

# Representing Generative Wholeness with Pattern Language

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Are there features in alternative advanced technological media that might enable or disable the generation of wholeness (also known as **life** in *The Nature of Order*, and **quality without a name** in *The Timeless Way of Building*)?

The seminal books of Christopher Alexander have been published only in the 19th century sequential medium of paper.

In 1995, Ward Cunningham invented the C2 wiki to allow the pages of the Portland Pattern Repository to be interlinked on the web and enable collaborative editing on the Internet.

The thesis of this focus session for PLoP 2018 is that tools (and media) through which pattern language is represented may inhibit authors from aspiring to systemic pursuits, as well as discouraging the community from easily sharing collective learning.

The focus session is to be conducted as a participatory workshop on October 24. Discussion amongst the participants are to be summarized and included in the final proceedings publication.

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## 1. INTRODUCTION

Christopher Alexander challenges pattern developers to ask whether "a particular set of patterns, *taken as a system*" will generate a coherent whole. The pattern language should be more than just a "good way of exchanging fragmentary, atomic ideas" and should enable evidence of improvement along two dimensions: "(1) the moral capacity to produce a living structure and (2) the generativity of the thing, its capability of producing coherent wholes" [Alexander 1999, p. 75].

Further, the development of a pattern language can be seen as a form of knowledge work. The books published by the Center for Environment Structure in the 1970s were developed as a hardcopy manuscript by a team in close physical proximity, face-to-face in Berkeley. Since the rise of the Internet and Computer-Supported Cooperative Work, knowledge work largely takes place in mediating spaces, with social interaction enabled by informatic spaces [Ing and Simmonds 2002].

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Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, to republish, to post on servers or to redistribute to lists, requires prior specific permission. A preliminary version of this paper was presented in a writers' workshop at the 25th Conference on Pattern Languages of Programs (PLoP). PLoP'18, OCTOBER 24–26, Portland, Oregon, USA. CC-BY-NC-SA 2018 David Ing. HILLSIDE 978-1-941652-03-9

For PLoP 2018, a focus session is being convened as a participatory workshop. The face-to-face meeting is organized as three steps:

- (1) Communicative Framing (for Formulating the Mess)
- (2) Dialectic Sensemaking (for Typifying Affording Values)
- (3) Narrative Synthesizing (for Programming for a Living Meshwork)

Within each of these steps, a starter context will be shared so that the group has some common ground. This starter context is included in the pre-event text that follows.

Discussion during the face-to-face meeting will be captured and subsequently summarized for inclusion into the version to be published in the final proceedings for the conference.

The time together will close with an exploration looking forward, of how we, as individuals or as a group, might progress on better developing pattern languages in a mediated world.

This focus session may serve as a preliminary touchstone from which future work may be based.

## 2. COMMUNICATIVE FRAMING

The first step of appreciating the issues can be ignited by the trigger question:

- For whom does the pattern language generate value (or benefits)?
  - The whom could include: the sponsor; the client; the provider, etc.
  - What value (or benefit) could be unfolding wholeness, life, quality without a name, beauty, regeneration, etc.

The challenge with pattern language, from a systems approach, is that these values or benefits are properties of the whole, not necessarily in the parts.

What I am proposing ... is a view of programming as the natural, genetic infrastructure of a living world which you/we are capable of creating, managing, making available, and which could then have the result that a living structure in our towns, houses, work places, cities, becomes an attainable thing. That would be remarkable. It would turn the world around, and make living structure the norm once again, throughout society, and make the world worth living in again. [Alexander 1999, p.82]

Here's a claim: much of pattern language work has focused attention on the parts, so that the full sight of the whole is lost.

### 2.1 A starter context for Communicative Framing

From *A Pattern Language* [1977], suppose that we focus on **128 Intimacy Gradient**. The chapter begins ...

#### **127 INTIMACY GRADIENT \*\***

... if you know roughly where you intend to place the building wings – WINGS OF LIGHT (107), and how many stories they will have – NUMBER OF STORIES (96), and where the MAIN ENTRANCE (110) is, it is time to work out the rough disposition of the major areas on every floor. In every building the relationship between the public areas and private areas is most important. [Alexander et al. 1977, p. 610]

... and ends with ...

At the same time that common areas are to the front, make sure that they are also at the heart and soul of the activity, and that all paths between more private rooms pass tangent to the common ones – COMMON AREAS AT THE HEART (129). In private houses make the ENTRANCE ROOM (130) the most formal and public place and arrange the most private areas so that each person has a room of his own, where he can retire to be alone – A ROOM OF ONE'S OWN (141). Place bathing rooms

and toilets half-way between the common areas and the private ones, so that people can reach them comfortably from both – BATHING ROOM (144); and place sitting areas at all the different degrees of intimacy, and shape them according to their position in the gradient – SEQUENCE OF SITTING SPACES (142). In offices put RECEPTION WELCOMES YOU (149) at the front of the gradient and HALF-PRIVATE OFFICE (152) at the back.... [Alexander et al. 1977, p. 613]

In figure 1 , this pattern can be represented with the larger-slower scale above, and the smaller-faster-scale below.

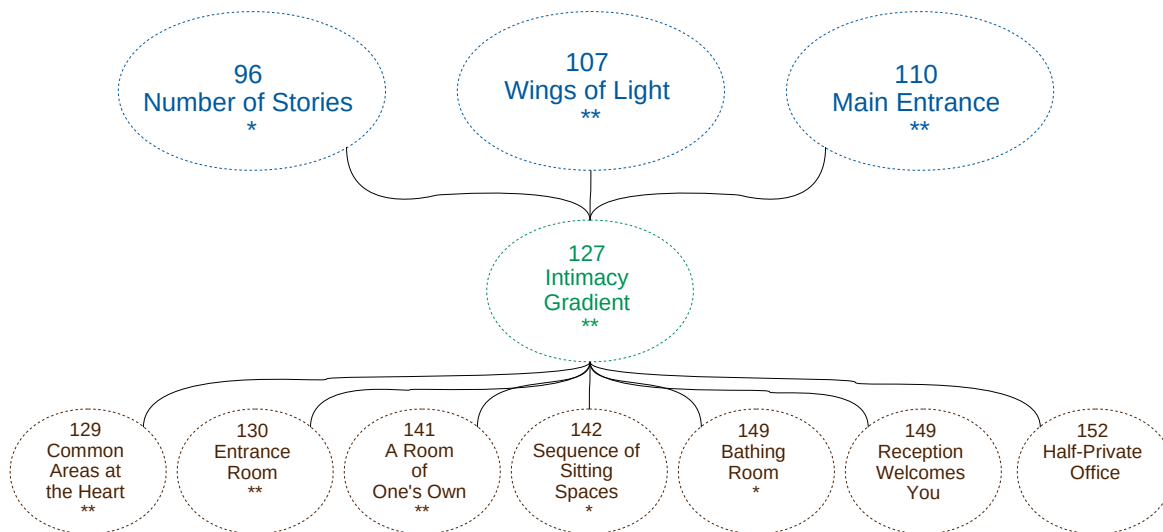


Fig. 1. Intimacy Gradient, with patterns larger-slower and smaller-faster

The textual description (not shown for Intimacy Gradient, above), draws attention reductively into the pattern, rather than the larger collection (whole) within the ecology.

*A Pattern Language*, in [1977], did not focus so much on the value(s) in the whole. In *A Pattern Language Which Generates Multi-Service Centers* in [1968], there is a "miniature drawing of the language cascade", reproduced in Figure 2 .

Suppose that we're interested in **32 Child Care Position**. Here's the text for that pattern.

**PATTERN**

IF: Any child care station in any building where mothers have prolonged business (multi-service center, supermarket, etc.)

THEN: The child care station should be on the path from the building entrance to the place of business, and visible from this path; and the path should be laid out so that it looks into the child care station for roughly 20 feet along its length [Alexander et al. 1968, p. 183]

The relation from **32 Child Care Position** downward to **57 Child Care Contents** isn't in that text, only in the diagram.

If we trace upward from **32 Child Care Position**, we can see the text of relation in the parent, **10 Open to Street**, as well text referring to siblings.

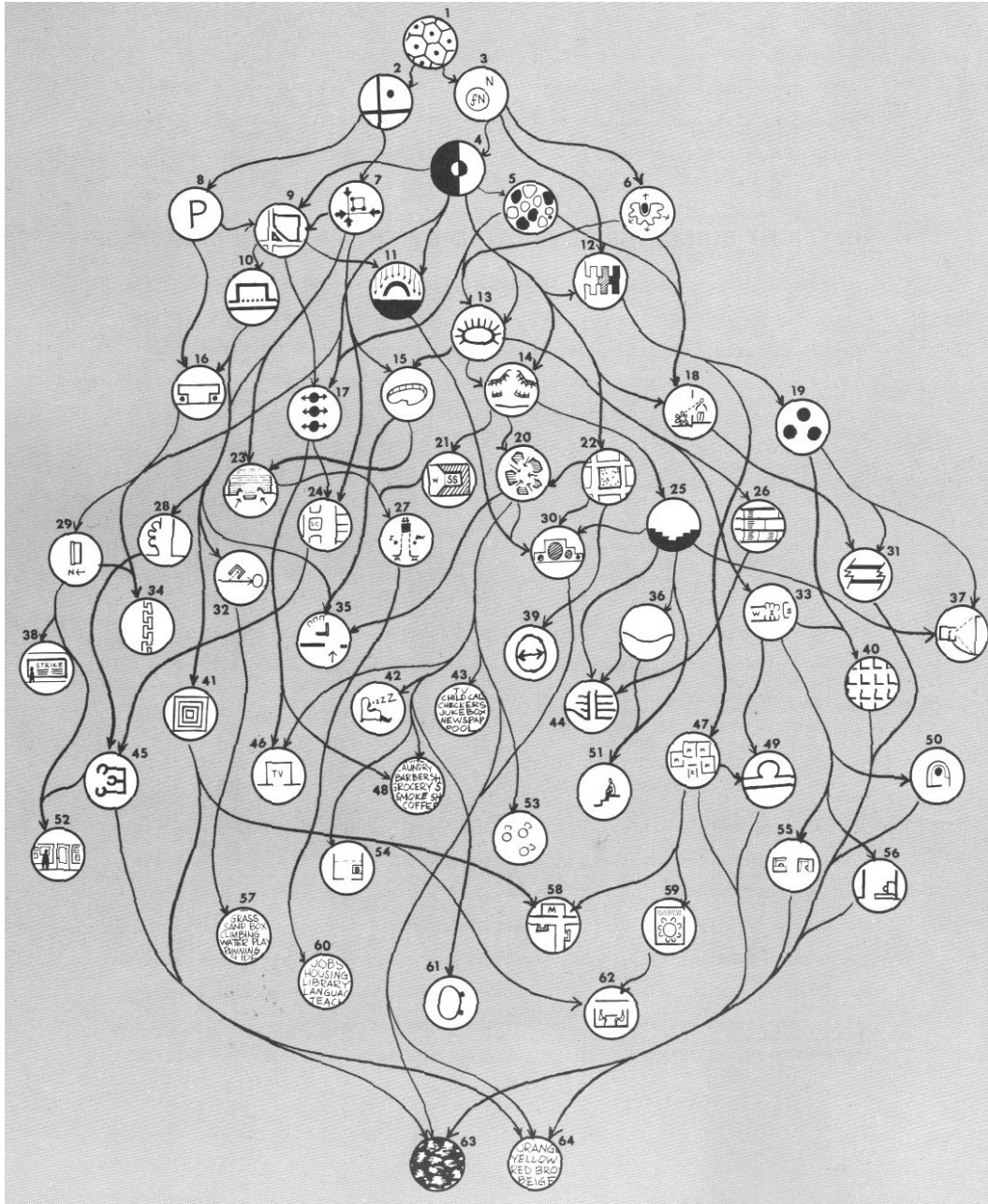


Fig. 2. Miniature drawing of the language cascade, from Alexander, Isikawa, Silverstein (1968)

**PATTERN**

IF: Any multi-service center,

THEN: The following activities, if they are part of the multi-service center program, should be visible from the street:

- . Information-conversation station (see Pattern 35).
- . Child care station (see Pattern 32).
- . Community projects (see Patterns 4 and 17).
- . Waiting arena and activity pockets (see Patterns 20 and 43).
- . Intake (see Pattern 28).
- . Town hall meeting room (see Pattern 41).
- . Self-service (see Pattern 21).

As far as possible, the outer face of the center is transparent at ground level, with glass and openings looking into the activities named. [Alexander et al. 1968, p. 105]

There are challenges lining up the text in **32 Child Care Position** to the relations linked in the diagram, reinterpreted in Figure 3. Discrepancies are shown below in brackets.

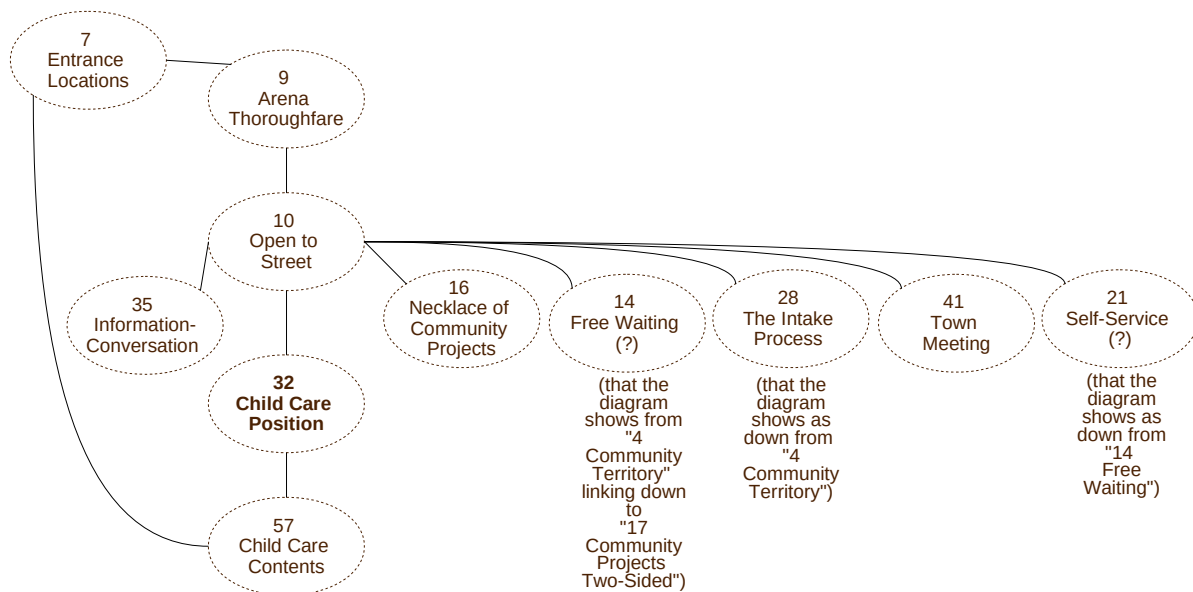


Fig. 3. Attempted reinterpretation around Child Care Position

In the original diagram, **7 Entrance Locations** connects (i) directly to **32 Child Care Position**, and (ii) indirectly through **9 Arena Thoroughfare** and **10 Open to Street**. These relations don't show up explicitly in the text.

The [1968] work was not prepared as carefully as the subsequent [1977] book, so perhaps the disconnect between the diagrams and text should be seen as lack of sufficient funding and time.

2.2 Discussion on Communicative Framing

Key points from the face-to-face discussion on October 24 will be included in a later revision of this document.

### 3. DIALECTICAL SENSEMAKING

The second step of elevating or lowering expected benefit of an option can be discussed with a trigger question:  
—Which option features help or hinder collective development of a generative pattern language?

#### 3.1 A starter context for Dialectical Sensemaking

As a dialectic foundation on which to base these discussions, some alternative technologies (with associated methods) can be considered:

- (1) Traditional wiki (e.g. Dokuwiki, <https://www.dokuwiki.org/dokuwiki> with Graphviz plugin <https://www.dokuwiki.org/plugin:graphviz> )
- (2) Tiddlymap (i.e. Tiddlywiki5 on node.js, with a Tiddlymap plugin, <http://tiddlymap.org/> )
- (3) Federated wiki with Graphviz or Cytoscape <https://github.com/fedwiki/wiki/issues/63> leading to <http://ward.asia.wiki.org/view/knowledge-graphing/view/graph-libraries>
- (4) Labeled Property Graph database (e.g. OrientDB with Graph Editor <https://orientdb.com/docs/3.0.x/studio/working-with-data/graph-editor/> ).
- (5) Systems Biology Graphical Notation (SBGN) <http://sbgn.github.io/sbgn/>
- (6) Obeo Designer Community at <http://www.eclipse.org/sirius/download.html> , based on Eclipse Sirius at <http://www.eclipse.org/sirius/>
- (7) eLiberate from the Public Sphere Project at <http://www.publicsphereproject.org/content/eliberate-0>

These technological platforms range from the more mature and stable, to the actively developed and rapidly evolving. Communities could choose to converge on a uniform architecture, or decide on a variety of ways that might (or might not) be translatable to each other.

#### 3.2 Discussion on Dialectical Sensemaking

Key points from the face-to-face discussion on October 24 will be included in a later revision of this document.

### 4. NARRATIVE SYNTHESIZING

The third step is architecting a way in which learning and reflection in action can take place.

#### 4.1 A starter context for Narrative Synthesizing

The method can follow an action research cycle, as shown in Figure 4.:

There are a variants of action research (or action learning) cycles. One well known depiction is:

- (1) Diagnosing;
- (2) Action Planning;
- (3) Action Taking;
- (4) Evaluating; and
- (5) Specifying Learning [Susman and Evered 1978]

#### 4.2 Discussion on Narrative Synthesizing

Key points from the face-to-face discussion on October 24 will be included in a later revision of this document.

### 5. LOOKING FORWARD

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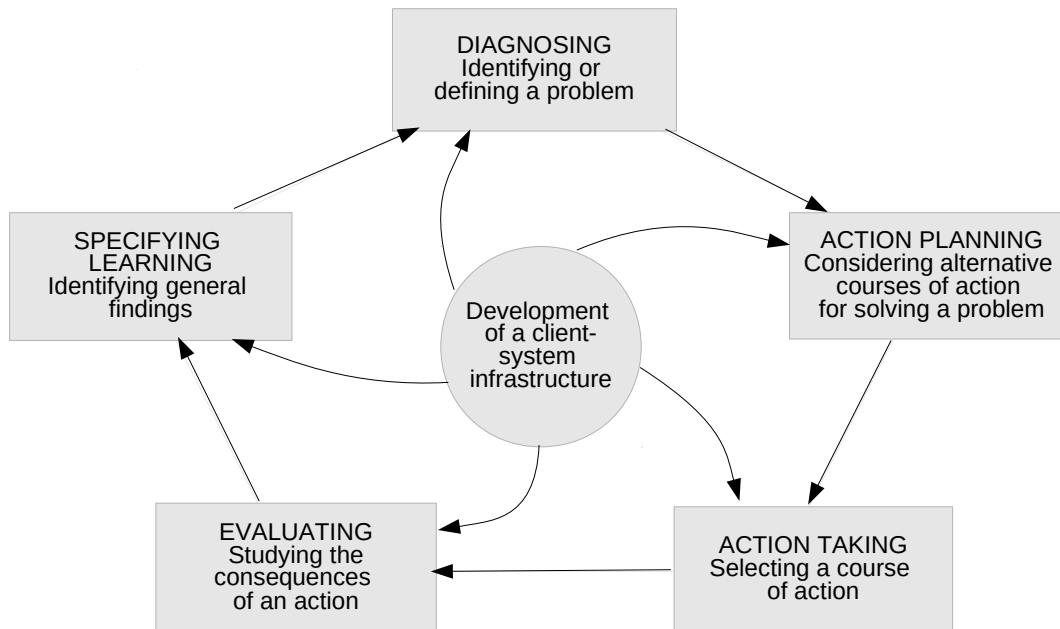


Fig. 4. Action research cycle, from Susman and Evered (1978)

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