McGill Centre for Intelligent Machines

EFFECTIVE PRESENTATION

A one-day workshop

Presented by

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1. INTRODUCTION

I'm the expert!

To make an effective presentation, you must be able to say that to yourself. That means, at the very least, that you must be in command of your subject matter, and be seen to be in command. Thus, you must appear confident. An effective presentation lies in the middle ground between confidence and cockiness.

Presentation = delivery, and so we will develop some guidelines for a delivery system. But a delivery system without a good product to deliver, can't be effective. So we must consider two main topics

- the product, i.e. the written paper, and
- the delivery, i.e. the presentation.

Presentation Types

The literature describes four types of presentation:

- Off-the-cuff
- Memorized
- Read
- Extemporaneous

The last three types presuppose a written document, a paper. We will first deal with the preparation of that paper. Then we will turn our attention to how it can be presented. But before we go much further, let's dispose of the off-the-cuff presentation type.

Off-the-cuff describes what might take place in a discussion following a formal presentation. And it's typically what takes place at committee meetings in a debate on an agenda topic. The term can be misleading, because it can carry with it a sense of lack of depth, understanding, knowledge. But a knowledgeable individual speaking off-the-cuff, may well make an effective presentation. However, that's not what we'll spend time on here.

A *memorized* presentation can be effective, but it has some major problems. This type is fine if you have a photographic memory, and automatic retrieval. But if you forget a word or line, the result can be a disaster. And even if you don't have a memory lapse, it can tend to sound mechanical, with no sense of spontaneity. Boring.

A *read* presentation avoids the memory pitfall, but if the presenter can read the paper, why can't the audience be allowed to do so? What does the presenter offer in the reading that the audience can't get on its own? In reading a paper it's difficult to maintain eye contact with your audience, and it's not easy to use natural body movements. The result is likely to be wooden and lack interest. The read presentation is, regrettably, common at professional society meetings, but the questions remain. As a small part of a highly technical presentation, with much essential detail, it might find a useful place, but in general, it's a second-best approach to delivering a paper.

This leaves us with the *extemporaneous* presentation.

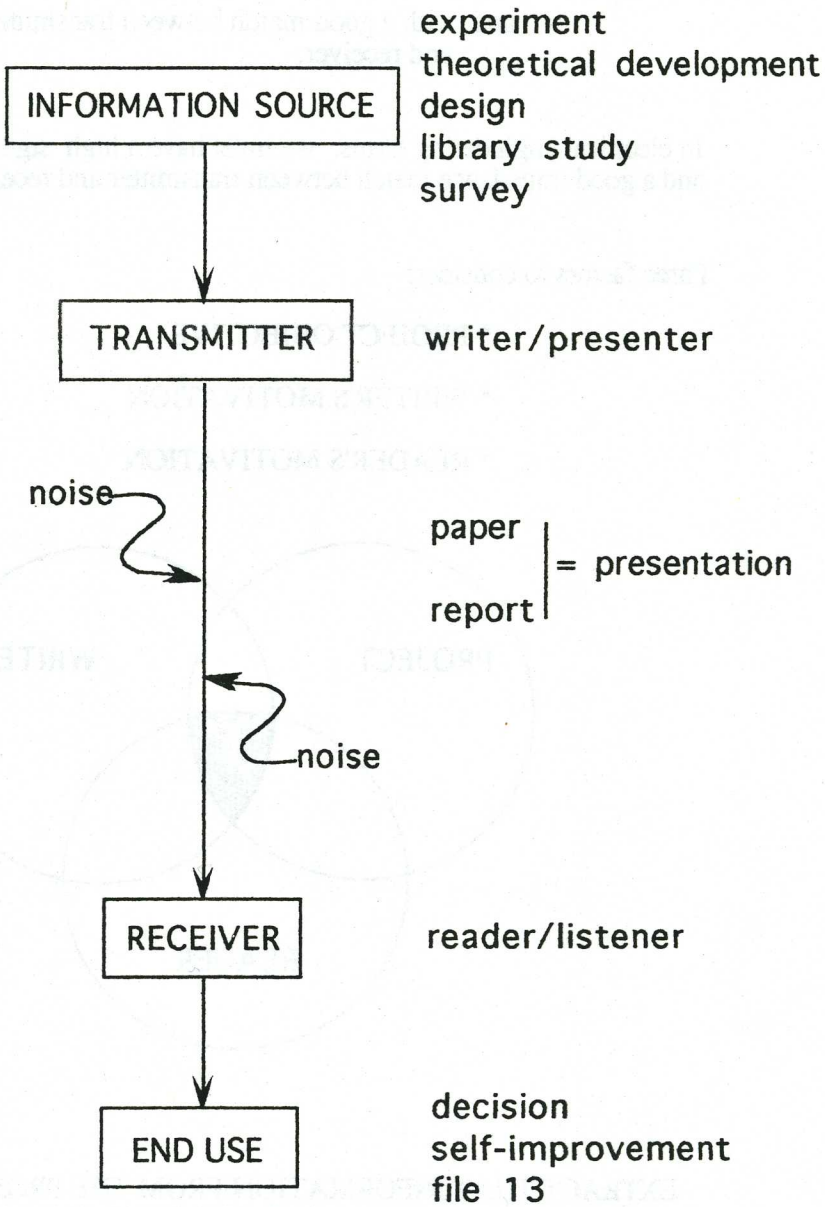
Webster's New Collegiate Dictionary defines *extemporary* as "composed, performed, or uttered on the spur of the moment; not prepared beforehand; impromptu." This sure sounds like *off-the-cuff* or impromptu. But as the term is used in our context, an extemporaneous presentation is anything but impromptu. Preparation for an extemporaneous presentation generally starts with a written paper, but not necessarily. For our purposes, we'll assume that it does.

We have two choices then: we can take the easy route - *read* the paper - and accept second-best - a mechanical presentation, or instead, be prepared to do some more work and produce a lively, natural presentation. But it does take more work, sometimes much more.

Consider the difference between an oral presentation and a written text. With a written text, the reader can study and reread as needed for understanding. The reader can consult Tables, ponder Graphs, study Appendices, and interrupt to consult reference material. A listener at an oral presentation does not have these possibilities. The listener must grasp the meaning at a single pass. And this poses a particular challenge to the extemporaneous presenter.

The first step in preparing the extemporaneous presentation is to produce a topic outline based on the written paper. But before we can do that we must write that paper.

TECHNICAL WRITING & PRESENTING, AS A COMMUNICATION SYSTEM



The system goal is to achieve a strong flow of information from those who know to those who don't, briefly, clearly, and *inconspicuously.*

How can we achieve a strong information flow?

With a strong signal,

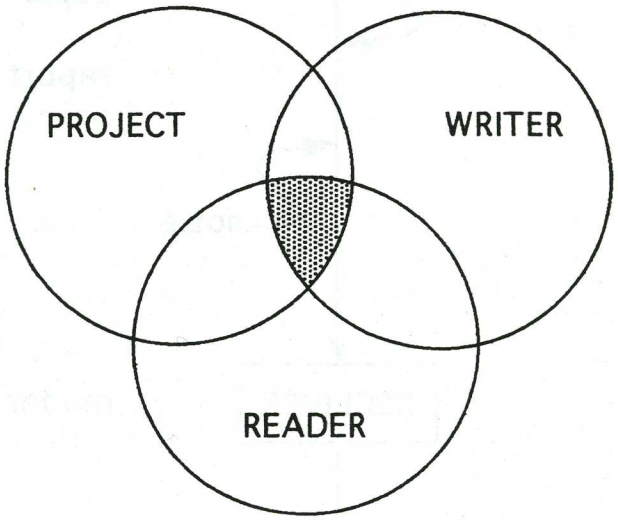
with low noise,

and with a good match between transmitter and receiver.

In electrical engineering terms: we must have a high signal-to-noise ratio, and a good impedance match between transmitter and receiver.

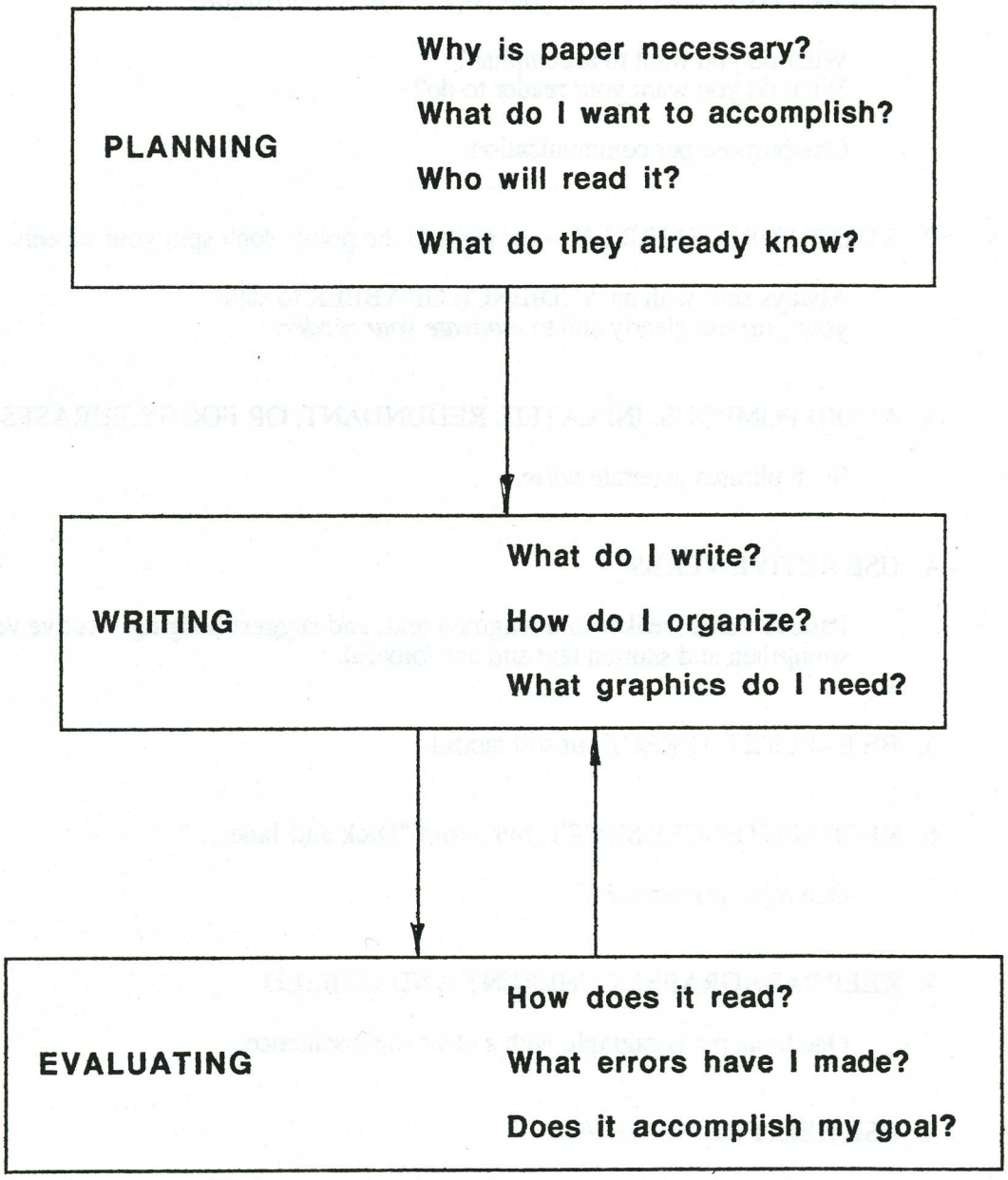
Three factors to consider:

* PROJECT OBJECTIVE
* WRITER'S MOTIVATION
* READER'S MOTIVATION



EXTRACT THAT INFORMATION FROM THE PROJECT THAT FITS BOTH THE WRITER'S AND THE READER'S MOTIVATION

MAKE YOUR TEXT USEFUL FOR THE READER



Aim your writing at a target just below your reader's level

KNOW YOUR TARGET AUDIENCE

Writing Guidelines

1. DEFINE THE PURPOSE of your paper -- *your motivation.*

   What do you want to accomplish?
   What do you want your reader to do?

   One purpose per communication.

2. START PURPOSEFULLY -- get right to the point, don't spin your wheels.

   Always start with an AUDIENCE GRABBER to state your purpose clearly and to *motivate your reader.*

3. AVOID POMPOUS, INFLATED, REDUNDANT, OR FOGGY PHRASES.

   Such phrases generate *noise.*

4. USE ACTIVE VERBS

   Passive verbs weaken and lengthen text, and suggest hedging. Active verbs strengthen and shorten text and are forceful.

5. BE EXPLICIT, DIRECT but still tactful

6. KEEP SENTENCES SHORT, but avoid "Dick and Jane ... "

   One topic per sentence.

7. KEEP PARAGRAPHS COHERENT AND UNIFIED

   One topic per paragraph, with a clear topic sentence.

8. USE HELPFUL HEADINGS

   Good headings keep your text logical and focussed. They increase readability, and reduce fog.

9. PROOFREAD ALOUD

   Get a colleague to proofread aloud for you if you can, if not, read aloud to yourself.

10. SET TEXT ASIDE AND THEN REREAD at least once

    Writing is iterative. How many iterations can you afford?

11. CHECK FOG INDEX (See Appendix 1)

    Remember your target audience. Keep fog index below 12[1].

12. KEEP MESSAGE SIMPLE AND DIRECT

    Worry about *clarity*, not about *rules* of grammar.

    But poor grammar will distract your reader, and reflect poorly on your technical competence, so avoid glaring errors.

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[1]See The Gunning Fog Index, Appendix 1

A Presentation Framework

1. GRAB your reader/listener	State your PURPOSE
2. EDUCATE your reader/listener	Give the FACTS
3. CONVINCE your reader/listener	Give your REASONING
4. CLOSE with clear next step	State what ACTION follows

Quality

The QUALITY of a presentation depends on

* Technical content
* Organization
* Validity and significance
* Literary style

* TECHNICAL CONTENT

What's the purpose?

What are your motivations?

Why bother to write?

IDENTIFYING MOTIVATIONS HELPS ORGANIZE WRITING

* ORGANIZATION

-arrange material to emphasize main purpose

-show material to best advantage

-demonstrate importance

* VALIDITY AND SIGNIFICANCE

-cite sources

-show alternatives with reasons; show negative aspects too

-discuss implications

-interpret data, results, conclusions

* LITERARY STYLE

Readability depends on

-proper use of technical language

-full development of sentences and paragraphs to show relationship among technical ideas, and therefore on the proper use of logical connectives, transitions, and headings

Clarity is essential

-clear exposition demonstrates clear thinking (and the converse is dangerously true too)

-ambiguity raises doubts

-use technical language appropriate to the subject **and to the target audience**

Fog index should be low

Writing Your Paper is a Design Project

An OUTLINE of a text is like an initial block diagram for a system design-- it's an organizing tool.

An outline has two interacting purposes:

1. To arrange your information in logical order
2. To help organize your thinking

Keep your outline flexible -- work back and forth between purposes.

Avoid forcing your ideas into a rigid structure; don't carve your outline in stone.

BRAINSTORM

Record everything that comes to mind, as it comes to mind, to build an idea bank

Don't worry about the order of topics as you brainstorm

From your idea bank, select key ideas and supporting ideas

DECIDE ON YOUR MAIN THRUST

will you emphasize
- data
- method
- novelty
- recommendations
- cost-benefit relation
- ... ?

DECIDE ON DETAILS TO INCLUDE

Decide on supporting tables, graphs, illustrations

DECIDE ON HEADINGS

Use the conventional organization:

Introduction
...
(body)
...
Conclusions or Recommendations

Your choice of the "body" sections represents your decision on the relative importance of your material and the level of detail that you need.

Headings

Headings are the writers direction signals to the reader. They are a major contributor to understanding. Headings serve as a navigation system through a document and through an oral presentation too. Headings that don't help the reader through the paper are not worth having.

A well-structured outline usually generates well-structured headings. And good headings usually result in more concise texts, since good headings generally reduce the need for transition words or sentences. Thus, good headings reduce fog.

BE CONSISTENT - DECIDE ON YOUR HEADING STYLE AND STAY WITH IT.

The Paragraph as an Organizing Device

"In the written text make the paragraph the unit of meaning"

So says *Strunk and White* [2]

The paragraph is an organizing device

- by topic
- by visual effect on the page

The paragraph is an organized unit of meaning

- organization is usually *introduction - body - conclusion*
- *introduction* generally includes a *topic sentence*

Topic sentence gives clear direction to the paragraph

- it gives your reader a framework for understanding your message
- it gives you a test for what fits into the paragraph
- it tells your reader what to expect from the *body* of the paragraph

Where should your topic sentence be?

- Generally in first place as the *introduction* (the beginning of any text should grab the reader, the end leaves the final impression, and the middle is the weakest position.)

How long should a paragraph be?

- generally long enough to develop the subject of your topic sentence. If longer than a page, then it is likely too long and should be split into sub-topics;.if three or more on a page then they are likely too short;
- Lambuth[3] says " Don't make them so long that they are hard to follow, nor so short that they are choppy." And "There is no absolute rule for paragraphing. Your own feeling must be your guide."

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2 William Strunk, Jr. and E. B. White *The Elements of Style* 3d ed. New York: Macmillan, 1979. pp. 15-17

3 David Lambuth *The Golden Book on Writing.* Penguin, 1976. pp. 8 - 9

A paragraph must have *unity*

- it must have only one topic, clearly stated in the topic sentence

- each sentence must contribute to that topic

- it should be complete. "Unless a paragraph is more or less self-contained it does not fulfill its mission in life."[4]

Repetition or paraphrase of words and phrases helps to *unify* the paragraph. The topic sentence sets out the unifying idea, and recurrent terms reinforce, give continuity, and unity.

A paragraph must have *coherence*

- The parts of a good paragraph are logically connected. They cohere, stick together. They are not *incoherent.*

- Transitions between ideas, sentences, arguments, are smooth, clear, and logical.There are many transition devices to bridge between sentences, and between paragraphs too. See, for example, Bingham pp. 29-33, or Lannon[5] .

Some commonly used transitions:

and	also	furthermore	again
under	to the right(left)	beyond	nearby
first	afterward	next	before
similarly	in comparison	likewise	
although	nevertheless	but	yet
so	therefore	hence	because
for instance	namely	for example	viz
that is	in fact	in other words	
in close	briefly	in conclusion	

Repetition is a useful connecting device too. But, it must be used with care, and not simply become *redundancy.*

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4 Lambuth

5 John M. Lannon *Technical Writing* 5th ed. New York: Harper Collins. 1991 pp.518 - 521

Inflated [or Foggy] Expressions[6]

due to the fact that
by virtue of the fact that
owing to the fact that
for the reason that
in view of the fact that
on the grounds that
on account of the fact that
in the event that
in spite of the fact that
prior to
subsequent to
in the course of
the greatest percentage of
during the time that

a large number of
on the occasion of
take into consideration
leave out of consideration
make an approximation
put on a demonstration
effect the standardization of
come to a conclusion
green in color
neat in appearance
rectangular in shape
controversial in nature
in the neighborhood
most of the time

More Fog Generators

dead corpse
fatal slaying
advance warning
past history
lag behind
round circle
basic fundamentals
plan ahead
estimated at about ...
in the range of between...
in the case of
at this (that) point in time
attached hereto, please find
this is to inform you
at your earliest convenience

centered around
collect together
connect up
empty out
fill up*
make mention of
perform an analysis
in order to
very (most) unique
we are of the opinion that
it is recommended that
join (merge) together
enclosed herewith, please find
this is to confirm
as soon as possible

---

6 Bingham, p. 154

* but *fill in, fill out* are examples of phrasal verbs; the prepositions *in, out*, act as part of the verb, and are essential to the meaning.

The Writing Process

The writing process includes three steps (see p. 5):

1. planning
2. writing
3. evaluating

These steps are non-linear -- they join and overlap.

Write your first draft as quickly as possible. Record your ideas following your outline.

Don't break your train of thought to check your dictionary, Strunk and White, or whatever. Don't worry about grammar, spelling, or punctuation on your first pass. Simply record your ideas.

Then leave your draft for a while.

Return to revise. Now is the time to consult your dictionary, handbook, thesaurus, ...

The overall process is

ORGANIZE
WRITE
RELAX (or do something else)
READ
REVISE
REWRITE
RELAX
READ
REVISE
REWRITE
...

The process is iterative. How many iterations must you go through? How much time can you afford to spend and for what marginal return? But you must afford at least one iteration.

Strunk and White, p. 72:

> Do not be afraid to seize whatever you have written and cut it into ribbons; it can always be restored to its original condition in the morning, if that course seems best. Remember, it is no sign of weakness or defeat that your manuscript ends up in need of major surgery.

A GOOD WRITER FILLS HIS OWN WASTEBASKET, NOT HIS READER'S

Common Usage Problems

1. There's five people coming tomorrow.

2. Do you know what affect that will have?

3. I only filed my return a day late.

4. He looked at the Fairview Shopping Centre driving along the Trans-Canada highway.

5. If Vicky and Sue don't go tomorrow, she won't get the job.

6. The construction sight is across the street.

7. Jaffa oranges are as good if not better than Sunkist.

8. She was hired by the personal department yesterday.

9. None of the Reformers were elected in New Brunswick.

10. The principle reason for the collapse was unknown.

11. The trio was comprised of a violin, cello, and a viola.

12. I enjoy teaching, cross-country skiing, and TV.

13. He learned to cook, do the laundry, and how to change the baby's diaper.

14. The traffic in Montreal is worse than Toronto.

15. Québec city is further from Montréal than from Trois Rivières.

Problem Paragraphs

1. One of the largest problems in designing an airfoil is the ability to retain a low landing speed without sacrificing the required high speed performance. In order to do this, it is necessary to increase the plan area of the wing when low speeds are required. This will result in an increase in both drag and lift which makes the airfoil unsuitable for high speeds. This condition can be achieved by incorporating the use of a slot or flap. In this way a most unique configuration can be achieved.

2. In order to reduce the drag on a car the aerodynamicist has two options: first he can reduce the frontal area of the car. This has been done not only to reduce drag but to lighten cars, however there is a limit to the extent to which the area can be reduced and still provide adequate enough room for the car's occupants. Secondly, he can reduce the drag, which translates roughly into streamlining.

3. DELIVERING THE PRODUCT - PRESENTATION[7]

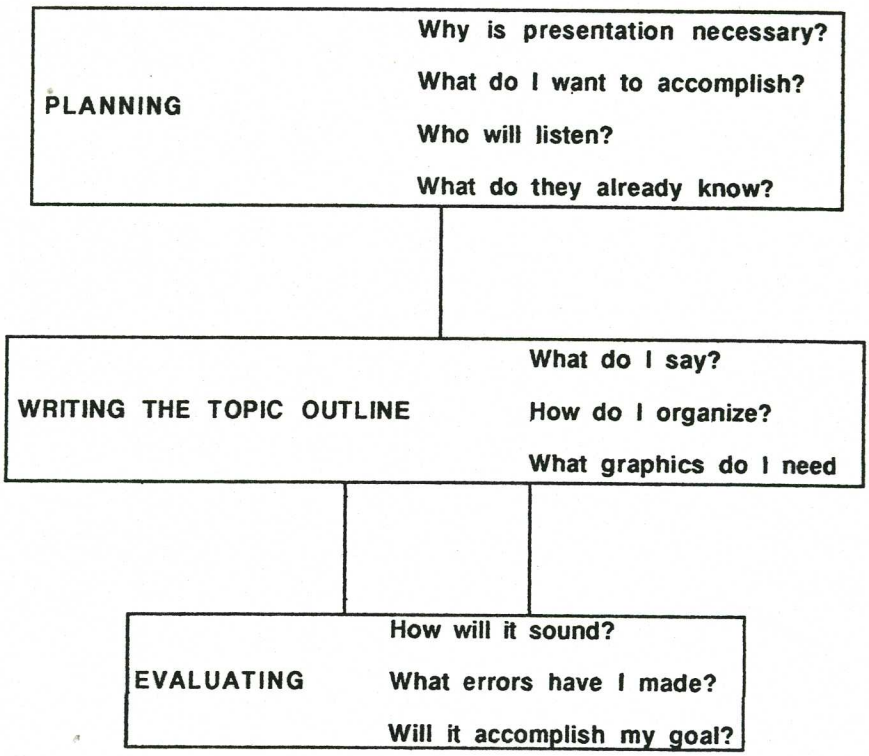
Start with your written paper. You've followed the Writing Guidelines. You've proofread, revised, rewritten. You've done your best to produce an organized text, coherent and complete, clearly aimed at your target audience. You've opted for the lively, natural *extemporaneous presentation.* So you're ready to do more work.

Consider, again, the difference between a written text and an oral presentation. With a written text, the reader can study and reread as needed for understanding. The reader can pause over Tables, Graphs, Appendices, and interrupt to consult reference material. A listener at an oral presentation does not have these possibilities. The meaning must be grasped at a single pass. And this poses a particular challenge to the extemporaneous presenter.

The Topic Outline

Your first step is to develop a topic outline based on the written paper. Having decided that you will not succumb to the temptation to simply read the paper, you must now avoid a second temptation - using marginal notations on the paper as your lecture notes. There are two reasons for this: you might want a different order of presentation, and it's too easy to slip into reading from the paper itself.

Here is the Page 5 chart revised for the oral presentation:



[7]See Houp and Pearsall, Chapter 19, for an excellent development of the topic

Don't try to present everything you know about the subject, or even everything that you've included in the paper. Your time is limited, and likely rigidly prescribed, so you must exercise discipline in identifying the main points in your paper. What might you leave out in the oral presentation? What ideas do you want your listeners to carry away with them? Your extemporaneous presentation should trigger audience interest in reading your paper.

Construct your topic outline as a series of short sentences. You will not read a text, nor will you have committed your "speech" to memory, but if you truly know your topic, all you need is a reminder of the presentation order, and of the timing of visual aids.

Prepare your topic outline on numbered 3"x 5" cards, or preferably on the pages of a loose-leaf binder. A dropped card deck can be an embarrassment. Your outline must include cues for your visual illustrations.

Visual Aids (Visuals)

What points will need highlighting by visuals? How can you best illustrate? You must consciously address these and similar questions, and not just blindly follow the structure of the paper. For example, illustrations that are effective in a written text, may not work on a screen. And conversely too.

Visuals are used to enhance, not replace words. Each visual should have a purpose. Visuals should clarify and illustrate and help your audience understand your message, and should only be used if they truly do so. And so their timing is critical. A wrongly timed visual, not accurately keyed to what you are saying, is a major distraction; it generates noise in your communication system.

The two main choices for visuals are still slides and overhead projection transparencies. Flip charts, and the blackboard can be useful as an adjunct, for answering questions, say, but the overhead projector can be effective here too.

Some points to remember:

- Like a good text, the illustration must be simple.
- Like a good paragraph, the visual must illustrate a single idea.
- Like a well -organized and formatted paper, the illustration must be attractive.
- If the back rows of your audience can't see the illustration, it's not worth projecting
- The audience must be able to grasp the meaning of the visual quickly; it must not call for detailed study.

Slides

Slides tend to appear as more formal than transparencies but they have some practical limitations: they need a darkened room, they generally can carry less information than transparencies, they're more difficult and costly to prepare, you can't make instant changes on the screen, and facing the.audience is neither easy nor natural. However, if you prefer the formality and are inclined to use slides, here are some dos and don'ts: (See also Dale)

For text - No more than five lines of large type per slide.
Avoid large amounts of tabular information unless your purpose is to highlight limited parts. An enlarged "sub-set" is likely better

For graphs - No more than four curves per graph.
Keep the curves uncluttered, and easy to grasp at a glance. Remember, the visual during an oral presentation should enhance your talk. A graph on the screen shouldn't be expected to yield numbers. It should accurately demonstrate trends and relationships.

Be careful with colour combinations -
Avoid yellow, orange and red on the same slide.
Avoid blue and green on the same slide.

Be careful with backgrounds.-
White lines on lightly coloured backgrounds are attractive.
Dark backgrounds further reduce room illumination.

Keep illustration simple.-
They should be understandable in no more than two minutes.

Transparencies

Transparencies are easier and cheaper to prepare than slides, and marginally easier to carry around with you. And they don't need a fully darkened room. When you use the overhead, you keep control. You needn't look at the screen; you can naturally face the audience. You can add to, highlight, or change content in front of your audience. You can use prepared overlays as part of your presentation plan, or use water-soluble pens as part of your plan, or spontaneously, as the need arises.

Some dos and don'ts:

For text -You can show marginally more lines of large type per transparency, but be careful: don't be tempted to just photocopy an illustration from your paper. That's easy and cheap, but the type size is likely to be too small, and there may well be too much information for effective use on the screen. Use your written text, but profit from the easy editing prowess of your word processor. Edit and enlarge the type, and enlarge tables.

For graphs - like for slides. Don't just photocopy your text graphs, unless they're large enough. Keep the graphs uncluttered and generally no more than four curves per graph. Remember, as for slides, the visual during an oral presentation should enhance your talk. A graph on the screen shouldn't be expected to yield numbers. It should accurately demonstrate trends and relationships.

Colour combinations and backgrounds - same concerns as for slides. Keep things simple, and easy to grasp at a glance.

Keep the room lights on, but avoid direct light on the screen.

Blackboard or Flip Chart

Just a few points to note:

- Don't talk while you write; your back will be toward the audience.
- Follow a plan; a snapshot of the final product should be a coherent message, not an unrelated set of notes.

Mechanics of presentation

- Before you start, check out the facilities - room, projection equipment, microphone, etc.
- It's normal to be nervous, but with good outline notes and with practice, your confidence will grow.
- Speak up, articulate clearly, and look at your audience. Speak to individuals in turn, but don't fix your gaze on any one person.
- Watch for audience feedback- apparent interest, yawns, glances at watch, reading the McGill Daily - and adjust your delivery accordingly.
- Pause to check your notes; don't worry about doing this, it's better than getting lost.
- Use natural body movements, but don't exaggerate them. Don't stand stock-still at lectern or projector, move forward to make or emphasize a point, but don't pace. But be careful if you're using a microphone; if it's a fixed mike, too much movement will cause volume to rise and fall.
- Use humor only if you can do so easily. Audience should laugh with you, not at you.
- Project confidence and authority, but don't be cocky. Don't sound apologetic.
- Avoid distracting mannerisms - don't jiggle the coins in your pocket, play with a pen or pointer, or use automatic phrases repetitively.

- While talking, don't turn your back to the audience.
- Project only what you want your audience to see at the moment, don't give them something to read ahead. And don't obscure the screen.

- With an overhead projector, glance at the transparency, generally not the screen. Stand aside, if you wish to point at the screen. Use a pointer on the projector, but don't fiddle with it. Turn the projector off when there's no image on the screen, or use a projection mask.

- With slides, don't spend more than about two minutes per slide. If it takes longer than that to understand, then it's not a good illustration.
- And be sure that your slides don't end up looking like a badly synchronized movie. Keep the total number down, perhaps no more than four or five in a twenty-minute presentation.

4. CONCLUSION

Your organization must be unified and coherent (remember the definitions for paragraph structure). Anticipate questions, and be prepared to answer them. If you can't, admit it, without sounding apologetic. Admitted ignorance is acceptable, appearance of stupidity is not.

Again: Know your topic

Know your audience

Know what you want to accomplish

Organize your presentation around the old teacher's rule:

Tell them what you're going to tell them

Tell them

Tell them what you told them

Finally, you must have the confidence to say "I'm the expert!"

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APPENDIX 1 GUNNING FOG INDEX

The Fog Index is an analytic tool, not a prescription. Use it with caution.

$$F.I. = 0.4(S + F),$$

where S = Average sentence length

and F = percentage of words with three or more syllables (good "scrabble" words).

In counting sentences- treat clearly independent clauses as separate sentences.

In counting "scrabble" words- don't include proper nouns, combinations of short words such as "workingman", or verb forms that have more than two syllables because of endings like -ed, -es, or -ing. (e.g. created, trespasses, wandering.)

Gunning's ten principles

Keep sentences short

Prefer the simple to the complex

Use the familiar word

Avoid unnecessary words

Put action in your verbs

Write as you talk

Use picturable terms

Tie in with the reader's experience

Make full use of variety

Write to express, not to impress

TOTAL NUMBER OF WORDS IN SAMPLE _____
NUMBER OF SENTENCES _____

AVERAGE: WORDS/SENTENCES S _____

NUMBER OF LONG WORDS _____
-- AS A PERCENTAGE F _____

_____

F.I. = 0.4(S + F) _____

TOTAL NUMBER OF WORDS IN SAMPLE _____
NUMBER OF SENTENCES _____

AVERAGE: WORDS/SENTENCES S _____

NUMBER OF LONG WORDS _____
-- AS A PERCENTAGE F _____

_____

F.I. = 0.4(S + F) _____

TOTAL NUMBER OF WORDS IN SAMPLE _____
NUMBER OF SENTENCES _____

AVERAGE: WORDS/SENTENCES S _____

NUMBER OF LONG WORDS _____
-- AS A PERCENTAGE F _____

_____

F.I. = 0.4(S + F) _____

APPENDIX 2 HOW TO WRITE NUMBERS

- single-digit numbers:

  spell out (zero to nine)

Exceptions:

- always use numerals

  1. with a measurement unit or other symbol:

     \$3, 8 cm, 4 kg, 8%, 20 g, ...

  2. for numbers that include decimals or fractions:

     2.54, $\frac{3}{5}$, 0.35, ...(use a leading zero for decimal numbers less than one)

  3. to refer to a chapter or figure or ... :

     Chapter 1, Figure 3, Table 5

  4. for ages:

     She is 7 years old.

  5. for a mixed series:

     There are two pages of summary and eight pages of appendices.
     But - *There are 2 pages of summary, 30 pages of text, and 8 pages of appendices.*

- multi-digit numbers:

  use figures (10, 11, 12, ...)

Exceptions:

- always spell out

  1. numerals that start a sentence:

     Eleven years old, and she can already solve differential equations.

  2. generalized round numbers:

     The 10 students ate about thirty hamburgers.

  3. one of two consecutive numbers without punctuation:

     ten 100 g samples, four 2 x 4's.

APPENDIX 4 ABSTRACTS AND SUMMARIES

The words *abstract* and *summary* are sometimes used interchangeably. But despite the occasional interchangeable use of the terms, there is a difference.

An ABSTRACT is a digest of the original text and must maintain the emphasis of the original. The abstract should generally not be longer than about 125 words, and contain no introduction, no argumentation, and no citations or illustrations.

There are two main types of abstract: informative
indicative or descriptive.

An informative abstract highlights the findings, briefly but quantitatively; it reflects what the original text *contains*. An indicative abstract is a narrative version of the Table of Contents; it reflects what the original text *is about*. Many good abstracts are a blend of both types: they give specific information on the findings, and general information about the rest of the paper.

An ABSTRACT helps a reader decide whether to read the full paper, or attend the conference presentation. It is aimed at the same audience as is the paper itself. In some cases, it might supply enough information for decision-making, but that is not its main purpose.

A SUMMARY is a more complete document. It is longer than an abstract, sometimes running to several pages for a long report. It contains introductory material, and sets out the purpose. And like an informative abstract, it stresses the conclusions and recommendations.

The SUMMARY provides enough information for decision-making. It's the busy person's paper and may well be aimed at an audience with a different background and interest (generally less technical and more financial) than the target audience for the paper itself. An EXECUTIVE SUMMARY is the busy busy person's paper; it is usually shorter than a SUMMARY and it too is aimed at an audience different from that for the paper itself. And so, matching the level, tone, and content to the reader is particularly important for a summary.

Journal and conference papers generally require an abstract, whereas in-house reports can require an abstract or a summary, or sometimes both.

Since an abstract is a digest of a full-length text, it is written after that text is completed. An abstract written before the completion of the full text, for submission to a conference programme committee for example, can only be speculative, since the digest depends completely on the full text.

The abstract must contain a statement of the problem, a description of your problem-solving method, and your main conclusion. And it must be self-contained; the reader should not have to read the full-length text to understand your message, only to get additional information.

The abstract contains only the essential information elements from the original text. To be concise, it can not contain the background and supporting information, nor figures, citations, or appendices. The absence of literature citations does not constitute plagiarism; it is universally understood that the original text contains the necessary source references. And since the abstract is used in computerized literature search systems, it must contain all the key words under which you would wish your paper to be indexed.