

Towards more evidence-based public speaking advice: the effect of summarizing in an educational presentation on audience information retention



“Your sole purpose as a speaker is to make sure that your message will be remembered.

You have to be prepared to do anything to achieve that – even if it means standing on your head.

I’ve stood on my head once.”

(Wagenaar 1996: 7)

Focus of research

To what extent can rhetorical techniques or strategies a speaker applies during an informative or educational presentation influence the audience's information retention?

Retention techniques
in classical and
modern rhetorical
advice



Use of retention
techniques in
(educational)
speeches



Effect of specific
retention techniques
in an experimental
setup



Effect of specific retention techniques in an experimental setup



To what extent does the rhetorical technique 'summary' / 'recapitulation' influence information retention in an educational presentation?

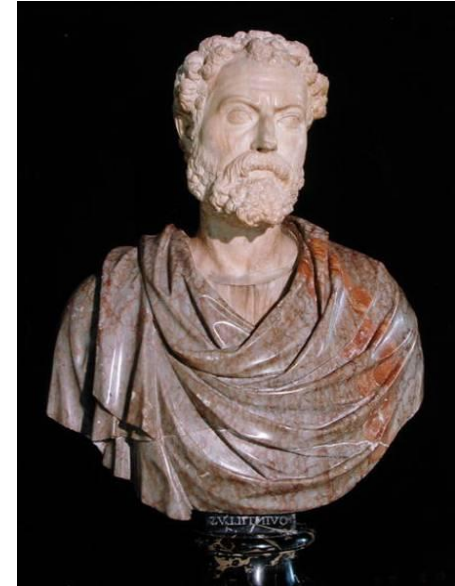
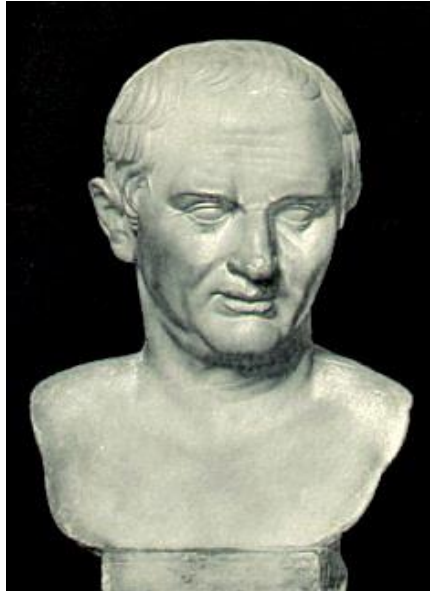
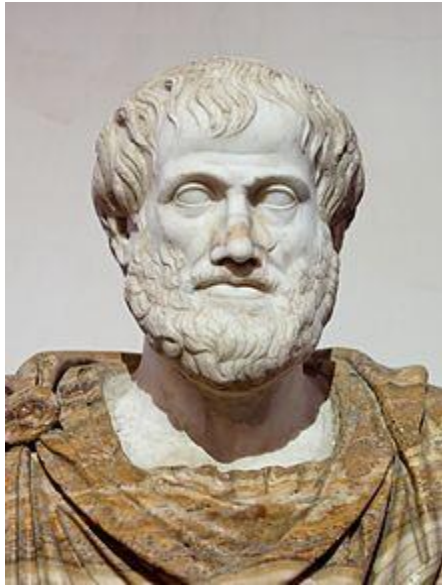
Tell you what I'm going to tell you

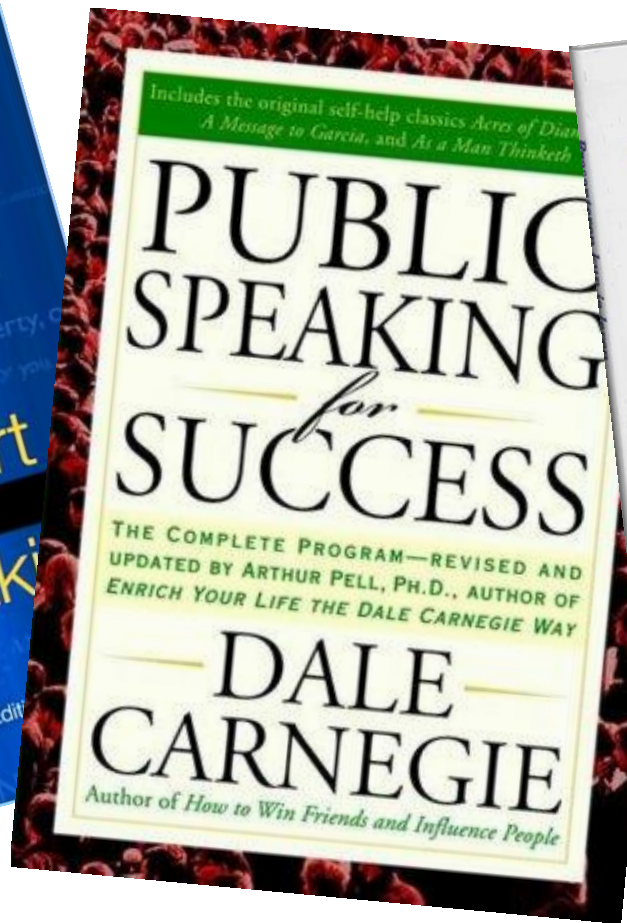
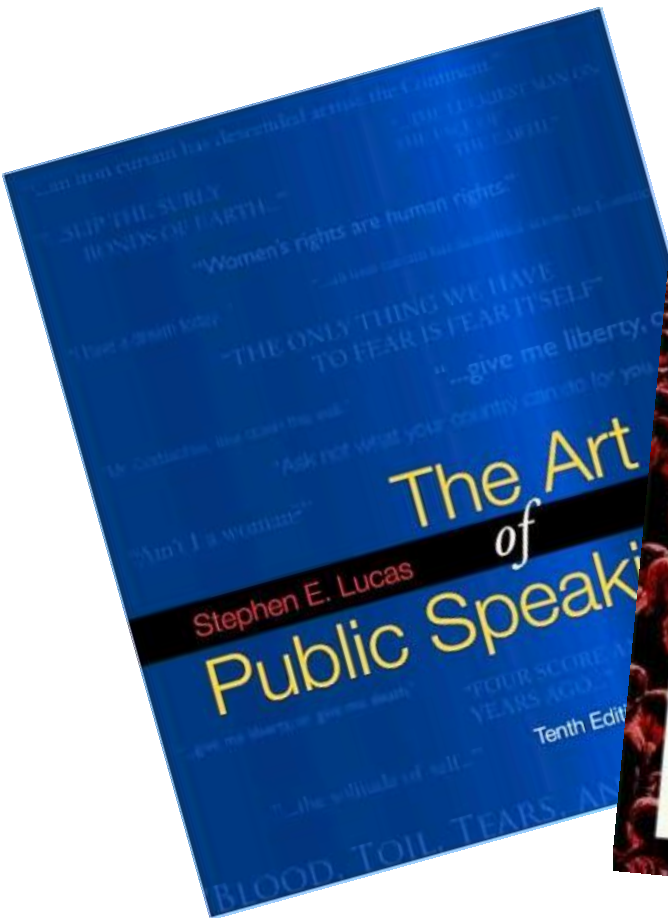
- Retention advice in modern public speaking textbooks
- The case of the summary: an experiment
- Recap and discussion

Tell you what I'm going to tell you

- Retention advice in modern public speaking textbooks
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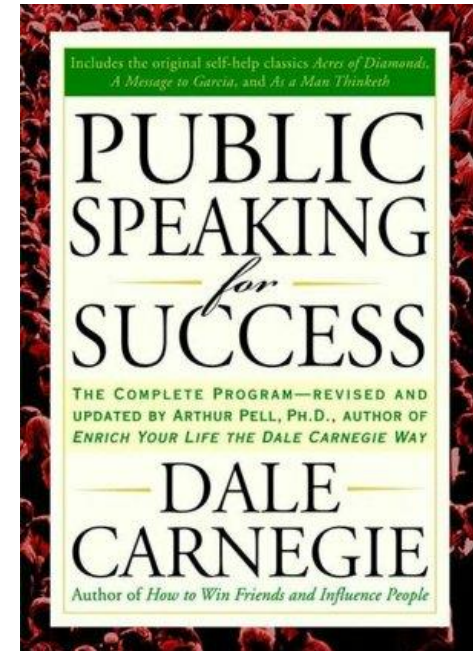
Docilem parare!





Retention techniques in modern public speaking textbooks

- 2 corpora: 40 English-language and 40 Dutch-language public speaking textbooks in period 1980-2009
- State of the art on rhetorical retention advice? (quantity, advice, warnings, sources?)
- Quantity: 7% (English), 2% (Dutch)
- Advice: summary, repetition, anecdote, audiovisual techniques
- Sources:
 - EN: references in 75% corpus, 14% to scientific sources
 - DU: references in 25% corpus, 64% to scientific sources



Summary: an intriguing technique

- Often advised and connected to retention in modern public speaking textbooks:
 - English: most frequently mentioned technique
 - Dutch: runner-up after 'repetition'
- Not always used by speakers, e.g. by Dutch ministers (Andeweg & De Jong, 2008)
- Advice is not that straightforward:
 - Some advisors argue a summary can backfire
 - Not much advice on formulation/design of summary

How to phrase the summary?

Informative summary or indicative approach?

Wagenaar (1996:8):

“The main message is not the subject of your research, but its conclusion. Not [indicative]: ‘I have performed a research into the suggestibility of small children’, but like this [informative]: ‘Children between the ages of three and ten years old are more suggestible than older children and adults.’ ” (translation MW).

Tell you what I'm going to tell you

- Retention advice in modern public speaking textbooks
- The case of the summary: an experiment
- Recap and discussion

Research design: 3 versions of educational presentation on 'framing'

Version 1: no summary (length 15:38)



Version 2: indicative summary (16:05)



"I have explained the concept of framing and have mentioned 4 effects of framing"

Version 3: informative summary (16:52)



"Framing is ... [definition]. Framing has 4 effects. Firstly... (...) And the final framing effect is..."

Communiceren met frames



T. Hopstaken

Instituut voor Talen en Academische Vaardigheden

TU Delft

Frames have four important effects.

0:00:01 / 0:15:38



Experimental procedure



Presenter: unknown lecturer (colleague)

Audience: +/- 250 students of Delft University

(Mechanical Engineering, Molecular/Life Science and Technology)

Context: presentation skills lecture, introduced as 'testing newly developed course material for online use'

Questionnaire

Part 1:

- Open questions:
 - How many effects?
 - Which effects mentioned?



Students handed in **part 1** after 5 minutes

Part 2:

- 33 multiple choice questions on entire speech
- 22 statements on appreciation of speech, Likert scale 1-5



Statements divided into factors:

- Peroration appreciation
- Ethos of the speaker
- Appreciation of presentation as educational tool

Part 3:

- **Posttest** 2 to 3 weeks later
- Repetition of open questions part 1

Main hypothesis

Listeners to an informative summary will remember more main points and will have a higher appreciation of the presentation than those who heard the version without a summary or with an indicative summary.

Results information retention: reproduction effects

Open question: write down the framing effects the speaker mentioned

- Scored using score sheet with strict instructions
- 2 raters, inter-rater reliability $\kappa < 0.82$

Average over all effects (0 = all incorrect, 1 = all correct)

| Version | N | Mean score |
|-------------|----|------------|
| No summary | 92 | 0.20 |
| Indicative | 94 | 0.18 |
| Informative | 94 | 0.39 |

Results information retention: reproduction effects

Open question: write down the framing effects the speaker mentioned

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- 2 raters, inter-rater reliability $\kappa < 0.82$

Average over all effects (0 = all incorrect, 1 = all correct)

| Version | N | Mean score |
|-------------|----|--------------------------|
| No summary | 92 | 0.20^a |
| Indicative | 94 | 0.18^b |
| Informative | 94 | 0.39^{ab} |

a: significant difference $p < .05$

b: significant difference $p < .05$

Informative version: significantly better reproduction of effects mentioned than two other versions

Retention: reproduction per effect

Open question: write down the framing effects the speaker mentioned

Average per effect (0 = all incorrect, 1 = all correct)

| Version | N | Effect 1 | Effect 2 | Effect 3 | Effect 4 |
|----------------|----------|-----------------|-----------------|-----------------|-----------------|
| No summary | 92 | 0.20 | 0.27 | 0.01 | 0.32 |
| Indicative | 94 | 0.19 | 0.20 | 0.02 | 0.32 |
| Informative | 97 | 0.15 | 0.44 | 0.33 | 0.70 |

Retention: reproduction per effect

Open question: write down the framing effects the speaker mentioned

Average per effect (0 = all incorrect, 1 = all correct)

| Version | N | Effect 1 | Effect 2 | Effect 3 | Effect 4 |
|-------------|----|----------|-------------------------|-------------------------|-------------------------|
| No summary | 92 | 0.20 | 0.27 | 0.01 | 0.32 |
| Indicative | 94 | 0.19 | 0.20 | 0.02 | 0.32 |
| Informative | 97 | 0.15 | 0.44^a | 0.33^a | 0.70^a |

a: significant difference $p < .01$ informative version with other two versions

- Informative version:
significantly better reproduction of effects 2, 3 and 4
- Effect 1: no significant differences

Results information retention: posttest

Similar pattern to first set of open questions

Effect 2, 3 and 4: informative version scores significantly higher on information retention than two other versions ($p < .05$, $\kappa = 0.7 - 0.86$)

Effect 1: no differences between versions

- Results indicate positive effect informative summary as opposed to both other variants
- General scores on retention after 3 weeks were relatively low: 0 to *a maximum of 17%*

Results information retention: multiple choice questions

Inconclusive results:
no significant differences between the three versions

More precise analysis necessary

Results peroration appreciation

Three statements:

1. The closing statements made the content of the speech comprehensible
2. The closing statements formed a good summary of the entire speech
3. The closing statements were clear

Cronbach's alpha = .785

| Version | N | Mean peroration appreciation |
|----------------|----------|-------------------------------------|
| No summary | 75 | 3.30 |
| Indicative | 72 | 3.47 |
| Informative | 77 | 3.79 |

Results peroration appreciation

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| No summary | 75 | 3.30 |
| Indicative | 72 | 3.47 |
| Informative | 77 | 3.79 |

1 = strongly disagree, 5 = strongly agree

Hypothesis:

Listeners to an informative summary will remember more main points and will have a higher appreciation of the presentation than those who heard the version without a summary or with an indicative summary.

- **Confirmation, but not complete:** except for mc questions, informative version scores significantly better on all other points – results posttest on open questions show similar pattern
- Indicative version seems less effective

Recap



Recap

In the educational presentation in this experiment:

- the design of an informative summary was a winning strategy to enhance retention and peroration appreciation
(no drawbacks detected for informative summary)
 - using an indicative summary or no summary was less effective to enhance retention and peroration appreciation
- More support for advice to use an informative summary to enhance information retention

What's next?

More experimental research?

- More messages, different audiences
- Experimental research into partitio / other retention techniques?

Speech and presentation analysis

- Analysis of scientific and political speeches on use of advised rhetorical retention strategies

Integration with insights from cognitive psychology

- Three main encoding principles:
organisation, visualisation, elaboration (Baddeley e.a., 2009)

Possible discussion points

- Do we really need public speaking advice based on empirical research and if so, can results be translated into advice?
- Which hurdles do we need to overcome?
(e.g.: ecological/external validity, single message design, intercultural differences, etc.)
- Is it useful and valid to use insights from other disciplines (cognitive memory research) to interpret phenomena occurring in a rhetorically based research?
- Any ideas from a more argumentation theory-oriented perspective?

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References

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Corpora: research question & motive

What is the state of the art in English-language and Dutch-language public speaking advice on information retention in the period of 1980-2009?

- Quantity
- Advice
- Warnings
- Sources
- Comparison

Starting point for further (experimental) research on retention within rhetorical theory

Corpora textbooks 1980-2009

- Overview of most 'influential' Dutch and English-language public speaking textbooks

- Criteria:

- In US/NL-libraries
- Reprinted
- One per year (1980-2009)

} 30 books

- Reparation criteria:
European perspective /
translations /
references

} 10 books

————— +

Total corpus:

40 books
(80 for both languages)

Corpora: analysis

All books in corpus
studied completely



Retention fragments
'diagnosed'

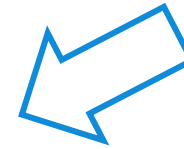
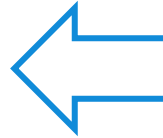


Fragments tagged:
advice or warning?



Labeled as specific
rhetorical technique

Check: search on key
words retention →
explicit reference



Based on list of
techniques used by
Andeweg & De Jong
(2004)



Comparison of corpora: techniques and sources

| | English-language | Dutch-language |
|--|------------------|----------------|
| | | |
| | | |
| | | |

Comparison of corpora: techniques and sources

| | English-language | Dutch-language |
|--|--|---|
| 3 most frequently mentioned rhetorical techniques (books) | <ol style="list-style-type: none">1. Summary – 52,5%2. Anecdote – 50%3. Repetition – 47,5% | <ol style="list-style-type: none">1. Repetition – 47,5%2. Summary – 32,5%3. Visual projection – 32,5% |
| | | |
| | | |

Comparison of corpora: techniques and sources

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| 3 most frequently mentioned rhetorical techniques (books) | <ol style="list-style-type: none"> 1. Summary – 52,5% 2. Anecdote – 50% 3. Repetition – 47,5% | <ol style="list-style-type: none"> 1. Repetition – 47,5% 2. Summary – 32,5% 3. Visual projection – 32,5% |
| 3 most frequently mentioned warnings (books) | <ol style="list-style-type: none"> 1. Information overload – 47,5% 2. Visuals: distracting – 27,5% 3. Visuals not clearly visible – 22,5% | <ol style="list-style-type: none"> 1. Information overload – 17,5% 2. Complex language – 15% 3. Visuals: too many details – 7,5% |
| | | |

Comparison of corpora: techniques and sources

| | English-language | Dutch-language |
|--|--|---|
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| References / sources | <ul style="list-style-type: none"> • 205 references in total • 14,1% scientific sources • References in 75% of corpus | <ul style="list-style-type: none"> • 16 references in total • 64,3% scientific sources • References in 25% of corpus |

Most frequently mentioned rhetorical retention techniques

| English-language | Dutch-language |
|--------------------------------------|---|
| 1. Summary | 1. Repetition |
| 2. Anecdote | 2. Summary |
| 3. Repetition | 3. Visual projection |
| 4. Imagery / vivid language | 4. Visual text |
| 5. Chunking (clustering main points) | 5. Partitio (structure overview) |
| 6. Object / prop | 6. Electronic presentation (e.g. PowerPoint) |
| 7. Connecting to audience | 7. Systematic structure |
| 8. Metaphore | 8. Circle technique (Referring to technique used in introduction) |
| 9. Visual projection | 9. Visual images |
| 10. Content-related humor | 10. Clear main message |

Most frequently mentioned rhetorical retention techniques: structure/organisation

| English-language | Dutch-language |
|--------------------------------------|---|
| 1. Summary | 1. Repetition |
| 2. Anecdote | 2. Summary |
| 3. Repetition | 3. Visual projection |
| 4. Imagery / vivid language | 4. Visual text |
| 5. Chunking (clustering main points) | 5. Partitio (structure overview) |
| 6. Object / prop | 6. Electronic presentation (e.g. PowerPoint) |
| 7. Connecting to audience | 7. Systematic structure |
| 8. Metaphore | 8. Circle technique (referring to technique used in introduction) |
| 9. Visual projection | 9. Visual images |
| 10. Content-related humor | 10. Clear main message |

Most frequently mentioned rhetorical retention techniques: visualisation

| English-language | Dutch-language |
|--------------------------------------|---|
| 1. Summary | 1. Repetition |
| 2. Anecdote | 2. Summary |
| 3. Repetition | 3. Visual projection |
| 4. Imagery / vivid language | 4. Visual text |
| 5. Chunking (clustering main points) | 5. Partitio (structure overview) |
| 6. Object / prop | 6. Electronic presentation (e.g. PowerPoint) |
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Most frequently mentioned rhetorical retention techniques: visualisation

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Advice: main categories both corpora

1. Visualisation: show, don't tell
2. Structure and organisation: construct a clear speech
3. Conclusion: wrap up with a take home message



Key words check corpus analysis

- Acquir (acquire, acquiring)
- Drive home
- Encod (encode, encoding)
- Forget
- Forgot (forgot, forgotten)
- Hit home
- Learn
- Memor (memory; memories; memorize; memorable)
- Mental
- Mind
- Reassemble
- Recall
- Reconstruct
- Recount
- Remain
- Remember
- Retain
- Retention
- Retriev (retrieval, retrieve)
- Stick
- Store
- Storage
- Take home

Comparison of groups

- Average age subjects: 19 years old (range 17 to 32 years)
- Predominantly male subjects (technical university)
- Prior knowledge and usefulness of subject?

| Version | N | Prior knowledge* | Usefulness subject* |
|----------------|----------|-------------------------|----------------------------|
| No summary | 92 | 2.52 | 3.46 |
| Indicative | 94 | 2.35 | 3.43 |
| Informative | 98 | 2.29 | 3.37 |

* Mean on a Likert scale 1-5

→ No significant differences between groups

Hypotheses: recap

H1: V3 (informative) will score higher on information retention of information mentioned in summary than V1 (no summary) and V2 (indicative)

→ **Confirmation, but not complete:** except for mc questions, informative version scores significantly better on all other points

H2: V2 (indicative) will score higher on information retention than V1 (no summary)

→ **No confirmation:** no differences found, except for scores on mc questions

Hypotheses: recap

H3: V3 (informative) will score higher on peroration appreciation than V1 (no summary) and V2 (indicative)

→ Confirmation

H4: V2 (indicative) will score higher on peroration appreciation than V1 (no summary)

→ No confirmation

Cognitive memory research

Important principles to encode and retrieve information

- Organisation
- Visualisation
- Elaboration / association



(Baddeley et al., 2009)

Cognitive memory research

Important principles to encode and retrieve information

- Organisation



Summary / *recapitulatio*



(Baddeley et al., 2009)