

1.3 Proper Use of Questioning for Creative Thinking and Decision-Making

Effective Use of the Questions "In order to do what?", "How to do?" and "Why?"

1.3.1 Understanding the difference between "In order to do what?" "How to do?" and "Why?" questions

1.3.2 Proper use of the questions "In order to do what?" "How to do?" and "Why?"

1.3.3 Use of the question "Why?"

1.3.4 The "because" theory

1.3.5 The effect evaluation of the methodology

1.3.1 Understanding the difference between the questions "In order to do what?" "How to do?" and "Why?" (Fig. 1.3-1)

- (1) The question "Why?" goes back to past matters or existing knowledge
- (2) The questions "In order to do what?" and "How to do?" draw out thinking about the future
- (3) One cannot begin thinking for new tasks, if the question "Why?" is used.

In the following, we show how to create the vectors of creative thinking and action by combining and properly using the above questions.

1.3.2 Proper use of the questions "In order to do what?" "How to do?" and "Why?"

We consider how correct knowledge is obtained.

1.3.2.a Recognition of cases

We divide acquisition of correct knowledge into cases of the past and the future.

- (1) We designate "acquisition of knowledge by the proper purpose-measure relation" as "acquisition of correct knowledge about the future," and
- (2) designate "acquisition of knowledge by the proper cause and effect relation" as "acquisition of correct knowledge about the past."
- (3) To acquire knowledge about the proper purpose-measure relation of future matters, one should start from the questions "In order to do what?" and "How to do?"
- (4) To acquire knowledge about the correct causal relation of past matters, one should start

from the questions "How did that happen?" or "How come it's like that?"

For example, suppose a child asks the question "Why can goldfish live in water?" In this case, the answer tends to be at the responder's whim. At times, the parent may say "That is God's will," a dead end for the child. However, if we switch the question to "How can goldfish live in water?" we may come up with hypotheses such as "Could it be because there is air in water?" Verifying the hypothesis by looking in books or by experiment, one then finds that they are using their gills to breathe air, and arrives at the causal relation "Goldfish can live in water because they can breathe the air dissolved in water through their gills."

1.3.2.b Once correct knowledge is obtained, one may start from "Why?" for an intelligible explanation. Even in this case, however, one may also explain from "In order to do what?" "How to do?" or "How did it happen?"

1.3.2.c Image diagram of the above relation

We may explain the above relation using the present (point B) as a base in the image diagram (Fig. 1.3-1).

- (1) The first equations "In order to what?", and "How did it happen?" both point from left to right.
- (2) If we mix the questions "In order to do what?" and "Why?" one question points to the right and the other to the left, resulting in confusion.
- (3) By starting from questions in the same direction as in (1), vectors of thought can be aligned to obtain an orderly conceptual system.

1.3.3 Proper use of "Why?" question

1.3.3.a A case study of the question "Why?"

If the question "Why?" is asked first, one is led to the following cases. However, except for cases (3) and (5), there is no guarantee which case one will be led to.

- (1) Repeating "Why?" the correct algorithm is established, and one arrives at the correct answer.
- (2) When the correct algorithm is not established, one may arrive at a false answer, which at face value provides the correct explanation.
- (3) It is possible to aim for the situation above.

- (4) In the worst cases, it will lead to responsibility issues, or hurting people's feelings.
- (5) The past may be negated. Here, however, a paradox develops. The past cannot be erased, but one negates it and come up with an algorithm which treats the past as if it has disappeared.
- (6) Thinking about the future that was done in the past may be revived and utilized. However, in this case, one repeats "Why?" to arrive at point C, and taking time, worrying, or negating the past, one finally arrives at point A, jumping over point D, recognizing one's thinking in the past.

1.3.3.b Effective uses of the "Why?" question

Use of the "Why?" question is advisable in the following situations:

- (1) After the proper purpose-measure relationship, or the correct cause and effect relationship is established, "Why?" may be used for an intelligible explanation.
- (2) If one starts to question "Why?" out of habit and is lucky enough, one can arrive at an understanding of the correct relationship. On the other hand, if one inserts tentative knowledge (such as religious matters), one can maneuver to arrive at an opportunistic conclusion.
- (3) "Why?" can be used to convince ourselves of our own situation.
- (4) The "Why?" question points to an unalterable past, so it is very effective for embarrassing people or pursuing their responsibility, not allowing any escape. If you wish to embarrass people, start with a "Why?" question by all means.
- (5) The "Why?" question can be used to find the cause of the breakdown of existing mechanisms. This is because personal considerations need not enter. Even then however, it may be better to start off with "How did this happen?".
- (6) Generally speaking, one may use the "Why?" question to become convinced of impersonal matters, or the mechanism of Nature through established hypotheses or theories.

1.3.4 The "because" theory

In bureaucracies or organizations, new things often cannot be initiated just with the knowledge of "In order to do what?", "How to do?" This is because governments and organizations have regulations which require an answer to "Why?" questions; for example,

accounting and budgetary laws. To deal with the situation, we insert the "because" theory in the above conceptual system. That is, after the correct relationships are established, one can answer "why" questions with "because". This allows explanations of policy, securing the budget, and social benefits.

Examples of "because" theory are:

- "Because a safe new-generation helicopter was developed to raise the efficiency of emergency rescue, saving many lives is possible.
- "Because there are requests from all quarters, which cannot be ignored, we should do A to do B"
- "Because they are doing it overseas, we should do A to do B".
- "Because a new purpose-measure relation is established, we should do A to do B" which allows action in government.

This method (way of thinking and procedure), which allows this conceptual system to be immediately applicable to daily business, is the PMD method described in the beginning of Chapter 2.

1.3.5 The effect evaluation of the methodology

1.3.5.a How this method was developed

This method was developed under the following circumstances.

- At an organization involved in large scale R&D, the development of an ideal large-scale integrated information system was planned.
- However, the agent responsible for the design of the integrated information system did not lay adequate groundwork, the long-term plan was unapproved, and it was attempted to place existing business on the computer system without any changes. This led to haziness about the relation with the whole project, business became more complicated and confusion reigned in the organization.
- The people in charge of the information system were pestered with the question "Why this mess?" from other members in the organization, with good intentions of finding an entrance to the solution, but with "Why?" "Why?" this automatically led to a pursuit of responsibility.

- To escape this situation, the method was developed.

1.3.5.b How the mechanism in the method was utilized

- This method recommends using “Why” to intentionally embarrass people.
- However, that was not called for. The author distributed copies of the method and PMD thinking in Chapter 3, and gave OJT (On the Job Training) for PMD to the people concerned.
- The situation changed. “Why?” questions petered out.
- This led to an improvement in the situation, and a long-term plan was officially set up using the 5-3 improvement method given in Chapter 2.

1.3.5.c Changes in the times

- People in organizations want to improve things, so they ask “Why?” with good intentions.
- At times, this may go well, but more often than not, it leads to confusion.
- The latter may happen particularly during the development of new things.
- Asking “Why?” was all right in the age of improving existing things, catching up with foreign technology, and materializing things whose model was already present.
- If a system was already in place, and trouble occurred in the system, one could start from “Why?”
- In contrast, when things such as new computers systems are developed and used for the development of things with a new concept, starting from “Why?” will almost always lead to a deadlock. A good example is the early phase of the development of the integrated information system described above.

1.3.5d Supplement

In Japanese, there is the question “doushite”, which simultaneously means “Why?” and “How?” The nuance is closer to “Why”, and “How?” rather than “How”, and “Why?” “Why?” comes first in its interpretation.

Therefore, let us reconfirm the simple rule: “Why?” and “doushite” should not be used until the correct algorithm is discovered. Only “How to do?” is permitted.

References

- [1] M. Esaki, A Method to Create the Vectors of Creative Thought and Action, Proceedings of the Japan Creativity Society, Tokyo (Oct. 1989)

Fig 1.3-1 Image map of thinking pattern starting from "why" and "in order to, how to" questions

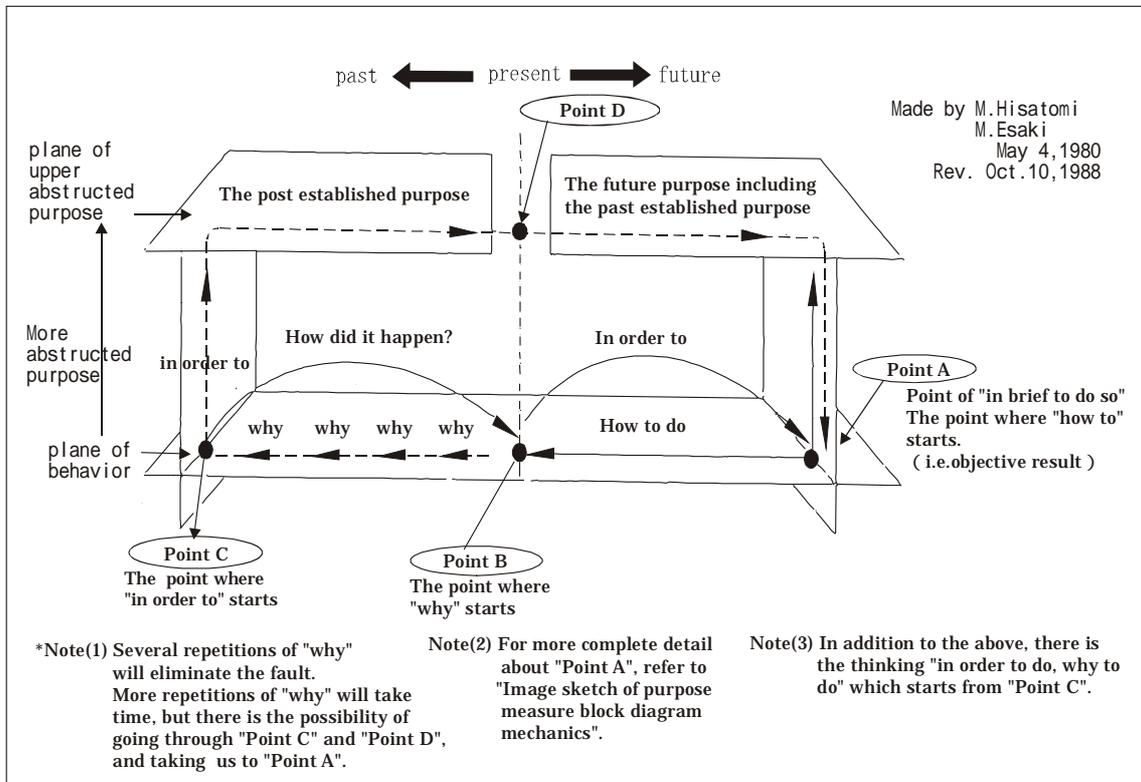


Fig 1.3-2 The section of our brain corresponding to Fig 1.3-1

