



EFFICIENT WRITING

Didactics of
mathematics
KU IND

September 14, 2023

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WHO IS MIRJAM?

Background

- Engineer & PhD, DTU (social science)
- Assistant Professor, DTU
- Associate Professor, AAU (humanities)
- Coach and consultant

Work areas

- Writing Bootcamps and coaching
- Doctoral coaching
- Training doctoral supervisors
- Change management support



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UNWIND

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PROGRAM

Agenda!



09:00-09:50	Writing exercise, share experiences, writing tools & first goals
09:50-10:00	Break
10:00-11:10	First focused writing session followed by reflection
11:10-11:20	Break
11:20-12:00	More writing tools: <ul style="list-style-type: none">- Different phases in writing- Rhetorical reading- Making arguments in academic texts
12:00-12:45	Lunch
12:45-14:15	Workshop on storytelling in academic texts
14:15-14:30	Break with physical movement
14:30-15:45	Second focused writing session followed by reflection
15:45-16:00	Set writing goals for the near future and wrap up



INTRODUCTION AND TOOLS

SPEEDWRITING

Purposes

- To get started producing text
- To overcome your own inner critic
- Generate ideas and clarify thoughts
- To warm up for writing

How?

- Decide on a time span and write all the time (max. 15 min)
- Write in a fast pace
- Don't correct errors
- <http://studypedia.au.dk/skriv-opgaven/skriv-nu/>



EXERCISE: SPEEDWRITING

Speed write for 7 minutes:

- When does academic writing work well?
- What are my challenges in academic writing?

OR

- What is my writing goal for today?

If you stop, write:

'If I knew what to write I would write...'



SHARE IN PLENARY

What are your
main challenges
in academic
writing?

What are your
best strategies to
get writing done?

CHALLENGE:
WRITING IS A
COMPETENCE
THAT WE ARE
EXPECTED TO
HAVE ...

“Although there are many courses, books and so on about writing, it is generally assumed that people will somehow work out how to manage themselves to write *productively* and *well*.”

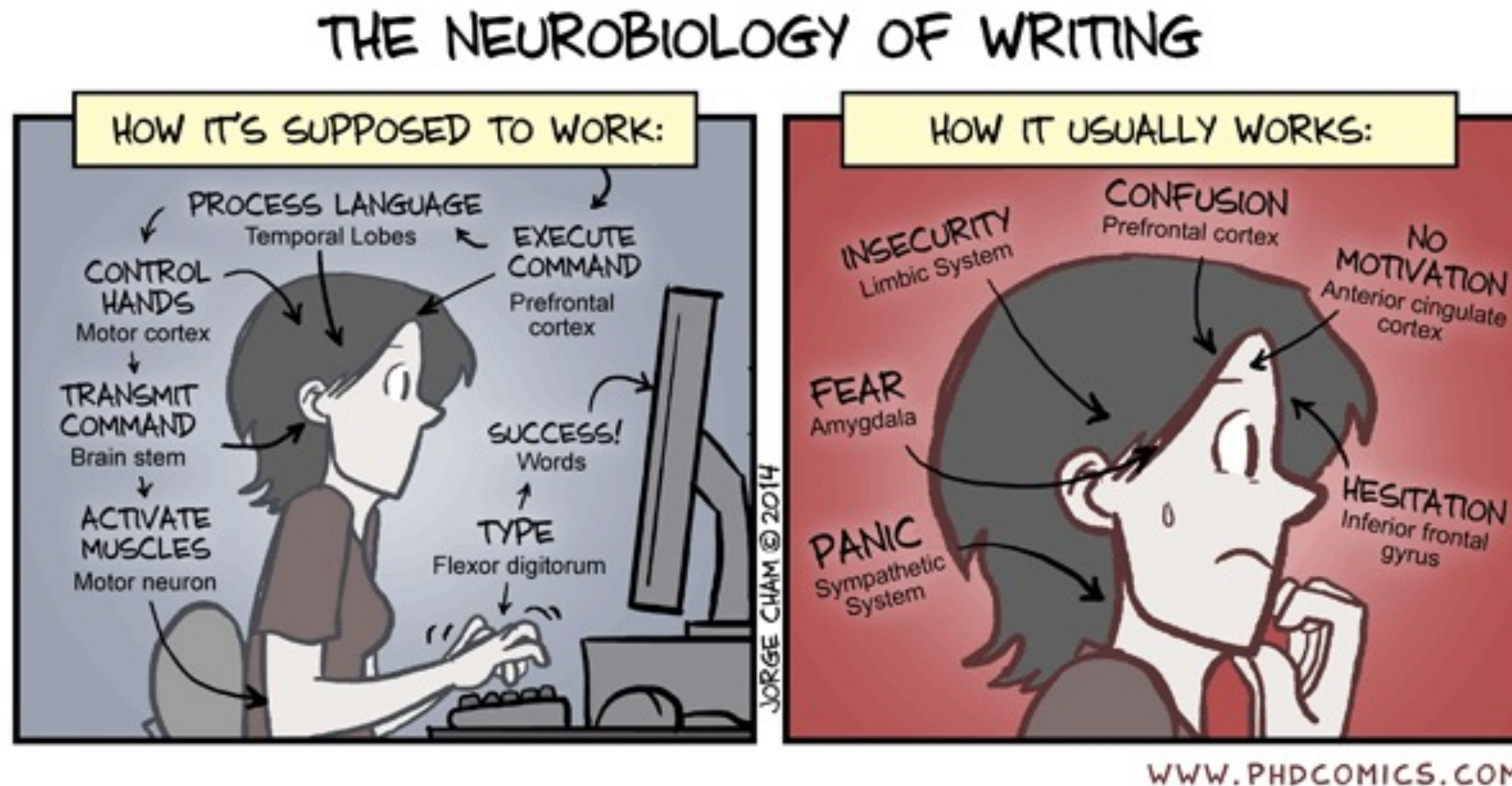
Source: Gardiner & Kearns (2012), The ABCDE of writing: Coaching high-quality high-quantity writing, p. 237

HOW DO I GET STARTED?



*Writing is 90% procrastination
and 30% panic.*

IDEALS VERSUS REALITY





Could writing
just be a piece of
work?

I LACK TIME!



YOUR "TO DO" LIST

TO DO

- ☒ ~~WRITE TO DO LIST~~
- ☐ GET REIMBURSED FOR CONFERENCE EXPENSES
- ☐ WORK ON THESIS

TO DO

- ☒ ~~WRITE TO DO LIST~~
- ☒ ~~GET REIMBURSED FOR CONFERENCE EXPENSES~~ ☐ GO TO BANK
- ☐ WORK ON THESIS
- ☒ ~~SEND SLIDES TO PROF JONE~~
- ☐ SUBMIT PAPER REVIEW
- ☐ GRADE FINALS
- ☐ MEET WITH UNDERGRAD

JORGE CHAM © 2010

TO DO

- ☐ CLEAN APARTMENT? ☐ DENTIST?
- ☒ BACK UP FILES! ☐ BUY MORE COFFEE!
- ☒ ~~WRITE TO DO LIST~~
- ☒ ~~ORDER SUPPLIES~~
- ☒ ~~GET REIMBURSED FOR CONFERENCE EXPENSES~~
- ☐ WORK ON THESIS
- ☒ ~~SEND SLIDES TO PROF JONE~~
- ☐ SUBMIT PAPER REVIEW
- ☐ PRINT POSTER
- ☐ GRADE FINALS
- ☐ LAUNDRY
- ☐ MEET WITH UNDERGRAD
- ☐ HELP LABMATE WITH THEIR RESEARCH
- ☐ CALL MOM!!

TO DO

- ☐ WRITE NEW TO DO LIST
- ☐ WORK ON THESIS?

SIGH...



WHY DO WE PROCRASTINATE?

- You have not defined the first step precisely
- You are avoiding a decision
- You are afraid that when you write down your thoughts people will realize that you are not clever enough



*Writing is 90% procrastination
and 30% panic.*

CONSEQUENCES: DISPLACEMENT ACTIVITIES

Engage in a range of behaviors that keep you busy and displace the guilt e.g.,

- Reading
- Sourcing more information
- Referencing
- Formatting

Source: Gardiner & Kearns (2012), The ABCDE of writing: Coaching high-quality high-quantity writing, p. 237



CONSEQUENCES: OVERCOMMITTING

Some writers get so overcommitted with other tasks that it is essentially impossible for them to write, e.g.

Organizing conferences

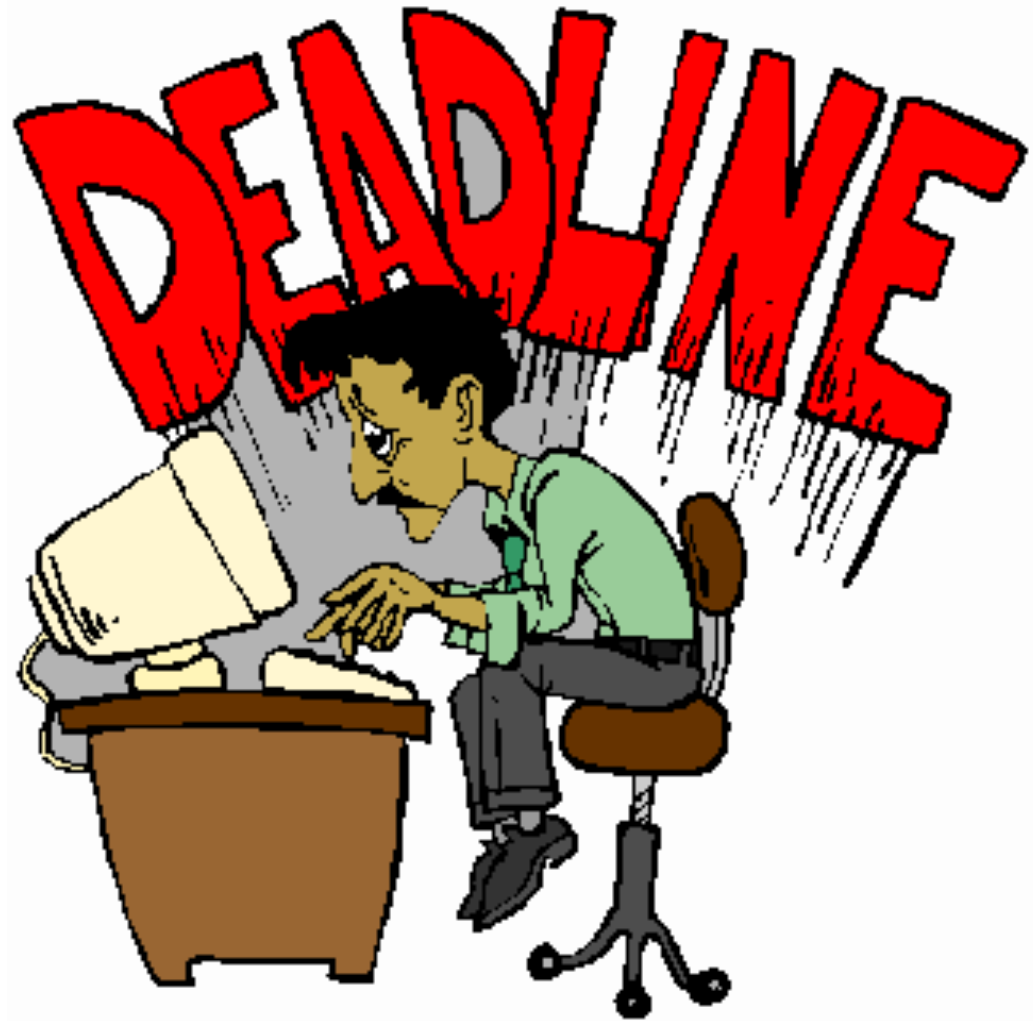
Help the office to move

Taking on extra teaching

Source: Gardiner & Kearns (2012), The ABCDE of writing:
Coaching high-quality high-quantity writing, p. 237



DEADLINES
WORK
– BUT IT IS NOT
THAT JOYFUL!



WAITING FOR THE RIGHT STATE OF
MIND...

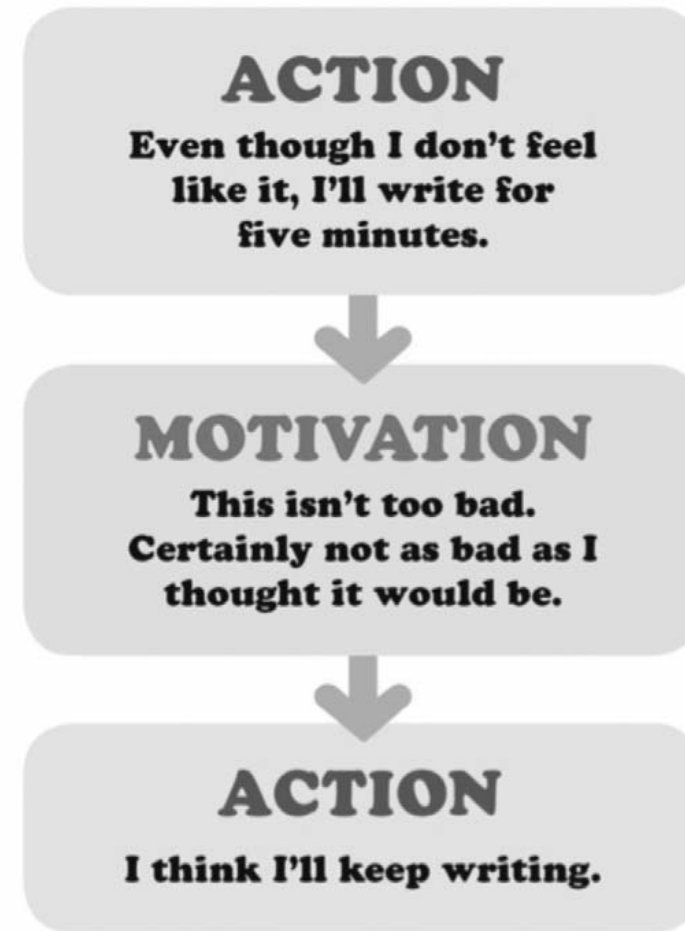
“If I waited till I
felt like writing,
I'd never write at all.

– Anne Tyler

GET STARTED

”Motivation is triggered by taking action”

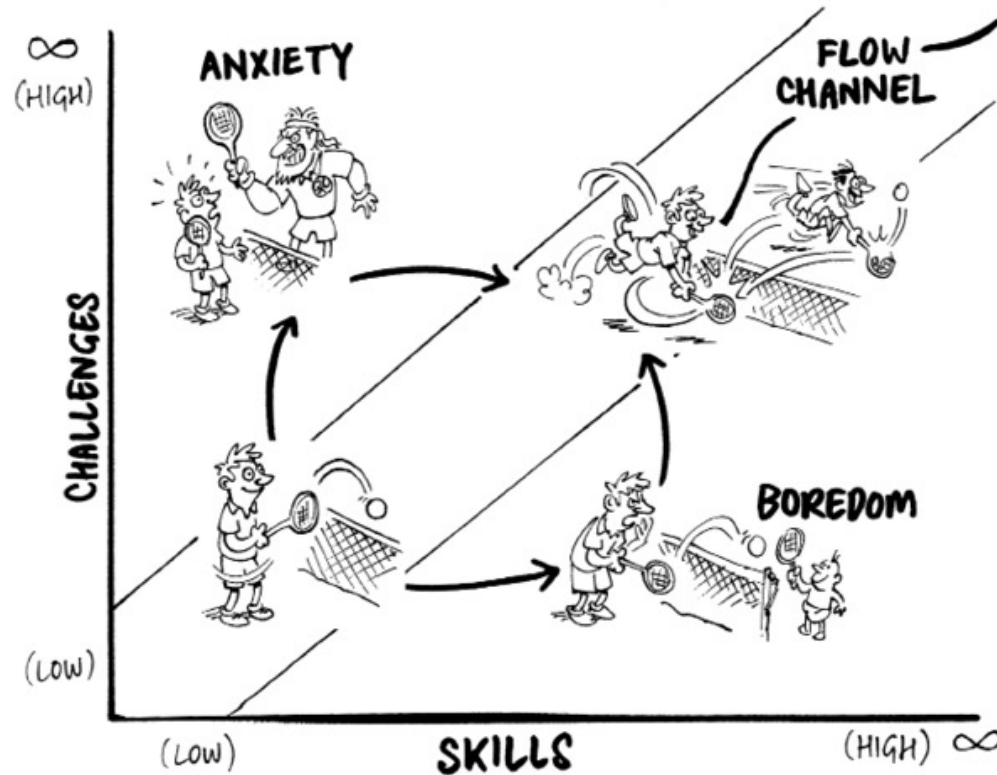
Figure 2: The relationship between action and motivation (from Gardiner & Kearns, 2010).



Source: Gardiner & Kearns (2012), The ABCD of writing: Coaching high-quality high-quantity writing, p. 244

TO BE IN FLOW

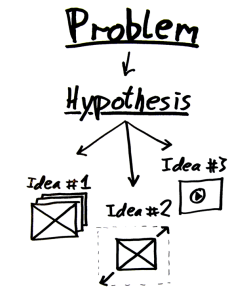
- 1) The challenge fits your skills
- 2) Attention – you are totally involved in what you are doing
- 3) You have clear goals and receive feedback
- 4) You don't worry about losing control
- 5) You lose self-consciousness
- 6) You don't have a sense of time



Picture source: <https://www.safaribooksonline.com/library/view/100-management-models/9781909652804/Text/Part-2-models.xhtml>

APPROACHING THE WRITING PROCESS

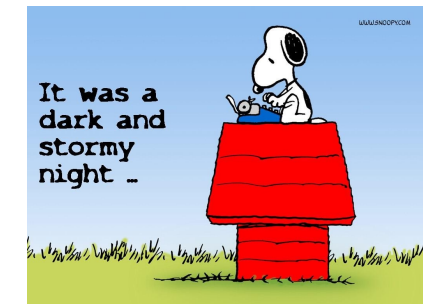
- Start with claim, premise or hypothesis
- Start with disposition or outline (planning)
- Start with writing



Essay Structure
The Essay
Essay Organization

Disposition

1. Problem Introduction/Description
2. Situation Analysis (Background)
 - Working with children, adolescents and adults
 - Data sets, strategies
 - And experience of children or adults
3. Topic
 - Question 3 (1 point)
 - Addressed requirements
 - Subject to the problem: Basics, communication, methodology, society
 - Current situation
 - Work experience: how are working systems divided?
 - Number of personnel in 2020 in percent
4. Salary, 5% during training the salary increases 8,000 per month
5. Future Opportunities: Examples in literature, independent research, primary school, youth centers, residential care, in families and neighborhoods



WRITING PROMPTS

Purpose

To get started

How

Formulate a sentence you must finish

Or ask a question

Examples

”The essence of this chapter is...”

”This paragraph summarizes...”

“The main conclusion is...”

“The most important finding is...”

“In the following I will discuss...”

What are my most important results?



WRITING GOALS...

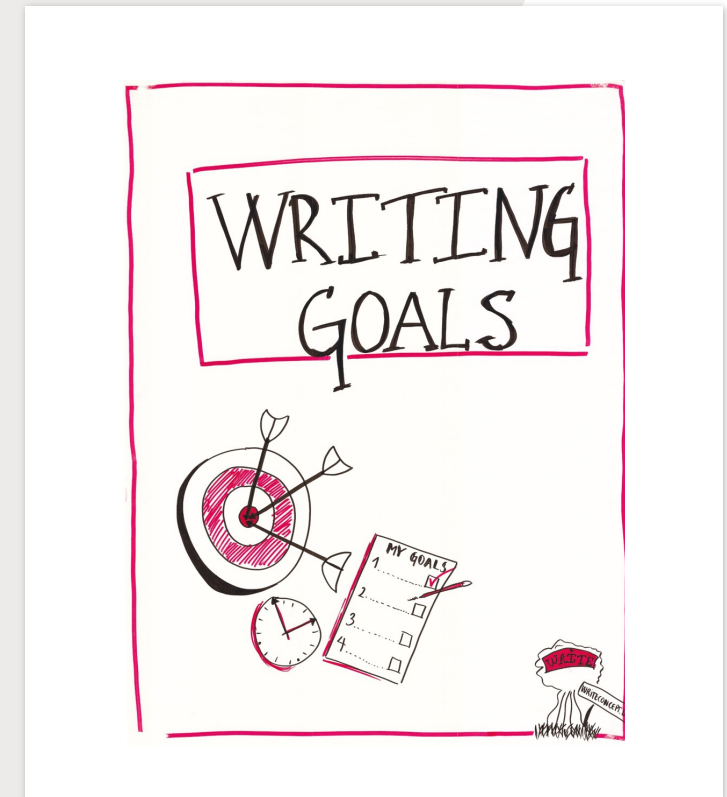
...are about braking down the task into smaller pieces

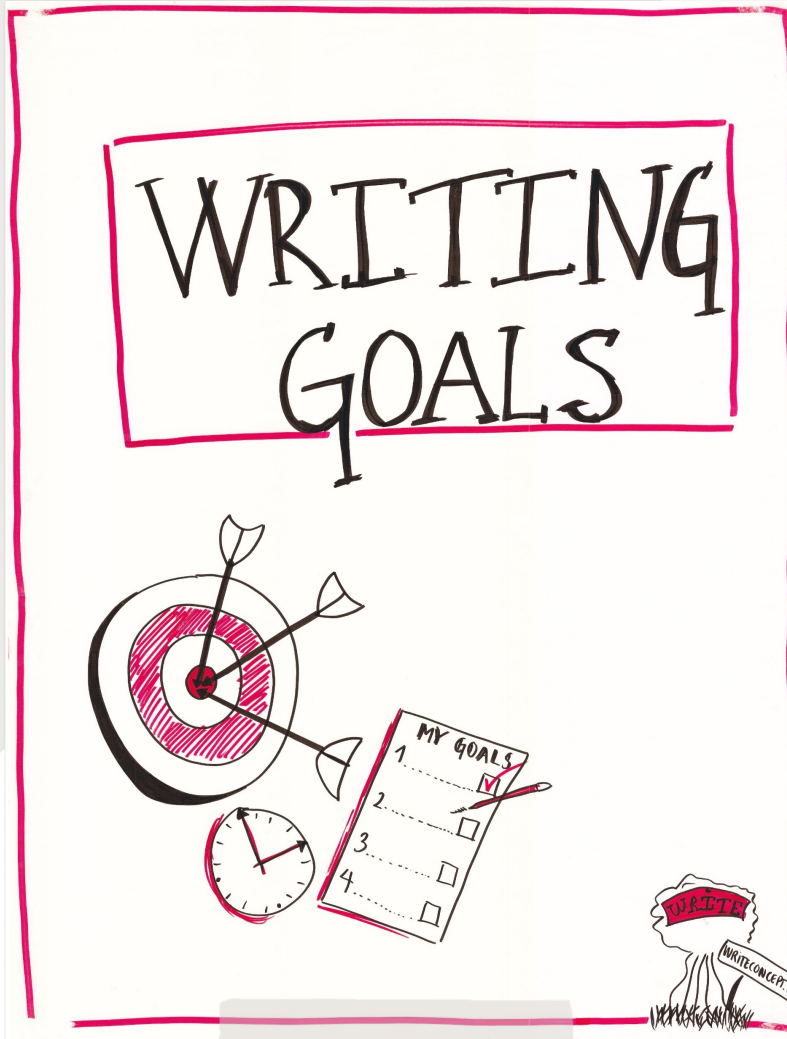


"I want to finish the article before the Easter holiday"

EXAMPLES OF WRITING GOALS

- I will write a paragraph of app. 1 page, explaining how I use the concept 'transformative learning'
- The next hour I will write 10 lines explaining the graph or quote
- I will write a draft of the first paragraph of the discussion
- I will finish the paragraph on methodology in the article and send it to my co-writers
- I will re-structure the introduction





WRITING GOALS

Purposes

To break the writing task in to smaller pieces

To overcome procrastination

26

How

1. Decide which time span you are setting a goal for
2. Decide what and how much you aim at writing
3. Set a timer and stop on time
4. Take a break and set a new goal if you have decided to continue

WRITING SESSION 1

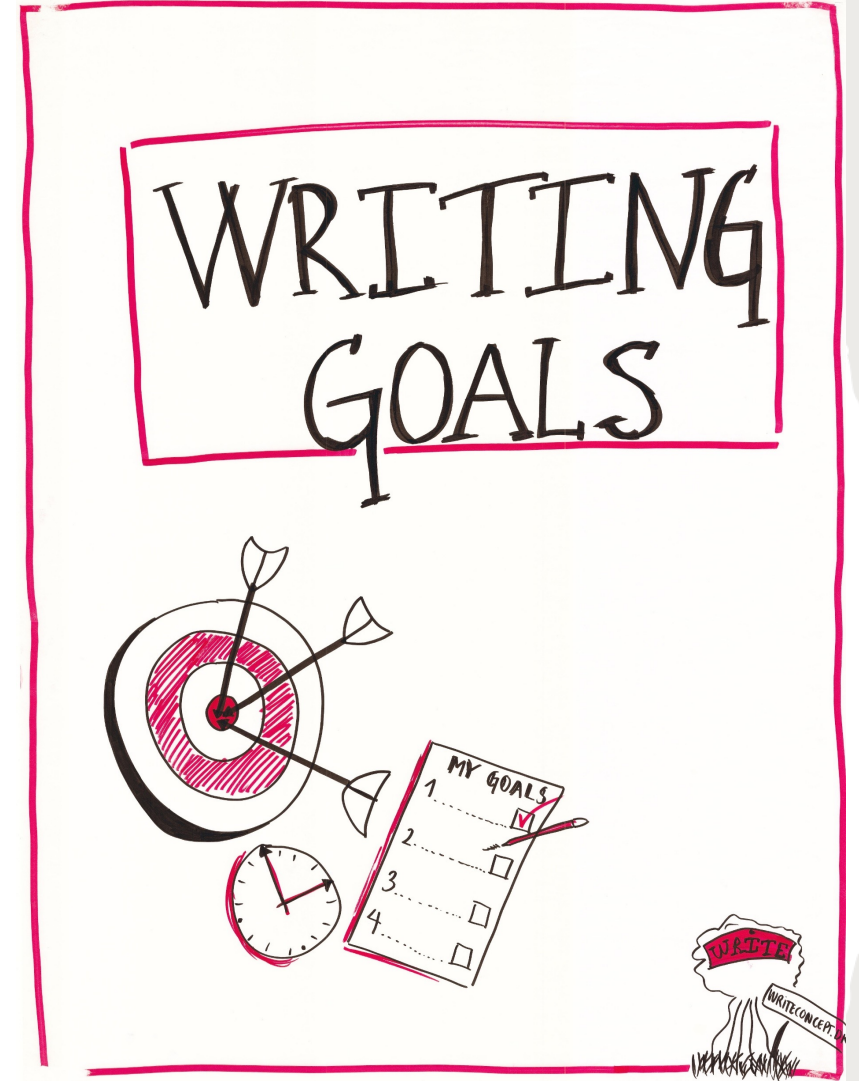
SET WRITING GOALS AND SHARE

Time span: 50 minutes

Decide what and how much you
aim at writing.

Challenge each other on making
realistic goals

I will stop you!





MORE WRITING TOOLS:

RHETORICAL READING
ACADEMIC PHRASE BANK
DIFFERENT PHASES IN WRITING
MAKING ARGUMENTS IN ACADEMIC
WRITING

REACH YOUR TARGET GROUP: RHETORICAL READING

- Analyse structure and language
- What characterises this genre?
- Which discussions go on in the journal?



THE ARTICLE DESIGN CANVAS

Name(s):		Target Journal:		Current Title:		Date / Version:		Article Design Canvas	
Others Research What bodies of literature(s) are relevant? Does each Literature Support or Motivate the research?		Research Design What Methodology / Design was used? Principles / Objectives of the Methodology / Design What Methods of Data Collection and Analysis were used? Strengths / Features of the Methods Sampling Methods / Aspects of Context		Findings / Results What are the Key Findings, Results, or emergent Themes?		Focal Phenomenon What "Things" are being investigated? Specify the Main Phenomenon and Specific Sub-phenomena			
Observations and Arguments What Issues / Themes are evident? What Gaps / Problems exist? What are the Risks / Costs of the Gaps / Problems?								Contributions What are the Contributions? Establish links to Identified Literature(s) Contribution(s) Type? (empirical, theoretical, practical, methodological, philosophical)	
		Theory What Theoretical Ideas are used or developed in the research? Developed Hypotheses? Theory Testing / Theory Generation? Conceptual Framework / Theoretical Lens?		Discussion How do the Findings / Results compare with Past Research? Establish links to Specific Articles					
This Research What are the Research Questions? What are the Benefits / Value of the Research Questions?								Future Research How should others use this research? What future research should be done and how can this research be incorporated into it?	

A simple template for creating an overview of the article. It visualizes the backbone structure of the research paper. Download and read more [here](#)



Introducing work

Referring to sources

Describing methods

Reporting results

Discussing findings

Writing conclusions

Academic Phrasebank / Signalling transition

GENERAL LANGUAGE FUNCTIONS

Being cautious

Being critical

Classifying and listing

Compare and contrast

Defining terms

Describing trends

Describing quantities

Explaining causality

Giving examples

Signalling transition

Signalling transition

Previewing what is to follow in a paper or dissertation is like showing a map to a driver; it enables them to see where they are going. So it is useful to think of a preview section as a 'road map' for the reader. It must be accurate, but it must be easy to follow.

Writers are also expected to indicate to the reader when they are moving from one topic to another, or from one section of text to another. These are known as transition statements and examples of these, together with some previewing statements, are given below.

Previewing sections of text

The section below describes ...

What follows is an account of ...

In the following pages, I will present ...

The following is a brief description of ...

In the section that follows, it will be argued that ...

The problem of X is discussed in the following section.

A more detailed account of X is given in the following section.

The structure and functions of X will be explained in the following section.

Advising cautious interpretation of results - close

(Also refer to *Discussing Findings*)

These findings cannot be extrapolated to all patients.

These data must be interpreted with caution because ...

These results therefore need to be interpreted with caution.

These results do not rule out the influence of other factors in ...

This account must be approached with some caution because ...

It is important to bear in mind the possible bias in these responses.

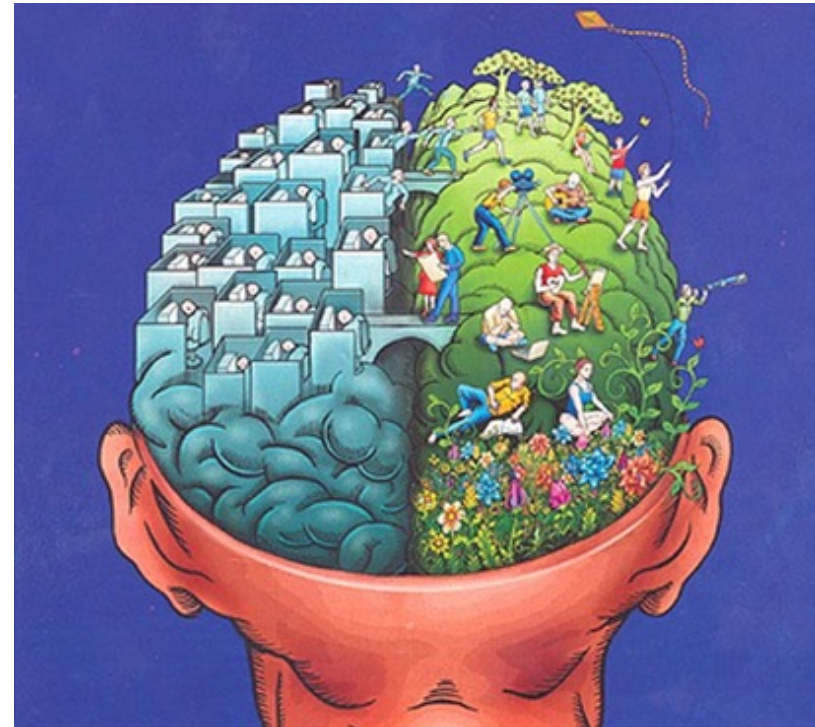
Although exclusion of X did not ..., these results should be interpreted with caution.

However, with a small sample size, caution must be applied, as the findings might not be ...

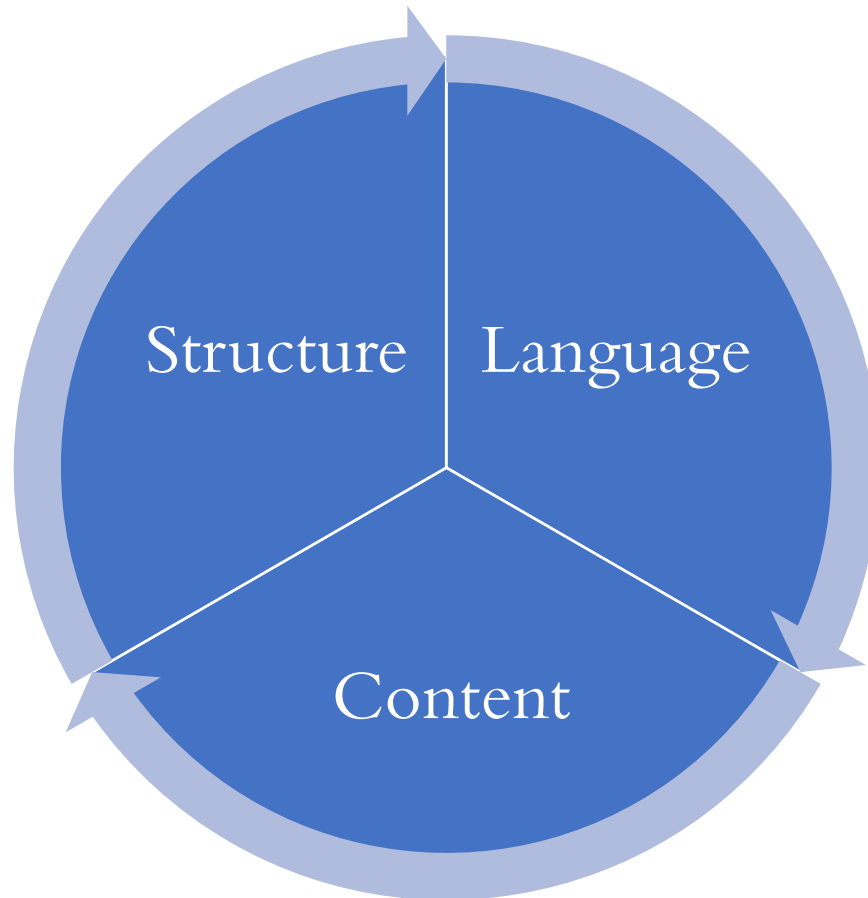
DISTINGUISH BETWEEN DIFFERENT PHASES IN THE WRITING PROCESS



Separate creative and critical
thinking when you write



THE 3 RHETORICAL GRIPS OF THE TEXT



- Content: ideas, claims, line of argument
- Structure: sequence of ideas and sections
- Language: precision, active vs. passive voice

THE CONTENT

Questions you can ask your text while writing:

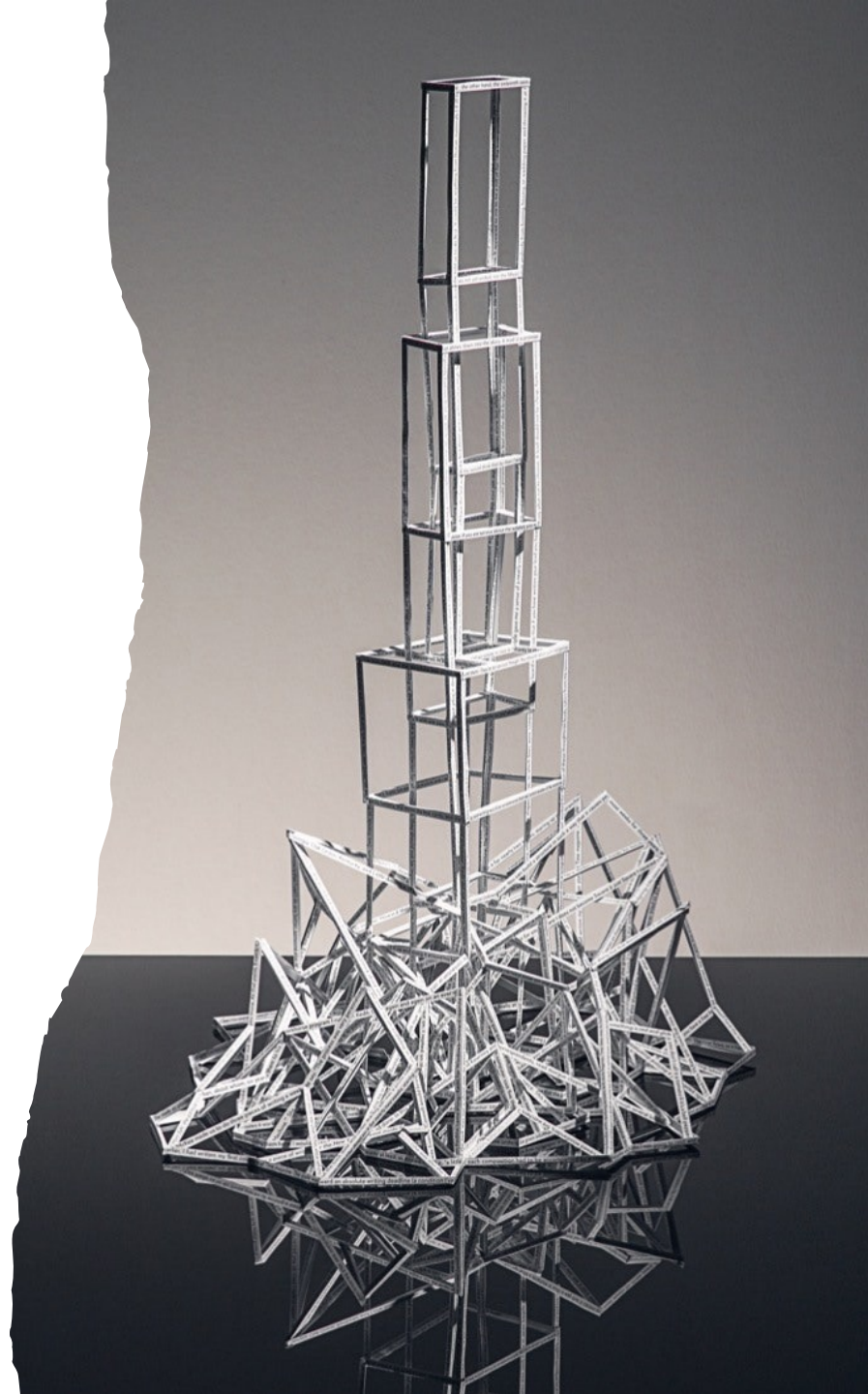
- What is your main point?
- Are there text pieces which are irrelevant for the main point?
- Does the text answer the target group's questions?
- Does the line of argument hold?



THE STRUCTURE

Questions you can ask your text while writing:

- Are the title and headlines signalling the content?
- Do you get motivated to go on when you read the introduction?
- Is there coherence between the title, introduction, the main text and the conclusion?
- Is there enough meta text or too much?



THE LANGUAGE

Questions you can ask your text while writing:

- Is the text easy to read out loud?
- Do you mix active and passive voice?
- Are the sentence constructions too complex?
- How is my tone of voice (formal/informal)



**I'M NOT ARGUING...
I'M EXPLAINING WHY I'M RIGHT**



iAm

IAMFUNNYSHIRTS.COM

If you want to win
every argument
for the rest of your life,
give up
your need to be right.



JackieWoodside.com

LEARNING TO ARGUE

When you argue to understand, we all win



Argument - Monty Python



Watch Later



Share



[HTTPS://WWW.GOOGLE.COM/SEARCH?CLIENT=FIREFOX-B-D
&Q=MONTY+PYTHON+ARGUMENT#FPSTATE=IVE&VLD=CID:1A
624475,VID:OHDB5GBTAEQ,ST:0](https://www.google.com/search?client=firefox-b-d&q=monty+python+argument#fpstate=ive&vld=cid:1a624475,vid:ohdb5gbtaeq,st:0)

WHAT IS AN ARGUMENT?

An argument isn't just contradiction

An argument is a connected series of statements intended to establish a proposition

Argument is an intellectual process

Argument - Monty Python

YouTube · unmusedtails · 7 Oct 2017

YouTube 



AN ARGUMENT IN ITS SIMPLEST FORM

- **CLAIM:** Food manufacturers should reduce the amount of sugar added to food items.
- **REASON:** Because overconsumption of sugar is bad for people's health.
- **EVIDENCE:** Research has shown that overconsumption of sugar is implicated in chronic health disorders such as obesity and cardiovascular disease (Bleich & Vercammen, 2020; Schmidt, 2014; Yang et al., 2014).

CLAIM because of REASON based on EVIDENCE

Resource: <https://thegraduatewritingguy.com/arguments/>





THE FIVE ELEMENTS OF AN ARGUMENT

1. **CLAIM:** is a statement that something is true. It can be argued and proven with evidence.
2. **REASON:** statements that support the claim, why readers should accept a claim, 'because...'
3. **THE WARRANT:** the principle that establishes how the reason is relevant to the claim
4. **EVIDENCE:** empirical data from your own or other studies or other evidence the readers accept as a fact
5. **ACKNOWLEDGEMENT AND RESPONSES:** Statement of objections to your argument and your response that show why they are not fatal to your argument

Boot, Colomb and Williams (2003), The craft of research; page 127-140

Resource: <https://thegraduatewritingguy.com/arguments/>

EXAMPLE OF WARRANT AND COUNTER CLAIM

Food manufacturers should reduce the amount of sugar added to food items *{claim}*, because overconsumption of sugar is bad for people's health *{reason}*. For example, research has shown that overconsumption of sugar is implicated in chronic health disorders such as obesity and cardiovascular disease (Bleich & Vercammen, 2020; Schmidt, 2014; Yang et al., 2014) *{evidence}*. *Because of the severe health consequences of such chronic conditions, food manufacturers have an ethical responsibility to avoid contributing to these conditions {warrant}*. *However, some may argue that consumers, rather than food manufacturers, should be held responsible for making healthy choices {acknowledgement of counter-claim}*. Yet making such healthy choices is often more difficult than it might seem. For many staple foods like bread and cereal, all the major manufacturers add sugar to most offerings, so that many consumers may have no option outside of shopping at expensive specialty health food stores *{response}*. In fact, a recent survey of small and medium sized grocery stores found that 80% of bread products were sourced by 4 main manufacturers, all of whom added sugar to 90% of their products *{evidence to back up response}*.

Resource: <https://thegraduatewritingguy.com/arguments/>

DEVELOP YOUR CAPACITY TO ARGUE THROUGH IDENTITY WORK



Clearly there is identity work involved in learning to articulate a scholarly argument. It makes you feel far more vulnerable than hiding behind description or facts. It feels risky to assert a point of view. ‘Oh I can’t say that. Who am I to think that? Why would anyone take notice of what I’ve got to say? I don’t know as much as the experts. I can’t’

*You are an active player in the field
who has something important to say!*



THE ‘SO WHAT?’ EXERCISE

Instead of feeling inadequate, ask your self what is your contribution going to be?

- Why write about this?
- Whats the point?
- So what?
- Who cares?

Fill in the blanks: ‘Your name (date) argued that...’

THREE STRATEGIES TO LEARN HOW TO ARGUE



Questions to guide the arguer stance – five elements of an argument



Learning to argue through tiny texts – the abstract

Locate
Focus
Report
Argue



Sentence skeletons

Remove the content and make
the syntax visible

“ ARGUMENT IS NOT EASY – YOU HAVE TO PRACTICE ”
BUT THESE STRATEGIES CAN SUPPORT YOU

“A good abstract asks you to write more confidently than you feel – as a scholar with something significant to say, with a perspective and a defensible base from which to speak”

“The sentence skeleton is a scaffold, a way to practice asserting and staking a claim in your field. Metaphorically, you stand in the shoes of a more experienced writer to get *inside* the patterning of language”

REFERENCES AND RESOURCES

Boot, Colomb and Williams (2003), The craft of research; page 127-140

Thomson, P. & Kamler, b. (2016). Detox Your Writing – Strategies for doctoral researchers, Chapter 5

AU resource on argumentation: <https://studypedia.au.dk/en/academic-standards/argumentation>

The writing guy on arguments: <https://thegraduatewritingguy.com/arguments/>

Video: <https://www.google.com/search?client=firefox-b-d&q=monty+python+argument#fpstate=ive&vld=cid:1a624475,vid:ohDB5gbtaEQ,st:0>

A photograph of three men sitting around a campfire at night in a desert-like setting. The man on the left is crouching and gesturing with his hands while speaking. The man in the middle is sitting cross-legged, looking towards the speaker. The man on the right is sitting cross-legged with his hands on his head, looking surprised or concerned. A large tree is in the background under a dark sky.

STORYTELLING IN ACADEMIC TEXTS

INFORMATION OR A STORY?

He went to the store

Fred died

Sharon went hungry and wept

KENDALL HAVEN'S RESEARCH

Your job as a storyteller is to connect the dots!

...you need to help your audience to make
sense of the information!

<https://www.kendallhaven.com/>

STORYTELLING IN RESEARCH WRITING

“Storytelling fulfils a need to add value to what might otherwise simply be a list of ideas – use the story to structure your text”

“Narrativizing is a way of engaging the reader – attract readers’ attention and make them remember your story”

(Cally Guerrin 2016)



THE STORYTELLING TOOLBOX

- Is the *storyline* coherent & logical?
- Is the *problem and situation* clear? Create a scene
- What is the *conflict*? Show what you want to overcome and solve it
- Work with *pace and tempo*



WHAT ABOUT THE IMRAD STRUCTURE?

<i>I</i>	Introduction
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<i>M</i>	Method
----------	--------

<i>R</i>	Results
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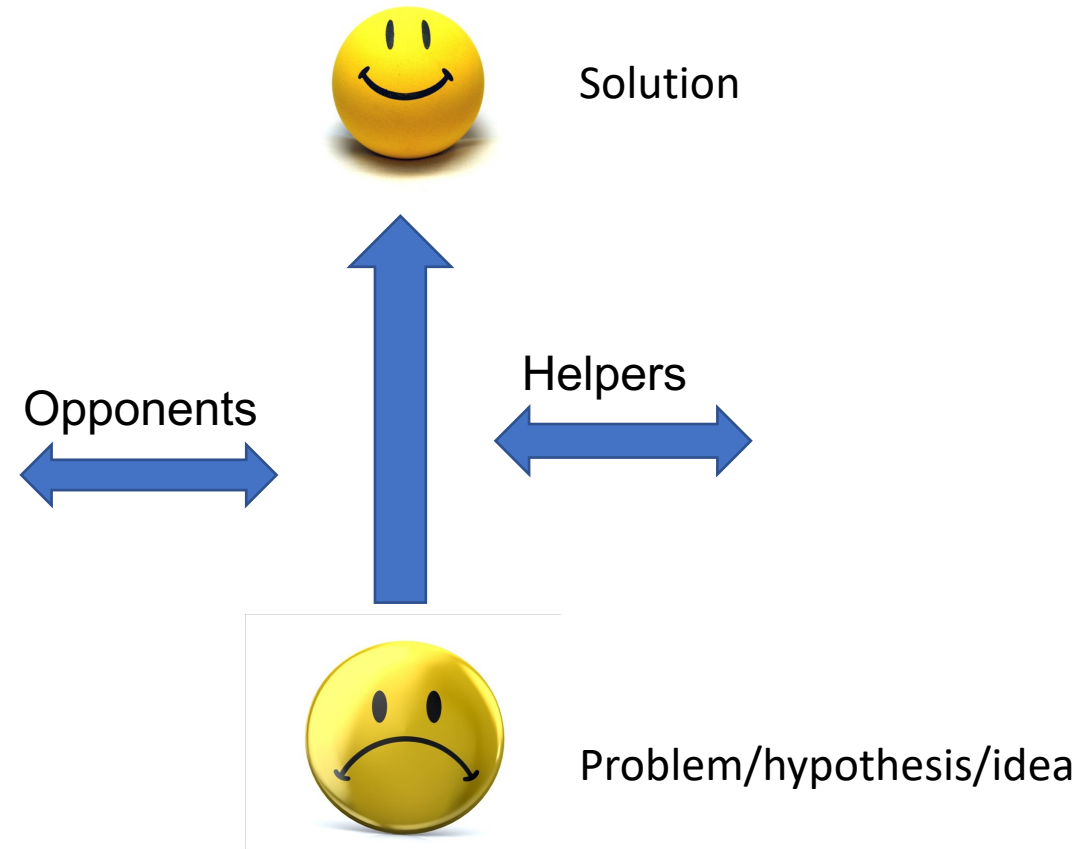
<i>a</i>	and
----------	-----

<i>D</i>	Discussion
----------	------------

The introduction, methods, results, and discussion (IMRAD) structure: a fifty-year survey, [Luciana B. Sollaci](#), MS, Library Director¹ and [Mauricio G. Pereira](#), MD, DrPH, Professor of Epidemiology^{2,3}



THE ACADEMIC STORYLINE



Plot: ..and then what happened?

SPRE

– SITUATION, PROBLEM, RESPONSE & EVALUATION

Situation

- Motivation
- The general problem
- State of art



Problem

- Question
- Hypothesis
- Missing link



Response

- Method, theory
- Data, Analyse
- Results
- Discussion



Evaluation

- Conclusion

Elements

- Problem/Conflict
- State of art (context)
- Data 1, 2, 3...
- Argument 1, 2, 3...

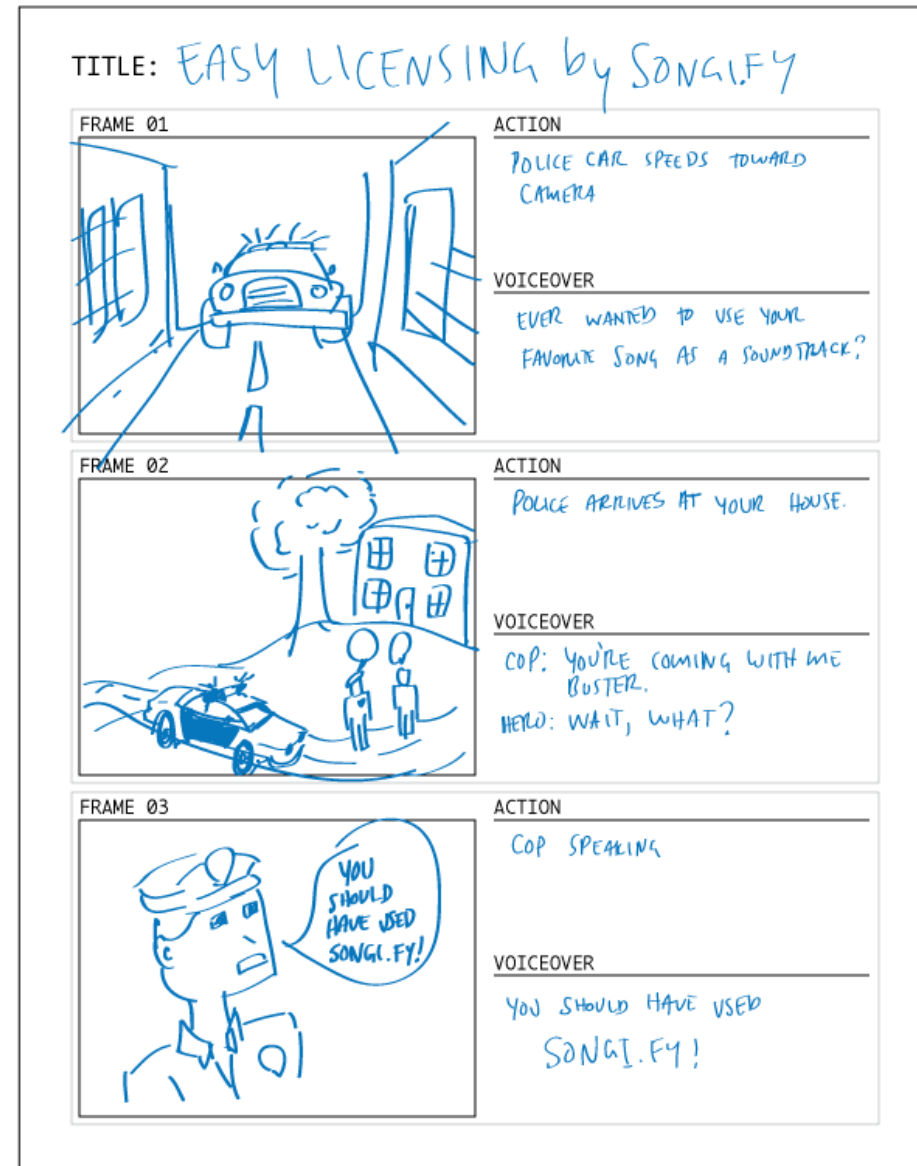
(Sarah Haas, Presented at a workshop in 2014)

STORYBOARDING

Elements

- Problem/Conflict
- State of art (context)
- Data 1, 2, 3...
- Argument 1, 2, 3...

<https://www.youtube.com/watch?v=6aTnEanIXBk>



MOTION AND PACING



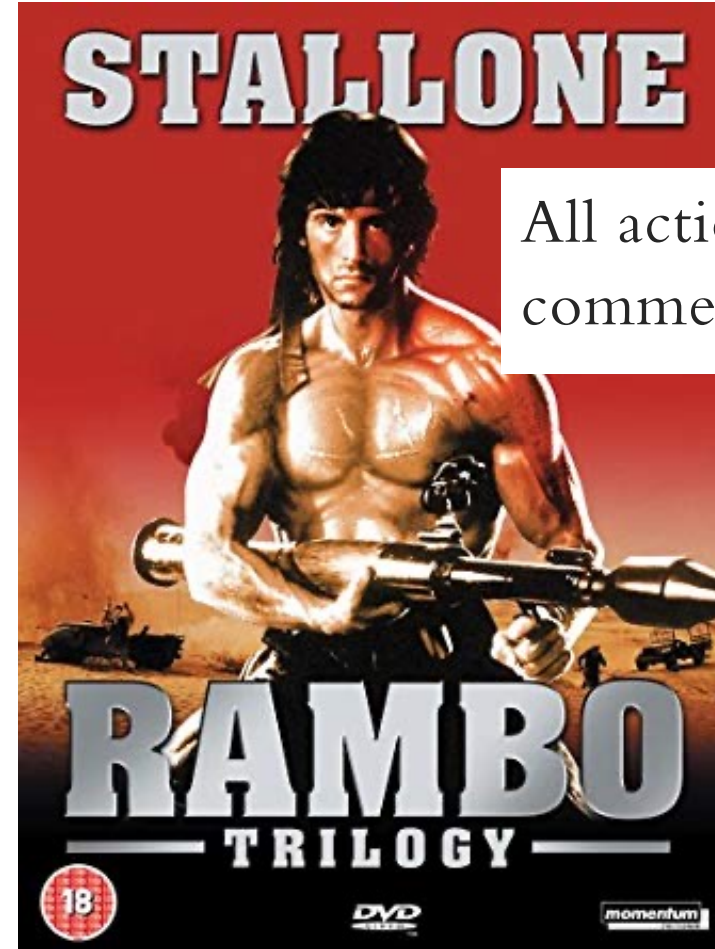
“Good stories are a brisk journey, and the reader can always feel the breeze in his hair”

Flaherty (2009: 70) in Pollock & Bono (2013)

BALANCING ACTION AND COMMENTARY



All commentary
– no action

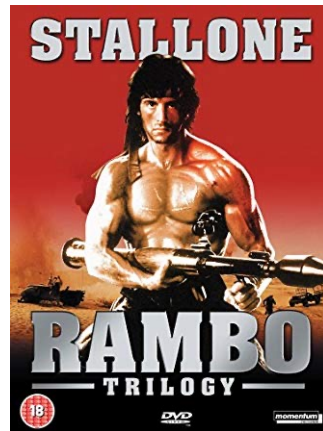


All action – no
commentary

ACTION AND COMMENTARY

Too much action...

- Descriptions of data and methods lack details
- Little interpretation of results
- Rapid fire statements of findings



Too much commentary...

- Long front ends
- Repetitive arguments
- Overinterpret results
- Lots of equations
- Extensive literature reviews
- Very detailed descriptions of context



Example: “Study [1] explored..., Study [2] found...”, but you do not discuss how they relate to each other or use them to build a hypothesis

Balance concrete and abstract language

EXAMPLE OF INTRODUCTION I

”In the direct-injection engines, the turbulence generated by bulk flow structures and fuel injection enhances small-scale mixing in the cylinder. Injection strategies and combustion chamber geometrics thereby affect the ignition delay through their effects on the turbulence. In this work, cycle-resolved high speed particle imaging velocimetry was employed to aid understanding of how the injection strategy affects mixtures preparation in an optically accessible engine.”

(Övind Andersson 2019, Efficient Scientific Writing)

EXAMPLE OF INTRODUCTION II

”Why do chimpanzees seldom help others without being requested? One plausible explanation from the perspective of cognitive mechanisms is that chimpanzees cannot understand another’s goal upon witnessing another’s predicament. (.....) Nevertheless, we still know little about the cognitive mechanisms underlying helping behaviour in nonhuman animals, and no study has examined if and how chimpanzees understand others’ goals in these types of helping context.

(Övind Andersson 2019, Efficient Scientific Writing)

What's your story?



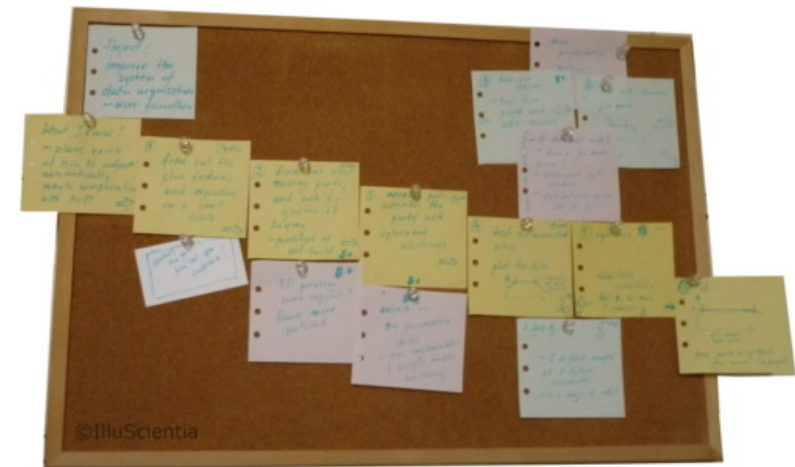
STORYBOARD EXERCISE

Work individually for 20 minutes:

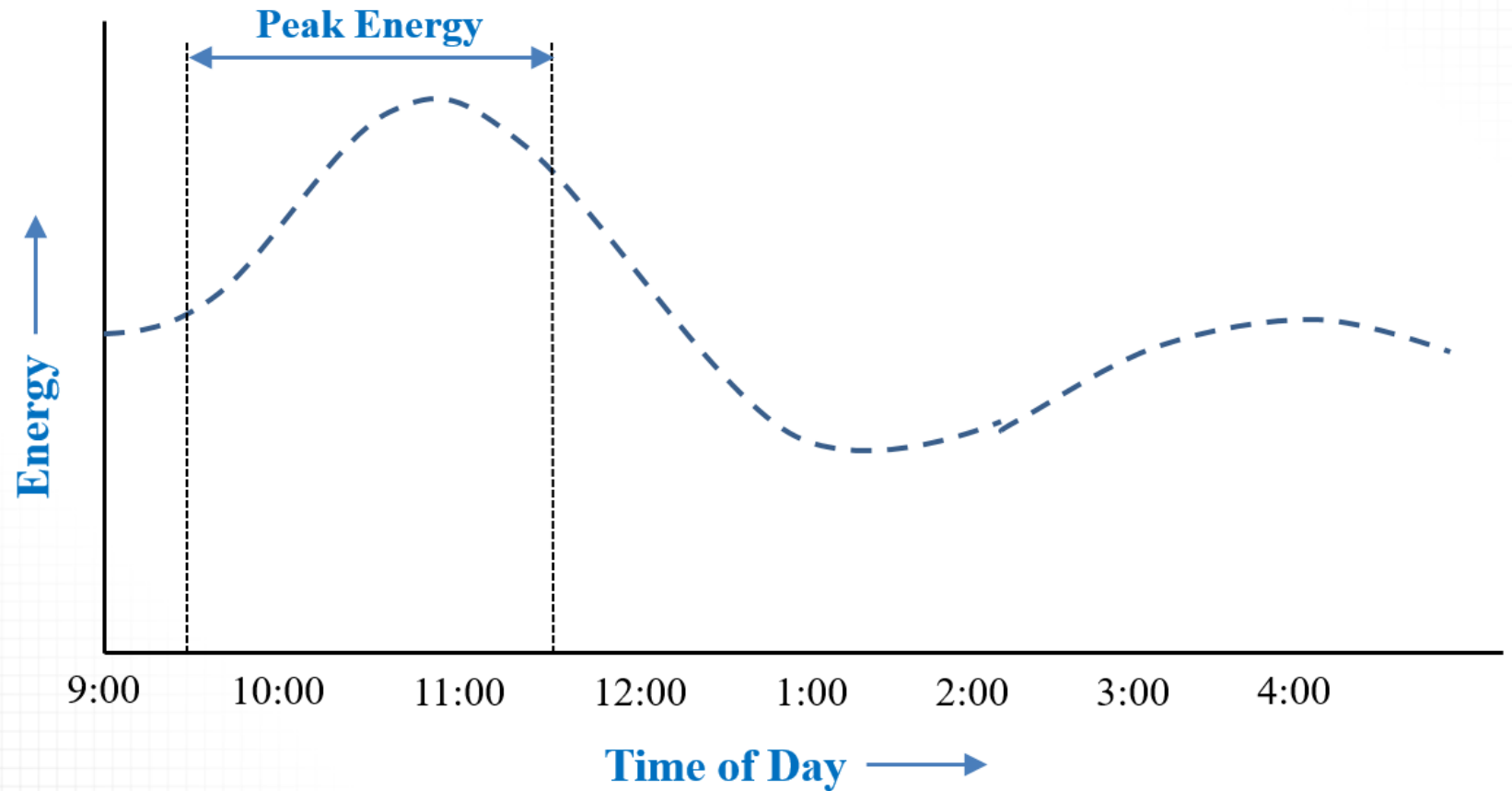
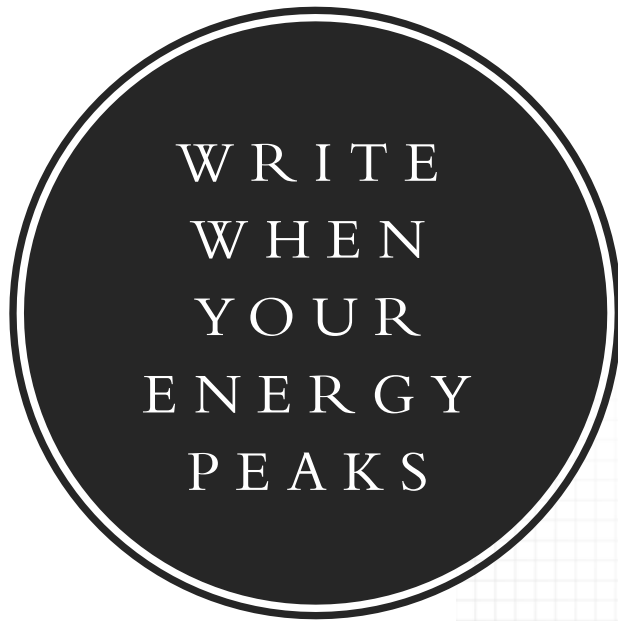
- Draw or write the different elements of your story on cards
- Include the elements/ideas your are struggling with
- Organize the cards in a storyline

Work in groups of 2 for 2 x 15 minutes:

- Tell your story to a colleague – use the cards
- Listener asks questions
- Help each other develop the story



Daily Energy Curve



WRITING GOALS...

Always know your
next writing goal!



PLAN YOUR WRITING

- Make a plan for finishing up your current writing task

OR

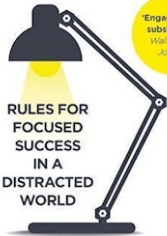
- Create a writing routine



MORE INSPIRATION

DEEP WORK

"Cal Newport is a clear voice in a sea of noise, bringing science and passion in equal measure"
Seth Godin, author of *Linchpin*



RULES FOR
FOCUSED
SUCCESS
IN A
DISTRACTED
WORLD

Cal Newport
Author of *So Good They Can't Ignore You*

"Engaging and
substantive"
*Wall Street
Journal*

Air & Light & Time & Space

HELEN SWORD

HOW SUCCESSFUL
ACADEMICS WRITE

SRHE Society for Research into Higher Education
Advancing knowledge. Informing policy. Enhancing practice.

Writing in Social Spaces

A SOCIAL PROCESSES APPROACH TO
ACADEMIC WRITING

Rowena Murray

RESEARCH INTO HIGHER EDUCATION

Open UP Study Skills

Writing for Academic Journals

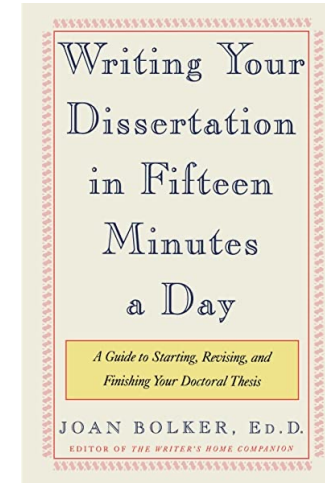
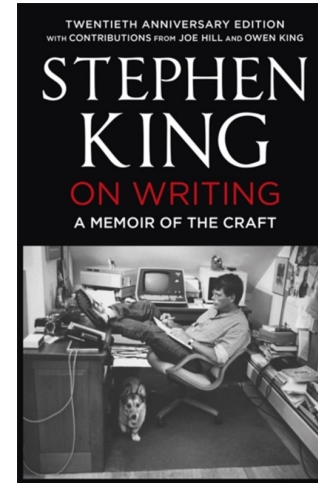
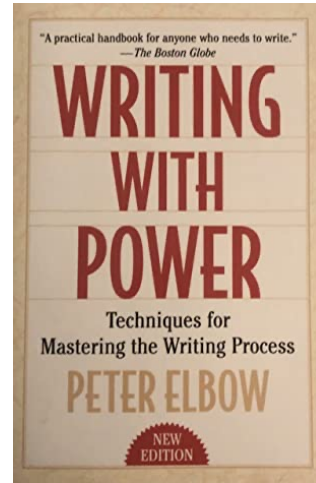
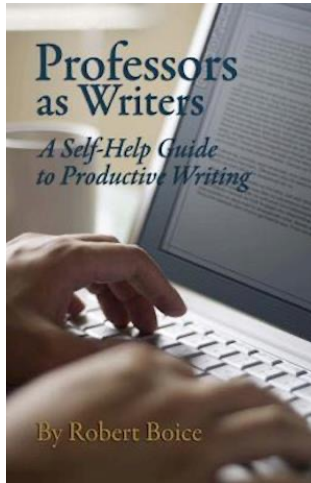
3rd
edition

- Streamline the process of writing academic papers
- Target a journal, find topics and develop arguments
- Make time to write
- Get to grips with using social media



Rowena Murray

MORE INSPIRATION



MORE INSPIRATION

