Exploring the Context of Pattern Languages:
A dialogue on the world around
Christopher Alexander
David Ing
Aalto University and
the International Society for the Systems Sciences
PURPLSOC: Pursuit of Pattern Languages for Societal Change
Danube University Krems
October 21, 2017
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)
Dialogue in encouraged with a starter set of 7 ideas in dialectic

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<td>Holistic, sequential processes → effective unfolding</td>
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<td>13. Interactive value constellation</td>
<td>Coproduction of offerings: product, service, relationship</td>
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<td>14. Feeling of connectedness, living structure</td>
<td>Test which induces wholeness + resembles inner self</td>
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If they can get you asking the wrong questions, they don’t have to worry about answers  
(Thomas Pynchon)

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<th>Type</th>
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<td>1</td>
<td>False positive:</td>
<td>finding a (statistical) relation that isn’t real</td>
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<td>2</td>
<td>False negative:</td>
<td>missing a (statistical) relation that is real</td>
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<td>3</td>
<td>Tricking ourselves:</td>
<td>Unintentional error of solving wrong problems precisely (through ignorance, faulty education or unreflective practice)</td>
</tr>
<tr>
<td>4</td>
<td>Tricking others:</td>
<td>Intentional error of solving wrong problems (through malice, ideology, overzealousness, self-righteousness, wrongdoing)</td>
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Over 50 years, Christopher Alexander and coauthors evolved concepts and language in built environments.
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)
An open system of knowledge recognizes parallel research.

1. There are two ideas hidden in the word system: the idea of a system as a whole and the idea of a generating system.
2. A system as a whole is not an object but a way of looking at an object. It focuses on some holistic property which can only be understood as a product of interaction among parts.
3. A generating system is not a view of a single thing. It is a kit of parts, with rules about the way these parts may be combined.
4. Almost every ‘system as a whole’ is generated by a ‘generating system’. If we wish to make things which function as ‘wholes’ we shall have to invent generating systems to create them.

In a properly functioning building, the building and the people in it together form a whole: a social, human whole. The building systems which have so far been created do not in this sense generate wholes at all. (Alexander, 1968, p. 605)
“The Systems Approach and Its Enemies”, (Churchman, 1979)

Common to all these enemies is that none of them accepts the reality of the "whole system": we do not exist in such a system. Furthermore, in the case of morality, religion, and aesthetics, at least a part of our reality as human is not "in" any system, and yet it plays a central role in our lives.

To me these enemies provide a powerful way of learning about the systems approach, precisely because they enable the rational mind to step outside itself and to observe itself (from the vantage point of the enemies). [....]

We must face the reality that the enemies offer: what's really happening in the human world is politics, or morality, or religion, or aesthetics. This confrontation with reality is totally different from the rational approach, because the reality of the enemies cannot be conceptualized, approximated, or measured (Churchman, 1979, pp. 24–53).

There are at least ten distinguishing properties of planning-type problems, i.e. wicked ones .... We use the term “wicked” in a meaning akin to that of “malignant” (in contrast to “benign”) or “vicious” (like a circle) or “tricky” (like a leprechaun) or “aggressive” (like a lion, in contrast to the docility of a lamb). [....]

1. There is no definitive formulation of a wicked problem ....
2. Wicked problems have no stopping rule ....
3. Solutions to wicked problems are not true-or-false, but good-or-bad ....
4. There is no immediate and no ultimate test of a solution to a wicked problem ....
5. Every solution to a wicked problem is a "one-shot operation"; because there is no opportunity to learn by trial-and-error, every attempt counts significantly ....
6. Wicked problems do not have an enumerable (or an exhaustively describable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan ....
7. Every wicked problem is essentially unique ....
8. Every wicked problem can be considered to be a symptom of another problem ....
9. The existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's resolution ....
10. The planner has no right to be wrong ....
Wicked problems led to IBIS and argumentation schemes

1964 Notes on the Synthesis of Form
1965 A City is Not a Tree
1967 C. West Churchman Wicked Problems (Management Science)
1967 Horst Rittel has suggested that the term "wicked problem" refer to that class of social system problems ...
[p. B-141]
1968 A Pattern Language which Generates Multi-Service Centers
1970 Werner Kunz + Horst Rittel Issues as Elements of Information Systems (IURD Berkeley)
1970 Issue-Based Information Systems ... guides ... identification, structuring ... Elements ... are topics, issues, questions of fact, positions, arguments and model problems
1973 Horst Rittel + Melvin Webber Dilemmas in a General Theory of Planning (Policy Sciences)
1975 The Oregon Experiment
1977 A Pattern Language
1979 The Timeless Way of Building
1980 Horst Rittel APIS: A Concept of an Argumentative Planning Information System (IURD for EC)
1987 Jeff Conklin + Mike Begeman gIBIS: A Hypertext Tool for Team Design Deliberation (ACM Hypertext)
1988 Werner Kunz + Horst Rittel Issues as Elements of Information Systems (IURD Berkeley)
1990-1999 The Origins of Pattern Theory
1999 The Origins of Pattern Theory
2000-2005 Sustainability and Morphogenesis
2004 Generative Codes
2005 Empirical Findings from the Nature of Order
2007 Compendium NG (Github)
We are interested in the **design of systems**, i.e., of structures that have organized components. [...] **Inquiry** is an activity which produces knowledge.

Common to all these enemies is that none of them accepts the reality of the "whole system": we do not exist in such a system. [...] We must face the reality that the enemies offer: what’s really happening in the human world is politics, or morality, or religion, or aesthetics.
Pattern language has risen in agile, groups, public sphere

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<td>1987</td>
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<td>1995</td>
<td>Hillside Group Pattern Languages of Program Design</td>
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<td>1996</td>
<td>Patterns of Software: Tales from the Software Community</td>
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<td>2001</td>
<td>2004 Coplien + Harrison Organizational Patterns of Agile Software Development</td>
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- A Pattern Language which Generates Multi-Service Centers
- Systems Generating Systems
- The Origins of Pattern Theory

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- Pattern Manual
- The Oregon Experiment
- A Pattern Language
- The Timeless Way of Building

**1980s**
- The Nature of Order

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- New Concepts in Complexity Theory
- Sustainability and Morphogenesis

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*Systems Generating Systems* 1968
*The Origins of Pattern Theory* 1999
*New Concepts in Complexity Theory* 2003
*Sustainability and Morphogenesis* 2004
*Generative Codes* 2005
*Empirical Findings from the Nature of Order* 2007
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?

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.
Hierarchy theory led to panarchy and resilience science

... 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.

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.

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The Timeless Way of Building

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

1999
The Origins of Pattern Theory

2002
Lance Gunderson
Panarchy: Understanding Transformations in Human and Natural Systems

2003
New Concepts in Complexity Theory

2004
Walker, Holling, Carpenter, Kinzig

2004
Sustainability and Morphogenesis

2005
Generative Codes

2007
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2012
The Battle for Life and Beauty of the Earth

2015
Juan Carlos Rocha, Garry Peterson, Reinette Biggs
Regime Shifts in the Anthropocene: Drivers, Risks and Resilience (PLoS ONE)
Interactive value is in the shift to a service economy

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 ....

... 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 ...

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2004 Sustainability and Morphogenesis
2005 Generative Codes

1994 Richard Normann + Rafael Ramirez Designing Interactive Strategy: From Value Chain to Value Constellation
2004 Stephen Vargo + Robert Lusch Evolving to a New Dominant Logic for Marketing (J. Marketing)
2002-2005 The Nature of Order (4 books)
2007 Empirical Findings from the Nature of Order
2011 Haluk Demirkan, Jim Spohrer, Vikas Krishna The Science of Service Systems
2012 The Battle for Life and Beauty of the Earth

1970s 1980s 1990s 2000s 2010s

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