Exploring the Context of Pattern Languages:

A dialogue on the world around Christopher Alexander

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Aalto University and
the International Society for the Systems Sciences

PURPLSOC: Pursuit of Pattern Languages for Societal Change
Danube University Krems
October 21, 2017

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Agenda

1. What is the context of pattern languages?
   (A starter set)

2. Some paradigms (1960s-2010s) that influence generative pattern language

3. Dialectical dialogue
   (audio to be recorded, subsequent reporting)

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Dialogue in encouraged with a starter set of 7 ideas in dialectic

Problem-seeking (architectural programming, defining issues)	1	Problem-solving (design activity with science and creativity)
Wicked problems (argumentative planning, no stopping rule, type 4 errors)	2	Solution to a problem in context (parts + spatial relations between [e.g. forces)]
Multiple perspectives inquiry (systems approach: politics, morality, religion, aesthetics)	3	Culture unselfconscious-selfconscious (repeating familiar pattern ↔ innovation, modifications)
Normative methods, social organization (agile development, liberating voices, group process)	4	Descriptive methods, physical space (phenomenon of life-wholeness, 15 geometric invariants)
Ecological quality outside/between (affordances, ecological epistemology)	5	Objective quality inside (origins of nature, unfolding, progressive differentiation)
Resilience, collapse, transformation (hierarchy, pacing layers: scales larger-slower smaller-faster)	6	Order, wholeness-preserving/disrupting (holistic, sequential processes → effective unfolding)
Interactive value constellation (coproduction of offerings: product, service, relationship)	7	Feeling of connectedness, living structure (test which induces wholeness + resembles inner self)

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If they can get you asking the wrong questions, they don't have to worry about answers (Thomas Pynchon)

Type **1** error	**False positive**: finding a (statistical) relation that isn't real
Type **2** error	**False negative**: missing a (statistical) relation that is real
Type **3** error	**Tricking ourselves**: Unintentional error of solving wrong problems precisely (through ignorance, faulty education or unreflective practice)
Type **4** error	**Tricking others**: Intentional error of solving wrong problems (through malice, ideology, overzealousness, self-righteousness, wrongdoing)

Ian I. Mitroff and Abraham Silvers. 2010. *Dirty Rotten Strategies: How We Trick Ourselves and Others into Solving the Wrong Problems Precisely.* Stanford University Press.

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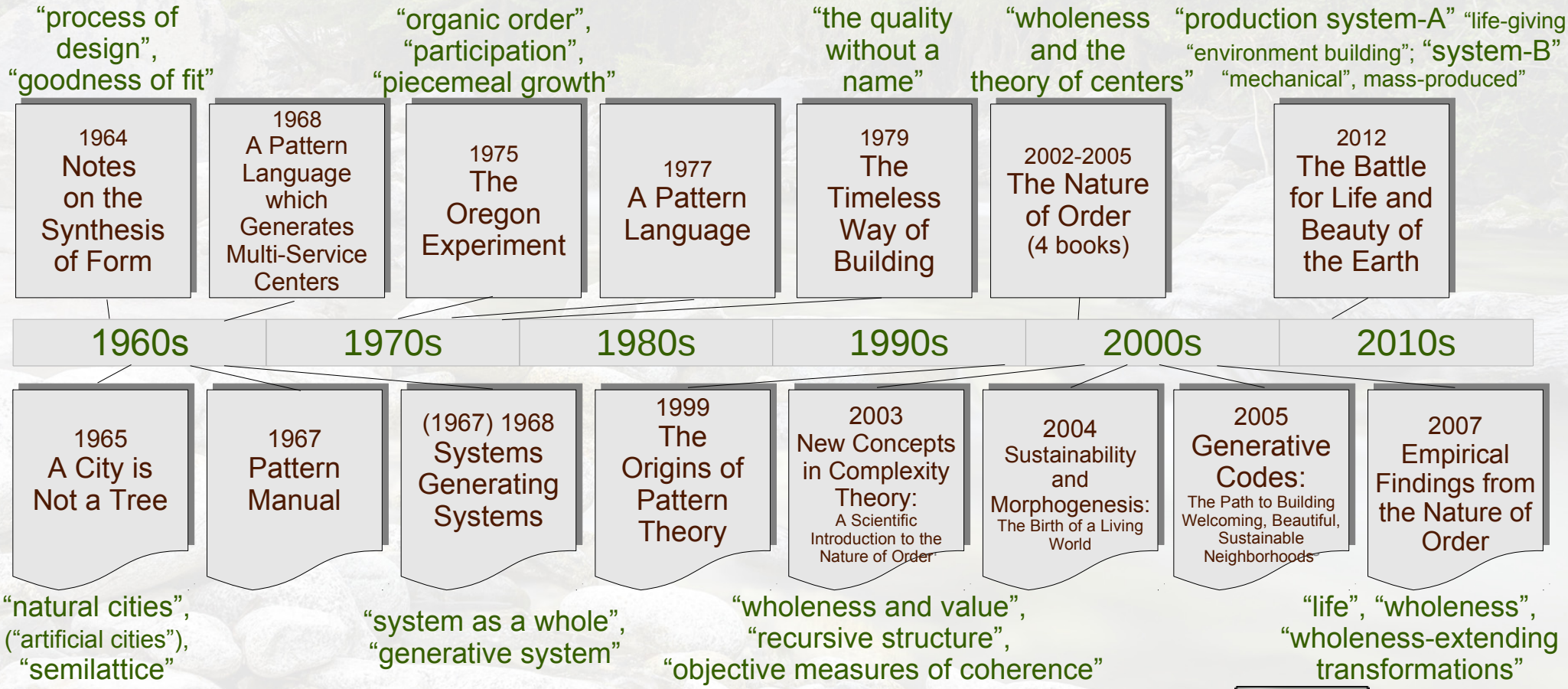
Over 50 years, Christopher Alexander and coauthors evolved concepts and language in built environments



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At Berkeley: Churchman, Rittel and Alexander taught in 1960-1970s

C. West Churchman (1913-2004)

- 1957 joined Berkeley, graduate programs in OR at School of Business Administration
- 1964-1970 Associate Director and Research Philosopher, Space Sciences Laboratory
- 1981-1994 retired, taught Peace & Conflict Studies

Horst Rittel (1930-1990)

- 1963 Berkeley College of Environmental Design
- 1974 both Berkeley and University of Stuttgart

Christopher Alexander (1936 -)

- 1963 Berkeley College of Environmental Design
- 1967 cofounder Center for Environmental Structure
- 1998 retired from university

Both Alexander and Rittel were part of what at the time was called the 'design methods' movement in architecture, worked and taught in the same building, and did talk and were seen walking off to have lunch together. Churchman was teaching in the Business School a few minutes down on the way to the center of campus.

- *Thor Mann*
  (posted April 17, 2017)

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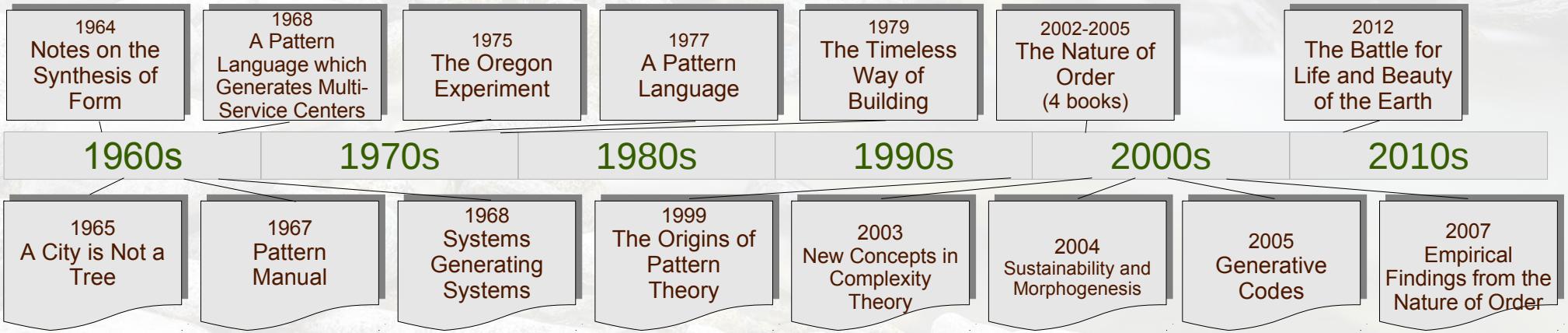
An open system of knowledge recognizes parallel research



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Architecture ~ problem-seeking. Design ~ problem-solving

1969
William Pena + John Focke
Problem Seeking: New directions in architectural programming

Design is problem solving; programming is problem seeking. […] The "total problem" ... serves to point up constituent problems, in terms of four considerations, those of form, function, economy and time.

1971
Horst Rittel
Some Principles for Design of an Educational System for Design
(J. Arch Edu)

Instrumental knowledge relates three kinds of entities with each other: 1. Performance Variables …. 2. Design Variables … 3. Context Variables ….

"**Under context C (O), design configuration D (O) will lead to performance P (O).**"

Recurring Difficulties in Design

1. … the worthwhileness of a project
2. … the appropriate level of a problem
3. … the nature of the solution
4. … an evaluation system [….]
11. … to implement a solution proposal
12. … to test the results

2006/03/02
Grady Booch
On Design
(IBM blog)

As a noun, design is the named (although sometimes unnamable) structure or behavior of an system whose presence resolves or contributes to the resolution of a force or forces on that system. […]

As a verb, design is the activity of making such decisions. Given a large set of forces, a relatively malleable set of materials, and a large landscape upon which to play, the resulting decision space may be large and complex. [….]

All architecture is design but not all design is architecture.

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Notes on the Synthesis of Form

1968
A Pattern Language which Generates Multi-Service Centers

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The Timeless Way of Building

2002-2005
The Nature of Order
(4 books)

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The Battle for Life and Beauty of the Earth

1960s | 1970s | 1980s | 1990s | 2000s | 2010s

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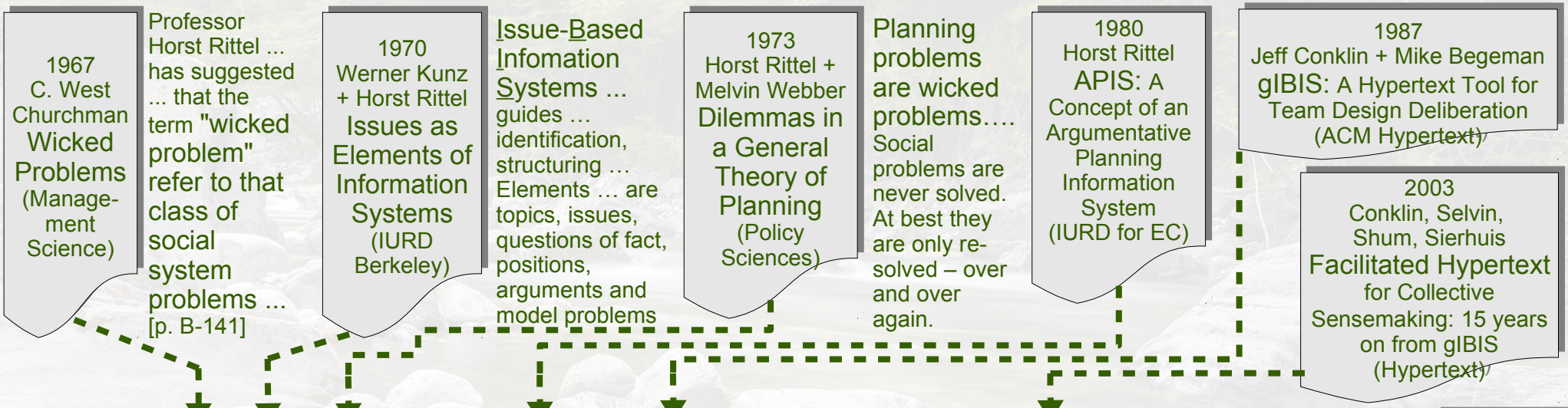
Wicked problems led to IBIS and argumentation schemes



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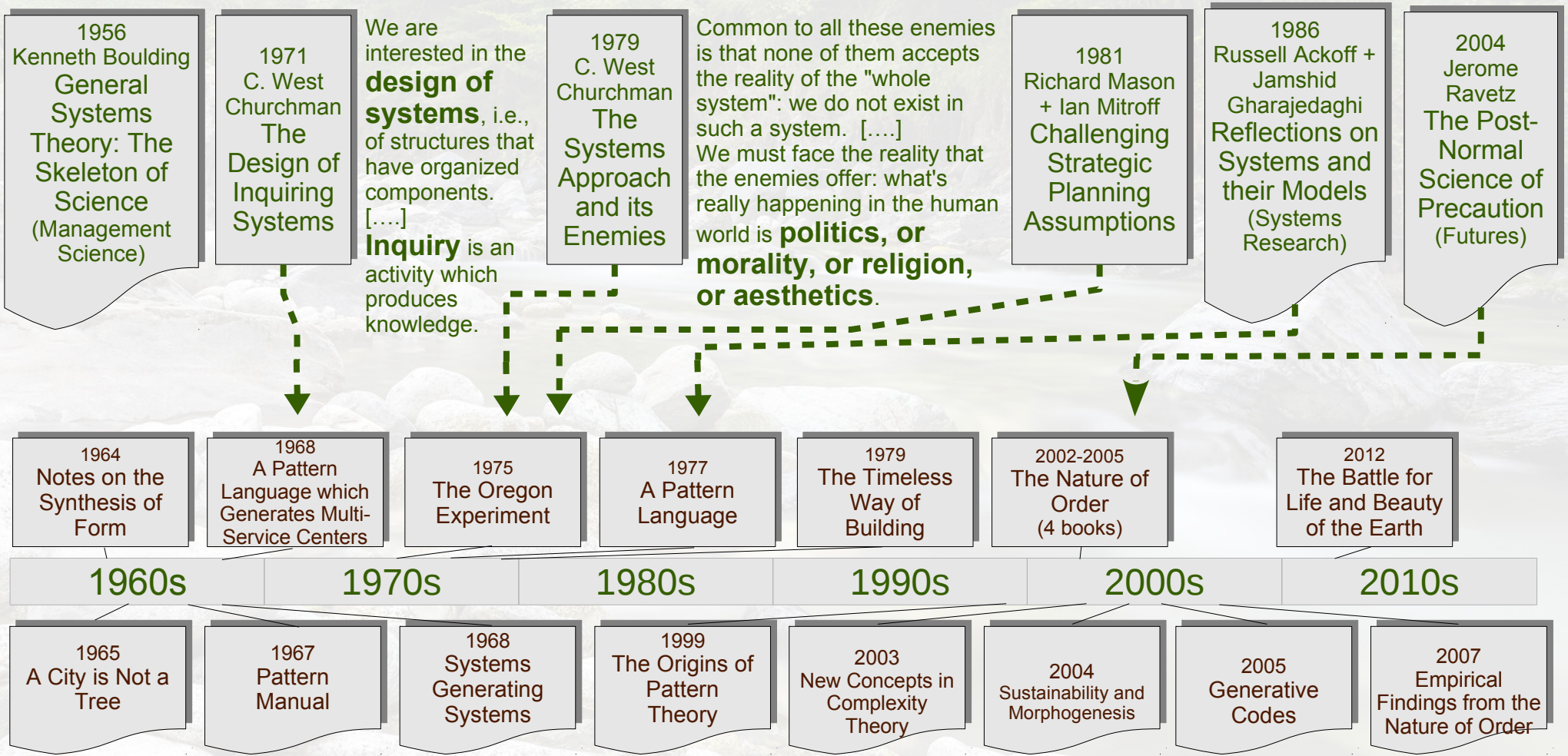
Systems approach led to assumption surfacing, postnormal science



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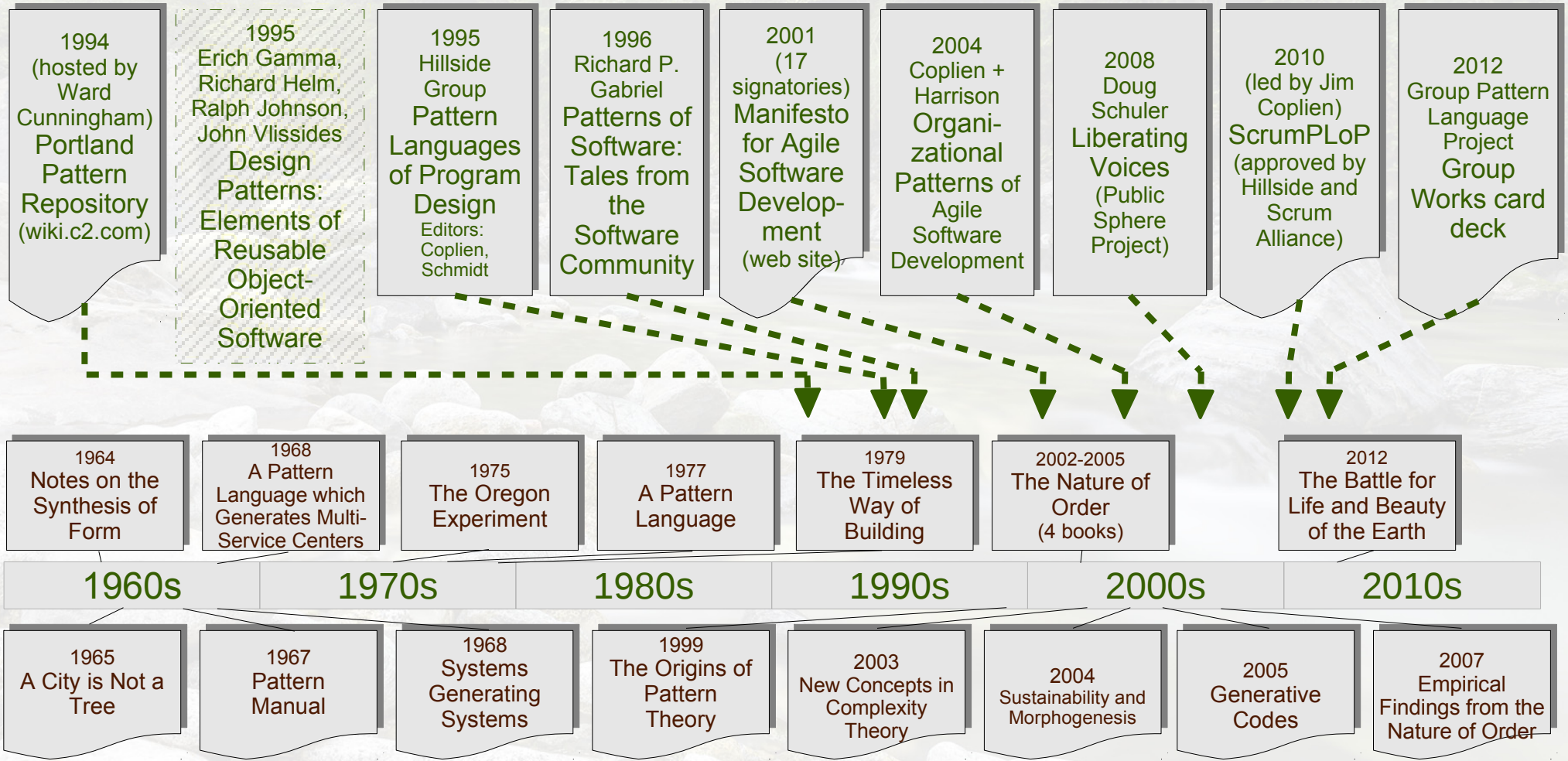
Pattern language has risen in agile, groups, public sphere



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Ecological epistemology led to interaction design + affordances

1972 Gregory Bateson Steps to an Ecology of Mind

The questions which the book raises are ecological: **How do ideas interact?** Is there some sort of natural selection ...? What sort of economics limits ...? What are the necessary conditions for stability (or survival) of such a system or subsystem?

1979 James J. Gibson The Ecological Approach to Visual Perception

The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill. …. I mean by it something that refers to both the environment and the animal in a way no existing term does. It implies the complementarity of the animal and the environment

1997 ACM CHI97 Towards a Pattern Language for Interaction Design (SIGCHI Bulletin 1998)

1999 Donald A. Norman Affordance, Conventions, and Design (Interactions)

2000 Tim Ingold The Perception of the Environment: Essays on livelihood, dwelling and skill

2011 Tim Ingold Being Alive Essays on movement, knowledge and description

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Hierarchy theory led to panarchy and resilience science

1982
Timothy F.H. Allen + Thomas B. Starr
Hierarchy: Perspectives for Ecological Complexity

... patterns that generally remain opaque until we model using hierarchies. By hierarchy is understood **a system of behavioral interconnections whereby the higher levels constrain and control the lower levels** to various degrees depending on the time constants of the behavior.

1994
Stewart Brand
How Buildings Learn: What Happens After They're Built

2002
Lance Gunderson + C.S. Holling
Panarchy: Under-standing Transfor-mations in Human and Natural Systems

2004
Walker, Holling, Carpenter, Kinzig
Resilience, Adaptability and Transformability in Social-Ecological Systems
(Ecology & Society)

Resilience is the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks.

2015
Juan Carlos Rocha, Garry Peterson, Reinette Biggs
Regime Shifts in the Anthropocene: Drivers, Risks and Resilience
(PLoS ONE)

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Interactive value is in the shift to a service economy

1994
Richard Normann + Rafael Ramirez
Designing Interactive Strategy: From Value Chain to Value Constellation

Co-production is the term we use to describe the 'reciprocal' relationships between actors which characterize the service economy.

Offerings organize activities along several dimensions: (1) In time …; (2) In space or location …; and (3) In terms of relationships among actors ….

2004
Stephen Vargo + Robert Lusch
Evolving to a New Dominant Logic for Marketing
(J. Marketing)

… *operand resources* as resources on which an operation or act is performed to produce and effect, and … *operant resources,* which are employed to act on operand resources … A goods-centered dominant logic developed in which operand resources were considered primary.

A **service-centered view** implies processes … largely focused on operant resources ...

2007
Spohrer, Maglio, Bailey, Gruhl
Steps Towards a Science of Service Systems
(IEEE Computer)

2011
Haluk Demirkan, Jim Spohrer, Vikas Krishna
The Science of Service Systems

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