

A Practical Guide on Pattern Writing for Pattern Languages of Practices

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This paper presents key considerations, content forms, and checkpoints for writing patterns in the concise deep style for pattern languages of practices. The concise deep style, proposed by the author of this paper, Takashi Iba, is a style of pattern description that, while being concise and easily readable for the general public, allows for the inclusion of a variety of specific meanings. It is specifically developed for pattern languages of practices and has been used since *Learning Patterns*, continuing to be employed in pattern languages crafted by the Iba Lab and CreativeShift Inc. This paper discusses how to write patterns in the concise deep style for pattern languages of practices. It includes content forms for various elements such as Solution, Problem, Context, Forces, Actions, Consequences, and Pattern Name, detailing one form for Solution, three forms each for Problem, Context, Forces, Actions, and Pattern Name, and one for Consequences. Additionally, the key points for drawing pattern illustrations are overviewed. The knowledge provided in this paper will serve as a practical guide on Pattern Writing for Pattern Languages of Practices.

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1. INTRODUCTION

In the process of crafting a pattern language, the phase of Pattern Writing begins, where patterns are described based on information obtained from the mining process. Studies and discussions about Pattern Writing have focused on the elements that constitute a pattern description, such as Context, Problem, and Solution, known as pattern forms, so far. However, what has not been given attention is how the sentences in each of these items should be written or what they should contain. I believe that focusing on this aspect is critically important in learning and practicing Pattern Writing.

Looking back, I have been teaching Pattern Writing for about 20 years and have always pondered over how to write better patterns. In this journey, I faced the issue that the quality of pattern descriptions often depends on the individual writing skills of the authors. This means that while some people write well-written patterns, others do not, and this disparity seemed to hinge on personal capabilities. I have always harbored the hope of overcoming this reliance on individual talent, especially in analytical and structured writings like patterns, which are different from novels or poetry.

At one point, while comparing the 'solution' sentences of patterns with students at Iba Lab, they noticed something. In well-written 'solution' sentences, it was always articulated 'what is important to do' (*what*) and 'how to do it' (*how*). Conversely, when only one of these elements was present, the descriptions felt incomplete, and the patterns did not seem as compelling. This led to the realization that for a Solution to produce a good quality Consequence, it must include both 'what is important to do' (*what*) and 'how to do it' (*how*). This can be succinctly formulated as follows:

What should be done to bring a desirable result and how to do it.

With such a form present in 'Solution,' I speculated that hidden forms might also exist in other pattern description elements like Context and Problem. This led me to analyze the statements in these other elements. This paper is based on those findings and reorganizes them into a practical guide for Pattern Writing.

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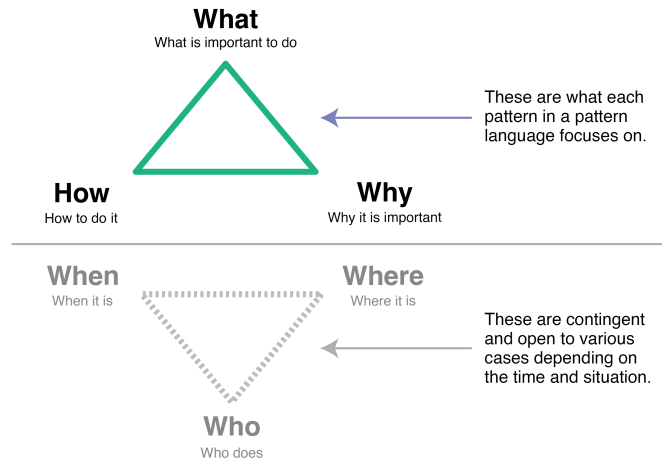


Fig. 1: The Pattern Triangle: when crafting a pattern language, for each pattern, 'what,' 'how,' and 'why' are focused on, rather than 'who,' 'when,' and 'where'.

2. WHAT TO WRITE IN A PATTERN AND ELEMENTS WITHIN A PATTERN IN CONCISE DEEP STYLE

A pattern language describes and shares knowledge of the essence of good designs or practices in a specific domain. This knowledge encompasses what is important to do, how to do it, and why it is important (Figure 1). In crafting a pattern language, authors primarily focus on the 'what,' 'how,' and 'why' aspects of designs and practices. In contrast, the 'who,' 'when,' and 'where' aspects are not the main focus, as patterns are designed to be universally applicable, suitable for anyone, anytime, and anywhere, as long as the context fits.

In the Pattern Writing phase, the 'what,' 'how,' and 'why' components, which were mined in the Pattern Mining phase, are articulated in a pattern form. The order of fundamental statements is as follows: in a certain Context, a Problem often occurs, therefore do a Solution:

- **Context** is a statement describing the situation where the pattern is applicable.
- **Problem** is a statement describing an issue likely to arise within the Context, resulting from the absence of the Solution.
- **Solution** is a statement describing an effective practice to solve or avoid the Problem, thereby achieving the desired quality within the Context.

This echoes what Christopher Alexander stated in his book, *The Timeless Way of Building*: "Each pattern is a three-part rule, which expresses a relation between a certain context, a problem, and a solution." (Alexander 1979, p.247). These are the common components of pattern forms. The additional elements of a pattern's description vary according to the style.


This paper focuses on the concise deep style, developed by Takashi Iba, the author of this paper, for pattern languages of practices. The concise deep style is a pattern description style that is concise yet rich in meaning, akin to a haiku. It has been utilized in *Learning Patterns* and other works by the Iba Lab, Keio University, and CreativeShift Inc.

In this style, alongside Context, Problem, and Solution, additional elements such as Forces, Actions, and Consequences are included:

- **Forces** is a statement describing the factors that cause the Problem within the Context.
- **Actions** is a statement that outlines specific, common examples of the Solution, aiding the reader in understanding its application.
- **Consequences** is a statement detailing the results of implementing the Solution within the Context.

Pattern Name

Introduction


Pattern
Illustration

Context

▼ In this context

Problem

Forces

▼ Therefore

Solution

Actions

▼ Consequently

Consequences

Fig. 2: Fundamental pattern form written in the concise deep style.

In addition to these elements, a pattern also includes a Pattern Name, Introduction, and Pattern Illustration, all of which help in more effectively conveying the essence of the pattern:

- **Pattern Name** is a concise yet appealing term consisting of multiple combined words that captures the essence of the pattern.
- **Introduction** is a sentence that supplements the pattern name in a way that piques the readers' interest.
- **Pattern Illustration** is a simple illustration that expresses the state leading to desirable Consequences.

In the concise deep style, the order of elements is as follows: Pattern Name, Introduction, Pattern Illustration, Context, Problem, Forces, Solution, Actions, and Consequences. This pattern form in the concise deep style is depicted in Figure 2.

In the Pattern Writing phase, the Solution is crafted based on the information about '*what*' and '*how*,' whereas the Problem and Consequences are developed based on the information about '*why*' (Figure 3). Moreover, the Pattern Name, encapsulating the overall idea of the pattern, should reflect an essence of the '*how*' and/or '*what*.'

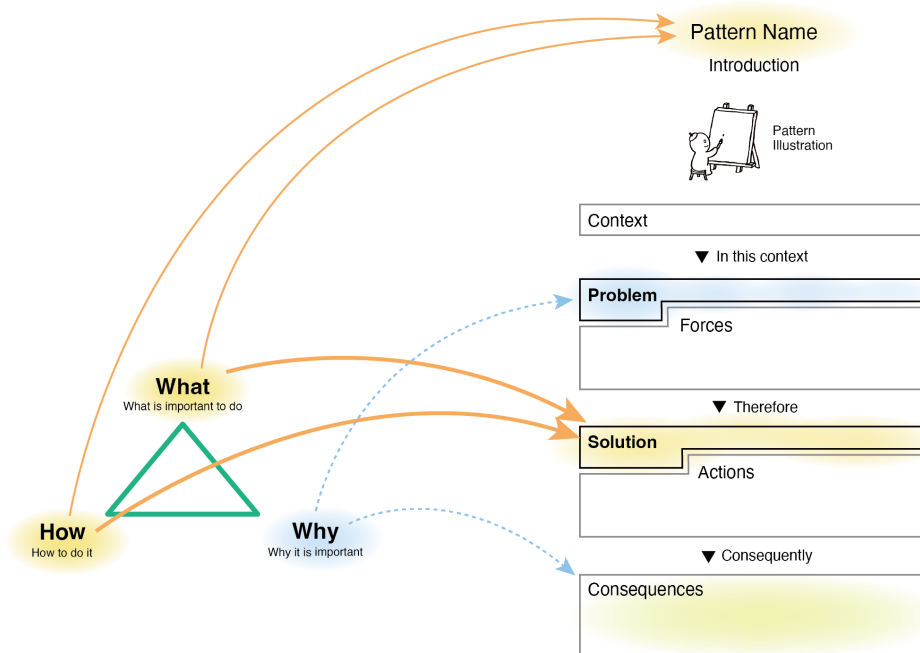


Fig. 3: In the Pattern Writing phase, the 'what,' 'how,' and 'why' components are transformed into a description written in the pattern form.

3. EXAMPLES OF PATTERNS IN THE CONCISE DEEP STYLE

The following subsections present examples demonstrating the concise deep style.

3.1 An Example from *Project Design Patterns*

The following is the pattern description of **Idea Coupling** in *Project Design Patterns* (Iba and Kajiwara 2019):

Idea Coupling

New value is the result of a combination of ideas.



You are trying to come up with the concept and value for your project.

▼ In this context

If you only focus on one aspect of your project, then it will be difficult to differentiate it from that of another competitor or to create unique value. Even if it is underpinned by a solid concept, a project created through a single perspective is bound to be similar to an existing service, and thus have weak appeal.

▼ Therefore

Create unique value by combining ideas from various perspectives. For instance, instead of creating a “normal” hotel, create a hotel with new value by combining it with other aspects such as serviced apartments, galleries, and offices under the concept of “a place for creators.” Explore many combinations of different elements and see how you can create new value.

▼ As a result

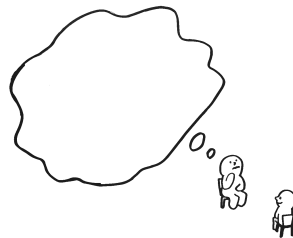
You will be able to create a unique project that includes many possibilities for growth. As you develop your skill in integrating various ideas into a single project, you will be able to continuously create unique projects. Furthermore, a project with many elements will allow users to customize how they use it, which will make the project even more special to them.

3.2 An Example from *Words for a Dialogue*

The following is the pattern description of **Pause for Thinking** in *Words for a Dialogue* (Iba et al. 2017, Nagai et al. 2017, Iba and Nagai 2018):

Pause for Thinking

Wait for words to be generated.



You asked the other person a question about themselves.

▼ In this context

When they do not immediately respond to you, you may want to change topics or reword your question but this may intercept their thoughts and words as they are being formed. If you do not immediately receive an answer, you may think that they did not understand your question and try to rephrase it. However, the deeper the question causes them to reflect, the more time they need to think and put their thoughts into words.

▼ Therefore

Wait for them to think and gather their thoughts into words. Silence after asking a question is not meaningless. Rather, it is time for them to recall their past experiences and feelings and to search for the words to express them. Trying to rush their answer would disrupt this time. You should relax and wait until they are ready to respond.

▼ Consequently

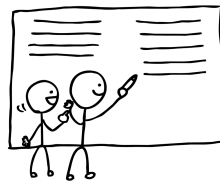
Instead of simply saying what they already knew, they will be able to look back at their experience, see it in a new light and find the words to talk about it. In this manner, the dialogue about their ‘**Experienced World**’ will expand and the other person will also gain an opportunity to redefine their ‘**Experienced World**’.

3.3 An Example from *Words for a Journey*

The following is the pattern description of **Can-Do List** in *Words for a Journey* (Iba and Okada 2015, Iba et al. 2016a, Iba et al. 2016b):

Can-Do List

Don't get too depressed by the things you can't do.



You are trying to live positively with dementia, but there will still be times when you feel down.

▼ In this context

You may feel trapped by sad feelings caused by fright and worries about your future. Losing some of your abilities is a hard experience, and thinking that you might become more impaired is even harder. Because it may be hard for your family to notice small changes in you, it may seem that your family isn't taking these problems seriously. Stress from these things may cause you to feel down and keep your worries to yourself.

▼ Therefore

Make a list of the things that you can still do now. Take a pen and a piece of paper, and make the list as long as possible. The list can include activities from your everyday life, your hobby, or past work life. Talk to someone who can help you expand the list. Even the smallest things can go on the list.

▼ Consequently

You should notice that there is still a lot that you can do. Even small things that once were ordinary and nothing special will become special once you see them on the list. This long list should make you feel better, and a positive attitude toward yourself should return. You can use the items on this list to make your '**Daily Chore.**'

In the upcoming sections, this paper will explore the content form for each element of pattern description. The discussion sequence will differ from the pattern's typical layout. It will begin with the Solution, followed by the Problem, Context, and then move into detailed discussions of Forces, Actions, and Consequences. This leads to the Pattern Name, which symbolically encapsulates the entire pattern, and the Introduction, before considering the Pattern Illustration. The structure of this paper aims to mirror the process of Pattern Writing, offering insights for both understanding and practical application.

4. WRITING A SOLUTION STATEMENT

Solution statement should be a concise sentence that describes how to avoid/solve the Problem within the given Context in order to realize the good Consequences.

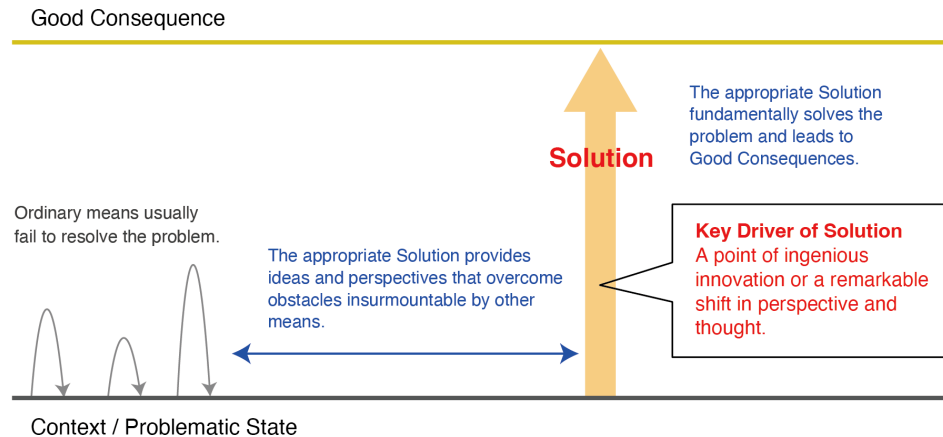


Fig. 4: Solution should contain a 'key driver' offering unique and non-obvious strategies to enhance the effectiveness of the reader's actions.

4.1 Key Considerations for Writing a Solution Statement

When writing a Solution statement, the following points should be kept in mind:

- Identify what is important to do, and how to do it: The Solution statement should clearly articulate what is essential to achieve the desired quality, followed by specific guidance on how to implement it.
- Make the 'how' inspiring: The guidance on implementation should be insightful, containing a 'key driver' that offers unique and non-obvious strategies to enhance the effectiveness of the reader's actions (Figure 4). It cannot be something obvious that most people would easily come up with (in this case, there would be no need to write the pattern). Therefore, authors must diligently seek out and convey essential and inspiring knowledge. The more the pattern gives fresh insight for the reader, the higher the possibility of the pattern actually coming to use in their actions.
- Make it appropriately abstract: The implementation guidance in the Solution should maintain a *middle level of abstraction*, allowing for its applicability across various scenarios while enabling readers to easily envision the concrete actions required.
- Write in imperative form: The Solution should be phrased in the imperative form to clearly convey the specific actions required. It is noteworthy that, when writing patterns in Japanese, expressions unique to the language are used instead of the imperative form (Iba and Yoshikawa, 2016).

4.2 Content Form of a Solution Statement

The only content form of a Solution statement is as follows:

What should be done to bring a desirable result and **how** to do it.

A Solution statement should clearly describe what is necessary to achieve the desired quality in the pattern language and how to accomplish it. In the case of English, typically it would be written such as "Do...[*what*], by ...[*how*]-ing." Variations in expression are encouraged to avoid monotony in the patterns.

It should be noted that the Solution's description should focus on '*what*' needs to be achieved. Overemphasizing '*how*' it is done may reduce the pattern to a mere 'trick' rather than universally applicable knowledge. As a pattern language aims to offer more than just a collection of tricks, including clear guidance on the '*what*' aspect of the Solution is crucial.

Examples of this content form include:

- "Feel the experience they shared with you as though it were your own, by imagining the world from their perspective." (**Inner Viewpoint**, from *Words for a Dialogue*)
- "Create unique value by combining ideas from various perspectives." (**Idea Coupling**, from *Project Design Patterns*)
- "Examine cases that are unappealing to you or have bad reputations in order to determine the reasons for such results and to learn from them." (**Studying Not-So-Good Cases**, from *Project Design Patterns*)

4.3 Checkpoints for Revising the Solution Statement

During the revision of the Solution statement draft, the author should check the following points and improve if necessary:

- Is the Solution indeed comprised of what the reader should do, supported by how it should be done?
- Does the Solution effectively integrate 'what' with 'how', with 'how' serving as supportive explanation for 'what'?
- Is the 'how' part of the Solution inspiring enough? Check again whether the 'how' is not obvious or common sense. It should be insightful and be convincing enough to make the readers put it into action. If the 'how' component is not sufficiently inspiring, re-evaluate it to enhance its insightfulness and effectiveness in prompting action.
- Does the Solution look effective even when the Forces pointed out in the pattern persist? The Solution must be valid under the existence of the Forces. Will the Solution solve the Problem every time? If not, re-evaluate the 'how' component of the Solution, revisiting the mining stage as needed.
- Is the Solution statement at a suitable level of abstraction, applicable generally? It should avoid details unique to specific situations, shifting such specifics to the Actions statement if necessary. Instead, they should be generalized, to a certain extent. If the author finds details that are too specific to a pattern, move it to the Actions statement.
- Does the Solution statement avoid the use of metaphors or imagery, focusing on direct and clear descriptions? Generally, the Solution statement should not contain any metaphorical elements in the sentence. This is because they do not serve as a direct description for explanation. Avoid including metaphors in the Solution. Also, refrain from mentioning the Pattern Name within the Solution statement. The Solution should convey the essence of the Pattern Name without repeating it verbatim.
- Does reading the Solution statement evoke a sense of relevance and excitement, encouraging readers to actively try it? The Solution statement should be written in such a way to make the readers' want to truly want to try it. Take a moment to read over the Solution from the readers' perspective to check if it is enticing enough.

5. WRITING A PROBLEM STATEMENT

Problem statement should be a concise sentence that explains a common problem occurring in the given Context (when the Solution is not initiated).

5.1 Key Considerations for Writing a Problem Statement

When writing a Problem statement, the following points should be kept in mind:

- The Problem statement should describe the factor preventing the desired quality/result. It is essentially a state of 'loss of quality' that needs to be addressed. In any given Context, multiple issues may arise from different perspectives, but the author must identify and focus on the most essential issue for the pattern.
- Differentiating the Problem from the Context is crucial. The Problem statement describes an issue that arises unintentionally within a certain Context. When determining what information to include, the author should decide based on its relevance to the Solution. Information irrelevant to the Solution should be included in the Problem statement, while information that sets a precedent for the Solution belongs in the Context statement.

5.2 Content Forms of a Problem Statement

There are mainly three content forms of a Problem statement as follows:

- (1) *A description of behaviors or events that typically lead to a problematic situation.*
- (2) *A description of specific conditions and the problematic situations they cause.*
- (3) *A description of scenarios where routine actions inadvertently prevent optimal outcomes.*

5.2.1 *Content Form of a Problem Statement (1).* A description of behaviors or events that typically lead to a problematic situation. The first content form of a Problem statement is to start with a description of 'what tends to happen (or what one tends to do)', followed by the resulting 'problematic situation'. There are two cases for a problem: one that occurs as soon as the Context exists, and one that occurs after some time has passed. In scenarios where problems develop over time, the pattern should guide readers to act preemptively, preventing issues before they occur, as remedial actions may be ineffective once the problem has already manifested. Examples of this content form include:

- If only certain people are talking, other participants will lose their opportunity to speak and share their unique perspectives. (**Invitation for Utterance**, from *Words for a Dialogue*)
- When they do not immediately respond to you, you may want to change topics or reword your question, but doing so may intercept their thoughts and words as they are being formed. (**Pause for Thinking**, from *Words for a Dialogue*)
- You may be unable to deepen your ideas when you are only thinking inside your head. (**Thorough Listing**, from *Project Design Patterns*)
- If you continue the project without knowing much about the other person, then there will be a time when you come to a disagreement and the project comes to a standstill. (**Empathetic Partners**, from *Project Design Patterns*)
- A project that lacks concreteness will cause complications in the development process and make it more difficult to realize. (**Thinking with Reality**, from *Project Design Patterns*)
- If you rephrase their original words into your own words with your own interpretation, a different meaning of what they said will be perceived and lead the dialogue in a different direction. (**Exact Same Words**, from *Words for a Dialogue*)
- If you start to think you shouldn't do something on your own and should have everything done by others, you may eventually find yourself unable to do even the tasks you were once capable of. (**Daily Chore**, from *Words for a Journey*)
- You want to help achieve their goals, but you think you should wait until they recover a little before they start. (**Preparation for the Dream**, from *Words for a Journey*)
- If you are only looking at materials that are naturally accessible to you, then you will only be taking in information that is within your interests, and you will be unable to bring new perspectives to your project. (**Nutritious Information**, from *Project Design Patterns*)

5.2.2 *Content Form of a Problem Statement (2).* A description of specific conditions and the problematic situations they cause. The second content form of a Problem statement is to begin with a set of conditions, using phrases like 'If...' or 'In the case that...', followed by the problematic situation they cause. For this format too, there are two cases for a problem: one that occurs as soon as the Context exists, and one that occurs after some time has passed. In scenarios where problems develop over time, the pattern should guide readers to act preemptively, preventing issues before they occur, as remedial actions may be ineffective once the problem has already manifested. Examples of this content form include:

- Your family won't know how much they should get involved with your disease, especially if the symptoms are still light. (**Departure Announcement**, from *Words for a Journey*)
- When the same people are always around, the person with dementia will be confined to a very small world. (**Generational Mix**, from *Words for a Journey*)
- When caregiving continues for a long period, topics of conversations tend to be centered on the disease itself and its care. (**Make it Funny**, from *Words for a Journey*)
- While a project with many different elements includes a wide range of possibilities, the main value and aim of the project tend to be unclear. (**Killer Pitch**, from *Project Design Patterns*)
- There is no guarantee that your first approach is the best, since there is no "right or wrong" in how you implement your project, especially if you are working with new ideas. (**Approach Search**, from *Project Design Patterns*)

5.2.3 *Content Form of a Problem Statement (3)*. A description of scenarios where routine actions inadvertently prevent optimal outcomes. The third content form of a Problem statement is to describe scenarios where routine actions, while not problematic, miss the opportunity to achieve better results. This refers to situations where standard practices lead to average outcomes, but with a potential loss of enhanced performance. This form often uses phrases like 'If you only do..., you will miss the opportunity to...', highlighting the potential for better outcomes. Examples of this content form include:

- If you simply create something within your client's expectation, then the project will be nothing more than what was already expected. (**Pleasant Memories**, from *Project Design Patterns*)
- It is difficult to review your own project and make brave changes/improvements. (**Review in their Shoes**, from *Project Design Patterns*)
- You assume that an exciting experience or exciting information has nothing to do with your project, thus wasting an opportunity to make your project more interesting. (**Chance Taker**, from *Project Design Patterns*)
- Even if you work very hard at your job, it can be difficult to produce exceptional results. (**Expansion of Interests**, from *Project Design Patterns*)
- A project that is too proper can be uninteresting and even unapproachable. (**Points of Play**, from *Project Design Patterns*)

5.3 Checkpoints for Revising the Problem Statement

During the revision of the Problem statement draft, the author should check the following points and improve if necessary:

- Is the Problem the reason why the ideal result fails to come about? Is the Problem statement directly addressing the root cause of why the ideal result isn't achieved? It's vital to ensure that it encapsulates the fundamental issue within the pattern. Does the Problem statement capture the actual cause of the issue, or the lack of quality within the Context?
- Does the Problem statement avoid language that is condemning or blaming those in the situation? Avoid phrases that imply wrong decisions or failures, and instead, reframe them more supportively, considering the readers' perspectives. It can be easy to unintentionally include attacking phrases such as "because the subject makes a wrong decision (a certain problem occurs)" or "because the subject fails to do something (a certain problem occurs)". Such phrases can often times be re-written in a more supportive manner, by taking into consideration the readers' mindsets and situations.
- Does the Problem statement convey a realistic sense, motivating readers to avoid it? The statement should evoke emotion and reality, but without resorting to exaggeration or overly negative language. This is the same as how great novel authors would not directly write, "he/she was sad", when expressing a character's emotions.
- Are the Context and Problem similar to those in other patterns? Identical Contexts and Problems should logically lead to similar Solutions. Avoid creating separate patterns for identical problems and ensure each pattern distinctly captures its unique Problem. This issue is especially common for patterns in the same groups or categories. Therefore, the author should always compare each pattern's Context and Problem with that of other patterns and make revisions as necessary.

6. WRITING A CONTEXT STATEMENT

Context statement should be a concise sentence that describes the circumstance in which the pattern will be useful.

6.1 Key Considerations for Writing a Context Statement

When writing a Context statement, the following points should be kept in mind:

- Specify the circumstances or factors where the Problem is likely to occur. A well-written Context clearly outlines the preconditions leading to the Problem.
- Specify the circumstances in which the Solution given will become useful. The Context should also specify when the Solution becomes applicable, clearly outlining preconditions for its effectiveness.
- Eliminate redundant or general information that applies universally across the pattern language, ensuring each Context is uniquely tailored to its specific Problem and Solution.

6.2 Content Forms of a Context Statement

There are mainly three content forms of a Context statement as follows:

- (1) *A description of a specific point in time, such as during, after, or upon the occurrence of an event.*
- (2) *A description of a particular situation in which an individual or entity is considering or attempting to do something.*
- (3) *A description of a specific environment, context, or a set of conditions that are present.*

6.2.1 Content Form of a Context Statement (1). A description of a specific point in time, such as during, after, or upon the occurrence of an event. The first content form of a Context statement is to describe a specific point in time when the pattern would be applied. This includes timing such as 'while doing something', 'after doing something', or 'after an event occurs'. If the Context refers to 'doing something', the pattern guides actions during that activity. If it's about 'after doing something', it advises on steps to take following the activity. Similarly, if it's 'after something happens', the pattern suggests actions post-observation of an event. Examples of this content form include:

- You are listening to them talk about their experience. (**Response to What is Said**, from *Words for a Dialogue*)
- You are listening to the other person talk about their story. (**Deep Listening**, from *Words for a Dialogue*)
- You are gathering information for a new project. (**Direct Sourcing**, from *Project Design Patterns*)
- You are thinking about ways to realize your project. (**Approach Search**, from *Project Design Patterns*)
- You are developing a project that involves many different elements. (**Killer Pitch**, from *Project Design Patterns*)
- Participants are discussing the problem. (**Diverse Understandings**, from *Words for a Dialogue*)
- You are seeking ways to learn more about dementia and get involved. (**Personal Connections**, from *Words for a Journey*)
- You asked the other person a question about themselves. (**Pause for Thinking**, from *Words for a Dialogue*)
- You have started a dialogue to dissolve the problem. (**Everyday Meetings**, from *Words for a Dialogue*)
- The initial plan for your project has been made. (**Review in their Shoes**, from *Project Design Patterns*)
- You listened to them talk about their experience. (**Inner Viewpoint**, from *Words for a Dialogue*)
- You have come up with a good idea. (**Proto-Planning**, from *Project Design Patterns*)
- You encountered an exciting experience or information unrelated to your ongoing project. (**Chance Taker**, from *Project Design Patterns*)
- You encounter a service or a design that is unappealing to you. (**Studying Not-So-Good Cases**, from *Project Design Patterns*)
- You have been collecting information about dementia care from books and the Internet. (**Family Expert**, from *Words for a Journey*)
- The other person is overcome with emotion and is crying or lashing out. (**Tunnel of Emotion**, from *Words for a Dialogue*)

6.2.2 Content Form of a Context Statement (2). A description of a particular situation in which an individual or entity is considering or attempting to do something. The second content form of a Context

statement is to describe a situation leading up to an action, such as when a subject is 'trying to do something' or 'considering doing something'. In both scenarios, this Context type captures the subject's intention or direction of thought before taking action. Examples of this content form include:

- You are presenting your project idea to your client. (**Room for Commitment**, from *Project Design Patterns*)
- You have held several meetings to continue the dialogue. (**Continuous Engagement**, from *Words for a Dialogue*)
- You are trying to start a dialogue. (**As a Living Person**, from *Words for a Dialogue*)
- You want to ask questions in order to hear the other person's story. (**Open Question**, from *Words for a Dialogue*)
- You are trying to respond to something they talked about. (**Exact Same Words**, from *Words for a Dialogue*)
- You are planning an event for people with dementia and their family members. (**Mix-Up Event**, from *Words for a Journey*)
- You are going to see another person's work. (**Imagination Gap**, from *Project Design Patterns*)
- You want to know what your customers are looking for through your services. (**Become a Real Customer**, from *Project Design Patterns*)
- You want to receive comments and advice from others to improve your project. (**Graduated Consultations**, from *Project Design Patterns*)
- You want to enjoy designing your project and create exciting projects. (**Expansion of Interests**, from *Project Design Patterns*)

6.2.3 Content Form of a Context Statement (3). A description of a specific environment, context, or a set of conditions that are present. The third content form of a Context statement is to describe a specific environmental condition, existing circumstance, or certain factors that lead up to a phenomenon (rather than referring to a specific timing). While less common than the first two forms, this type of Context is valuable for expressing circumstances resulting from other patterns within the pattern language. Examples of this content form include:

- Some family members are taking central roles in caregiving. (**The Amusement Committee**, from *Words for a Journey*)
- Your job is to design projects that create new value. (**Combination of Strengths**, from *Project Design Patterns*)
- You are constantly gathering information. (**Personal Stock of Resources**, from *Project Design Patterns*)
- You have begun spending less time outside and more time inside your home. (**Favorite Place**, from *Words for a Journey*)
- Due to 'Job-Specific Contributions,' you have thought of a new product or service targeted at people with dementia and those around them. (**Warm Design**, from *Words for a Journey*)
- Various perspectives are introduced to the dialogue. (**Ambiguous State**, from *Words for a Dialogue*)
- What the troubling experience means to individual participants is constantly being changed through the dialogue. (**Ever-Widening Context**, from *Words for a Dialogue*)

6.3 Checkpoints for Revising the Context Statement

During the revision of the Context statement draft, the author should check the following points and improve if necessary:

- Does the Context relate to both the Problem and the Solution? A Context should capture the essence of both the Problem that occurs from a situation, as well as its Solution. The author should check that the Context statement written is a proper explanation of a circumstance that applies to both the Problem and the Solution, not either or.
- Does the Context fit properly with the Context of the preceding and succeeding patterns?

- Does the overall lineup of the “Contexts” make sense as a whole language? The Context sets the precedent for each pattern. In order for the language to make sense as a whole, the Context should be tuned and adjusted in relation to other patterns. Therefore, the Context of a pattern cannot be completed as a separate entity. Before completing a pattern language, the author should take time to tune each pattern as a coherent set. However, this also implies that authors should not expect to write a perfect Context statement initially, as its quality can be fine-tuned during the revision stage.

7. WRITING A FORCES STATEMENT

Forces statement should, in a few sentences, describe the factors influencing or causing the Problem within the given Context.

7.1 Key Considerations for Writing a Forces Statement

When writing a Forces statement, the following points should be kept in mind:

- Analyzing the cause of the Problem: What are the circumstances that are likely to exist within the given Context? What factors cause these issues? The Problem typically does not arise from a person’s intentional or malicious behavior, but rather from various forces that naturally exist within the Context. So, what are the forces that are truly at play? The Forces statement should be a description of such elements, and how they relate to the resulting issues.
- Consider the Problem statement as the key sentence, with the Forces statement providing supporting sentences in the paragraph. The Forces statement should complement the Problem statement, forming a coherent paragraph when read together. The order and content of the paragraph can be arranged freely according to the author’s intention, as long as the overall paragraph makes sense.

7.2 Content Forms of a Forces Statement

There are mainly three content forms of a Forces statement as follows:

- (1) *A description of “one’s tendency to do something (or a tendency for something to occur)”, which causes the Problem.*
- (2) *A description of ‘existing precedents’, which inevitably cause the Problem.*
- (3) *A description of ‘existing situations’, which directly or indirectly cause the Problem, often coupled with other risks.*

7.2.1 Content Form of a Forces Statement (1). A description of “one’s tendency to do something (or a tendency for something to occur)”, which causes the Problem. The first content form of a Forces statement begins by describing typical tendencies (thoughts or actions) common in most people. When doing so, the author should express some empathy; as such tendencies are, in a way, normal responses to the given Context. Phrases such as “... tends to happen” or “... will inevitable happen” could be used. This should be followed by an explanation that such thoughts or actions lead to problematic situations, using phrases like ‘however, such thoughts/actions lead to....’ The ‘problematic situations’ mentioned should directly result from these thoughts and actions, and should not encompass the ultimate problem, such as the loss of quality mentioned in the pattern language as a whole. Finally, the author should summarize the Problem once more in a concluding sentence, considering the pattern’s category or the overarching theme of the pattern language for appropriate nuance and tone. Examples of this content form include:

- When they do not immediately respond to you, you may want to change topics or reword your question, but doing so may intercept their thoughts and words as they are being formed. If you do not immediately receive an answer, you may think that they did not understand your question and try to rephrase it.

However, the deeper the question causes them to reflect, the more time they need to think and put their thoughts into words. (**Pause for Thinking**, from *Words for a Dialogue*)

- Although you are carrying out your **Travel Plans**, you may sometimes lose confidence in yourself. It can be hard to cheer yourself up, especially when you notice your memory worsening or find yourself unable to do things you were once capable of. When such things happen, you may tend to become blind to all the things you can still do. You can become depressed about your disability and lose the will to do anything else. (**Fellow Travelers**, from *Words for a Journey*)

7.2.2 Content Form of a Forces Statement (2). A description of 'existing precedents', which inevitably cause the Problem. The second content form of a Forces statement involves describing a set of principles that are relevant to the specific circumstances. These factors are not the result of a person's intentional actions but are rather the natural outcomes of the given Context. The author should aim for an objective tone to avoid placing blame on the subject (readers) for the 'Problems.' Examples of this content form include:

- You may be unable to focus on what the other person is saying if you are distracted by the opinions and judgements forming in your mind. Every person has their own experiences and ways of thinking based on these experiences. Therefore, it is inevitable that you form your own interpretations and judgements when listening to the other person. However, too much focus on these thoughts makes it difficult to understand what the other person wants to tell you. (**Deep Listening**, from *Words for a Dialogue*)

7.2.3 Content Form of a Forces Statement (3). A description of 'existing situations', which directly or indirectly cause the Problem, often coupled with other risks. The third content form of a Forces statement is to start with a description of an existing situation, often phrased as '...is in a state of...'. While this approach is less common, it effectively sets the scene for the problem by focusing on the existing facts within the Context. Continue this with a description of how the inevitable Problem arises as a "result of" the existing factors. Additionally, it may describe how other conflicting factors exacerbate the situation, leading to the Problem. Examples of this content form include:

- If your project is specifically designed for the current market, then it may become outdated or irrelevant as time passes. A product or service may succeed right after it has been released if there is no competition. However, the more successful your project becomes, the more likely it is that other people will create similar products and services, which will change the demand-supply balance of the market. Furthermore, the world is in a constant state of change, so your project may lose its appeal as time passes. (**Incorporating the Future**, from *Project Design Patterns*)

7.3 Checkpoints for Revising the Forces Statement

During the revision of the Forces statement draft, the author should check the following points and improve if necessary:

- Are there any factors in the Forces statement unrelated to the cause of the Problem? Even with the best efforts to extract the Forces by carefully analyzing the Context of the Problem, there will be times when some of the forces are not relevant causes of the Problem. Therefore, it is important for authors to go back and check whether all of the Forces are applicable to the pattern.
- Is there a sense of reality when reading the Forces statement? The Forces statement should be written in such a way that readers fully understand the cause of the Problem and become motivated to initiate the Solution. The Forces should be written with an objective viewpoint, and must capture the true essence of the causing factors.
- Are the Forces written in such a way that is condemning or attacking toward those who are in such a circumstance? Like the Problem statement, the Forces statement must not be written in a manner that is critical or blames those experiencing the issue. It can be easy to unintentionally include attacking phrases such as "because the subject makes a wrong decision (a certain problem occurs)" or "because the subject

fails to do something (a certain problem occurs)”. Such phrases can often times be re-written in a more supportive manner, by taking into consideration the readers’ mindsets and situations.

- Does the Solution work even if the same Forces continue to exist? Will the Problem be solved properly in such a case? A pattern’s Solution must be valid within the existing Forces of the Context. In the case that it is not, it can be assumed that either the Solution or the Forces is not properly analyzed. In principle, the Solution should counteract the present Forces, altering the conflict’s dynamics and thereby preventing or solving the Problem.
- Is the paragraph coherent and expressive when read together? The author should check whether the Forces sentences can be read as supporting paragraph sentences to the key sentence of the Problem (written in bold text). However, beyond grammatical correctness, the paragraph should be expressive and harmonize with other patterns. In the revision stage, the author should check these factors, and fine-tune the overall expression and quality.

8. WRITING AN ACTIONS STATEMENT

Actions statement should describe some specific methods or examples of the given Solution to support the readers’ understanding, captured in a few sentences.

8.1 Key Considerations for Writing an Actions Statement

When writing an Actions statement, the following points should be kept in mind:

- Provide a diverse selection of the most typical examples, so readers can get a clear understanding of how to carry out the Solution. While the “Solutions” should be written in a rather abstract manner, the Actions should be more specific, providing actual examples to help the readers’ understanding. The author should mention examples which are common and well-representative of ‘how’ the pattern can be effectively initiated. Furthermore, when choosing which examples to mention, the author should consider offering a range of examples for various readers.
- The Solution should be the key sentence, with the Actions as supporting sentences. The Actions sentences should be structured under the key sentence of the paragraph, the Solution (written in bold text). Furthermore, they should be written so that the Solution statement followed by the Actions statement can be read as a coherent paragraph. So long as the paragraph makes sense, the order and content of the paragraph can be written freely according to the author’s intention.

8.2 Content Forms of an Actions Statement

There are mainly three content forms of an Actions statement as follows:

- (1) *A description of an example of what to do.*
- (2) *A description of the process of implementing the pattern, including the sequence of steps and any practical tips.*
- (3) *A detailed breakdown of the Solution’s essential meaning.*

8.2.1 Content Form of an Actions Statement (1). A description of an example of what to do. Because the Solution is written rather abstractly, the reader may have a difficult time putting it into action. The Actions statement helps to give readers specific examples and details for better understanding and implementation. The examples described in the Actions should not be something too particular. Instead, these examples should be typical and representative of how to initiate the Solution. Furthermore, the author should include not just one, but several examples (diverse examples), so that the readers can properly understand the direction of the pattern and how it can be applied. Occasionally, there may be patterns where the Actions would contain extreme examples, by the author’s intention. These are cases where the author wants to demonstrate how the pattern can be applied at an expert level (such cases are often found during mining interviews, or from the

author's own experience). When including such examples, the author should refrain from using the phrase "For example..." as it might give the impression that it is expected of the reader to also achieve the pattern at this level. Instead, the author should use phrases such as "There are some cases where..." so that it is clear that it is not an easily accomplished action. When done properly, including extreme examples can help readers understand the full range (from typical to extreme) of the pattern's usage. However, it should be noted that every example in the Actions must represent the Solution, and the use of extreme examples should be limited to when absolutely necessary, typically only in one pattern within a pattern language. Examples of this content form include:

- Talk with your family and create a chore that you can do by yourself every day. It can involve simple tasks, such as watering a plant or giving the pet dog his/her food. Tasks such as folding the laundry and making coffee for the family, or anything similar, are important. Reference your "Can-Do List" to look for chores that you can do. (**Daily Chore**, from *Words for a Journey*)
- Even if the goal seems hard to achieve, start now and move little by little toward its actualization. For example, if the person with dementia wishes to go on a trip to a place, you can start by looking for transportation and possible helpers who could assist on the trip. You can ask doctors and specialists for advice on how to prepare. One person with dementia had their family help them achieve the goal of climbing Mt. Fuji. If you prepare even a little every day, the possibility of achieving the goal will increase greatly. (**Preparation for the Dream**, from *Words for a Journey*)
- Hold meetings frequently to continue the deepening dialogue. In the Open Dialogue therapy sessions held in Finland, each meeting is approximately 60 to 90 minutes long and is first held every day for 10 to 12 days consecutively. How often the dialogue sessions are held can be decided later. At the end of each meeting, participants should reflect on what was shared, decide when they will gather next and what they will discuss at that time. (**Everyday Meetings**, from *Words for a Dialogue*)

8.2.2 Content Form of an Actions Statement (2). A description of the process of implementing the pattern, including the sequence of steps and any practical tips. This approach is common in writing Actions, given the difficulty of fully expressing how to implement a pattern in a single key sentence. The author could list each step, to fully explain what actions to take. For instance, the author could use phrases like 'First do ..., then do ..., and finally finish by doing ...' to outline the steps. Another way involves describing practical tips in the Actions statement to enhance the readers' understanding. Examples of this content form include:

- Make time for the dialogue supporters to talk about their feelings regarding the discussion, and ensure the others listen. First, you should ask if you can have time for the supporters to talk separately. The 'Dialogue Supporters' should have a conversation in front of everyone. You should share your honest thoughts and feelings about what has been discussed in the dialogue. Thereafter, have everyone rejoin the group and ask the other participants what they thought of the conversation they just heard, moving the dialogue further. (**Reflecting Talk**, from *Words for a Dialogue*)
- Instead of holding down those emotions, embrace them and use them to deepen the conversation. Expressing deep emotions is the first step to dig into the experience they cannot yet articulate. Therefore, you should consider their emotions and help them gradually put the experience into words. Focus must be placed on what they say as well as their body language and facial expressions. To delve deeper into their emotions, which is important, you can also ask questions related to how they felt, such as 'What did you feel when that happened?' (**Tunnel of Emotion**, from *Words for a Dialogue*)

8.2.3 Content Form of an Actions Statement (3). A detailed breakdown of the Solution's essential meaning. In some instances, it is effective to describe the Solution statement in more detail, rather than provide specific examples in the Actions statement. That is, the author could go into detail about the meaning and significance of the Solution. This approach is suitable when the Solution itself clearly conveys what needs to be done, making additional specific examples unnecessary. Examples of this content form include:

- Wait for them to think and gather their thoughts into words. Silence after asking a question is not meaningless. Rather, it is time for them to recall their past experiences and feelings and to search for the words to express them. Trying to rush their answer would disrupt this time. You should relax and wait until they are ready to respond. (**Pause for Thinking**, from *Words for a Dialogue*)

8.3 Checkpoints for Revising the Actions Statement

During the revision of the Actions statement draft, the author should check the following points and improve if necessary:

- Does the Actions statement enable readers to understand how to carry out the Solution? The Actions statement should give specific examples to support readers to understand what is otherwise written abstractly in the Solution. The author should make sure that the reader would be able to imagine and follow the action steps.
- Do the methods and steps in the Actions accurately represent the Solution, and are they diverse enough to provide readers with a coherent understanding of the pattern? Are they also diverse enough, to allow readers to gain a coherent understanding of the pattern? The Actions should not be random examples of the Solution; they should be common exemplary cases. At the same time, however, the author should offer several diverse examples, to accommodate various readers' situations.
- Is the Actions statement free of the effects of the actions, which should be written in the 'Consequences' section? When writing the Actions statement, it can be easy to want to write its consequences at the end of the sentences. However, authors should avoid this temptation, as the result of taking the Actions should be summarized in the Consequences section instead. The author should follow the function of each pattern section; otherwise, there would be no purpose in using the pattern format, and the information would be difficult to understand from the reader's viewpoint. However, including short-term or specific results of the action in the Actions statement is acceptable, as this is sometimes inevitable.
- Is the paragraph coherent and expressive when read together? The author should check whether the Actions sentences can be read as supporting paragraph sentences to the key sentence of the Solution (written in bold text). However, the paragraph should not simply be written in proper structure grammatically, but should be expressive and harmonious with that of other patterns. In the revision stage, the author should check these factors, and fine-tune the overall expression and quality.

9. WRITING A CONSEQUENCES STATEMENT

Consequences statement should, in a few sentences, describe the ideal result or output of initiating the Solution within the given Context.

9.1 Key Considerations for Writing a Consequences Statement

When writing a Consequences statement, the following points should be kept in mind:

- Write the Consequences so that readers can grasp how the problem will be solved, the additional benefits of the pattern, and its future impact. The Consequences statement is a description of the result of performing the Solution within the pattern's Context, summarized in a few sentences. The first sentence should capture the direct benefit of solving the Problem. The second sentence should then explain any other related benefits or impact created by performing the Solution. Lastly, the third sentence should touch on the long-term effect of the pattern. By writing the Consequences in this format, the readers will be able to understand the direct effect of the pattern, as well as how it can impact the future.
- Mention uncertainty. Frequently, the Consequences describe what is 'most likely' to occur. The author must not guarantee that the mentioned result will happen at all circumstances. Therefore, it's important to inform readers that the statement indicates the general direction of likely outcomes. Phrases such as "... will lead to ...", "will likely result in", and "may help to ..." could be used.

9.2 Content Forms of a Consequences Statement

The only content form of a Consequences statement is as follows:

A description of the state in which the Problem has been solved, subsequent benefits, and the future.

The first sentence of the Consequences should be a description of a state in which the problem has been solved. It is crucial that the first sentence describes the state of the problem being solved, as this is the primary goal of the pattern. The author can use a phrase such as “By doing ..., the problem will become...” for this first sentence. Additionally, the first part of this sentence should briefly restate the Solution from a bird’s-eye view, helping readers understand the relationship between the Solution and the resulting ‘Consequence’ more objectively.

The second sentence of the Consequences statement should describe any subsequent effects (benefits) of the pattern. For instance, there may be cases where the state described in the first sentence of the Consequences becomes a force to cause other desirable results. There might also be cases where the Solution itself produces side effects, not covered in the first sentence of the Consequences.

The third sentence of the Consequences statement (often with the phrase “Furthermore...”) should show the readers what kind of future the pattern would help to bring. This sentence should summarize how performing the Solution in the pattern’s Context contributes to the quality and future desired by the pattern language.

Examples of this content form include:

- The thoughts of individual participants will link together, gradually changing the meaning of what has been talked about up to the present. This provides room for new perspectives, further leading the dialogue. (**Chain of Responses**, from *Words for a Dialogue*)
- The dialogue will continue in a relaxed atmosphere where everyone can feel comfortable speaking up when they want to. Participants will also be able to think deeply about what is said and imagine things from other perspectives. Even if something shocking is said or extreme emotions are released in someone’s actions and words, the flow of the dialogue will not be disturbed. The dialogue will continue stably, regardless of what is said. (**Slow-Paced Conversation**, from *Words for a Dialogue*)
- You will be able to make your evaluation criteria more explicit when judging your ideas and making sound decisions. Although the scores themselves are based on your judgment, you are able to view them objectively by looking at your ideas from various perspectives. This process also makes it easier for you to discuss your ideas with others, which means that you can involve your partners in the decision-making process. Moreover, becoming accustomed to using numerical scores to evaluate your ideas will strengthen your ability to think analytically. (**Interactive Scoring**, from *Project Design Patterns*)
- You can actively engage in the actions around your life. The chores will create a steady rhythm in your day, making it easier for you to maintain control over your life. The chores will also become a good starting point to have conversations with your family. (**Daily Chore**, from *Words for a Journey*)

9.3 Checkpoints for Revising the Consequences Statement

During the revision of the Consequences statement draft, the author should check the following points and improve if necessary:

- Is the paragraph structured as follows? First sentence: a description of how the Problem will be solved (what is the positive effect from the pattern?). Second sentence: a description of other related positive effects of the pattern (are there any other benefits of the pattern, aside from simply solving the problem?). Third sentence: a description of its relation to the future and long-term effects (what will the future look like, short term and long term?).
- Does the first sentence capture the essence of the Solution from a bird’s eye view? The author should review whether the first sentence helps the readers understand the underlying meaning of initiating the Solution from an objective viewpoint.

- Are the Consequences valuable enough that the readers' want to achieve it? Additionally, are the Consequences compatible with the direction and quality of the entire pattern language? The Solution of each individual pattern should contribute to the overall "good quality" that the pattern language strives to achieve. Therefore, the author should ensure that each pattern's Consequences align with the overall goal of the pattern language and revise them to enhance readers' understanding.
- Are the Consequences reasonable and written honestly? The author must check that the content of the Consequences is not over-exaggerated or falsely presented. For instance, if there are any factors that may not always be true, the author should express the uncertainty accordingly, by using phrases such as "... will lead to ...", "will likely result in", and "may help to ...".
- Is the paragraph coherent and expressive when read together? The author should check not only that the Consequences are written in proper structure grammatically, but also that they are expressive and harmonious with that of other patterns. In the revision stage, the author should check these factors, and fine-tune the overall expression and quality.
- For patterns that are the last in a category or pattern language, the last (third) sentence of the Consequences statement should be an expressive ending. This sentence is crucial as it concludes not only the pattern but also an entire category or the pattern language itself. Therefore, it should be written to express a larger context, to give readers an understanding and a feeling of hope towards the ideal future the pattern language is trying to achieve.

10. CRAFTING A PATTERN NAME

Pattern Name should be a concise yet appealing term consisting of multiple combined words that captures the essence of the pattern.

10.1 Key Considerations for Crafting a Pattern Name

When crafting a Pattern Name the following points should be kept in mind:

- The Pattern Name should be an expression of the 'how' or 'what,' written with the 'Problem/Consequence' *contrast* in mind. The pattern name should be a term consisting of multiple combined words that ideally functions as a noun. In addition, when crafting the Pattern Name, the author should also consider the *contrast* between the Problem and the Consequences (Iba 2021). The role of a Pattern Name is not just to summarize the content of the pattern, but should also be a capturing term, which gives the readers a sense of hope and excitement to initiate the pattern. Therefore, the pattern author should diligently revise and refine their Pattern Names.
- Focus on crafting a Pattern Name that functions primarily as a noun, often composed of multiple combined words. This approach ensures that the Pattern Name goes beyond merely expressing the Solution (often a verb) to include aspects of the 'how' and 'what.'
- Search for synonyms and related images. When coming up with the Pattern Name, the author must not settle for the idea that first comes to mind. They should instead spend time searching for synonyms, using online thesauruses, to find the word that best captures the nuance and quality of the pattern. It is also often helpful to do search for images/illustrations/figures associated with the words being used, to make sure that the author's intention fits the common understanding of the words.

10.2 Content Forms of a Pattern Name

There are mainly three content forms of a Pattern Name as follows:

- (1) *An adjective followed by a noun representing an action, or a verb followed by an adjective describing the object.*
- (2) *A completely new or inventive term, either consisting of multiple combined words or a compound word.*
- (3) *A unique term representing the action's object or outcome.*

10.2.1 *Content Form of a Pattern Name (1)*. An adjective followed by a noun representing an action, or a verb followed by an adjective describing the object. The Pattern Name should, whenever possible, be a term that functions as a noun and often consists of multiple combined words. While noun-based terms are preferred over verbs, this rule may be overridden when necessary or for specific purposes. Examples of this content form include:

- **Deep Listening** (from *Words for a Dialogue*)
- **Become a Real Customer** (from *Project Design Patterns*)
- **Pause for Thinking** (from *Words for a Dialogue*)
- **Response to What is Said** (from *Words for a Dialogue*)
- **Unearth the Reason** (from *Project Design Patterns*)
- **Review in their Shoes** (from *Project Design Patterns*)
- **Live in the Moment** (from *Words for a Journey*)
- **Make it Funny** (from *Words for a Journey*)
- **Sitting in a Circle** (from *Words for a Dialogue*)
- **Studying Not-So-Good Cases** (from *Project Design Patterns*)
- **Thinking with Reality** (from *Project Design Patterns*)
- **Incorporating the Future** (from *Project Design Patterns*)
- **Turning the Tide** (from *Words for a Journey*)
- **Going Together** (from *Words for a Journey*)
- **Inventing Jobs** (from *Words for a Journey*)
- **Delivering the Voice** (from *Words for a Journey*)
- **Open Question** (from *Words for a Dialogue*)
- **Invitation for Utterance** (from *Words for a Dialogue*)
- **Slow-Paced Conversation** (from *Words for a Dialogue*)
- **Emotional Response** (from *Words for a Dialogue*)
- **Reflecting Talk** (from *Words for a Dialogue*)
- **Continuous Engagement** (from *Words for a Dialogue*)
- **Transformation of Meaning** (from *Words for a Dialogue*)
- **Flat Collaboration** (from *Project Design Patterns*)
- **Idea Coupling** (from *Project Design Patterns*)
- **Thorough Listing** (from *Project Design Patterns*)
- **Direct Sourcing** (from *Project Design Patterns*)
- **Interactive Scoring** (from *Project Design Patterns*)
- **Departure Announcement** (from *Words for a Journey*)
- **Disclosing Chat** (from *Words for a Journey*)
- **Preparation for the Dream** (from *Words for a Journey*)
- **Usual Talk** (from *Words for a Journey*)
- **Casual Counseling** (from *Words for a Journey*)

10.2.2 *Content Form of a Pattern Name (2)*. A completely new or inventive term, either consisting of multiple combined words or a compound word. Patterns often include new ideas. Therefore, the Pattern Name could be a term that focuses on expressing that new idea, either consisting of multiple combined words or a compound word. Examples of this content form include:

- **Tunnel of Emotion** (from *Words for a Dialogue*)
- **Reflecting Talk** (from *Words for a Dialogue*)
- **Chance Taker** (from *Project Design Patterns*)
- **Personal Stock of Resources** (from *Project Design Patterns*)
- **Proto-Planning** (from *Project Design Patterns*)
- **Nutritious Information** (from *Project Design Patterns*)

- **Graduated Consultations** (from *Project Design Patterns*)
- **Room for Commitment** (from *Project Design Patterns*)
- **Killer Pitch** (from *Project Design Patterns*)
- **Travel Plan** (from *Words for a Journey*)
- **Fellow Travelers** (from *Words for a Journey*)
- **Can-Do List** (from *Words for a Journey*)
- **Gift of Words** (from *Words for a Journey*)
- **Team Leader** (from *Words for a Journey*)
- **Family Expert** (from *Words for a Journey*)
- **Emotion Switch** (from *Words for a Journey*)
- **Warm Design** (from *Words for a Journey*)

10.2.3 *Content Form of a Pattern Name (3)*. A unique term representing the action's object or outcome. As already illustrated by the examples, it is often the case that Pattern Names use gerunds, such as 'Doing...', 'Trying...', or 'Thinking about...'. However, most often, it is actually not the action itself that is the central idea of the pattern. In such cases, the verb can be omitted to highlight the action's object instead. Simultaneously, it should be kept in mind that the Pattern Name should not be an ordinary term, but rather one that stands out as a distinct term. Examples of this content form include:

- **Exact Same Words** (from *Words for a Dialogue*)
- **Inner Viewpoint** (from *Words for a Dialogue*)
- **Significant Others** (from *Words for a Dialogue*)
- **Chain of Responses** (from *Words for a Dialogue*)
- **Tiny Signs** (from *Words for a Dialogue*)
- **First Meeting in Crisis** (from *Words for a Dialogue*)
- **Everyday Meetings** (from *Words for a Dialogue*)
- **Diverse Understandings** (from *Words for a Dialogue*)
- **Ambiguous State** (from *Words for a Dialogue*)
- **Ever-Widening Context** (from *Words for a Dialogue*)
- **Community for the Future** (from *Words for a Dialogue*)
- **Project Design Principles** (from *Project Design Patterns*)
- **Undiscovered Wants** (from *Project Design Patterns*)
- **On-the-Spot Feeling** (from *Project Design Patterns*)
- **Room for Commitment** (from *Project Design Patterns*)
- **Fundamental Values** (from *Project Design Patterns*)
- **Points of Play** (from *Project Design Patterns*)
- **Three Role Models** (from *Project Design Patterns*)
- **Empathetic Partners** (from *Project Design Patterns*)
- **Professional Opinion** (from *Project Design Patterns*)
- **Pleasant Memories** (from *Project Design Patterns*)
- **The First Step** (from *Words for a Journey*)
- **Daily Chore** (from *Words for a Journey*)
- **Self-Reflecting Room** (from *Words for a Journey*)
- **Favorite Place** (from *Words for a Journey*)
- **Voice of Experience** (from *Words for a Journey*)
- **Self-Intro Album** (from *Words for a Journey*)
- **Own Way of Expressing** (from *Words for a Journey*)
- **The Three Consultants** (from *Words for a Journey*)
- **Chance to Shine** (from *Words for a Journey*)
- **The Seen World** (from *Words for a Journey*)
- **Personal Time** (from *Words for a Journey*)
- **Generational Mix** (from *Words for a Journey*)

- **The Amusement Committee** (from *Words for a Journey*)
- **Hint of Feelings** (from *Words for a Journey*)

10.3 Checkpoints for Revising the Pattern Name

During the revision of the Pattern Name, the author should check the following points and improve if necessary:

- Does it stand out as a term and is it identifiable as a pattern when used in a sentence? A Pattern Name should be recognizable. That is, it should not be a term that is ordinarily used in everyday conversations. The author should ensure that the pattern stands out as a distinct term within a sentence.
- Does it contain the 'how' or 'what' component of the Solution? The author should check that the 'how' and 'what' component of the Solution is expressed.
- Does it express the positive effect of the pattern? The Pattern Name should not express the negative, problematic side of the pattern contrast. It should instead capture the essence of a desirable state produced by the pattern's Solution.
- Is it capturing enough to entice the reader to initiate the pattern? Does it provide a feeling of hopefulness for the reader? The Pattern Name should not simply summarize the pattern. It should be a hopeful term that appeals to the reader and encourages them to follow the pattern.
- Is the phrase well balanced visually, and does the phrase make sense verbally? It is also crucial to pay attention to the overall visual balance of the Pattern Name, as well as how it sounds when pronounced verbally. It should be checked whether the words used are expressive enough, but also common enough to be understood by readers. Furthermore, there may be cases when the Pattern Name should be revised due to difficulty of using it in everyday conversations.
- Is it a phrase that people of various backgrounds and circumstances can use? The Pattern Name should not be overly catered to a specific group of people. The author should check that the expression and tone of manner fits a wide range of people. It is often helpful to imagine examples of cases where the pattern will be used. Furthermore, it is also important that the expression harmonizes with the rest of the pattern language.
- Is it different enough from other patterns in the pattern language? A pattern language should not contain patterns with similar Pattern Names, as that would cause confusion. Therefore, it is necessary to compare Pattern Names among the pattern language, and make adjustments if needed. Additionally, the author should check if similar Pattern Names exist in other pattern languages.
- Check the Pattern Names in a list. In the final process of revising a pattern language, the Pattern Names should be listed out in the order of their sequence. It will be easier to revise the Pattern Names from an objective point of view by isolating them from the pattern content. This also helps in checking whether they are impressionable terms.

11. WRITING AN INTRODUCTION

Introduction of the pattern should be a sentence that supplements the pattern name in a way that piques the readers' interest. Since the Pattern Name is a concise term, it cannot completely describe the content of the Solution. Therefore, the Introduction can express supplementary information and nuances. For instance, if metaphors are used in the Pattern Name or Pattern Illustration, the Introduction could explain their meaning.

The Introduction could also be used as a catch-copy for the pattern, through using quotes or presenting rhetorical questions. However, while this technique can make the pattern more memorable, overusing it may reduce its effectiveness. Therefore, use of this technique should be limited to when absolutely necessary and done with attention to the overall balance of the pattern language.

12. CRAFTING A PATTERN ILLUSTRATION

Pattern Illustration is a simple illustration that expresses the state leading to desirable Consequences. In a Pattern Illustration, a simple character should be used to depict a situation involving action. It is important that this illustration does not contain too much detail, while ensuring it includes only elements essential to the pattern. If a metaphor is used in the Pattern Name, the illustration should generally resemble that metaphor, or at least not contradict it.

While this paper, focusing on Pattern Writing, does not cover Pattern Illustration, I would like to introduce some key literature related to Pattern Illustration. The first is our book 'Pattern Illustrating Patterns' (Iba and Iba Lab. 2015), which provides guidance on drawing pattern illustrations. The second is our paper (Iba et al. 2021), which offers a detailed discussion on the design principles of what and how things are depicted in Pattern Illustrations. Below is a summary of these works.

12.1 Pattern Illustrating Patterns

Pattern Illustrating Patterns presents 28 patterns on how to draw and what aspects must be considered when crafting pattern illustrations (Iba and Iba Lab. 2015). The Core Patterns includes:

- **Pattern Illustrating:** Draw Pattern Illustrations to express the pattern visually.
- **Essential Message:** Consider pattern illustration as having the same value as the pattern description; try drawing an illustration that contains the pattern's essence.
- **Moving Characters:** Draw a character that embodies the pattern's Essential Message.
- **Symbolic Representation:** Draw the scene that solves the problem within the context.

Patterns for Drawing Elements encompassing:

- **Center Words Hunting:** Identify essential strong words or phrases to grasp the pattern's essence.⁵ Overall Rough Sketch: Draw a rough sketch of the pattern illustration while you imagine what it should be like as a whole—according to the relationship between center words.
- **Sketches of Details:** Add elements that are lacking and adjust parts to strengthen the illustration's attraction for readers.
- **Image of Motion:** Use simple figures or arrows to express the motion's image.
- **Word Association Game:** Play a word association game to find the image that best expresses the concept.
- **Deciding the Amount:** Imagine specific situations in which the pattern will be used to decide the number or amount of elements to draw.

Patterns for Determining the Scene and Space covering:

- **Layout of Space:** Draw the illustration as if you are coordinating the 3D space.
- **Instinct Direction:** Choose an angle for drawing the illustration that matches natural physical sensations.
- **Zooming Out:** Zoom out to capture a wider area so that you can emphasize based on comparison.
- **Lively Peak Capture:** Imagine time flowing in the pattern and trim the peak of the character's liveliness and excitement.
- **Acting Illustrator:** Put yourself in the characters' shoes and act out their roles to get a better image of how their expressions would really look.
- **Time Symbol:** Draw the most important scene as the illustration's main part, but include something that symbolizes the past or the future.

Patterns for Finishing Touches to Raise the Quality including:

- **Mood Unity:** Draw the most important scene as the illustration's main part, but include something that symbolizes the past or the future.
- **Consistent Story:** Imagine a story having to do with your pattern language's topic and use consistent motifs to draw different scenes from the same story.
- **Composition Differentiation:** From illustration to illustration, change the point of view to give their compositions variety.
- **Strangeness Busters:** Check your illustration again with the question, "Are any points strange and unnatural?"
- **Simple Illustration:** Keep the amount of information in an illustration to a minimum.
- **Illustration Fans:** Stand in the readers' shoes and draw an illustration that is attractive and fun to see.

Patterns for Assisting when You are Stuck featuring:

- **Intriguing Doodles:** Keep on moving your hand and doodle to generate ideas and get inspired again.
- **External Inspiration:** Look at outside sources for ideas about what to draw.
- **Third Person View:** Show the illustration to someone unrelated to the pattern to get fresh ideas.
- **Polishing Word Sense:** Consciously take time to polish your word sense by reading and writing in your everyday life.
- **Stock of Expressions:** Take notes and create a stock of expressions you encounter along with the feelings you got from them.
- **Improving by Drawing:** Through the process of creating a pattern illustration, improve the verbal expressions of the pattern itself.

12.2 Principles of Pattern Illustration Design

The principles of pattern illustration design were extracted by analyzing more than 600 pattern illustrations for 19 pattern languages in various domains, which we have been creating for the past decade (Iba et al. 2021). Our discoveries on design principles of pattern illustration are grouped into the following 12 principles:

- **Space that has Depth:** Instead of just explaining the situation in two-dimensional pictures, illustrate depth to make the “existence” of the characters feel more real and empathetic for the readers.
- **Characters with a Mind and Body:** When drawing characters, do not just draw their movements, but also convey their thoughts, intentions, and feelings. Because facial expressions show what kind of feelings they have, imagine the characters’ emotions while drawing their faces.
- **Interactions on the Spot:** Instead of simply drawing interactions in an explanatory way, draw the synergies and reactions dynamically as if they are actually happening in the scene.
- **Time Flow from Left to Right:** In principle, the temporal order of events that occur in the illustration is from left to right. Because sentences in the patterns flow from left to right, readers tend to interpret the illustrations following the same flow.
- **Symbolic Object for Abstract Things:** Invisible ideas, such as relations and characteristics of things, can be expressed in visual form by symbolizing the idea with objects.
- **Visible Lines for Clusters and Connection:** Draw lines to visualize connections, chains, or clusters of things or people.
- **The Effect Given by Things Created:** When creating something with purpose, draw the effect given by the thing created, rather than its process.
- **Object-like Speech Bubbles:** In pattern illustrations, you can draw people handling speech bubbles just like any other hold-able objects because the bubbles are visibly expressed into the world as with the characters.
- **Visual Expressions in Comics:** In comics, there is a special way of expressing feelings called, “manpu.” This is the comics’ original way of using signs (symbols) to visualize feelings and sensations in comics. Although it should not be used so frequently, a few are useful for pattern illustrations.
- **Abbreviation for Simplicity:** Because illustrations can become more complex the more you try to be precise, take away the unnecessary details to make the illustration simple.
- **Evolving Stories from Patterns:** Although each pattern illustration individually symbolizes its patterns, make an overall story flow between all patterns to enhance the consistency of the whole pattern language.
- **A Magical Touch for Charms:** If the illustrations only visualize each pattern, this may be useful as pattern illustrations, but not enough to catch the hearts of the readers. Make the final touch onto the illustrations to charm the readers.

13. THE APPLICATION IN PATTERN LANGUAGE EDUCATION

The knowledge presented in this paper was provided to students taking a pattern language course at the Faculty of Policy Management and Faculty of Environment and Information Studies at Keio University. The class consisted of 60 students, from freshman to senior year. As the teacher of this course, the author of this paper experienced firsthand the positive impact due to the application of the key considerations, content forms, and checkpoints. The same course has been conducted every year since 2007.

The following are some responses from an anonymous survey conducted at the end of the semester regarding the course. The responses below are regarding how the material helped to understand important tips and revision points of their patterns:

- It helped me to understand what I should think about when writing the patterns.
- It was extremely helpful in pointing me to the right direction. I read the information beforehand, and from time to time during the writing process.
- Having a format for writing the patterns made the writing process so much easier. It proved to be helpful many times during this course.
- It enabled me to understand “where to start” as well as “where the finish line is”.
- It was a great explanation of what should be written in the patterns. It also helped to have a list of points to check after writing the patterns.
- The material was great, especially the list of points to check after writing the patterns.
- I had the material opened in the same window throughout the writing process. It was extremely helpful to get me aligned in the right direction, since I tended to go off-track about what should be written in each pattern.

Other students expressed how the material helped their team to collaborate, agree on a direction for their patterns, and brainstorm ideas together:

- Our group frequently referred to it whenever we got confused or couldn’t agree with each other. It made it easy to proceed with the group work.
- It was helpful for our group to have the materials, since it gave us something to refer to outside of class time, when there was no professor or teaching assistants around. The past examples mentioned in the materials were especially helpful in gaining a clear understanding of what patterns are.
- Our group would refer to the materials whenever we got stuck. It was helpful to have something we can look at together, and reflect on our work. The specific formats defined in the materials were helpful to understand the structure of the patterns.
- Our group often got lost in direction as our discussions evolved, but referring to the materials enabled us to revise the patterns in a way that made them work together as a whole language.
- We had some of the pages printed out, and referred to them during the group work.

On the other hand, some students found the pattern formats to be a limiting factor. The following comments are topics to be explored in the author’s future work:

- Although the materials gave our team a sense of shared direction, there were times when they limited our ideas, and made it difficult to write patterns that felt “real”. I think much of its helpfulness depends on the person using it.
- It allowed me to understand “where to start” as well as “the final output I need to work towards”. However, I became so focused on following the directions that it sometimes inhibited my creative process while writing.

Lastly, there was positive feedback that the material helped experienced students to share their tips with the other students in the group:

- As a member of the Iba Laboratory and having experience with Pattern Writing, I wanted to avoid being condescending to the other group members while giving them advice. The materials helped me to communicate my advice objectively and maintain a common understanding with the group, instead of simply “teaching” them.

The responses presented above suggest that the materials are effective for learning how to create pattern languages for both individual and group learning contexts.

14. CONCLUSION

This paper presented key considerations, content forms, and checkpoints for writing statements in Pattern Writing, which were derived from the experiences of the author and the author's collaborators over the past 20 years. We are confident that the practical knowledge presented in this paper will be highly beneficial to future authors of pattern languages of practices, and we encourage its application.

Additionally, the content of this paper was intended to be useful for writing pattern languages of practices. However, the author is interested in testing whether the same knowledge can be applied to pattern languages in architecture or software domains.

It is the author's hope that the readers of this paper will try applying what is written in their own Pattern Writing, in addition to utilizing the existing guides (Mezaros and Doble 1998, Harrison 2006, Wellhausen and Fießer 2011, Bergin 2013, Iba and Isaku 2016), and the author eagerly awaits feedback.

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