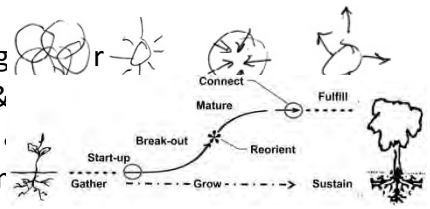
Image	Context • Moving r • Roles & • Stages • Movem	
Simplifying Relationships	Object	Solution
Links	Anticipated Results and Open questions	

". It's basically a way to clearly describe familiar elements of complex designs, like gems of expert knowledge. They'd be described in familiar terms as 1) where they apply, 2) the problems ('forces') to be dealt with, 3) the service to be provided and 4) a simplifying concept for how, with the objective being to bring the forces into balance with a solution releasing all the tension. So… that would be "a design pattern" or "object"

4. REPOSITORIES FOR NATURAL PATTERNS

One of the more surprising aspects of using Alexander's model for design patterns is how very many existing repositories of natural design patterns there really are. Its more or less inherent in nature to leave traces of both the simple and intricate patterns that develop naturally, as echoes of the past, as foundations on which to build, as endlessly repeated common solutions for common natural problems. Human culture, as a whole, is a kind of interface between the internal relationships of people and the external world in which we operate. One could even define a new meaning for 'culture' that way, as a constantly evolving interface between natural systems that need to work together, composed of inherited information and organization.

Every person knows a great deal about their own culture, making it a great resource of the recorded natural patterns they are familiar with. Of course, maybe more than anything else we all tend to take our own culturally inherited knowledge for granted, to "*be*" the "firmament and stars" of our personal worlds, as we should, as it is our own mind's main source of understanding. Natural patterns one notices in your own cultural inheritance are hard to reduce to abstraction, they are so deeply tied into our feelings. So I think if one just allows one's whole response to them, finding them naturally just deepens and enriches our cultures.

4.1 Cultures as Stores of Natural Patterns

How deeply hidden the natural patterns in our cultures seems to depend on how deeply ancient they are, and the converse, the things easiest to notice are the features of our cultures that are fairly superficial. Exceptions to that are beliefs that different cultures hold that come into conflict, and so have attention drawn to them. One can start with a "culture" itself being a "natural design pattern", as an accumulation of regular relationships between people sharing it and collectively for relating to their environment. Maybe the most notable thing one finds is how very extensive and multi-layered that "interface" really is, a really remarkable "artifact" of lives lived and shared over time, acting on patterns left by others and adding their variations.

Figure 12 combines a list of various kinds of layers of human culture that are easier and harder to notice, until some exploratory question or experience brings them out. One great way to get a sudden surprise of entering a world of cultural differences just different enough to be confusing is to walk into a friend's home. Generally "everything seems to work differently".

• Cultures as deep patterns of how to live •

12. Visible & Hidden; patterns of living

Family homes develop their own quite independent versions the common culture partly because of the complete privacy that homes allow a family, to organized themselves in what every way succeeds in combining the individuals and the individual differences in their roles in the world. So the general rule is to expect that in every home there are internal worlds of relationships that are most often both complex and fairly unique. It means that family cultures develop so independently that they are literally invisible to others who don't participate in them somehow, so we develop habits of respecting the privacy of homes, as containing an "inner world" we know very little about. We anticipate that whenever noticing the typical signs of occupancy, the various kinds of boundaries one naturally crosses to enter, or avoids crossing to leave undisturbed.

To turn that into a more general pattern of natural design one connects that experience with the related experiences of crossing other kinds of boundaries that separate cultural differences. You might enjoy in a group making lists of different kinds of boundaries between cultures, that give them privacy and caution against intrusion. Some a living culture will make for themselves, others a living culture will be attracted to as a "found shelter" and center of operation. Then there are others we find so unexpectedly when crossing them finding you've stepped into "another world", not even realizing it, and suddenly don't quite know how to act.

4.2 Natural Language as a Store of Patterns

If you think about where natural language came from, it becomes obvious that what words are for is connection our cultural meanings with the natural design patterns of the world we live in. Nouns, verbs and adjectives may have many related meanings, but generally as aspects of the natural design patterns we use them to refer to. We only need to explore their "contexts", "problems", and the "forces" their meanings bring into balance, to represent a "whole solution" for, to expand their familiar pattern language format for defining versatile whole patterns of design. It take searching for how to do it at first, of course, we start from being accustomed to using words for the intuitive meanings that come to us automatically, not thought of as conveying a balance of natural forces in an environment.

It helps to have a way to take families of related words out of their normal context, so one can stop and look at what natural designs their meanings refer to. In English there are fairly simple and surprisingly productive ways to do that, seeming to correspond to the actual accumulating layers of expanded meaning that our language today developed with. They are somewhat more visible as radiating patterns of meaning when from seeing lists of words with related structures and meanings, out of verbal context, so their related meanings can be looked at as a common pattern of thought that once developed. As you look at word roots, and how that root meaning is modified, it seems implied that the wonderful deep meanings of many of our words are emergent properties of putting together two very simple ideas to make a particularly powerful combined meaning. So as you look at the wonderful way the simple parts of compound words combine to express the more powerful words of English, you see them also as lists of the great "ah ha moments" of discovering deeply meaningful patterns of nature too.

4.3 Sifting for "Pattern words"

If we look closely, many common words are names for "centers" of natural design as Alexander might term them, as patterns of design that have strong living quality in terms of being inviting to life as in making places for lasting or temporary homes, of offering other design "services" that living things find meaningful. So "pattern words" would be the names for such designs that are in some sense pivotal in the context, as in the way that enabling "communication" or "community" are often central to the services to living things that a design provides. That might either be as a place of quiet or one connecting to places of commotion, for different purposes. Surprisingly perhaps, one seems to be able to find long lists of such "pattern words" by filtering natural language for words with the same prefix, or suffixes, complexly constructed word meanings. Figure 12 gives an example of how the structure of "community" can be looked at to recognize the natural design pattern it refers to.

• Pattern words to identify natural centers •

Community*: [comm·unity]*
combining a root for "together" modified by "unity"

The structure turns our attention:
- to the common natural phenomenon,
- to it being a property of natural design
- to a great variety of examples we individually know of,
- and to the many layered associations we are all familiar with.

13. Word structure a key to natural design

The word construction not only provides the name of a whole pattern of natural design. It also turns our attention to the natural design it names and all its roles in our lives. In normal use we don't need to study the natural designs that our common words refer to. If you want to have the qualities of a word in a design, though, it's very useful to learn more about the natural design pattern the word refers to. Looking at how the word is structured starts the process, of thinking over living examples looking for the common design pattern being referred to. I think of that as collecting materials for pulling the word associations apart to find the pattern elements we can understand it with, the implied "simplifying ideal", "problem", "forces" and "way of bringing balance" to understand natural design patterns in pattern language terms.

To explore this aspect of natural language it helps to have a simple way to collect groups of related words taken out of context, so their individual meanings and structures are what you first see, rather than their roles in a sentence. I'm not sure about with other languages,

but with English an easy way of sorting words a group of related meanings is to group them by prefix or suffix or root meaning. Below, for example, are a few of the 1,965 words in English that have the *"-tion"* suffix, obtained by using an online dictionary[7].

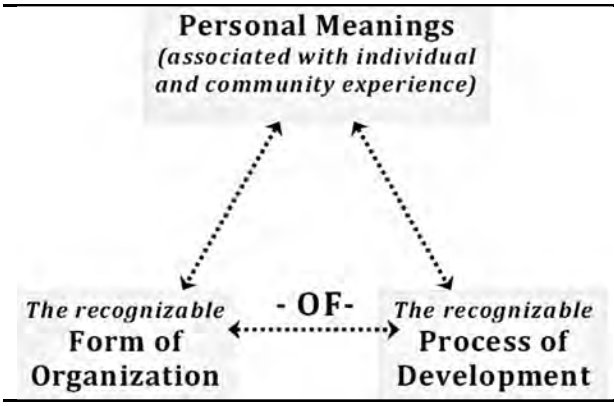
It helps to turn your attention back and forth between the meaning of the word root[8] and how the modifier,[9] "-tion", transforms the meaning of the root word to something greater. What these powerful terms of English have in common is this simple way of elevating a simple associative meaning in the root with quite broad generalization, an invention that came to English via Latin, and the Romans[10]

The most interesting thing these words mostly have in common is a *dual meaning*, relying on referring to both "the process of becoming" and the "the end state of being", for some particular recurrent pattern of relationships. To understand any state of being you'd surely want to know both, but who would have guessed that need to express both was how we got the words for them! As for a couple examples:

- abbrev·iation: used for both shortening something and the shortened form of it.
- acclam·ation: used for the process of making and the end state of what was made
- dele·tion: used for both the process removing something and the end state of it having been removed.
- comm·uni·cation: as reaching a common understanding, both the process of reaching it and for the understanding reached.
- co.oper·ation: as jointly operating something, both the process of finding how and the way of doing it found.
- vocal.iz·ation: used to variously mean 1) using the voice for expression, 2)the collection of ways people do that and 3) a particular vocal expression

[7] OneLook dictionary search for "*tion": http://www.onelook.com/?w=*tion&scwo=1&sswo=1
[8] 'root' http://www.thefreedictionary.com/root "The element that carries the main component of meaning in a word and provides the basis from which a word is derived by adding affixes or inflectional endings or by phonetic change."
[9] 'modifier' http://www.orbilat.com/General_References/Linguistic_Terms.html "a word or phrase that makes specific the meaning of another word or phrase."
[10] - tion: suffix of Latin origin, to form abstract nouns from verbs or stems, to express actions, states or associated meanings - http://dictionary.reference.com/browse/tion

• Meanings from Perspectives on Nature •

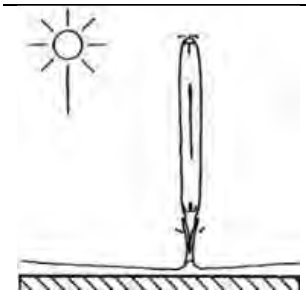


14. Dimensions of grounded word meanings

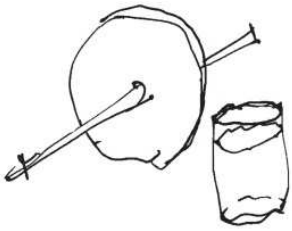
You use the same approach to drawing out the details of the natural design patterns these words refer to as described for "comm·unity"(figure 14). You could understand it as a triangle of understanding, that develops from associating 1) the process of change, 2) the end pattern of relationships and 3) the personal and cultural values and circumstances associated with them. In thinking through them in relation to the examples you are familiar with you try to recognize is the '*whole pattern*' of important experiences and relationships the word is relied for turning our attention to. The exercise might very casually done, but is likely to deepening your appreciation of the many living qualities that common language refers to, to give you more ready access to them as one works on other matters.

4.4 Locating Centers by their Individuality – the Emergent Property

• Individuality as the Emergent Property •



Separations & Birth a step to autonomy



Wheel & axel, glass and water

15. Abrupt Changes of State

I had a left over collection of elemental patterns that seemed to represent "individuality" and a sort of "un-pattern" of just being different from everything else. On thinking about it, perhaps that's what's so puzzling about the unique inventions of nature for which there are no equals, what many of the sciences call "emergence". That the true individuality of things seems to come about very unexpectedly, and not in relation to anything else whatever. Whatever the mystery is, "individuality" is clearly also another property like "wholeness" that can be recognized from a great many points of view, and as something that tends to pervade the forms of natural subjects that convey it.