

# The Pyramid Principle by Barbara Minto

## (The logic of writing)

### The pyramid structure

A person that seeks to learn your thinking about a particular subject faces a complex task.

George A. Miller describes in his treatise “The magical number seven, plus or minus two” a pattern governing the process of our mind. Whenever we encounter a number of items the mind begins to group them into logical categories so they can be retained. The mind will automatically impose order on everything around it. This tendency of the mind is nicely illustrated by the Greeks who grouped stars into figures instead of pinpoints of lights.

As the listener has to take in your story line by line, he must take each of these, digest them, relate them and hold them together. He will invariably find the job easier if your ideas come to him as a pyramid.

When you group together a number of sentences into a paragraph, you do so, because the sentences have a logical relationship. All of your sentences are needed to express a single idea of the paragraph, which is effectively a summary of the paragraph. Stating this summary sentence raises you to the next level of abstraction. On this level of abstraction you again combine a number of paragraphs to form a section. These paragraphs and no others are needed to express the single idea of the section, which again will be the summary of the ideas in the paragraphs below. Exactly the same thinking holds true in bringing together sections to form a document and the single idea of the document will be expressed in the executive summary.

If you have made the pyramid structure correctly your major point will be explained and defended by the in ever greater detail. Fortunately we can check if the pyramid grouping is correct by the following rules:

- Ideas at any level in the pyramid must always be summaries of the ideas grouped below them
- Ideas in each grouping must always be of the same kind of idea
- Ideas in each grouping must always be logically ordered.

The listener will automatically try to infer a logic order or structure whenever you present him your ideas. However, he will rarely use the same interpretation on your grouping as you do. Indeed, people will not infrequently find that they cannot see any relationship at all. Even if they do think exactly as you do, not stating your logic upfront makes the task of listening more difficult.

The pyramid structure almost magically forces you to present information only as the reader needs it.

### The story line

Any idea below the main point will automatically have both a vertical and a horizontal relationship to the other ideas in the document.

The vertical relationship serves to capture the readers attention as he is seeking the answer to his logical question “Why?” or “How?”. Any point you make must raise a question in the reader’s mind, which you must answer horizontally on the line below.

The points in the line below must not only answer the question above, but also answer it logically in an inductive or deductive grouping.

In the introduction you follow the classic narrative pattern of story-telling you take the audience by the hand and start with the situation description, then you introduce the

complication which gives raise to a number of questions and then you lead the audience through you line of thinking to the answer.

- Situation - telling the listener in story form what he already knows.
- Complication – describes the reason for your engagement, a change to a before stable situation.
- Question – defines the scope and goal of your engagement.
- Answer – is the goal of your engagement, e.g. your finding, conclusion or recommendation. The answer is your first key line point.

In the main part you start with the answer at the top of the pyramid and answer all logical questions in the lines below. The technique forces you to provide only the information relevant to the question.

When you are at the bottom of the pyramid you best pause and make summary before going on. Then you get back to the original question and you move horizontally from the first key line which you just summarised to the next key line.

Some useful guidance

- Sort out the introductory information first so that you leave yourself free to concentrate solely on ideas at the lower levels.
- Always put historical chronology in the introduction. You cannot tell the listener what happened in the main part.
- Limit the introduction to what the listener will agree is true.
- Key lines must be expressed as ideas or statement and not as single words.
- Even if not always all elements of Situation-Complication-Solution need to be included in the introduction, the author should be aware of them.
- Don't give findings that do not lead to conclusions.
- Don't state conclusions that are not based on findings.

Theoretically, having a proper introduction and a pyramid structure of the body you don't need a concluding statement. Rather than repeating your key line, you may try to produce an emotion in the listener, when stating your conclusion. You may end with a Next Steps chapter, however, be sure the listener agrees to your next steps.

Example of a directive:

(S) We want to do X. (C) We need you to do Y. (Q) How? (A) List of steps.

Example of a request for funds:

(S) Someone wants X. (C) He cannot purchase without my approval. (Q) Should I approve?  
(A) We should approve, because....

Example of a "How to change" document:

(S) Someone must change a process X to Y. (C) He doesn't know how to. (Q) How does he do it? (A) Follow the steps....

Example of a letter of proposal:

(S) You have a problem. (C) You have decided to bring in an outsider to solve it. (Q) Are we the right outsider to solve it? (A) Yes, we understand the problem, we have a sound approach, we have good people to work on it, we can help you there....

## Justify each grouping of items

You cannot simply group items and assume the audience will understand the significance.

Many writers have a tendency to group together items by a general rather than specific relationship, so that nothing is directly implied. Consequently such items are usually introduced with intellectual blanks.

Example:

The company faces three problems....

He is well placed to write this biography for three reasons....

What does it mean? There are 3.000 problems the company has, but we have listed three of those in one box and disregarded the other 2.997 – for what reason? Maybe the answer may be:

Example:

The areas of the organisation where greater delegation is needed are...

He is well placed to write the biography because he and the subject are essentially the same kind of people...

Every grouping implies an overall point that reflects the nature of the relationship between the item. You should force yourself to justify each grouping so that you are sure that your thinking is dead clear and that your writing reflects it.

- Summaries the action ideas by stating the effect of carrying out the actions.
- Summaries the situation ideas by stating what is implied by their similarity to each other.

The effect of stating the common effect or the common similarity also allows you and the audience to check the grouping for completeness. The more specific the summary is the easier it is to check for completeness and to easier it is to find criteria to judge when the end result has been reached.

Professor William Minto compared writing with the task of a battle commander who needs to file out his battalion through a narrow gap that allowed only one man at a time to pass. Likewise the audience can only take in one sentence at a time and has to reconstruct the story afterwards.

When you divide a whole into parts, you must make sure the pieces you produce are

- mutually exclusive of each other and
- collectively exhaustive in terms of the whole.
- ruthlessly limited all parts to the underlying logic of the effect or category.

## The essence of reasoning

C. S. Pierce claims that all problems arise from a missing or wrong structure that lacks to explain a case of observed facts. Such a structure expresses a belief about the world and is usually formulated in a set of rules. Problems are solved if there is a rule that allows predicting the result for a giving case.

Working with the three entities of rule, case and result he can distinguish three problem solving strategies:

- Deductive “The rule R states if A than B, therefore case C will result in R.”  
Starting with the rule we can demonstrate is validity by applying it to a case and checking the results.

- Inductive “A leads to B, C leads to D therefore we assume the rule R”  
Using different cases leading to various results we infer the rule.
- Abductive “We observe results R1 and R2 and therefore have the hypothesis R”  
Without full knowledge of a case we infer a number of hypotheses and test them.  
Successful hypothesis turn into a rule. Hypotheses need to be questioned in such a way that the answer allows to confirm or to discard the hypothesis.

Whenever you couple ideas to form an inductive or deductive grouping, your mind automatically expects a summarising statement of “therefore...”

**Example for Deduction:**

Here is what is going wrong. Here is what is causing it. Therefore here is what you should do about it.

**Example for Induction:**

Men are mortal. Socrates is a man. Therefore Socrates is mortal.

You must change. How? (horizontal). Why? (vertical)

**Example for Abduction:**

Aristotle had a hypothesis that force produces velocity. His hypothesis did, however, not explain why an arrow keeps flying after he leaves the bow. Newton created a new hypothesis that force relates to change in velocity.

An issue is a question so phrased as to require a yes-or-no answer, in order to permit us to prove or disprove our understanding of the cause of a problem.

B. Robert Holland set out a typical problem solving process in his manual “Sequential analysis” with the following steps:

<b>Step</b>	<b>Analytical problem solving</b>	<b>Scientific problem solving</b>
What is the problem? What question do you want your analysis to answer? Where does the problem lie? How can we picture the current situation?	Visualise the difference between the results you get and the results you want. Visualise the structure elements of the present situation causing the result.	Define the discrepancy between the results you get and what you expect. State the traditional assumptions of the theory that give rise to the discrepancy.
Why does the problem exist? How can we isolate the problem?	Analyse each element whether it is the cause.	Create hypothesis that give alternative structures to eliminate the discrepancy.
What can we do about it? What options do we have? What should we do about it? What recommendation can we give?	Formulate the logical alternative changes. Create a new structure incorporating the changes.	Devise experiments that will exclude false hypothesis. Reformulate the theory on the basis of the experimental results.

## Structuring the analysis into logical trees

When you reach a stage of determining why a problem exists, you frequently find that the relationships you need to analyse are not directly evident. In that case your strategy should be to visualise the logical structure that must exist to produce the results that you observe.

A number of structures you may use are:

- **Financial structure (ROI tree)**  
Uses the financial structure of a company to find areas that might cause a problem
- **Task structure**  
Uses the tasks a company / group needs to perform in order to identify critical tasks.
- **Activity structure**  
of possible causes or and hence actions leading to an effect.  
Ordered from strongest-to-weakest.
- **Choice structure (decision tree)**  
Stating mutually exclusive decisions in the form yes-no-questions, like are we doing the right things or not? are we doing the right things effectively or not?
- **Sequential structure**  
Grouping a list of actions leading to a desirable result along the time line.

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