

Pattern Symbolizing Patterns

Showing the content and value by expressions to encourage intuitive comprehension

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In this paper, we present *Pattern Symbolizing Patterns*, which shows the content and value by expressions to encourage intuitive comprehension. Pattern Symbolizing Patterns has 121 patterns, which improve expressions: pattern name, pattern illustrations and presenting of the pattern language, to encourage intuitive comprehension. The experiences, which are the sources of the patterns, are extracted from members of Iba Laboratory, whom have been making many pattern languages based on human action. Here, we introduce these 6 patterns: *Gulp the Pattern*, *List of Pattern Names*, *Synonym Search*, *Image Search Check*, *New Viewpoint*, *Words of the Future*, from how to make a pattern name that shows the content and value of the pattern.

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1. INTRODUCTION

Pattern language puts the practice of the experienced into words in the form of patterns, making it sharable to others. People can also practice it in daily life, compare your experience and make a reflection, or use it as a vocabulary when communicating (Iba, 2015). Therefore, it is needed to make it something the reader will think valuable and put into practice. However, long sentences composed by Context, Problem, Solution is hard to use in daily life, and difficult to express the attractiveness of the pattern. Therefore, it is important to show the content and value of the pattern by the expression of encouraging intuitive understanding. One of the examples is the pattern name.

So far, in papers that share the experience of pattern writing, some patterns to make an useful and memorable pattern name has been put into words: *Meaningful Metaphor Name*, *Noun Phrase Name* for example (Meszaros and Doble, 1997). On the other hand, keys to making pattern names that grasp the accurate essence of the pattern and enthralls the reader had not yet been put into words thoroughly. So, we once again expose the keys to naming thoroughly, and tried shaped it in 40 patterns.

We have stated the pattern name, but the pattern illustration that can visually express the patterns' essence, which has the same importance as the pattern name (Miyazaki et al, 2015). Also, it is very important to elaborate the presenting of pattern language: the value of editing and layout of the booklet and so on, for increasing the value of the pattern itself. About this manner, many ways of presenting have been introduced in the BootCamp, International Conference on Pattern Language of Programs so far (Joseph et al, 2012).

As said above, we put the experiences that make Naming, Pattern Illustrating, and the way of showing the patterns better into words and made *Pattern Symbolizing Patterns*: composed by 121 patterns in all.

In the following, we state the planning process and overview of *Pattern Symbolizing Patterns* after stating the importance of showing the content and value of the pattern by intuitive expression.

Also, we introduce 6 patterns that support making pattern names that express the content and value of the pattern.

2. THE IMPORTANCE OF SHOWING THE PATTERNS' CONTENTS AND VALUE BY INTUITIVE EXPRESSIONS

As noted above, patterns are for practicing experiences in daily life, and to share during conversations. However, it is difficult to have the readers actually use the patterns by only sharing the sentences composed by Context, Problem, Solution, Consequence and such.

There are 3 reasons for the difficulty. First of all, understanding the patterns' contents by reading long sentences for the first time disables readers to discover the value of the pattern, which increases no motivation. Also, long sentences are difficult to memorize the contents, leading to drawing a blank when recalling the patterns in daily life. The second is when sharing the patterns during the conversation, it becomes difficult to communicate by using it because we have to explain the pattern from the beginning. Moreover, to make the patterns usable to readers in daily life, we need to cause readers to want to put the patterns into practice. But with only sentences, patterns may not be able to cause readers to want to put into practice since they have difficulty imagining the good future clearly.

From this, to make pattern language actually usable to many people, showing the content and value of the pattern in an expression that intuitively encourages understanding besides sentences is needed. In this paper, we present the three below as the expression to intuitively encourage understanding that shows the content and value of the pattern with the format of *Presentation Patterns* (Iba et al. 2012).

1. **Pattern name:** A pattern name is a word that expresses the content of the pattern in one word. (Figure 1) Therefore, a pattern name makes the pattern sharable in the conversation (Wellhausen and Fiesser, 2011). Also, it helps the reader to recall the content of the pattern in daily life. A pattern name that has words with a positive image and can be used familiarly will allow the reader to be more enthusiastic in practicing the pattern.
2. **Pattern illustration:** A pattern illustration as with the pattern name, expresses the essence of the pattern (Miyazaki et al. 2015). (Figure 1) A pattern illustration: which expresses the pattern with one illustration, is something that encourages the readers' intuitive understanding. Thus, it not only expresses the content of the pattern, but also expresses the good future that the practice of the pattern brings about. Based on this factor, the reader can imagine the feeling when putting the pattern into practice, and can also imagine the good future that the pattern brings about more clearly. Drawing a lively pattern illustration can motivate the reader to practice the pattern.
3. **Presenting the pattern language:** Presenting the pattern language is to elaborate the editing of the book and booklet that records the pattern so as to improve the value and attractiveness of the pattern language. For example, *Presentation Patterns* is a rather short sentence with a simple format that has quite a blank space: presented differently from the format of the software patterns. The pattern names in the *Presentation Patterns* used a font that made the overall look of the pattern attractive to readers. Also, by inserting cases and quotes to make it more persuasive adds value to the pattern. Furthermore, the layout of the pattern is designed with the intent of making it easily readable. For instance, important parts are emphasized by bold or large words, making it recognizable for readers. (Figure 1)

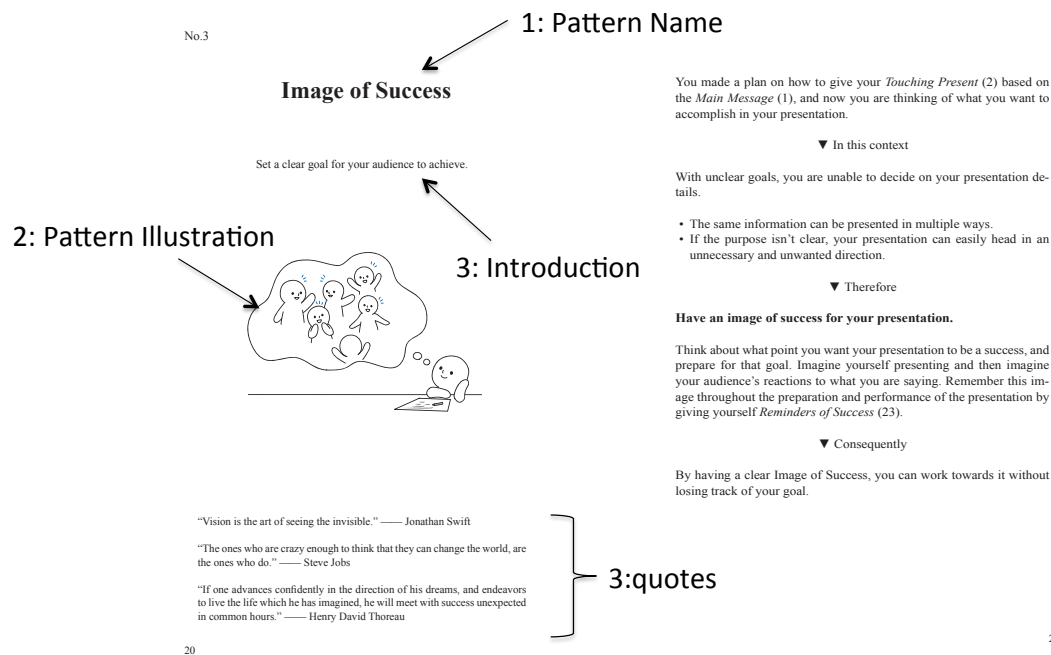


Figure 1: The pattern format of *Presentation Patterns*

The *Pattern Symbolizing Patterns* shares experimental rules that can be used in these three expressions for creating patterns that can be understood easily and encourage the readers to put the patterns into practice.

3. CREATING THE PATTERNS

We created the *Pattern Symbolizing Patterns* by mining the experiences of members in the Iba Laboratory, who have made pattern languages of human actions like *Learning Patterns* (Iba et al, 2009), *Presentation Patterns* (Iba, T. et al, 2012), *Collaboration Patterns* (Iba et al, 2013), *Generative Beauty Patterns* (Arao, et al, 2012), *Personal Culture Patterns* (Nakada et al, 2013), and *Pattern Language for the Art of Being with Dementia* (Iba T. et al, 2015). Among them, we created it from Iba: the most long experienced in making patterns, and the members who created *Pattern Illustrating Patterns* (Miyazaki, et al, 2015) (Harasawa et al, 2015), and the members who were involved in creating *Student Build Campus Patterns* (Iba et al, 2015), and *Cooking Patterns* (Akado et al, 2015).

Pattern Symbolizing Patterns is sorted into three groups of forty: pattern name, pattern illustration, and presenting the pattern language. And the patterns in each group are sorted in 4 layers on the level of abstracting (Figure 2). We used mining to apply the experience in this structure. For instance, to make a layer by the level of abstracting naturally, we first put out the higher experience level of abstracting, and then thinking of the three experiences dangling from it. When the more specific experience is extracted first, we used both top down and bottom up to put out 121 pattern seeds by extracting abstract hints that comprehend it.

In Mining, we starting from the group of the pattern name, writing the characteristics of good pattern names down on sticky notes. In doing so, we proceeded by comparing the unrevised pattern name and the completed version. We also compared the pattern name made in the class of Pattern Language by beginners, and the name made in Iba Laboratory. (Figure 3) The characteristics of the pattern names made in this way are listed as, "it captures the accurate content of the pattern", "it is usable in daily life", and "it enables us to experience the future it's aiming". After the characteristics of good pattern names were listed, we wrote down what we practice when we create a pattern name that has similar characteristics.

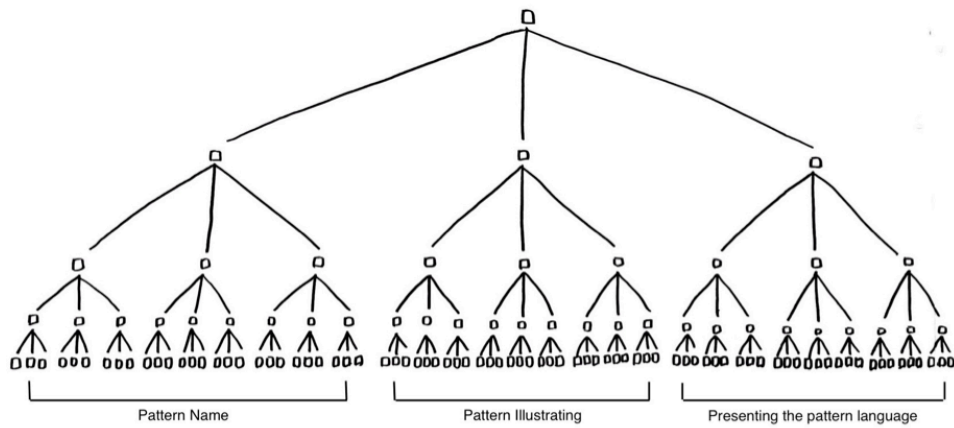


Figure 2: The structure of *Pattern Symbolizing Patterns*



Figure 3: Pattern mining with some completed pattern booklet

We extracted 121 experiences, and wrote out the pattern name, context, problem, and solution format. At this stage, Iba overlooked it entirely and brushed up the structure and pattern name. Then, we wrote out the full patterns, and the group members revised it repeatedly. While revising, the illustrating members drew the pattern illustrations (Figure 4). Also, group members of pattern illustration and presenting the pattern language worked on mining in the same method of pattern names.

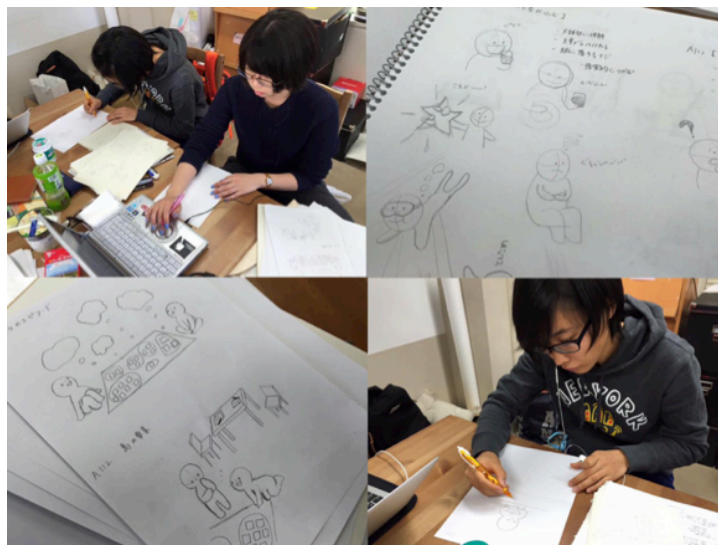


Figure 4: Drawing the pattern illustration

4. PATTERN SYMBOLIZING PATTERNS

In this section, we explain the overview of *Pattern Symbolizing Patterns*. We will also introduce six specific patterns to make good patterns that express the content and value of patterns.

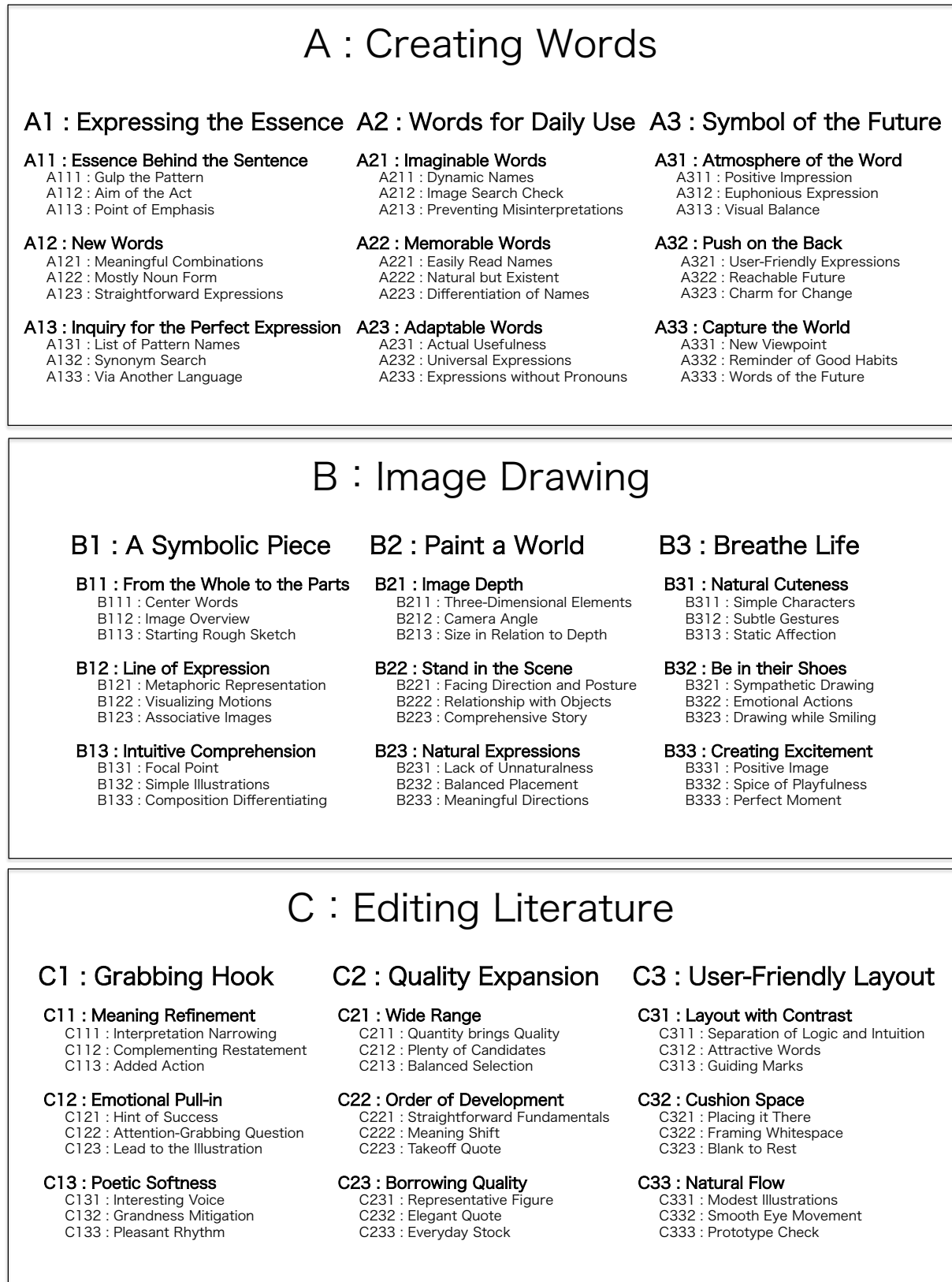


Figure 5: Overview of *Pattern Symbolizing Patterns*

4.1 The Structure of *Pattern Symbolizing Patterns*

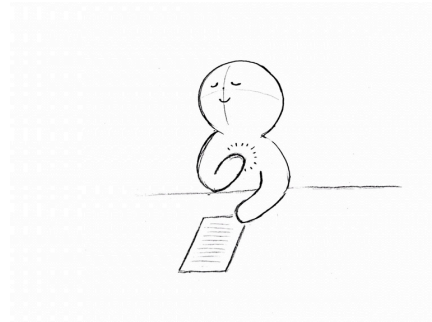
As you can see in Figure 3, *Pattern Symbolizing Patterns* are composed of 5 structures based on the abstraction level of tips, and on the top of the structure, there is a pattern that embodies the central idea. And the structure below is split into three groups of A, B, C, based on the types of patterns. In A, there are forty patterns of naming a pattern name that expresses the content accurately, and can make readers eager to put into practice. And in B, there are forty patterns of drawing a pattern illustration that makes the good future imaginable. B is made by taking in a part of *Pattern Illustrating Patterns* (Miyazaki et al, 2015). And in C, there are forty patterns of polishing up the pattern language to an attractive piece of work. Each A, B, C group is split into four layers. For example, there is A1, and an one level understandable pattern is A11, A12, A13, and the pattern of the level below that is A111, A112, A113: the shape of the dangling three patterns (Figure 5).

4.2 Some of The Patterns

This paper introduces 6 patterns bellow which pattern name expresses the content of the pattern accurately, and can make readers eager to put into practice. We chose the patterns that were easy to put into practice, and patterns that were thought especially heuristic: A111 *Gulp the Pattern*, A131 *List of Pattern Names*, A132 *Synonym Search*, A212 *Image Search Check*, A331 *New Viewpoint*, A333 *Words of the Future*.

Imagining the Situation

Sensitively grasp the essence of the pattern with your intuition



You want to grasp the essence of the pattern name.

▼ In this context

If you name patterns by words used in the solution, we might not fully understand the meaning of the pattern in detail, or may misunderstand the outlook. As a result, the substance of the pattern may be left out of the pattern name. When naming the patterns, it seems reasonable to just pick out keywords from the description of the solution. However, since one word does not describe the entire substance of the document, the Pattern Name chosen in this way will not cover the whole meaning of the pattern.

▼ Therefore

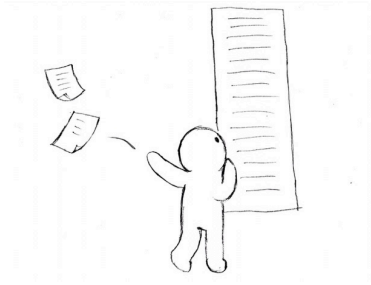
Read the pattern, and understand the content by imagining the situation of putting the pattern into practice. First, reading the pattern, imagine the context, problem, and solution clearly. If hard to imagine, see if any of your own experience fits. When thinking of the pattern name in groups, explain the pattern to other group members in your own words and deepen the understanding of the pattern.

▼ Consequently

By seeking the patterns' meaning until you fully understand it, you have a foundation for making a pattern name that covers all the essential concepts of the pattern. Also, fully comprehending the pattern helps with more ideas for illustration.

List of Pattern Names

Focus on the pattern name by only looking at the pattern name list.



You are looking at the patterns' sentences for clues of the pattern name.

▼ In this context

If you're thinking of the pattern name within the sentences of the pattern, it becomes a superficial pattern name that misses the pattern's essential core. When naming the patterns, we tend to look at the sentence to put every single essence into it. However, we tend to get caught in the words and phrases in the sentence when thinking by paper and computers in front of us. Therefore, we become inflexible and may think only from the words in the sentence.

▼ Therefore

Make a list of only the pattern names so you can gaze over the whole list separated from the sentences and think of better names. First, make a list of all the pattern names. By *Gulp the Pattern*, try not to look at the sentence itself and think of the pattern name among the list. You may look back at the pattern's sentences when the pattern name is completed to some extent, but at first, concentrate on making the names inside the world of pattern names.

▼ Consequently

By thinking away from the sentences, it broadens our ideas and views, which enables you to freely express a pattern name. Also, by making brand new words without using words from sentences, revising the sentence itself much better will become possible and the quality of the pattern all together can be raised.

Synonym Search

Have wide knowledge from the Internet
and dictionaries on your team.



You're on the stage of brushing up the pattern name, trying to find a better expression.

▼ In this context

You are unable to raise the quality due to limitations in your ideas and knowledge. A pattern name represents a pattern, and must be understandable from others by just the name itself. The pattern name will be the part that is used for communication, so you must check the ease of use and the wording of the name in detail. However, the expression is narrowed by thinking in one's limited ideas and vocabularies, which makes it difficult to make words in high quality.

▼ Therefore

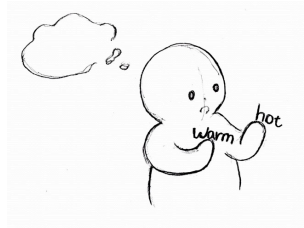
Search for synonyms and similar expressions for the words that you are trying to use, and choose the best one through comparison. For example, search thoroughly for synonyms on the Internet for the best word by comparing conditions like pronounceable, memorable, appearance, suitable, and such. You may as well look at books referring to the theme of the pattern language to find not only synonyms but also words.

▼ Consequently

By searching for words above your knowledge, it approaches to a symbolic pattern name that is more usable and seizes the essence. In this way the pattern name will be brushed up carefully and become an extremely precise one that will be agreed and used by many people.

Image Search Check

Touch of the word by image.



You want your pattern name to reflect the meaning of the pattern precisely.

▼ In this context

There is an uncomfortable feeling when reading it through because the touch of the pattern name and the sentence does not relate to each other. Since each word has a unique touch, even if the meaning is roughly grasped, how you choose the words may cause the touch you want to express to be slightly different. For example, the word “warm” and “hot” is very similar, but “warm” has a soft touch, and “hot” has a very strong and urgent touch. In this way, when the nuance of the words used in the pattern name does not match, you cannot give the correct image to the reader.

▼ Therefore

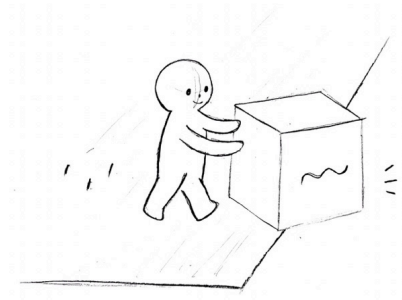
Do image search on the words used in the patterns to make sure that its generic image matches the one you want for your pattern. For example, to see the nuance and the touch that the abstract word “search” has, look the image up on the Internet. You can see what kind of image the reader has by the number of the similar images on the word “search”, and imagine what kind of image the reader has. Check the view that the reader has, and see if the word to make the pattern name fits the image.

▼ Consequently

By not only thinking of the meaning from the word itself but by thinking via visual images, the idea widens and will become easier to choose the more accurate word despite the slightly different nuances. Also, sense of unity will be produced if you can name the pattern that matches the touch of the pattern as a whole, which leads the reader to be imaginable and memorable of it.

New Viewpoint

Change the readers' stereotype in a good way.



You want to widen the vision of the reader by pattern language.

▼ In this context

Even if the detail of the pattern produces a heuristic vision, the word becomes very plain and cannot change the readers' recognition. Since pattern names are a short word, furthermore will fit in your daily life, it tends to become an ordinary word. In this case, readers cannot discover a new point of view and cannot be motivated to read the pattern. This disables readers to widen their views, which means the pattern language cannot play the role of conveying the feeling of a better future.

▼ Therefore

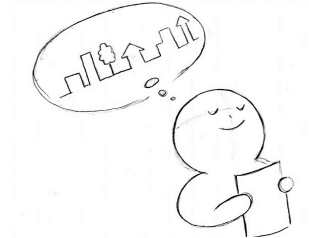
Provide new viewpoints that would change the perspectives of people to look at the world around them. We can provide a new point of view to the reader by a combination of words used in our daily life. For example, there is a pattern name called *Small Accomplishment*, sounds like you “accomplished” something really big, but by combining the word “small”, we can soften the impression.

▼ Consequently

It will become a heuristic pattern name that changes a bit of the readers' point of view. The reader can think over the problem they are holding at present in a new viewpoint, and will be able to proceed to a good future that the pattern produces.

Words of the Future

The pattern name you made will become
a common language used in the future you head for.



You are thinking of a pattern name that covers the identity of the pattern language.

▼ In this context

You don't know the standard of how much you can push out “identity”, making the pattern name something with no unity in the touch all together. Pattern language is not just an instruction on tips, but a piece of work to suggest a better world. For that reason, as every pattern language aims a different world, the “identity” of the touch should be different too. However, if you start wording without knowing how much you can push out “identity”, the unity all together will become one-sided with the writers’ words.

▼ Therefore

Choose pattern names with the vision of the words being naturally used in the future world that the pattern language is trying to achieve. Every pattern language has its own ideal future. We must first make it clear, and choose words that fit into the world. For instance, *Generative Beauty Patterns*, which leads you to live lively and beautifully, chooses sparkling words like *Make Magic!* and *Cinderella Makeover*. Also, in the *Pattern Language for the Art of Being with Dementia*, warm words such as *Going together*, and *The Amusement Committee* are chosen.

▼ Consequently

The wording will become united, and the identity of the pattern language will appear. As a result, pattern language made this way can widen the readers’ world because it has a firmly world view as a piece of work, and can show the reader the world it aims.

5. CONCLUSION

In this paper, we proposed *Pattern Symbolizing Patterns* that show the content and value of the pattern that encourages expressing intuitive understanding. *Pattern Symbolizing Patterns* is a pattern language structured by 121 patterns, which captures the essence of making pattern names, pattern illustrations, and presenting the pattern languages.

In Iba laboratory and in classes of Faculty of Policy Management, and Faculty of Environment and Information in Keio University, *Pattern Symbolizing Patterns* are already used to schedule making pattern languages, and to look back over experiences. In this way, we hope people writing pattern languages will use *Pattern Symbolizing Patterns*, and by doing so, the reader will come to want to read more, and want to share the pattern language to others during conversation. We also want pattern languages to actually be used by the readers, and as a result, make the tips sharable and practicable between people to enhance liveliness in human action.

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