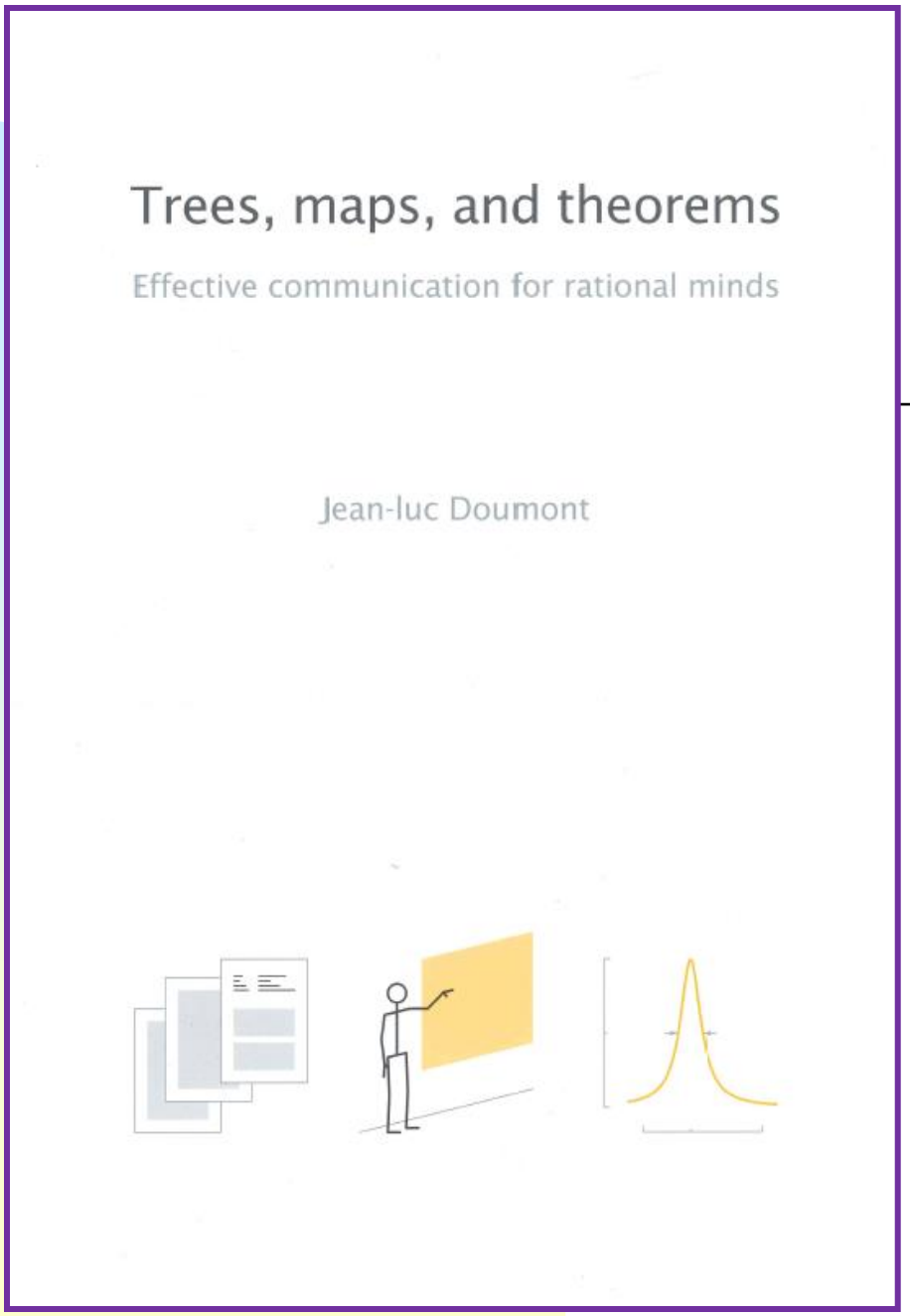


Effective Communication

Claudio I. Meier

& Ana Doblas

Herff College of Engineering

The University of Memphis

“Meae culpae”

1. Little time ➔ bad presentations…
2. Based on my raw teaching experience, which for some reason is almost integrally exposed (with a lot more!) in this book
3. I will only try to transmit these transversal concepts and try to “facilitate” your understanding

The real author of this presentation:
Jean-luc Doumont

Objectives of this session

At the end of today's lecture, students will be able to:

1. Define what constitutes effective communication
2. Understand how to adapt to their audience
3. Identify and avoid sources of noise in communication
4. Give examples of effective redundancy in communication
5. Understand the difference between sequential chains and hierarchies (or trees) of items
6. Explain the three central themes of an effective structure: balance levels and items, ease the navigation, and put the main message first

1. Intro: The name of the game

Effective communication (oral presentation or class, written, or graphical) is all about getting our messages *across…*

→ ***it is about an audience, not us***

- **Purpose**: What are trying to achieve when we communicate with our audience?
- **Contents**: What do we need to write, say, or draw in order to reach our goal?
- **Form:** Which contents will allow us to reach our goal & how should we write, say, or display them?

We want our messages to be **understood**

By whom? → By our **audience**!

Key aspect here is: ***Did they get it or not?***

- In order for them to **understand**, we need them to **pay attention**, but…
- This “understanding” is just a means, not an end!
- We may want them to understand so they remember it later, or become convinced of it, but ultimately, we want them to understand so they **start acting** in a certain (new, different) way

Message ≠ information !

Low flows in the Wolf River can be as low as 180 cfs during dry years ➔ that's a **piece of information**

In dry years, low flows in the Wolf River can go as low as 180 cfs; this allows water temperatures to reach extreme levels in summer, limiting DO levels and affecting fish populations ➔ that's a **message**

➔ A message contains more "*intelligent added value*" than a piece of raw information. It interprets the "information" for a specific audience and specific purpose. It states something that can be understood (at least by some) about the "piece of information."


Information
Interpretation
Message
What?
So what?

It is messages that present something that can be understood about any “piece of information”

- Both are “*ideas*,” but to communicate effectively we must identify and convey **messages**
- Conveying information is not enough; it leaves the audience wondering “*so what*?”
- A message conveys this “*so what*”

Information : Message AS Results : Conclusions

- A message makes a statement, and thus *requires a complete grammatical sentence*

Summarizing: The first step to communicate effectively is to clearly *identify the messages* that we want to pass on to our audience

If we merely convey information our audience will ponder "*So what? Why are they saying (writing) this? Where are they going?*" ➔ Common error!

In order to convey our messages we can use all opportunities at hand: Titles, figure captions, plots, telling the (very) occasional joke, empathizing with our audience, nice photos, etc.,

But ***without straying from our purpose*** and ***without adding*** *(too much)* ***noise***!

To communicate effectively, make sure you have messages

Take distance from your work

to identify motivation and outcome

Recognize opportunity

such as captions of figures

Be selective about contents

Express complexity in a simple way

➔ Now, many times we want to convey **multiple**, **complex** messages

And typically the context of the communication imposes **constraints**:

- 12-min oral presentation to summarize 4 years of hard doctoral work
- Explaining flood hydrology to 3rd graders?
- Maximum length for your conference paper is 6 pages
- Present in English, even though you are Nepali, Irani, from Bangladesh, Chilean, *Spanish*, etc.

To communicate effectively we must *optimize under constraints*. Of course, this does not refer at all to maximizing what we say, write or draw…

Instead, it means *to maximize how much our audience gets* from our document or presentation – with our purpose in mind, given the constraints

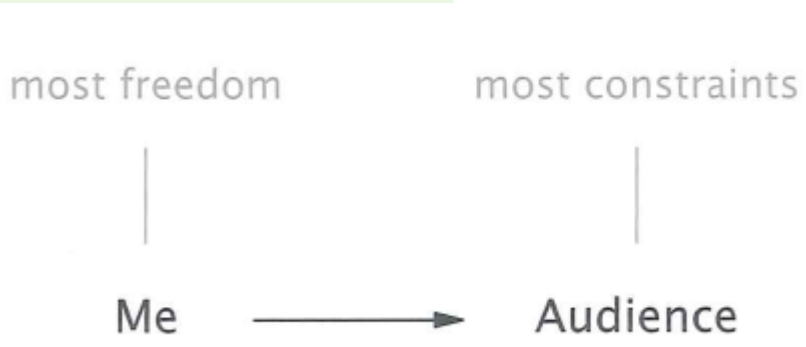
To communicate effectively is to

Get your audience to

- pay attention to
- understand
- be able to act upon

a maximum of message(s), given constraints

2. Three Laws of Communication
First: Adapt to your audience



To optimally convey messages we must **empathize** with our audience ("walk a mile in their shoes")

Example of adapting to your audience:

I could have assumed that all of you understand the meaning of "to empathize"

Worse: I could have even not wondered at all whether your knowing this (or not) affects my class (probably the most common case, sadly enough)

I could have used a dictionary definition (boring!), but hey, we're all friends here, right?

Note that typically, we cannot choose our audience: "*it is what it is*," you gotta take them as they come…

Still, we can decide *what* to tell them (and thus what not…), and *how* ➔ that's adapting to your audience

You can't expect them to adapt to you!

Recall that we are communicating because we have a purpose… this is not altruism!

In daily life, we spontaneously adapt to our audience….

So why is there so little "common" sense in academic communication, sometimes?

Empathizing with, and adapting to our audience is:

- Having some a-priori notion about *what they know*
- Anticipate their *needs* and *expectations*
- Structuring your story telling along *their lines of reasoning*, not yours
- Acknowledge their *limitations* and *constraints*: low (or no) familiarity with the topic, mastery of the language, time constraints, etc.
- Realize that if one strategy does not work, we must be ready to try a different one, e.g., explain the same concept again but with a different analogy

Typical student's audience in a class: "Dr. Meier"

- Purpose: Pass the course; maybe get a good grade
- Audience (captive = profe) knows more than the student and is morally obligated to read and grade the student's proposal or term paper, or listen to the presentation, no matter how "not so good"….
- Typical strategies: Include (way?) too much unfiltered material; if cramming the night before (just like this seminar, I should add), do lots of "arm waving" ➔ **noise**

Real-world audience: "Unpredictable"

- Purpose: that they pay attention, understand, and are able to act upon….
- Most often, will be unpredictably varied and mixed
- Most will know less than the author/presenter
- Highly selective about what they read or the talks they attend
- Very little patience with those presenters (writers) attempting to "put all the meat on the grill," often at the expense of clarity or conciseness

	Academia	Real world
Audience	Single, well-defined	Multiple, unpredictable
	More knowledgeable	Less knowledgeable
	Captive	Selective
Purpose	Demonstrate knowledge	Inform, convince, …

Most common error is to present too much information that is too technical, or else irrelevant.

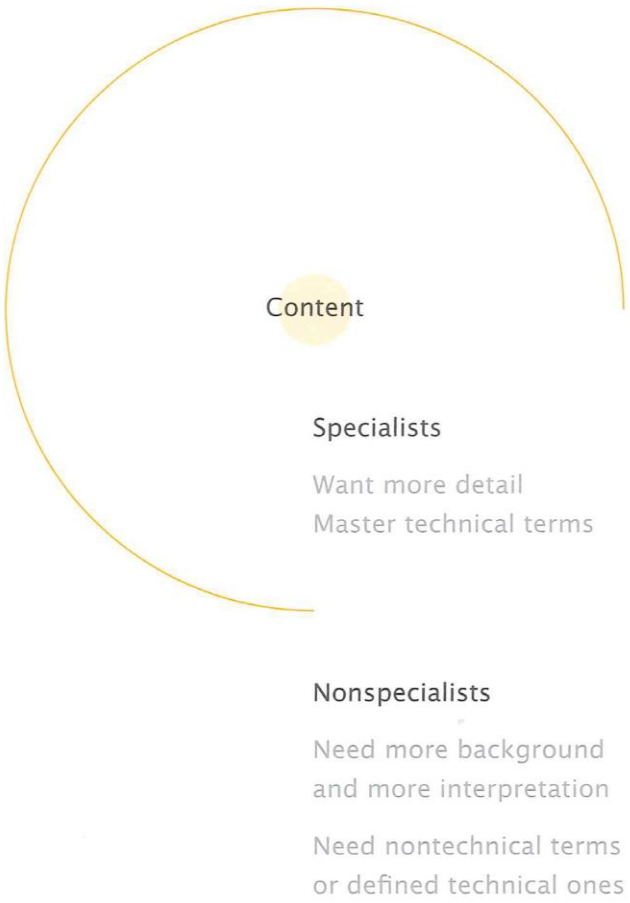
Too many "academics" think that every presentation (manuscript) should contain information that no one understands, so as to sound "more serious."

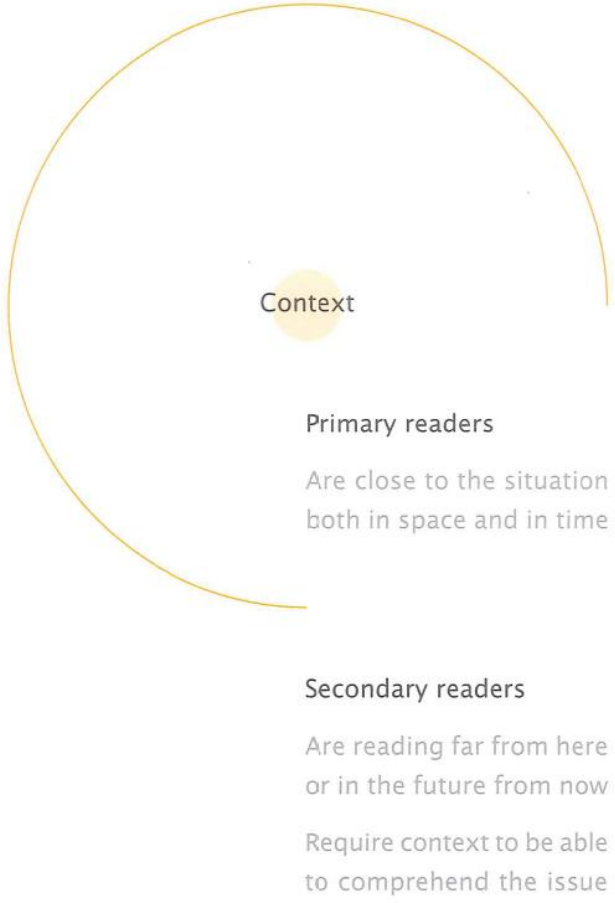
(In STEM, it would be intimidating equations with complicated calculus or linear algebra)

Truth is, a motivated audience will always have more respect and esteem for speakers (writers) who can explain complex matters in simple ways, and thus give new insights.

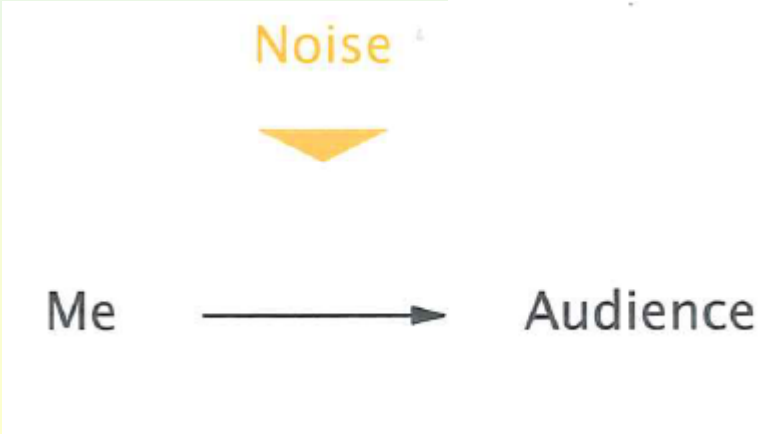
Audiences can be classified according to proximity to:

Subject matter / content **Overall situation** / context





2. Three Laws of Communication
Second: Maximize the S/N ratio



Anything that does not help to convey your messages is **noise**.

Nothing is “neutral” in communication: Audiences see and hear everything, and *whatever does not help with our message will most often detract from it*.

Examples:

- Actual undesirable noises (acoustic)
- Misspellings in a document
- Repeating filler words (you know?, er, hum, like)
- Conspicuous clothing (or lack thereof…)
- Complex slide backgrounds

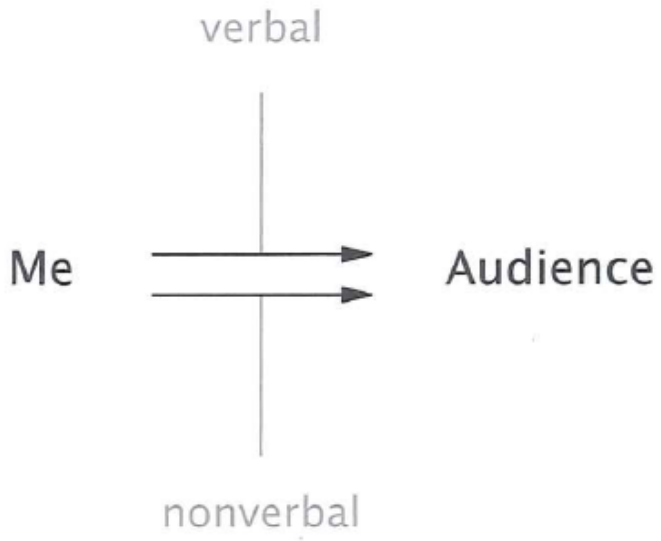
“Prose is architecture, not interior decoration, and the Baroque is over.”

Ernest Hemingway

In **written documents**, noise is anything that prompts readers to *stop thinking about contents* and *start thinking about form* (or irrelevant content):

- Complex, difficult to understand structure
- Long, at times incoherent, or else grammatically illogical sentences
- Lack of adequate punctuation and connectors
- Misspellings
- Irrelevant content
- Distracting visual elements
- Unusual or superfluous words
- Unnecessary repetition of words/sentences/ideas

2. Three Laws of Communication
Third: Use Effective Redundance



Redundancy helps restore messages damaged by **noise.**

But it needs to be effective, not repetitive, or else it becomes noise.

A “STOP-sign” intersection is a good example:
color, shape, writing, line on street all “say” stop!

Telling things once might not be enough if your messages are complex. Thus, the need for

Effective redundancy ≠ Mere repetition

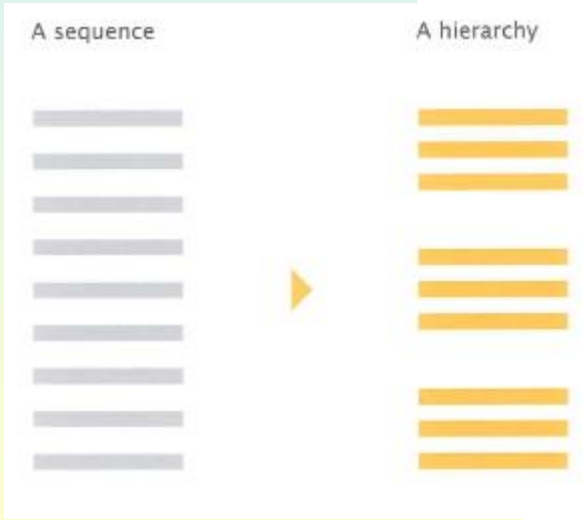
By giving several chances at understanding, it helps address non-homogeneous audiences.

➔ However, *it should not introduce noise itself* !

The different codings should work synergistically, not compete with each other for the audience's attention. Useful, distinct codings in text include:

- The text itself
- Headings in text/contents
- Page layout
- Figures, tables, etc.

3. Chains versus Trees



A chain **A tree**

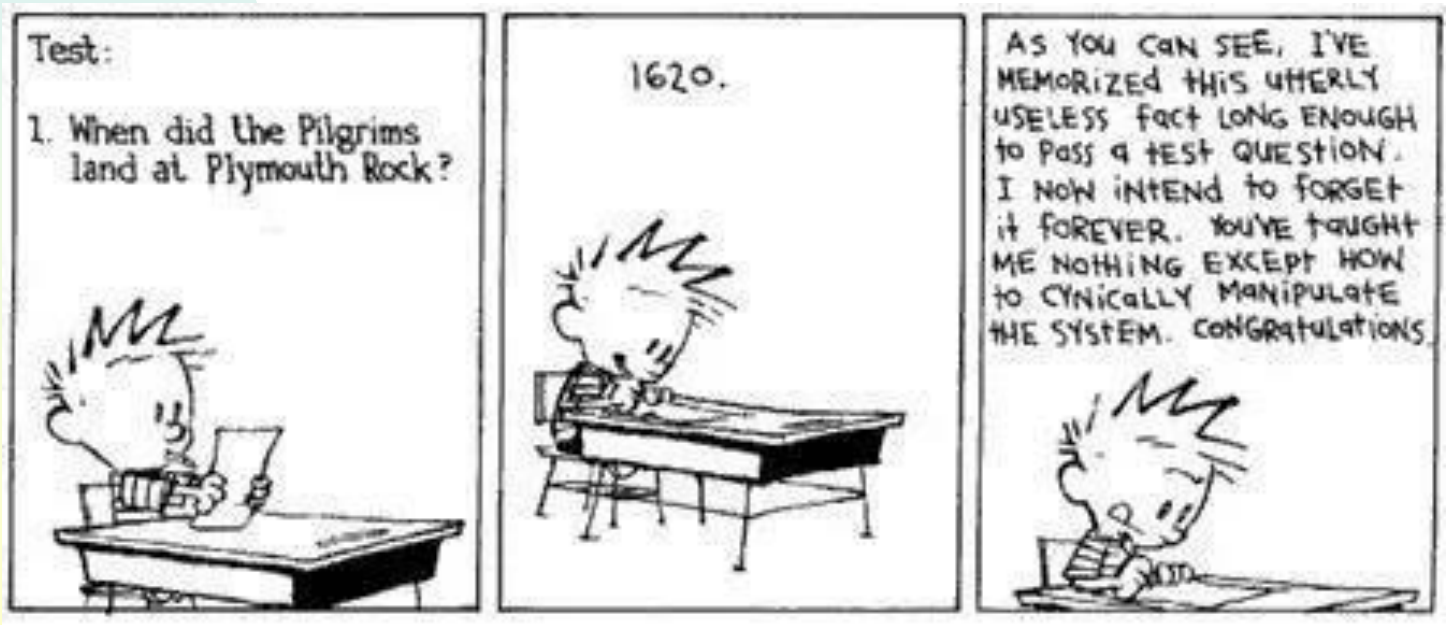
Our **capacity** for processing items of information presented in an unstructured list (chain, sequence) is **severely limited.**

But we can create a hierarchy, grouping items into fewer, higher-level items: a list of lists.

Chains do not communicate well.

They tax our short-term memory.

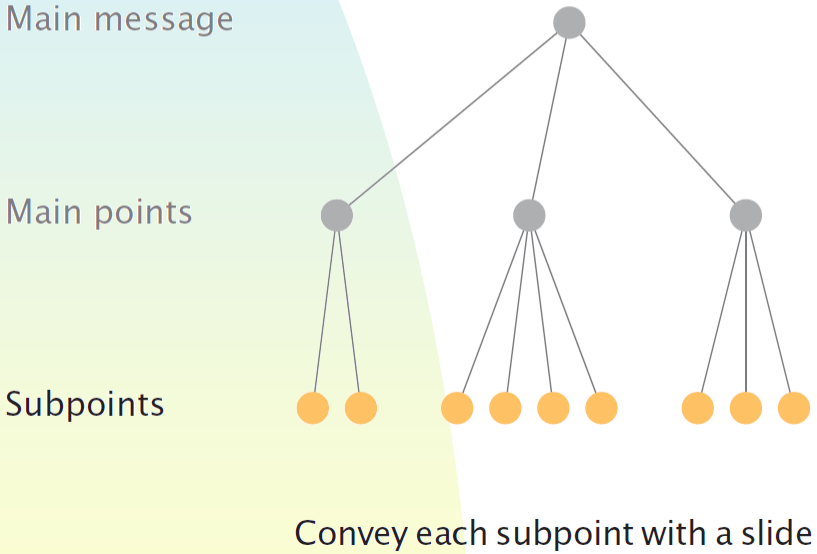
Only way to deal with them is by rote memorization, but this only provides sequential access (you forget a single item and you're out).



A “list of lists” is a **hierarchy**:

With each slide, convey one message (only).

State the message verbally, then develop it visually.



Convey each subpoint with a slide

It is much easier for our brains to process a list with three higher-levels items,

each of which in turn contains three lower-level items,

than to deal with nine “loose” items…

But: This works only if the original items have been grouped "somehow logically," not arbitrarily.

This "logic" must be made explicit to your audience! Use effective redundancy, e.g., visual clustering.

Depictional Representations
(representation with illustrations, similarity between illustration and object)

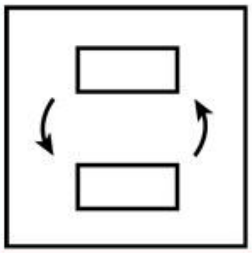
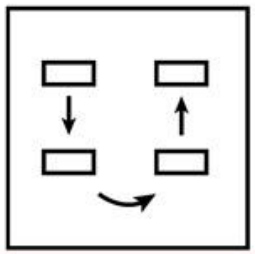
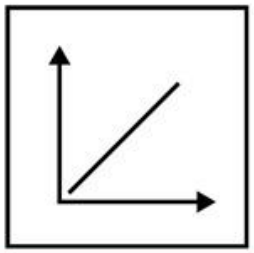
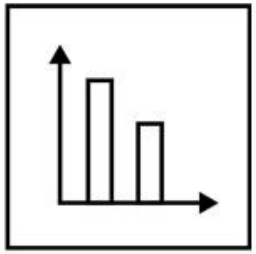
Logical Picture
Similarity between object and representation is logical

Realistic Picture
Similarity between object and representation is visual

Charts
Logical pictures of qualitative relationships

Graphs
Logical pictures of quantitative relationships

Photos, Drawings…

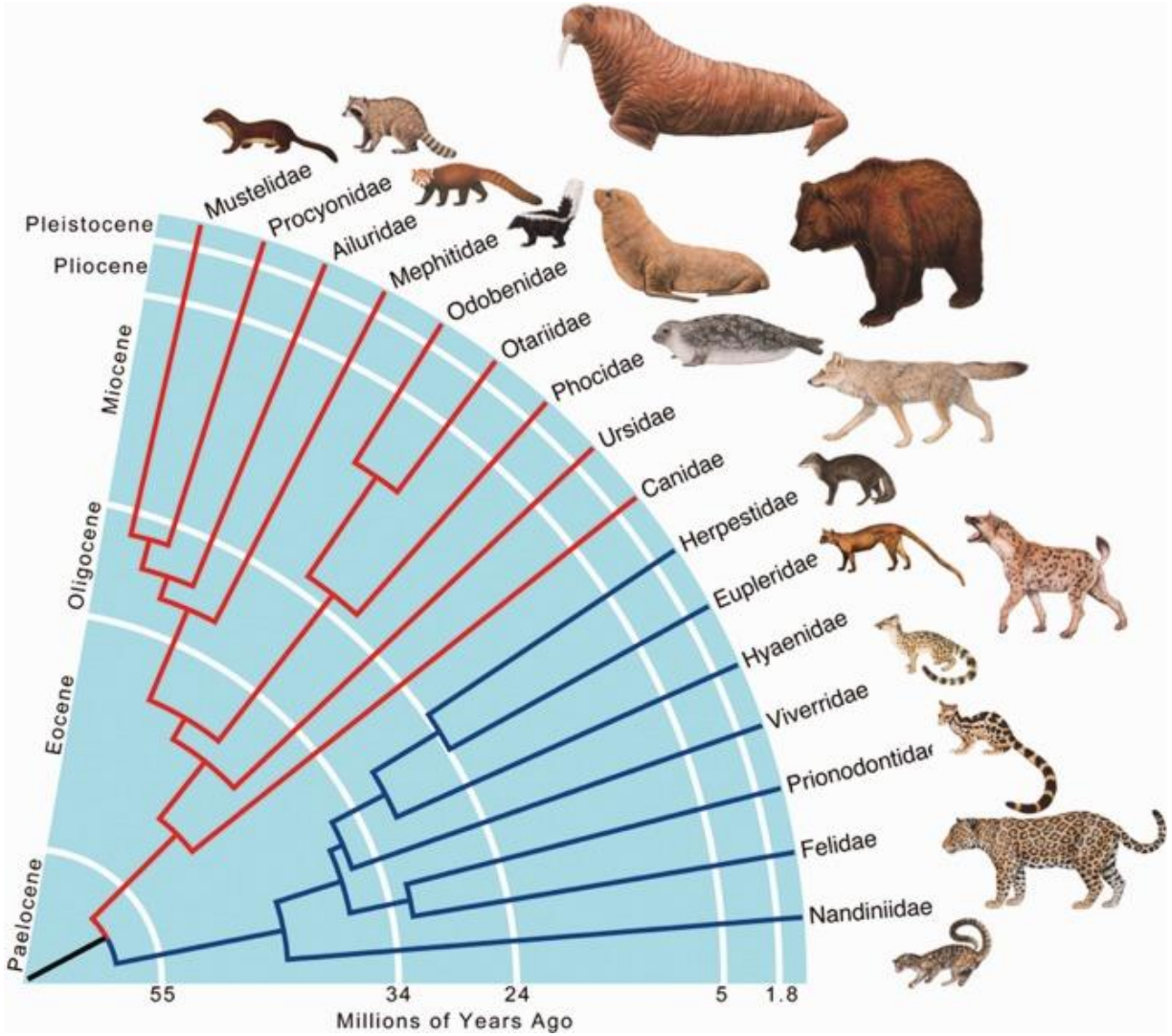





Chains can only be accessed in sequence.

Trees add a dimension, as they are arranged hierarchically.

The only issue with trees, is that they are much more difficult to construct…

You are forced to understand the relations…

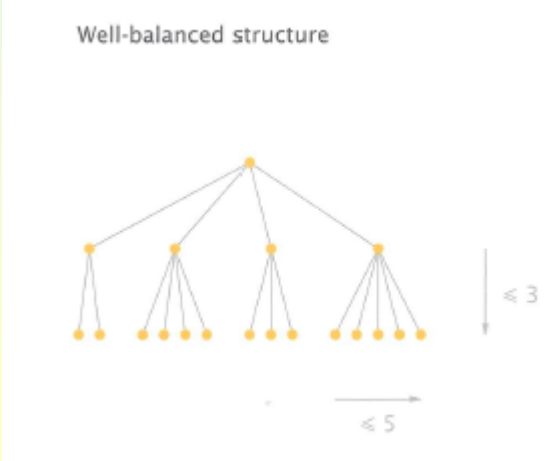


Fundamentals

The name of the game
The three laws of communication
A thousand words, a thousand pictures
Chains and magical numbers
Trees, maps, and theorems

Balancing the structure
Allowing easy navigation
Stating messages first

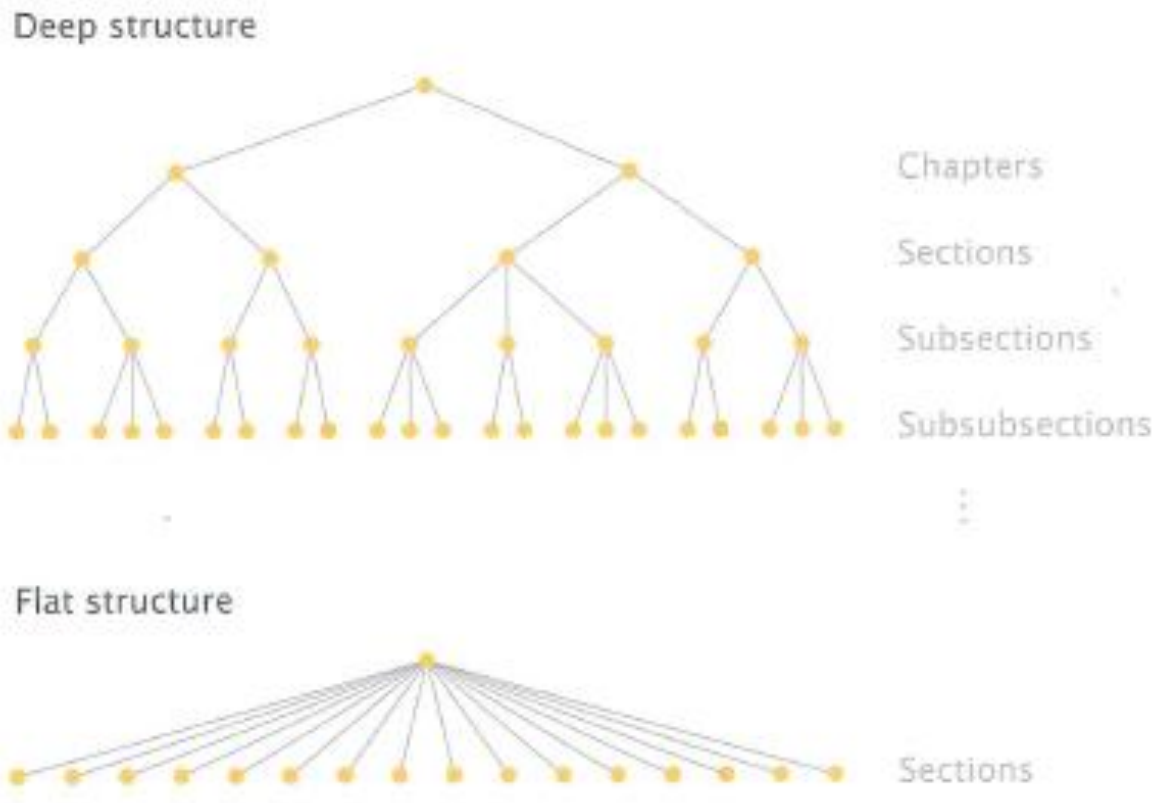
4. Effective Structure: Balance



An effective structure has a **limited number of levels**, with a

limited number of items per level.

How many? It really depends on the type of communication.



Dreaded engineering manual…

versus

Magazine article for less specialized audiences

Before dividing a new branch, always provide a global perspective, e.g., when starting a new chapter.

Fundamentals

The name of the game
The three laws of communication
A thousand words, a thousand pictures
Chains and magical numbers
Trees, maps, and theorems

Balancing the structure
Allowing easy navigation
Stating messages first

4. Effective Structure: Navigating

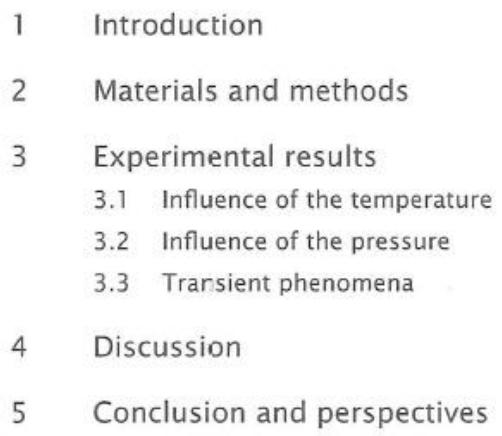
An effective structure can be navigated effortlessly if made visible.

Give your audience a map &

tell them at all times where they are on this map.

How do you allow for easy navigation?

- Include a **strong visual component** so readers can see the structure at a glance
- Show a slide preview
- Use a running footline
- Show the map as a whole to allow an immediate overview
- Summarized contents table?
- In written documents and websites, **tell the audience where it can go**.



4. Effective Structure: Put Messages First

An effective structure presents the material i**n the order the audience is most likely to want to learn it.**

Minimize navigation!

Professional audiences want to be told the message (the *so what?*) early.

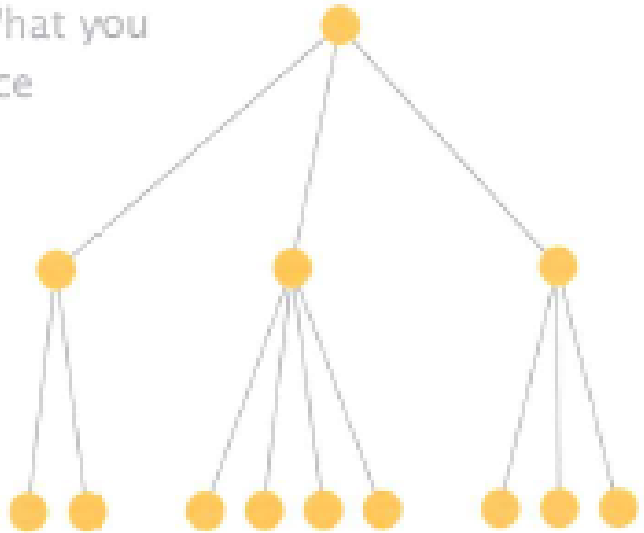
They still need proper motivation and context, though!

Top-down approach applied to an oral presentation

1 **Main message** What you want your audience to remember

2 **Main points** What supports this message

3 **Subpoints**



Then, you can add all those aspects that support your main message.

But *what is my main message*? "Easy":

If I wanted my audience to remember a single sentence out of all my class, presentation, document, poster, etc… which one would it be?

➔ **THIS IS THE MAIN MESSAGE**

Objectives of this session

At the end of today's lecture, students will be able to:

1. Define what constitutes effective communication
2. Understand how to adapt to their audience
3. Identify and avoid sources of noise in communication
4. Give examples of effective redundancy in communication
5. Understand the difference between sequential chains and hierarchies (or trees) of items
6. Explain the three central themes of an effective structure: balance levels and items, ease the navigation, and put the main message first