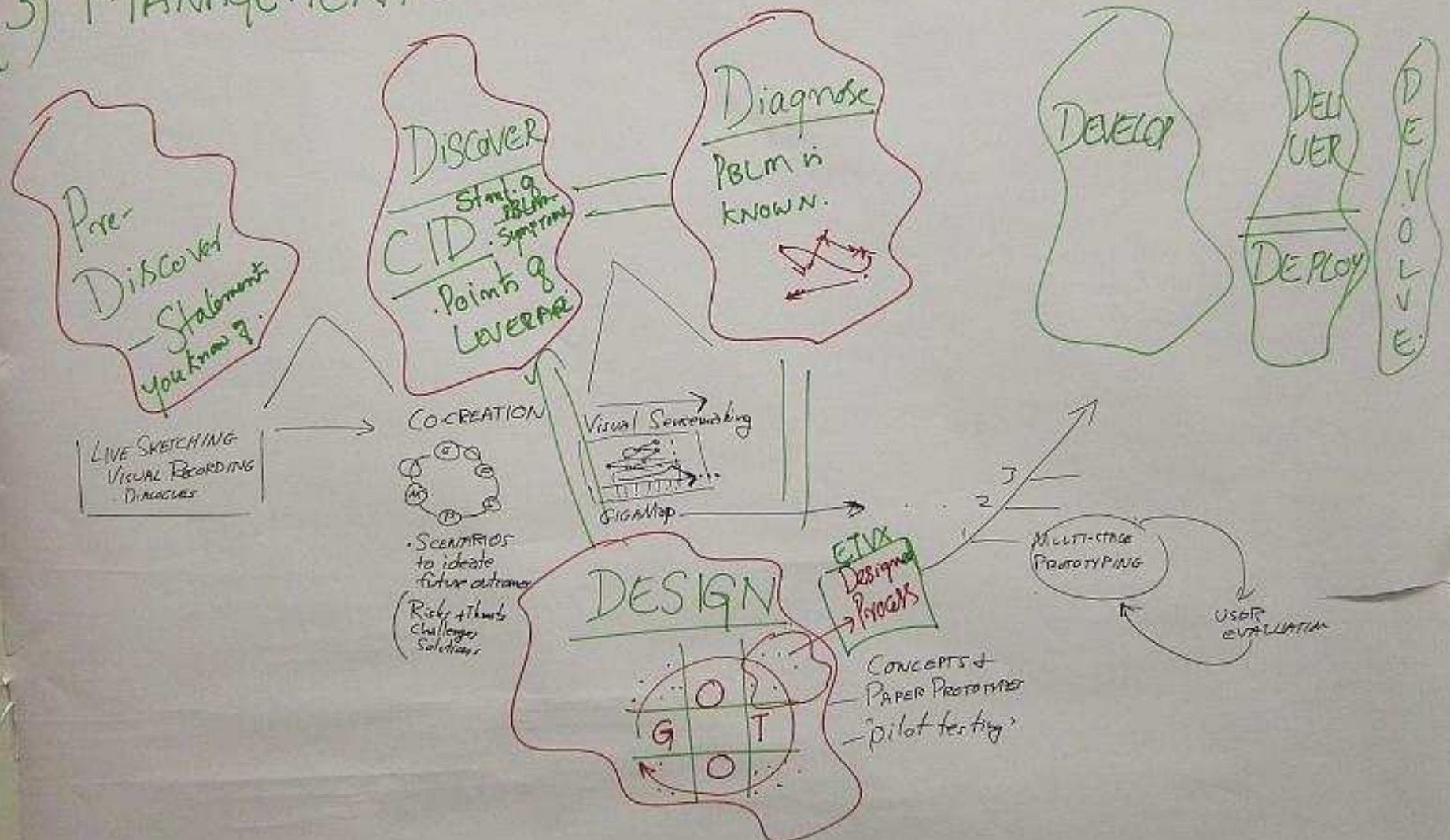
Open health data in public service



Design methods for management cybernetics

2) METHOD/METHODOLOGY: MULTI-Modelling

3) MANAGEMENT:



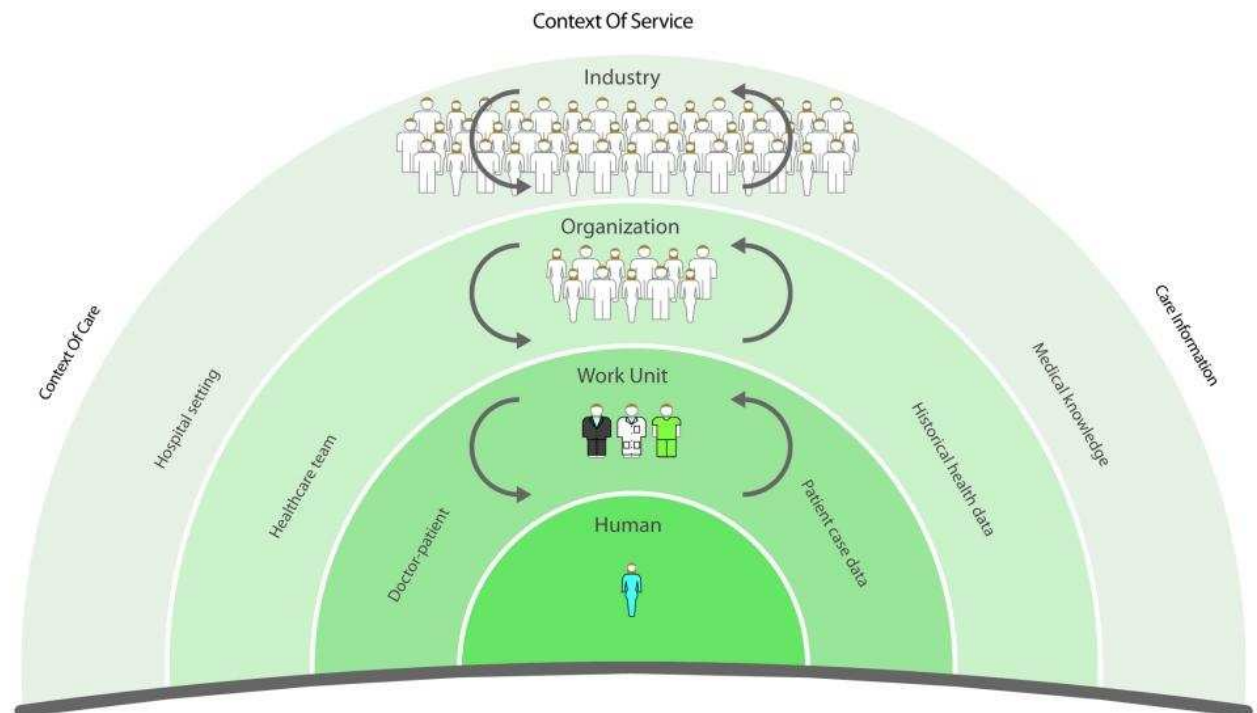
Design / Systems pairs

D4.0 Policy /
Dialogic Design

D3.0 Org Process /
Social Systems, Panarchy

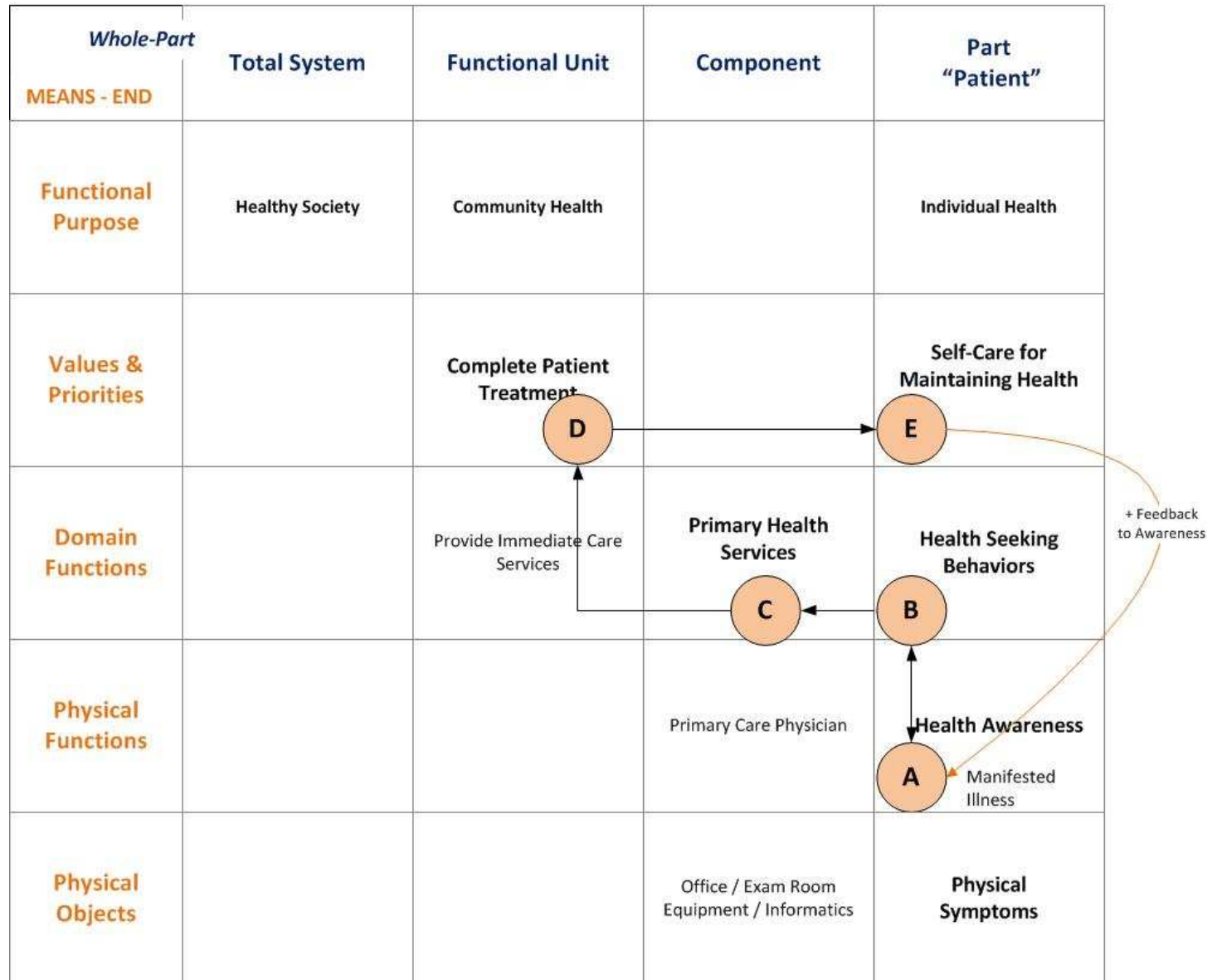
D2.0 Practice & Information /
Service Systems

D1.0-2.0 Product, Comm /
Activity Systems



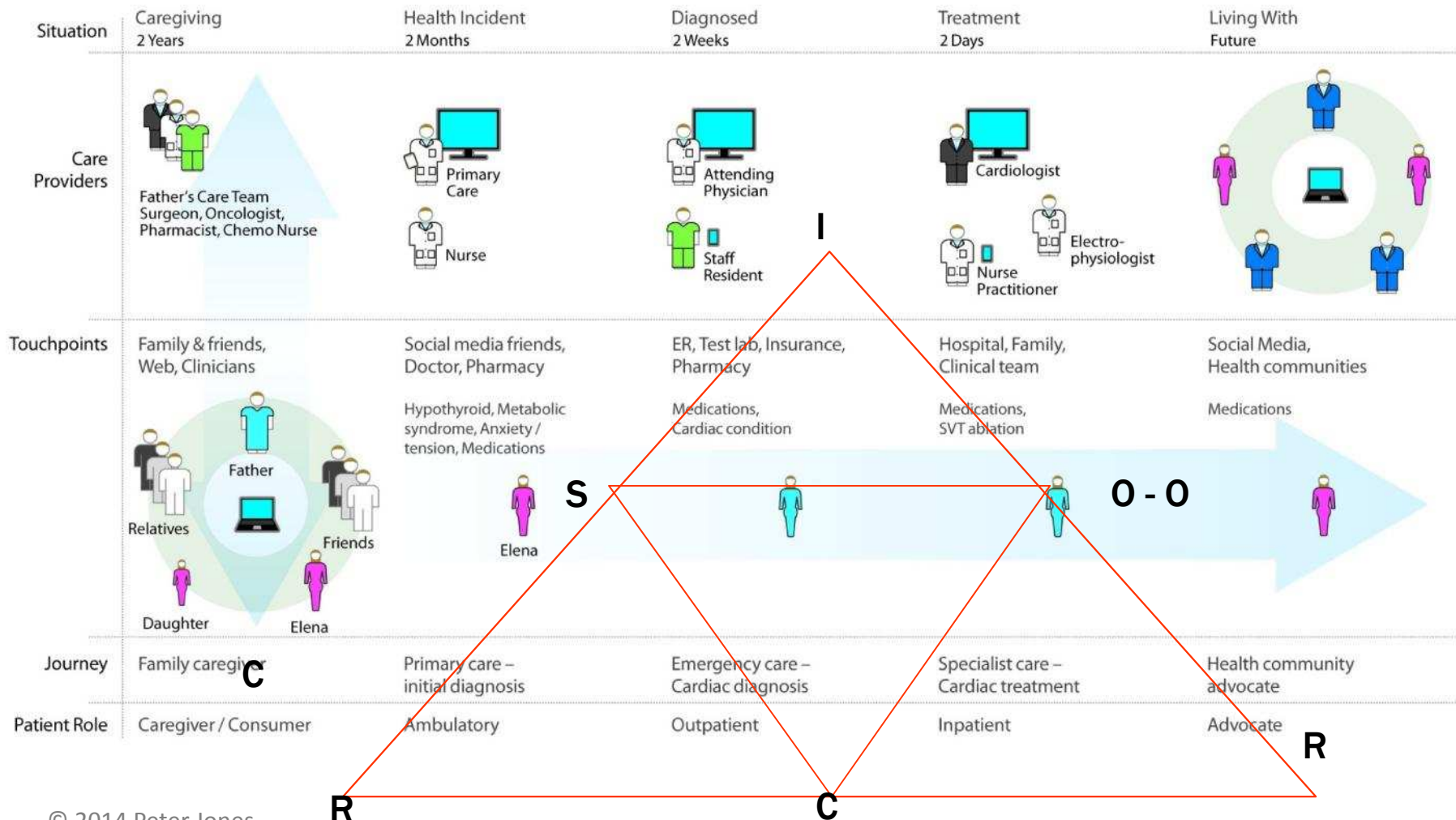
Service System Design / As Work Domain Analysis

What are the Functions of Primary Care in the Healthcare System?



Activity Systems Analysis / as Service Journey


Health Seeking | Patient Journey

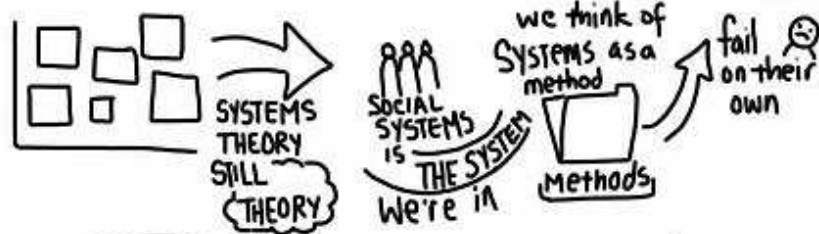


Compatible philosophies, different generations.

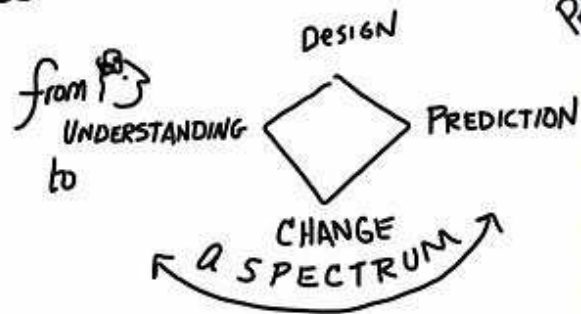
Participatory

Generation:	<i>First</i>	<i>Second</i>	<i>Third</i>	<i>Fourth</i>
Philosophy	Rational 1960's	Pragmatic 1970's	Phenomenological 1980's	Generative 2000's
Methods	Movement from craft to standardized methods	Instrumentality, Methods customized to context	Design research and stakeholder methods Design cognition	Generative, empathic & transdisciplinary
Authors & trends	Simon, Fuller Design Science, Planning	Rittel, Jones Wicked problems, Evolution	Schon, Don Norman User-centered & Participatory Design Reflective action	Dubberly, Sanders Generative Design Service Design Systemic design
Systems influences	Sciences, OR Cybernetics	Natural systems System dynamics Systems engineering	System dynamics Social systems Soft systems	Complexity Socio-ecological Dialogic

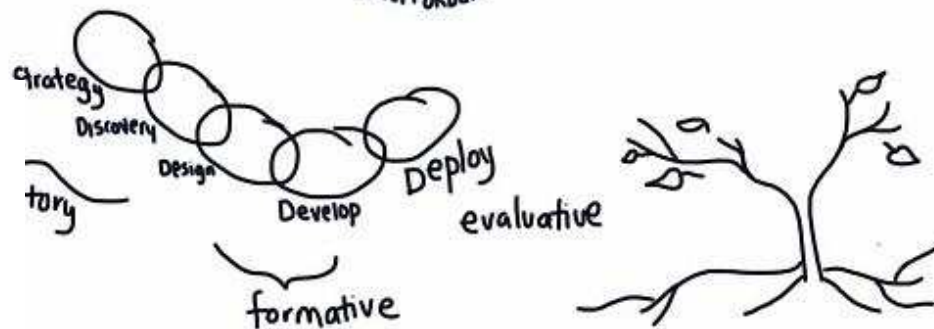
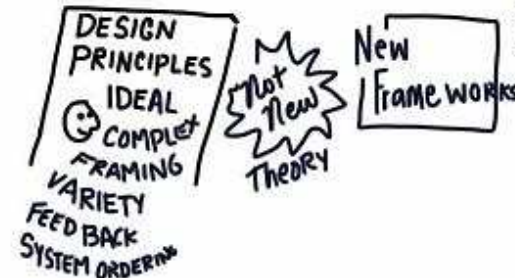
Peter Jones 
 Systems Theory > Design Practice



Still want What Works without Understanding



- PRINCIPLES
- * Idealization → A future state
 - * APPRECIATING COMPLEXITY
 - * Purpose FINDING
 - * BOUNDARY FRAMING
 - * Regentite Variety
 - * Feedback coordination
 - * SYSTEM ORDERING
 - * Generative Emergence
 - * CONTINUOUS ADAPTATION
 - * SELF ORGANIZING



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