Map of Reading, Reviewing, and Academic Writing

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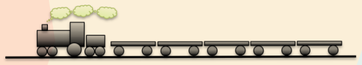
PRINCIPLES & TACTICS

The Locomotive pulls the Train



First impressions set the stage. If the first experience is good, your reader will forgive a lot later on; if the first part is a puzzle, the reader may not even get to 'later on'. Experienced writers indicate that 50% of the work goes in the first part: in the first chapter of a book, the first section of a chapter, the first sentence of a paragraph.

Three spans of attention

3 seconds – and know what it's about

30 seconds – and know what's the message

300 seconds ... and still find something new

The Curse of Knowledge

You, the author, know a lot about the subject you are writing on, your audience less. For you, many things seem 'obvious' because they're in the back of your head. Not so for the reader. It's like tapping your favourite tune with your pen on the table: in your head you hear the entire orchestra. Not so your table companion. Try to imagine their perspective.

USE YOUR DESIGN SKILLS

Plan before you write

Genre and argument. Decide if you are writing an empirical, review, or position paper.
30 second message. Decide and formulate your 'elevator pitch'.

Basic materials

Place together the key references, observations, and visuals you intend to use in your story. With these outline elements, you can get feedback on New and Relevant. In the writing, you can then focus on Clear and True.

Work these in 3 Powerpoint pages, and discuss them. Then you can set course before you deal with comma's and word choice (CNR).

Iterate

Don't expect to get it right in one go. Write, then review it as a reader. Then write. Let it lie down for a night. Then rewrite. Even experienced writers will have a dozen or more draft versions in writing a paper.

DON'T DROWN IN RULES AND TIPS

Write!

Don't let the tips and rules hold you back. Just start writing, then review. It's like what Schön said about sketching: you have a dialogue with your materials. So, get started.

PITFALLS: 3 COMPETING GENRES

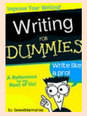
For most of us, academic writing doesn't come naturally, and we are easily lured into more natural ways of writing. Sometimes we don't notice before we're several pages further. Keep your eyes open to see when you drift off into tempting genres:

The Personal Diary

"I did this, and then I did that, and then I did that, ...and there's that... ...and this..."

A chronological account of your exploration. But the reader thinks: 'Where is this going, and why do I need to know this?'

Academic writing conveys information efficiently



The Instruction Manual

"You must do this, and this needs to be done so, ... And you must do that..."

A series of instructions with opinions of how things should be done, without giving proof why this is the necessary way.

All claims and values come with an argumentation

The Mystery Novel

"Keep on reading, You're puzzled now, but all will be revealed in the end..."

It took the author a long way to come to the conclusion, and he lets the reader share that suffering. Possibly with a disappointing end.

Conclusions should be easy to find

All these genres have their place, even in science, but rarely in an academic paper. So why does this map not give full argumentations? Because it is an instruction manual, not an academic paper.

HOW TO USE THIS MAP

Maps have been compiled by explorers for centuries, to help those that come after them to travel the terrain. Likewise, these maps contain overviews, backgrounds, and tips to help designers make sense of a piece of terrain. //pj

FRONT

general tips for writing	introduction and overview
reader types and visual thinking	reviewing with CNTRL

BACK

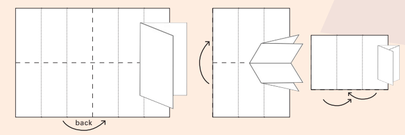
structure of, and tips per section	citing & refs
cartoon examples for genres of academic writing	resources

Academic writing follows conventions that are meant to optimize effectiveness (quality of findings) and efficiency (how easily the reader can find what he needs).
This Map brings together a number of lessons, tips, and hints about communication in general and academic writing in particular, paying special attention to the (visually oriented) skills and needs of designers as readers and writers.

Many of the principles in here are not just for academic papers. Also infographic posters, presentations, videos, and even agendas have to be clear, offer something new, true, and relevant, and do well to spark a like. But they have different makeup formats, and different opportunities for interaction and visual language.

COLOFON

Dear reader, this map is an ID4216 C&C draft version for a stand-alone information sheet with tips for writing (and other forms of communication). It is shaped like a tourist city-map, intended for A2. You may receive it in A3 format, unfolded. In that case, you may have to fold it yourself: the main page should be folded in two twice, then the result should be three columns, with this column ending up as the backside. Happy folding and unfolding.

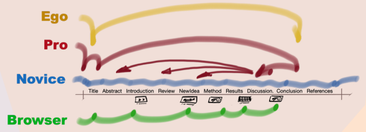


https://studiolab.ide.tudelft.nl/studiolab/mapofwriting/
Pieter Jan Stappers, IDE TU Delft
version 0.9 - October 2020

map of READING REVIEWING & academic WRITING

Academic reading (dis)orders

Not everyone reads from the beginning through the end. For a piece of fiction, yes, but for academic writing, no. It may help you to understand how your readers navigate your work:



The Novice or a student who doesn't know why he should read the text, may start at line one, and plod line by line to the end.

The Professional has an information need and is looking for it. She starts at the title, then does the abstract, jumps to the conclusions, and works her way back to the discussion. At each stage she may conclude "no, this isn't going to be it and stop". **So make sure your abstract also summarizes the findings,i.e., is not just an introduction**. After the discussion, the pro may go to the review (to check it's well connected), the introduction (only if she feels she's new to the topic), or the methods (especially if she doesn't trust the conclusions).

The Browser, or Visual Reader, will skip through the pages, and react to what pops out: visuals and tables. **Use visuals to highlight your main ideas or claims, and make sure your captions lure the reader to the text.**

The Ego, or Social Reader, will start with the names and references: does this writer cite the works I know? Do I know him? Do I know his university? **That's why there is blind peer review: so reviewers focus on the content.**

Serve the Visual Reader

In browsing for information, we all use quick scanning to pick up promising bits. Visually-oriented people (designers?) even more so.
Even in a text-dominated channel, such as an article, it helps to 'catch the eye'. Visuals can also organize a complex set of data, give a visual summary of an argument, or give a feel for 'the real thing'.

Your title appears in a table of contents. Will your reader see it and recognize what it is about?
The keywords are a mini-summary, just like terms in a search query.

The abstract summarizes the entire paper, not just the introduction, but also the findings and conclusions!

A visual can attract attention and summarize or highlight important text. The caption leads the interested reader to a further explanation.

Visuals

Diagrams highlight (abstract) relations in an argument.
Tables allow for comparison in several directions.
Photos and quotes, can show evidence and explanation as instances for an abstract claim.
Use these deliberately: eye-candy (just pretty pictures, not connected to the content) is likely to damage your message (unless maybe if you are making a commercial brochure, but that doesn't count as 'academic communication').

Make a Thumbnail Sketch

Designers often are visual thinkers. Academic writing formats are often very fixed (e.g., 4 pages, 2 columns fontsize 10). Before you start writing, (1) think of which core photos, diagrams, and tables you need to make your point, and make thumbnail sketches to see how large the different sections can be.

FIGURES, TABLES, CAPTIONS

Especially in academic publications, there are rules to how you use figures (and tables):
number each of them; **refer** to the number in the running text (preferably before the picture occurs in the layout).
Give it a **caption** that points out what the reader should notice. The evidence does not speak for itself. Compare these four examples of captions. Which one would make you want to read the connected text? Tip: don't postpone writing captions. Do them right away!

Figure 23

Figure 36 Senseo coffee maker

Figure 46 Picture of a bicycle

Figure 87 The two-part grille is BMW's visual signature

REVIEWING & WRITING WITH CNTRL

Reviewing with the CNTRL Criteria

Academic outlets use (peer) reviewers, who critically look at the value of submitted papers, give an evaluation (to the editor) and constructive criticism (to the author). Often, the review is double blind, which means authors and reviewers don't know each other's names.
In reviewing papers (or posters, reports, etc), reviewers use a set of criteria to judge the work.

CLEAR

Ask	Do
Can I see what the author wants to say? Is the whole thing a puzzle for me? Can I see the 30 second message?	Attend to your spelling, grammar, word use, definitions, examples, visuals. Communicate your main theme clearly and early (in the introduction and abstract)

This is where it begins. If it's not clear, the other criteria cannot be judged

NEW

Ask	Do
Do I learn anything I didn't know yet? Did the author add value? Is it more than a summary?	Make clear what your contribution is and how it goes further than what the audience already knows. Even a literature review brings something new.

TRUE

Ask	Do
Am I convinced? Is evidence given? Is the claim proven? Do I trust the reasoning? (not: Is it my opinion too?)	Cite sources, give evidence and argue why it warrants the claims. Explain, define, visualize.

RELEVANT

Ask	Do
Can I use this? Will it help me do my job? Does it connect to the theme?	Consider the expectations of your audience, their interests, and needs.

Here's where communities have their specific rules, demands, and expectations

Reader-centered writing: an empathic strategy

Writing and reviewing is like User-Centered Design: you need to 'step into the shoes of the user', to look at your text through the eyes of the intended reader, even if that reader is in some ways different from you. A reviewer needs to do this (for readers of his own community, e.g., a journal). A writer needs to do this. During the writing, look afresh at your text, through the eyes of the reader and reviewer (use the CNTRL criteria to help you).

LIKE

Ask	Do
Does it excite me? Is there a spark? Something special that doesn't fit CNTR criteria? (feel free to be subjective here)	Bring something original, show excitement, bring lively quotes and examples, have an evocative title or visual.

And yes, there's more than just these rules

Academic writing uses a standard construction to make it more efficient for readers to navigate the document according to their needs, to find specific information or arguments. One part of the standardisation is the order of the story. Most papers follow a strict sequence of sections, often with standard headings.
There usually are not explicit headings for Review of the existing literature and state of the art, and for the New Idea, the contribution of this paper (see functions).

TIPS PER SECTION

● = What (function of the section)
● = How (tips for writing it)

Title

- The title is the first thing people will see: make it appealing and informative (AIDA).
- People will see your title in a table of contents, imagine how your title looks in a list.

Authors and Affiliation

- It is common to say your name, where you work, and provide contact information.
- During blind (peer) review, the presentation is anonymous, and this information should not be in the paper.

Abstract

- Many readers read the abstract **instead of the paper.**
  The abstract summarizes not only the introduction and main idea, but also what was done and what was found.
- Try to write your abstract before you write your paper. It helps you define your main point and goal, which makes writing the rest easier.
  (Often, writers leave the abstract to the last because they 'will have to rewrite it in the end anyway' they are right and wrong: right because they will write it later, and wrong because they will have to rewrite it, and most of the rest of the paper, more often if they didn't choose their main message).

Introduction

- The introduction leads the reader into the problem field where the paper is situated; it starts in general terms, and explains the focus of the paper, the question addressed.
- It may flow directly into state of the art and new idea.
  In writing the introduction, do not assume that the reader has read the abstract.

Review and New Idea

- When you have indicated your question/focus/problem, explain the state of the art: what is already known about this in the literature, maybe discuss existing products, etc. This part makes clear what the new contribution of the paper is.
- Usually these parts are in a section in or after the introduction, and carry a heading that indicates the content, e.g. "Gift-giving in Western culture".
  It often works best to first review the status quo, then explain your new idea, and show how it fits in and adds to that.
  If you write an empirical paper testing a hypothesis, that hypothesis is explained here.

Method

- The method section describes what you did with enough detail for the reader to
  - understand where your results came from.
  - repeat the essence of your method and find results that can be compared to yours.
- Don't give too much or too little...
  The method is a description of what you did in the past, so, use the past tense ('we *asked* five people').
  The methods section should convince the reader that your method was appropriate for the goal of your study (to explore an area widely, or to test a specific hypothesis).
  For a literature review paper, the methods part describes how you sought, found, and selected the sources that you review.

Results

- Especially in empirical papers reporting a quantitative measurement or test of a hypothesis, results can be straight data, and their summarizing statistics, presented as such, presented as a fact, without discussion.

Discussion*

- In the discussion, you interpret the results, and make sense of what they mean for your story.
  For explorative, qualitative studies, separating data and interpretation can become very difficult for both reader and writer, and a single section Results and Discussion is made. Still it helps the reader if the author clearly separates data from interpretation.

Conclusion*

- The conclusion is the last section of the paper.
  In it, you move back to the general level of the introduction, explain what the importance is of what you found, and indicate broader impact of the work, and possible future steps for research or application.

* *Don't let the headings confuse you: in the discussion section you 'draw conclusions' from the data; in the Conclusion section you round off the story.*

References

- The references appear at the very end of the paper, and are structured following the rules of the journal. Usually they are presented in alphabetical order on author.

Do you need to use '**Introduction**, **review**, **method**,...' as headings for your sections? It depends. If you are sending this to a journal or conference, these will have explicit instructions, down to the level of spelling, fonts, and spacing.

Unless specific headings are specifically asked, you can vary, but notice that they serve a function for the navigating reader. Some are more standard (everyone knows the first text is the introduction, but people may want to skip to the discussion, or find the methods section).

Sometimes you can do both 'Discussion: main themes from this study' or 'Discussion: people prefer yellow'. But the standard headings are recognised by all readers (less exciting, but functional).

References should allow readers to find the original source in a library.

There are hundreds of rule sets, one of the most common formats is the APA style used in the cartoon papers.

THREE COMMON GENRES OF ACADEMIC PAPERS

Academic writing has a fixed structure which is different from fiction. Its readers navigate in specific ways, which a writer should understand. Each genre is suitable for a different kind of contribution, and brings a somewhat different way of writing your argument. Some other genres: the infographic, the tech report, the powerpoint presentation, the news item.

They are similar in that they contain: (1) THAT we work on something, (2) WHAT we found that's new, (3) HOW that finding plays out elsewhere, and (4) WHY we do all this.

Cartoon papers

Each genre has its own starting point, way of writing, of making claims, of providing argumentation, and evidence. The three 'cartoon papers' below are an attempt to give a concise example that highlights the differences in style.

AN EMPIRICAL PAPER

With an **empirical report** or **empirical paper,** the author has done something, and found something which he reports.
Don't forget to relate it to the work of others.

A better world with digital flowers

Jack Jones, Delft University of Technology

ABSTRACT
To improve life for people, many things have been tried. A new idea is that giving them hi-tech flowers can make them more happy. We tried and found a small, but promising, effect.

INTRODUCTION
People are often unhappy. Many things have been tried, especially in improving conditions, but not much regarding giving them technology that does not bring a function.

REVIEW
Ways of making people happy have been giving them money, food, health, peace.

NEW IDEA
Send them digital flowers, which speak their name. We expect this makes them terribly happy.

METHOD
We made flowers, gave them to 12 randomly selected Dutch people on TU Delft campus, asked them to rate their happiness

RESULTS
Average happiness was 5.3 for those who got flowers, a control group rated 4.0. Variance is 0.5

DISCUSSION
The increase is significant, suggesting it works. But it was less large than expected. Testing on campus and only Dutch participants is an important limitation.

CONCLUSION
Talking flowers may be a hopeful direction. But more research is needed before we can apply it to global sales.

REFERENCES
Jones (1970) *What flowers can do.* (…)
Perry (2004) *Creating digital flowers with nanotechnology.* (…)

A (LITERATURE) REVIEW PAPER

With a **review paper,** the author has collected what others have said about a specific topic. The author's new contribution is to critically compare what those works say about that topic.
Don't forget to tell where you looked.

A better world with digital flowers

Jack Jones, Delft University of Technology

ABSTRACT
Gifts improve the human condition. Recent theories have started to address this. This paper reviews recent literature, and discusses the relation between happiness and hi-tech gifts in particular.

INTRODUCTION
People are often unhappy. Several authors tried to explain why this is and propose remedies. This paper reviews approaches for gift-giving and happiness.

NEW IDEA
I reviewed the areas of consumer behavior, psychology, and design, for papers with 'gift' or 'giving' in the title.

METHOD
Much was found in the Journal of Consumer Happiness and Design & Emotion conferences. Many cite the X theory. Little is said about the role of technology.

RESULTS
Authors X and Y present theories of happiness, but say little about gifts. Z's theory of gifts focuses mostly on monetary value. W reports an experiment about evaluating gifts from parents.

DISCUSSION
Most authors agree that human interaction and appreciation is important for happiness and that gifts can play a part. Some address perishables such as flowers, but nobody discusses technology.

The field of gift-giving is gaining in attention, but much is yet unknown. Especially the technological aspect is missing. In my opinion it can be improved in the following way.

CONCLUSION
The growing attention for happiness brings some theoretical frameworks for the design of 'gift experiences'. I envisage that developing approaches tuned to digital gifts can open up new markets.

REFERENCES
X & Y(1995) *Happiness factors.* (…)
Z(2014) *On the price of gifts.* (…)
W(1995) *What parents give their children.*

A POSITION PAPER (OR ESSAY)

With a **position paper** or **essay,** the author starts from his own observation, experience, or idea, and develops a 'theory' from that. *Don't forget to place this in the relevant field, and relate your findings to what is known.*

A better world with digital flowers

Jack Jones, Delft University of Technology

ABSTRACT
To improve life for people, many things have been tried, e.g., gifts. In this paper I explore how chains of giving and giving back contribute to happiness.

INTRODUCTION
People are often unhappy. Many things have been tried, especially in improving conditions.

NEW IDEA
In my own experience, gifts have always made me happy, and as a designer, I have found that designing 'gifts' rather than 'functional items' brings a new perspective.

When a gift is received, it often brings a spark of joy. We see that in Xmas gifts, in welcome presents, and more. Especially the way it is given and the first moments of use bring smiles to people's eyes.

When I gave gifts, I observed that people kept them around, and brought them back later. It usually led to people giving gifts in return. The giving seemed more important than the gift, unless it was expensive.

REVIEW
The literature about gifts pays little attention to the return-giving. Jones (1970) addresses one-off giving of a gift, and Perry (2004) pays attention to digital gifts. Their findings can be applied to a single occurrence, but don't explain the longer chain of giving and giving back.

Giving more attention to longer chains of giving opens up perspectives for new ways to set up 'gift services'.

CONCLUSION
There is a lot of gift-giving in the world. In this paper I argued that we can design better gifts if we look at longer chains of giving and giving something back. This can lead to a new range of products as 'serial gifts'.

REFERENCES
Jones (1970) *What flowers can do.* (…)
Perry (2004) *Creating digital flowers with nanotechnology.* (…)

Beware of competing genres (see other side)

CITATIONS IN DIFFERENT SECTIONS

The sections in a paper differ in writing style, level of abstraction along data, information, knowledge, wisdom (DIKW), writing tense (present/past). Here's a tentative overview.

section	cited work	tense	D I K W	argumentation justification
introduction	general, popular	present	Wisdom to Knowledge	
review & new idea	mostly specialist	present	Knowledge	analysis, speculation
method & results	(only method book)	past	Data	actions
discussion	(only new perspectives)	past to present	Information to Knowledge	interpretation, hedging
conclusion	(general, popular)	present (future)	Knowledge to Wisdom	

In different sections you'll find different types of citations
Introduction general papers, overviews, examples from the media, …
Review Theories, important cases
New idea Work that is similar or 'outside work' that you build on.
Method Justification of why you used a method, or places where those methods are explained in detail
Discussion (When a new perspective emerged in the discussion) Work that has similar or different findings.

Format of citing

A: In the running text, point to the reference list, so the reader can find the reference. There are two main systems to give a citation:
- With numbers, e.g.,
  "We use the definition of affordance given by Gibson [3]"
- With authors and year of publication, e.g.
  "Gibson (1979) defined 'affordances' as …"

The reference list then shows
3. Gibson, J.J. (1979) *The Ecological Approach to Visual Perception.* Houghton-Mifflin, New York.

In the references section, provide all information needed to locate the cited source. This includes: authors, title and year of publication, title of journal or conference, volume, page numbers. Again, there are many styles of doing this, 'APA style' is very commonly used at the faculty.
In the format for the C&C conference: you can choose a citing style, but stick to one style.

What Google Scholar can do for you

Using a database/search engine like **Scholar** or Scopus can be very handy. For instance, if you find a paper in Scholar, it can give you
- a citation in APA style (and some other styles)
- a link to a pdf of the paper
- pointers to newer papers that cited this work
- pointers to related work and to the authors

But beware that Scholar is an algorithm, and not all information is correct (e.g., a citation may be incomplete, or author names may be spelled wrong); so check!

Other writing resources

Purdue University's **OWL** has explanations and tips on language grammar, style.
https://owl.purdue.edu/owl/purdue_owl.html

Manchester University's **Academic Phrasebank** provides example sentences for nuanced descriptions and claims
http://www.phrasebank.manchester.ac.uk

There are some great TED Talks about lively writing styles, e.g. Steven Pinker's talk (and book) about 'classic style'. Search Youtube for **"Steven Pinker Writing Style"** or type without errors **https://youtu.be/OV5J6BfToSw**

TU Delft's library gives access to many books and journals, also online. NB Downloading papers from these journals using the university's subscription only works if you log in from campus, or use a VPN connection.
https://www.tudelft.nl/library/