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## **PATTERNS FOR CREATIVE THINKING**

**Abstract:** Creative thinking can be learned in the same way as analytical thinking. Many creative thinking tools are highly structured and the same methodical patterns occur again and again. This paper is a start to collect and connect the basic patterns of creative thinking. It will not present any new method but will try to generalize the commonalities of similar methods and approaches. There are many descriptions of creativity methods and tools out there. What motivates the description as patterns is the generalization of similar methods, the reasoning for the actual form in terms of forces, and the contextualization and connection of the methods/tools. Very often a specific method implies other methods to follow up or it can be combined with other methods. A pattern language captures such relations.

**Keywords:** Creative thinking, patterns, boundaries, obstacles and consequences, multiple perspectives, idea trigger, random impulse, idea, generic term, a product, method or process, concept, product name, marketing campaign, scamper method, the Osborn tools.

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### **Introduction**

Creative thinking and the development of new ideas and solutions is complimentary to rely on proven solutions as they are generally described in patterns. It is my belief that patterns are a necessity for creative thinking. I see at least the following connections:

- Patterns are about not re-inventing the wheel. It is hardly creative to come up with something that has been around for years. Knowing the patterns of your domain avoids re-inventing and you can invest your time in developing ideas that are really original.
- Patterns channel creativity. A pattern can be implemented a million times over without ever doing it the same way twice. Knowing a pattern provides all the creativity to unfold it in many ways. Yet by showing the boundaries, obstacles and consequences a pattern it provides clear but flexible directions.
- Patterns can be combined. By the combination of patterns new forms emerge.
- Patterns divide and conquer problems. If you have patterns you can rely on, you can be much more creative to design new parts. You can focus on changing a part or completely substitute it.

### **Main Body**

There are lots of descriptions available online about tools and techniques for creativity. The generalization of comparable techniques, the justification for the actual form in terms of forces, and the contextualization and linkage of the techniques/instruments. A particular approach frequently suggests further approaches to pursue or might be used in conjunction with other approaches. Such linkages are captured using a pattern language.

So, patterns are already powerful for creative thinkers. But creative thinking can be more effective if our brains are stimulated in the right way. That is what the pattern language will be about.

We will start with three patterns:

**Multiple Perspectives** is about seeing a situation more holistic;

**Idea Trigger** is about stimulating thought into useful directions;

**Random Impulse** is about giving your thoughts a new and unexpected direction.

Each of the patterns should help to generate new ideas, improve existing ideas, or get a better understanding of ideas. “Idea” is a very generic term.[1] What it really means to you depends on the field you are working on. An idea can be a solution to a problem, a product, method or process, concept, product name, or marketing campaign. You are looking at a situation, problem or proposed situation and you do not know what to make out of it. You have the feeling that something is wrong but you do not understand what it is. You are stuck in your thinking, in your way at seeing things. You have found an idea or solution but you don’t know what it’s worth. You need a deeper understanding of a situation, a problem, or a proposed solution.

**By looking at a thing only from one perspective, it is most likely that you will miss important facts, potential paths and undesired consequences.[2]**

If we see an object or a scene most clearly, we are convinced that we see it the right way because it is so obvious. But think of a house that is painted red at the front and green at the back. If you look at it from the front you could swear that it is a red house. Anybody who claims to see a greenhouse seems to be weird. Yet both views are correct. A lot of time can be wasted if each party sticks to its position without acknowledging any other possible views.

If you want to explore a landscape, then you have to walk around and not stick to a single position. You can use one position to deeply analyze the details but you will only find what is possible to see from that position. The meaning of a thing or situation always depends of its context. A hammer can be the right or the wrong tool for a given task. By changing the context, we change the meaning of a thing. To understand all the potentials and liabilities, to see new paths and solutions, to give new meanings to a situation, to have original interpretations of a thing, we need to look at it from different angles. Therefore, deliberately look at the problem from different perspectives. Focus on one perspective at a time and find as many details, insights and implications for that view. Ignore any potential contradiction to other perspectives.[3]

Changing the perspective also means that you should systematically change your attitude to an idea. Be first a dreamer, then a realist, and finally a spoiler (also known as the Disney method).[4] First think about anything you wish, without limits. Forget all restrictions from society, physics or your budget. Think “what if?” Once you came up with fantastic ideas you can start thinking about which ones could be realized and how to achieve them – be a realist.

Finally, be critical to your plans. Think about any challenges, negative consequences and holes. Use this view to improve your ideas and select the most promising paths. Another way of picking different views on the same solution is to use **\*Edward de Bono’s Six Thinking Hats**. Each hat has a different colour and symbolizes a different view:

\* **White hat / analytical thinking:** What information and facts do we have? Which information is missing? How reliable are the data?

\* **Red hat / emotional thinking:** What is your gut feeling? What is your first impression? Express your thoughts without any justification!

\***Yellow hat / optimistic thinking:** What are the positive outcomes of an idea? Which factors are in favor for a proposal? Even sceptics have to find good points about a suggested solution.

\***Black hat / critical thinking:** What could go wrong? What are negative consequences?

Even if you are convinced of the success of an idea, think about every potential show stopper.

\***Green hat / lateral thinking:** Think out of the box and generate alternative ideas or derive new ideas from the existing approach.[5]

\***Blue hat / moderator:** Put on the blue hat to set the goals, decide which hat to use next and sum up the outcomes of a discussion.

In a group you should share the same view at the same time. By parallel thinking, all members of the group give their best to elaborate that view rather than defending a single position. To change the perspective requires some effort because we are often fixed on our current view. Changing the perspective potentially means that we have to adjust our beliefs. The value of deliberately changing the perspective is that all views are anticipated. There should be no competition about who has the best or most correct view. Rather, the competition

should be who finds the most aspects for each view.

Even if you are willing to change the perspective it is often very hard to think of a good new perspective. You can use IDEA TRIGGERS[6] to suggest a new perspective. Taking many perspectives also costs more time. If you are working in a group, you can split different perspectives between the members. In this case it is important that all views are equally valued. The purpose is not to prove that one group has the best perspective.

Questions can lead you to different thought directions, see new things, and provide views from **MULTIPLE PERSPECTIVES**.[6] A good question or way of viewing gives you the right kick to start thinking.

Therefore, **Compile questions, challenges, prompts, templates and tables as idea triggers that can be used randomly, as a checklist or on deliberate choice.**

A typical question template to gather information about a situation, a challenge or existing product is : Who? What? Where? When? Why? How?

If you ask all these questions you get already much more information as compared to an unstructured brainstorming. Most important, you don't forget one question to ask. Triggers to improve an existing idea or product are provided by the **SCAMPER method** and the **Osborn tools**. [7]

SCAMPER triggers your thoughts about modifying a solution by trying the following things to it:

S = Substitute: Can you substitute parts of the solution?

C = Combine: Can you combine the solution with other ones?

A = Adapt: Can you adapt an existing solution to solve your problem?

M = Magnify: What can be enlarged?

P = Put to Other Uses: In which other contexts could the solution be used differently?

E = Eliminate (or Minify): What could be reduced or simplified?

R = Rearrange (or Reverse): Could you rearrange or reverse the parts of your solution?

**The Oborn tools** are similar to **SCAMPER**, but treat Rearrange and Reverse as separate triggers. These triggers are often used as checklists, meaning that you ask each of the questions to generate new ideas for product improvement. Yet each of the triggers is already useful and if there is not enough time to run through all questions it just as fine to randomly pickup three of four. To randomly pick up an idea trigger you could write down the triggers on small cards and shuffle the card deck.

There are many more of these questions and each triggers a direction of thought. You should think about questions that suit to your domain and build your own stack of idea triggers.

**MULTIPLE PERSPECTIVES** also helps as each perspective is a thought trigger. The standardized description fields of design patterns (context, problem, forces, solution, consequences, known uses) also act as triggers. This shows that idea triggers can be used to find new ideas as well as finding existing knowledge.

Idea triggers often benefit from examples and helper questions:

### **Helper Questions for Substitute**

What parts can be replaced?

What rules can be change?

Are there other persons, places, time frames or ingredients?

Can you use other materials or surfaces?

### **Example for Substitute**

Instead to dial a number, one can enter the name of the person one wants to call. Instead of typing in the name one could speak the name into the phone.

An idea trigger always puts your thoughts in motion. It suggests a new direction of thinking for your current problem. While many of the triggers state obvious questions, these questions are often not in our head when we concentrate deeply on a challenge. By working with a checklist or randomly picking up an idea trigger we are reminded of these important questions. Because they

are often very simple they immediately generate new ideas or show a new direction of thought. You can also use **RANDOM IMPULSES** to trigger ideas.

Since ideas start to popup immediately, a common mistake is to stop too early to search for more. An idea trigger should be used to generate more than one idea. One could even set an **IDEA QUOTA**. The judgment about the ideas should be postponed to not stop the flow of new thoughts.

**Education example:** Split up a group of learners into small teams and let them use different thought triggers.

**Conclusion:** Many of the idea triggers are so important that I will describe them as individual patterns in future work. Behind each idea trigger there is a whole concept that can be captured as a pattern. But having idea triggers in itself is an important concept. Having a checklist, template or deck of card is quite important to not forget or skip always the same triggers.

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