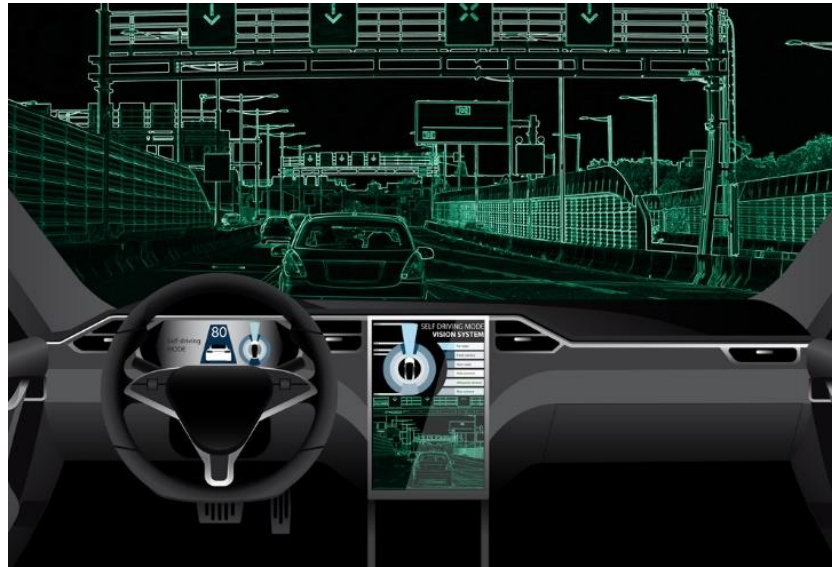


Hauptseminar SS 2019:
«**Engineering Trustworthy Cyber-Physical
Systems**»

Prof. Dr. Frank J. Furrer



HS DAY 1 Meeting 19. June 2019

Content:

1. Introduction (F.J. Furrer)
2. Presentations and Feedback (all)
3. Final Words (F.J. Furrer)

Name	Presentation	Feedback
Furrer, Frank J.: <i>Introduction</i>	09:20 – 10:20	
Fuhrmann Robert	10:20 – 10:40	10:40 – 10:45
Hilbert Hannes	10:45 – 11:05	11:05 – 11:10
Break	11:10 – 11:25	
Ludwig Heiner	11:25 – 11:45	11:45 – 11:50
Schoenicke Daniel	11:50 – 12:10	12:10 – 12:15
Furrer, Frank J.: <i>Final Comments</i>	12:15 - 12:30	
Final Discussion	12:30 – 12:40	

Content:

1. Introduction (F.J. Furrer)

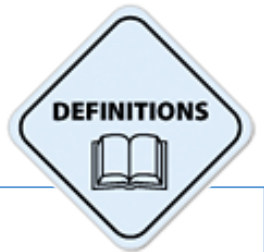
1st Round: **Observations & Recommendations**

Peer Reviews

Paper 1st Drafts

1. Presentations and Feedback (all)

2. Final Words (F.J. Furrer)



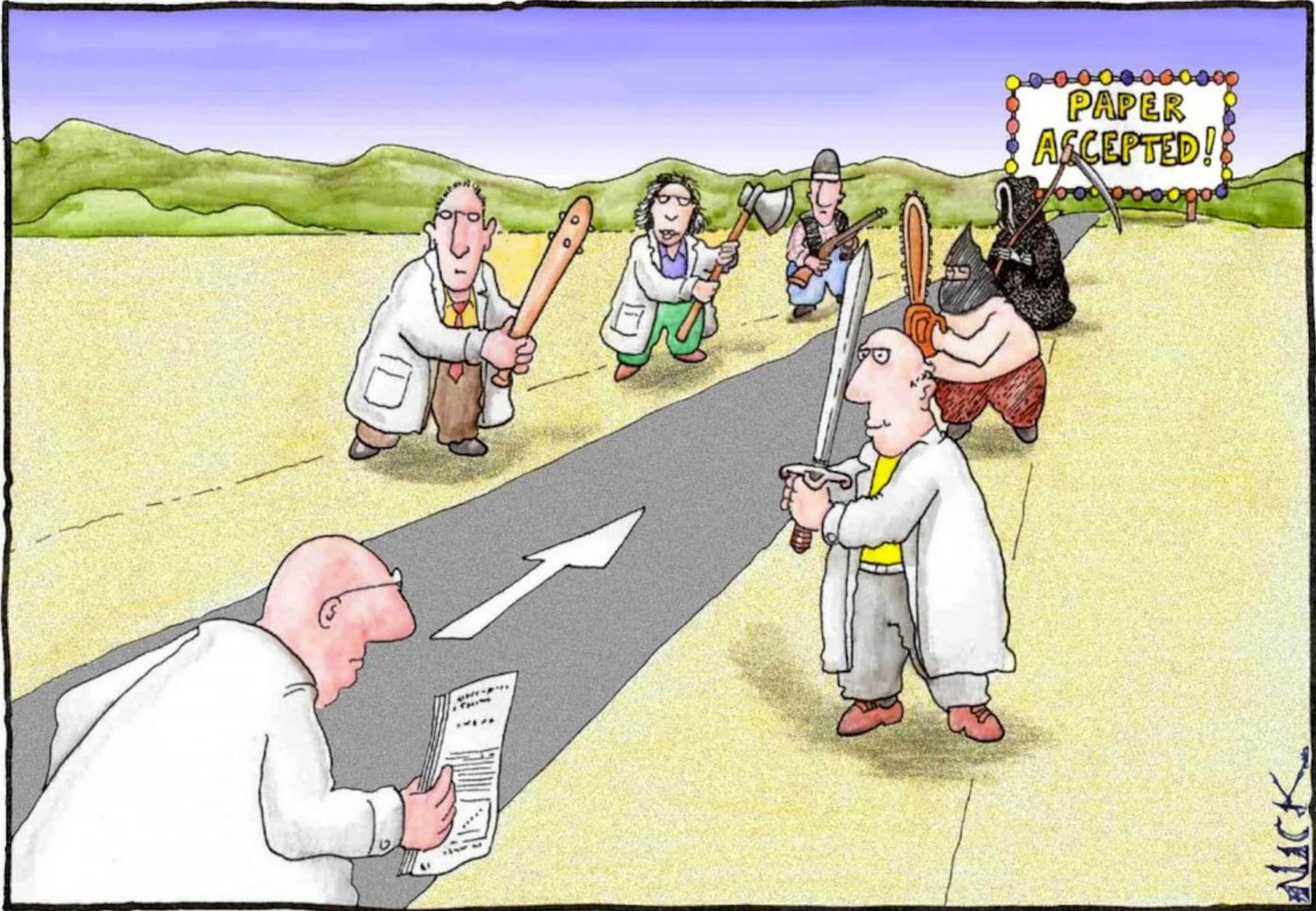
Peer review is the evaluation of creative work or performance by other people in the same field in order to maintain or enhance the quality of the work or performance in that field

http://www.linfo.org/peer_review.html

Feedback: Peer Reviews

Peer-Reviewer Assignment

Name	Vorname	Peer Reviewer 1	Peer Reviewer 2	Reviewer3
Ludwig	Heiner	Schoenicke	Fuhrmann	Furrer
Hilbert	Hannes	Fuhrmann	Schoenicke	Furrer
Schoenicke	Daniel	Hilbert	Ludwig	Furrer
Fuhrmann	Robert	Ludwig	Hilbert	Furrer
Furrer	Frank J.			



Review Process

<http://genomicenterprise.com/blog/2010/09/03>

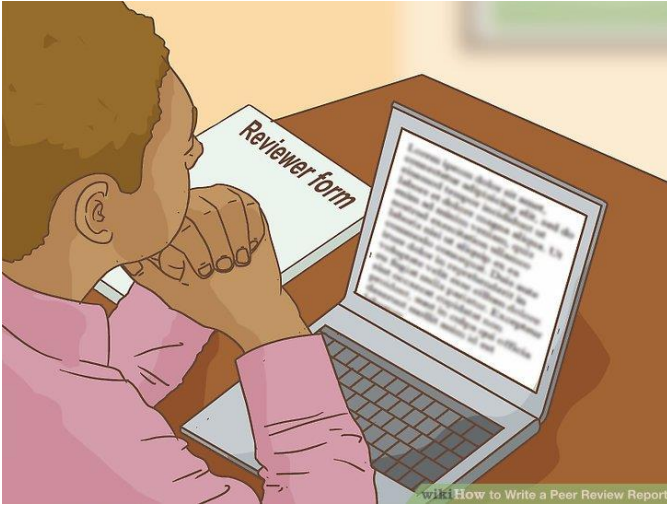


Your peer reviews were fair and helpful – *but rather short*

Peer review is the evaluation of creative work or performance
by other people in the same field

in order to maintain or enhance the quality of the work or performance in that field

http://www.linfo.org/peer_review.html



<https://www.wikihow.com/Write-a-Peer-Review-Report>

Is delivering a peer-review report:



➤ A nuisance?

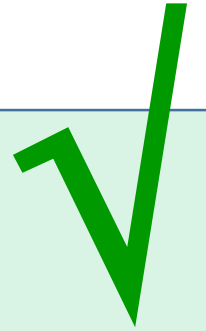
➤ An useless activity?

➤ An ignored work?

➤ A valuable scientific contribution?

➤ A recognized service to peers and society?

➤ A great step in academic and industrial recognition?





Peer Evaluations: Some "Do's"

1. Do treat the writer with courtesy and respect.
2. Do comment on the performance, **not** the person.
3. Do focus on how the argument is supported (or not), rather than whether you agree or disagree with it.
4. Do aim for balance and completeness in pointing out strengths and problem areas.
5. Do comment on specific examples of strengths and problem areas.
6. Do aim to **help** the writer see how to improve future work as well as the current draft.

<http://www.mhhe.com/mayfieldpub/maner/resources/peer5.htm>

<http://onlinelibrary.wiley.com/doi/10.1002/9780470750803.app1/pdf>



Peer Evaluations: Some "Don't's"

1. Don't use snippy marginal comments such as "So what?" or "What's your point?"
2. Don't get into debates over unresolvable questions of individual value and belief (for example, questions relating to religion, gun control, or abortion).
3. Don't argue with the writer. Raise objections or ask for explanations only to clarify and suggest ways of strengthening the argument.
4. Don't confine your comments to mechanical details.
5. Don't make vague, global comments.
6. Don't rewrite for the writer

<http://www.mhhe.com/mayfieldpub/maner/resources/peer5.htm>

<http://onlinelibrary.wiley.com/doi/10.1002/9780470750803.app1/pdf>

PEER REVIEW



- Improves paper or project
- Enhances the skills and knowledge of author(s)

Why are peer reviews good for the **reviewer(s)**?



Academia:

- Leads to important contacts
- Generates visibility and recognition

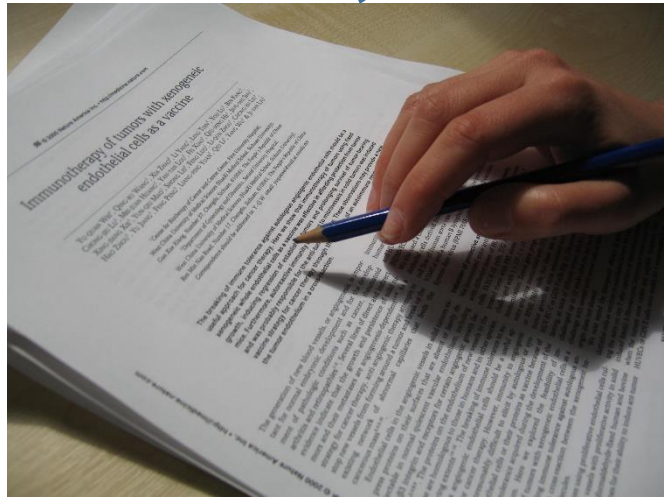
Industry:

- Massively raises the visible value of the reviewer
- Leads to invitation to project groups



Importance of good reviewers: **Academia**

Feedback for Author
Decision for Publisher



- Reputation
- Conference Program Committees
- Visibility
- Networking



<http://science.spb.ru>

<http://data-mining.philippe-fourmier-viger.com>

Importance of good reviewers: **Industry**

<https://images.template.net>

Project Proposal

Applied Accounting Services
12250 NE 131st Way, Suite 305
Kirkland, WA 98034
(PH) 425-740-8478
(FX) 425-740-8479
AAServices.com

August 20, 20xx

Project Title

Provision of Accounting and Payroll Services

Prepared for: Rachel Kenberry
General Manager
Valley Fitness, Inc.

Prepared by: Marty Trasker
President
AAS Inc.

Description

Valley Fitness, Inc is in need of Accounting and Payroll services to take over for an overburdened owner/manager. With limited office staff, the accounting and payroll functions have been suffering. Outsourcing these office activities to AAS will allow the owners/management to focus on the core aspects of their business.

Proposal Number: 534-20xx

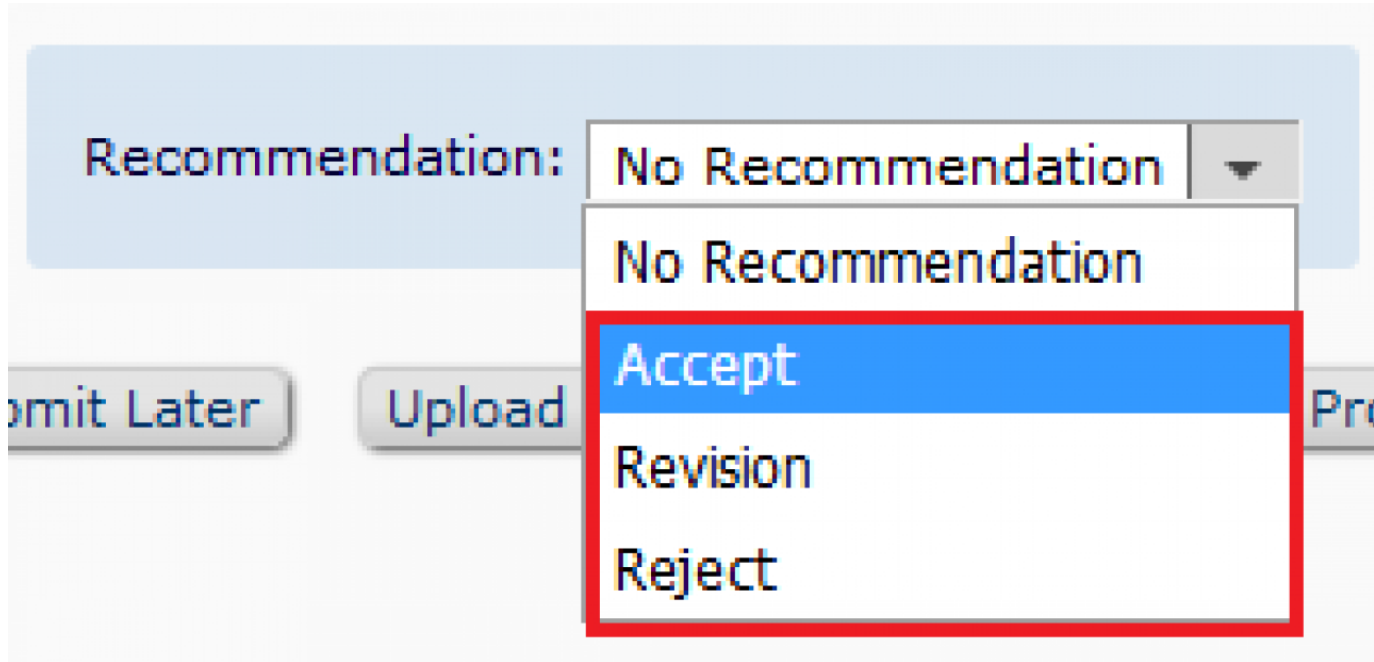


<https://aos.iacpublishinglabs.com>

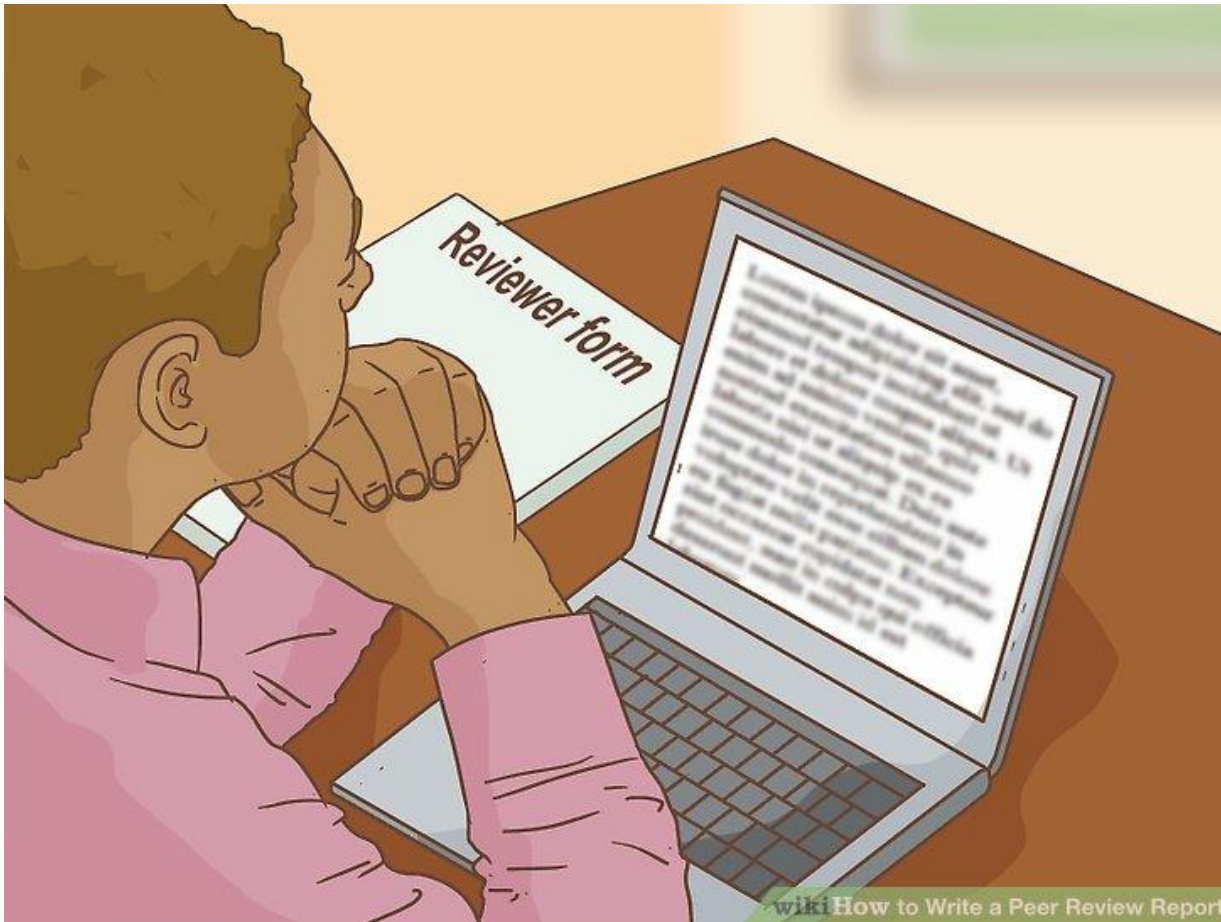


- Reputation
- Visibility
- Trust
- Expert status
- Soft Skills demonstration





Writing competent, helpful and comprehensive reviews
is a strong career-enhancing activity – both in academia and in industry



[How to Write a Peer Review Report](https://www.wikihow.com/Write-a-Peer-Review-Report)

Co-authored by [wikiHow Staff](https://www.wikihow.com/Write-a-Peer-Review-Report)

<https://www.wikihow.com/Write-a-Peer-Review-Report>



Feedback: Papers 1st Draft

Papers 1st Round: Main Observations

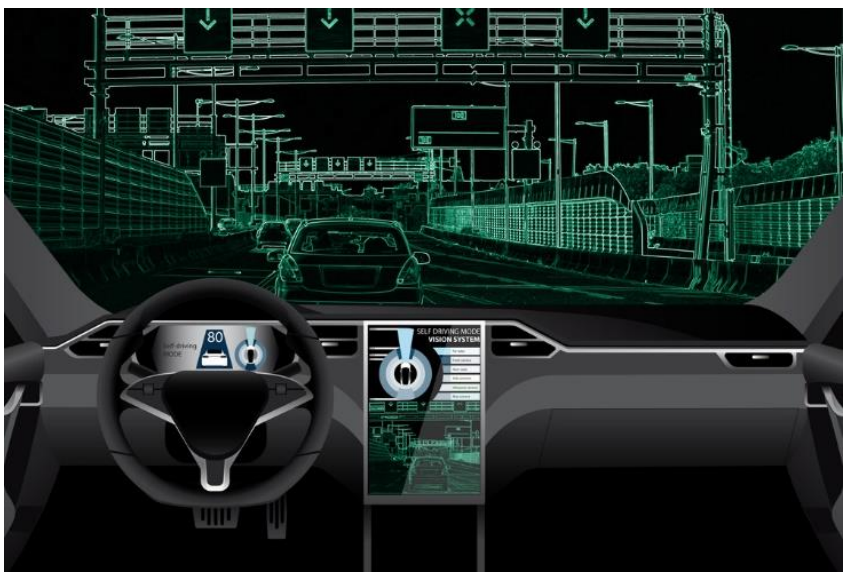
good

Theme

All themes are well-chosen and very interesting – some are quite challenging!

Fit to HS

Excellent fit of all themes to Trustworthy Cyber-Physical Systems



<http://krav.jp>

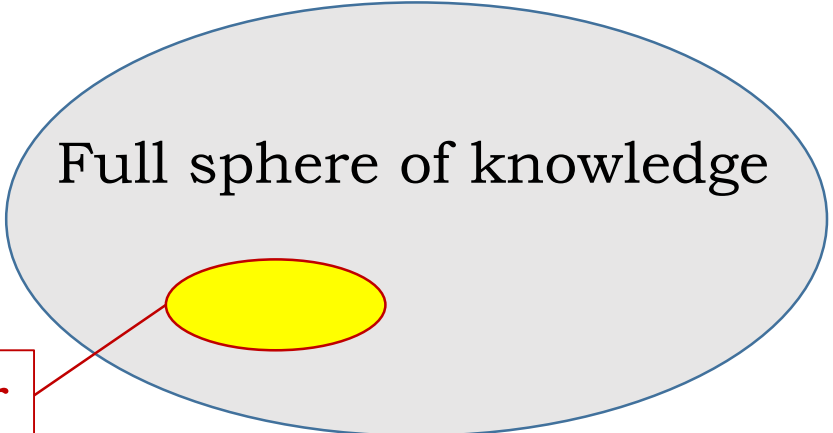
Papers 1st Round: Main Observations

improvable

Context



Context is the environment in which your reader has to see your paper



Context description is the most suitable presentation of the field of interest which then allows the **focussing on the topic of the paper**

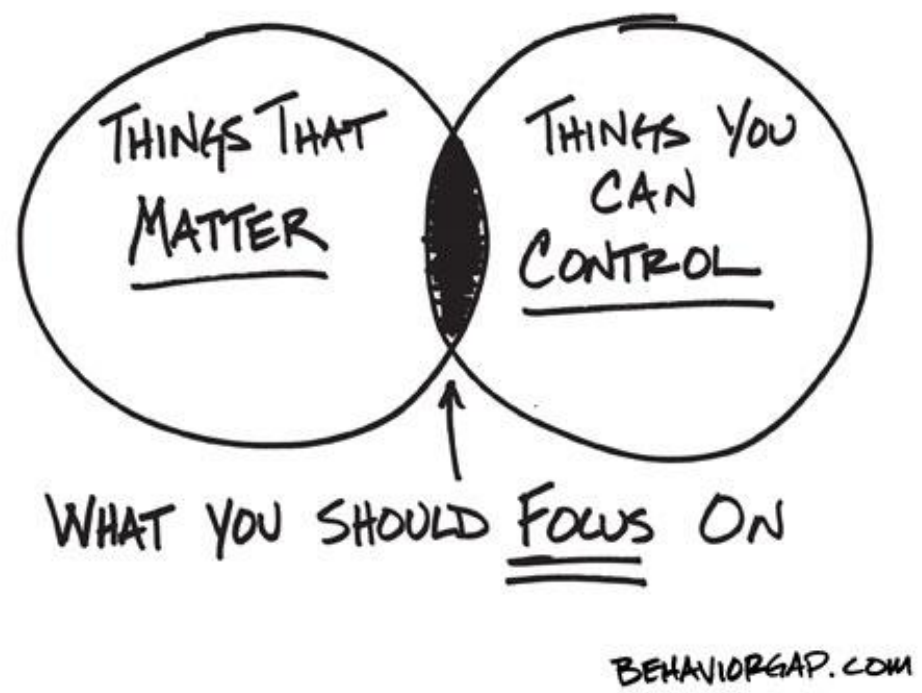
<http://www.ignitionone.com>

Papers 1st Round: Main Observations

improvable

Focus

Restrict yourself clearly and consistently to a well-defined topic



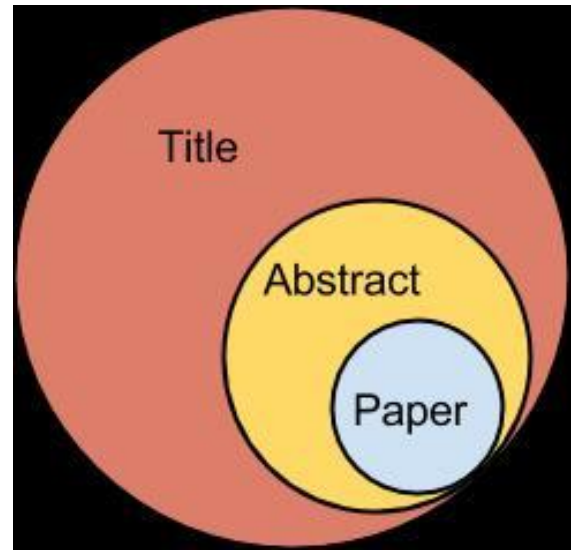
Precision

Express exactly and unambiguously what you want to communicate



improvable

Papers 1st Round: Main Observations



Title

General observation:
The titles were **not** sufficiently «seducing» and promising

Good academic titles reveal not only the topic of the paper but some idea of your specific approach, argument, and area of discussion

A great academic title should tell your readers as much as possible about your paper's central claim and its significance

How do I write a great title for my academic essay? University of Michigan – Sweetland Center for Writing
<http://www.lsa.umich.edu/UMICH/sweetland/Home/Undergraduate/Writing%20Guides/HowDoIWriteaGreatTitle.pdf>



Good Title = Promise

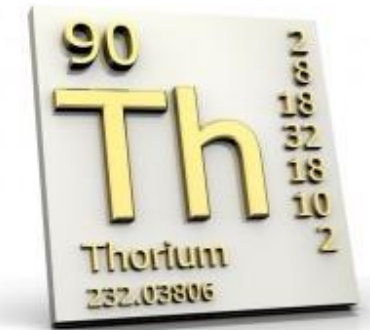
http://blogs.nature.com/naturejobs/2014/11/03

https://gedankenwelt.de

Message \Leftrightarrow Title [Excellent Example]

Audience: YOU!

- *Background:* mathematical-physical-engineering education
- *Prior knowledge:* basic nuclear physics
- *Expectations:* Possible solution to world's energy problem?
- *Reason for attendance:* critical assessment, gain of knowledge



Key message:

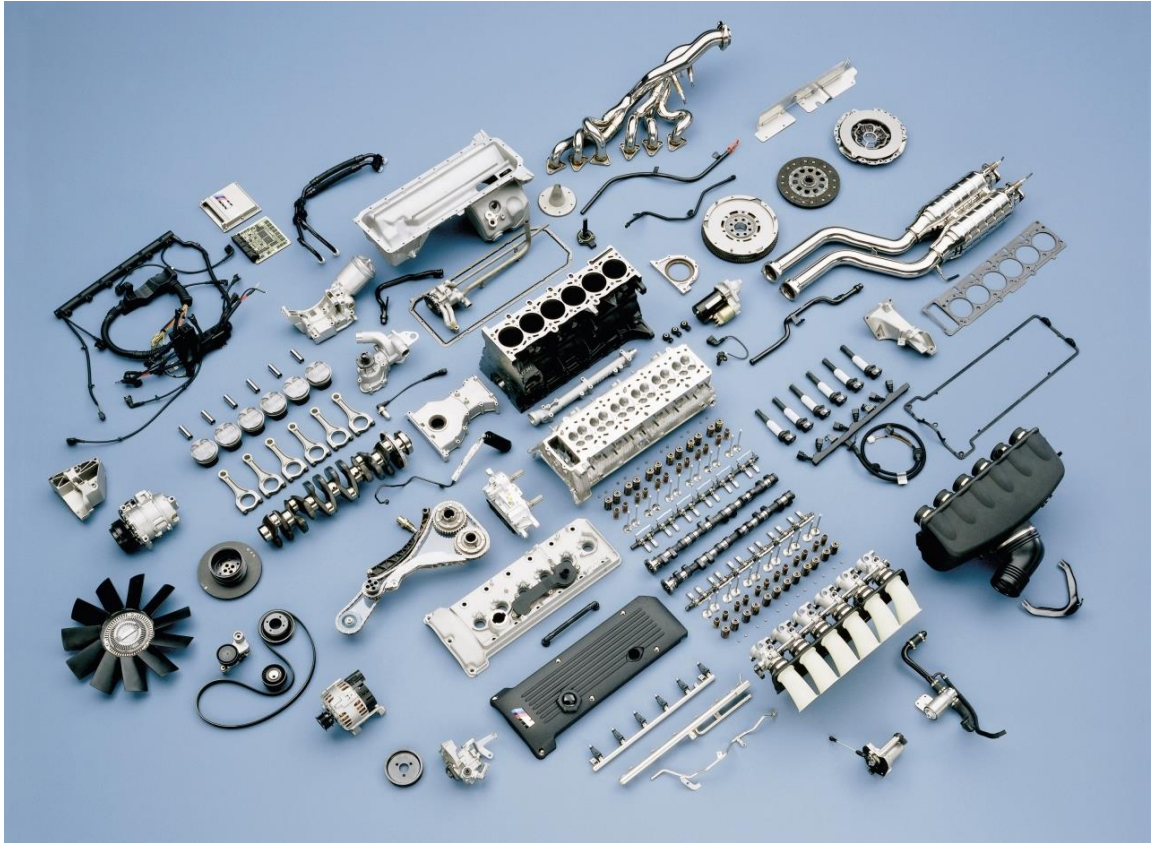
«THORIUM – The Green Energy Source of the Future»

Richard Martin: **Superfuel – Thorium, the green energy source of the future.**

Palgrave MacMillan Publishers, New York, USA, 2012. ISBN 978-0-230-11647-4

improvable

Concepts



- ✓ Some concepts are ill defined or not defined at all
- ✓ Are really all introduced concepts necessary for the storyline? ← **Repeated checks & elimination necessary**

improvable

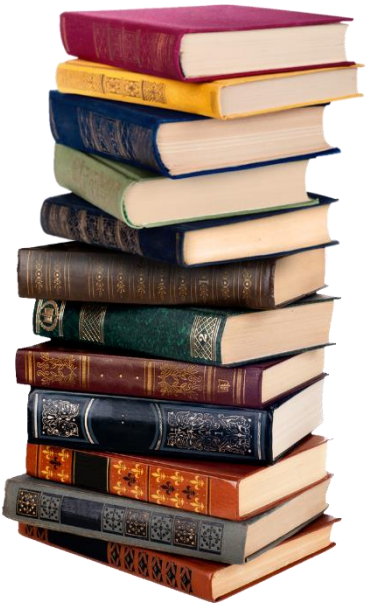


- **State of the Art**
- **Message of the Paper**

✓ The state of the art: What is the current knowledge?
Which is the related literature?

✓ Message of the paper:

- a) what is the new knowledge?
- b) which is the contribution of the author?
- c) why is it important? **⇐ NOT in the conclusions, but a separate chapter before**



State of the Art (SoA)

Literature Research

YOUR Creativity/Idea

State of the Art Assessment

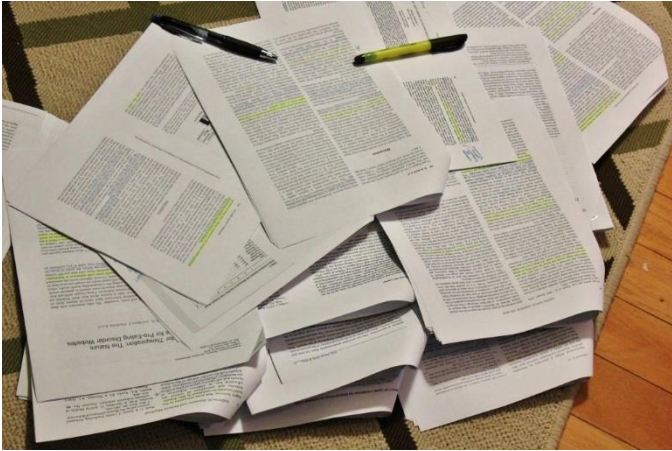
YOUR contribution

improvable



<https://unaslittlelibrary.wordpress.com/book-pile/>
<https://www.logovnx.com>

<https://www.parsingcience.org/>



- Didactic (tutorial)
- Scientific (New results)
- Technical (New applications)
- Disruptive (New field)
- Methodical (New ways)

Prior Knowledge

SoA Advancement

«My contribution»

Recommendation

Language

- German
- English



Use proofing tools!

Use a spell checker!

<https://www.grammarly.com>
<http://www.whitesmoke.com/>
etc.



... and: You all *underestimated* the required time !



Consequence:

- Stress
- Dissatisfaction with yourself
- Unsatisfactory result
- Bad conscience
- Unhappy teacher 😞



What can you do against time-stress?

Planning !

Plan 1: Storyline \Leftarrow *Conceptual plan of **content***

Plan 2: Time-plan – *Chapter/Section \Leftrightarrow **date***

Die meiste Zeit geht
dadurch verloren,
dass man nicht zu
Ende denkt

Alfred Herrhausen (1930-1989)

<http://www.strattonlaw.com>

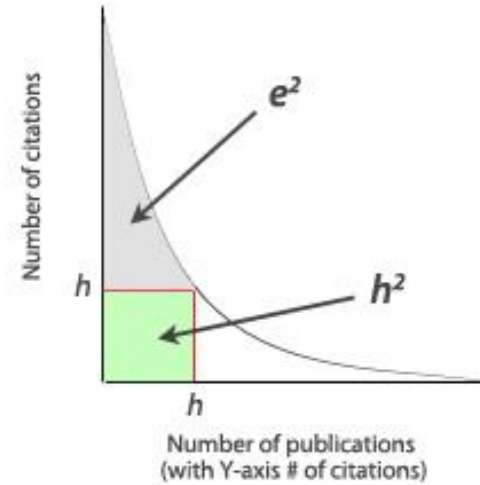
Writing convincing and admirable papers is a **key factor** for career success



<http://www.jobsofresume.com>

The impact or "quality" of a paper is assessed by counting the number of times **other** authors refer it in their work

Academia



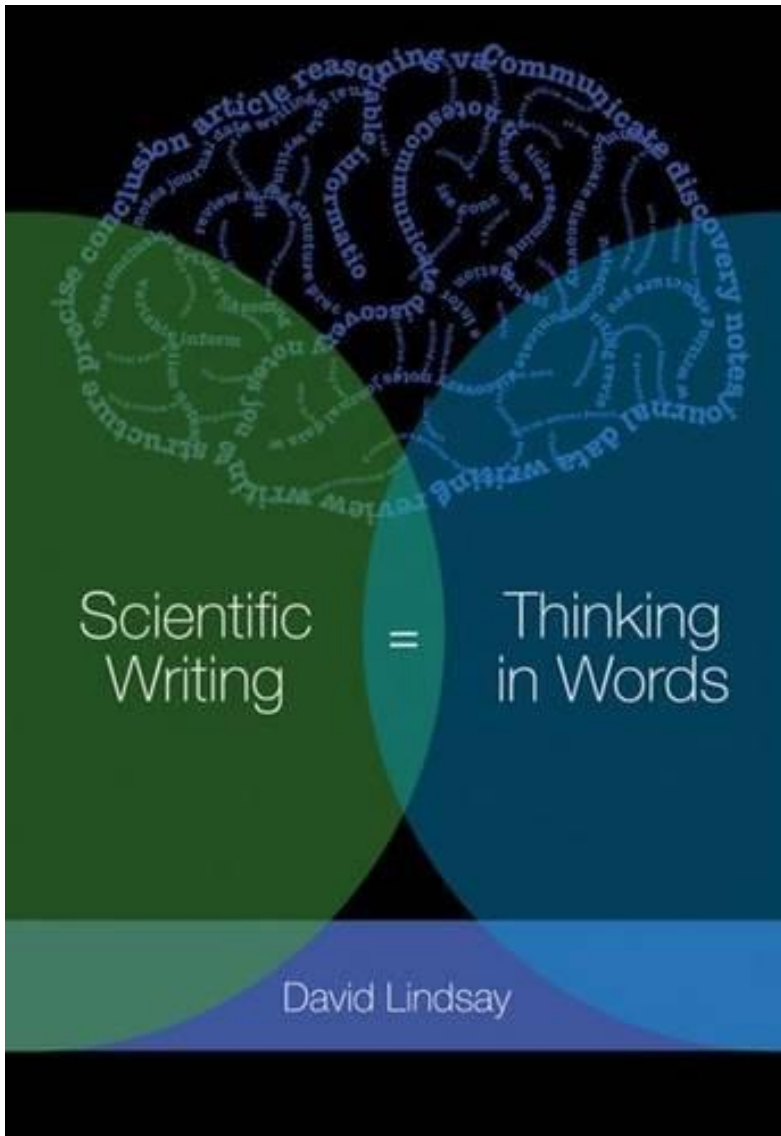
<http://www.benchmark.com>



Industry



<http://www.jobspace.com>



David Lindsay:

Scientific Writing = Thinking in Words

CSIRO Publishing (Australia)
2013
ISBN 978-0-643-10046-6



Fazit: Writing a **good** paper is **very hard** work !

Content:

1. Introduction (F.J. Furrer)

2. Presentations and Feedback (all)

3. Final Words (F.J. Furrer)

Procedure

Presentation
(20 mins)



FEEDBACK: Each participant:

1. One positive comment
2. One improvement comment

Audience
Feedback
(5 mins)

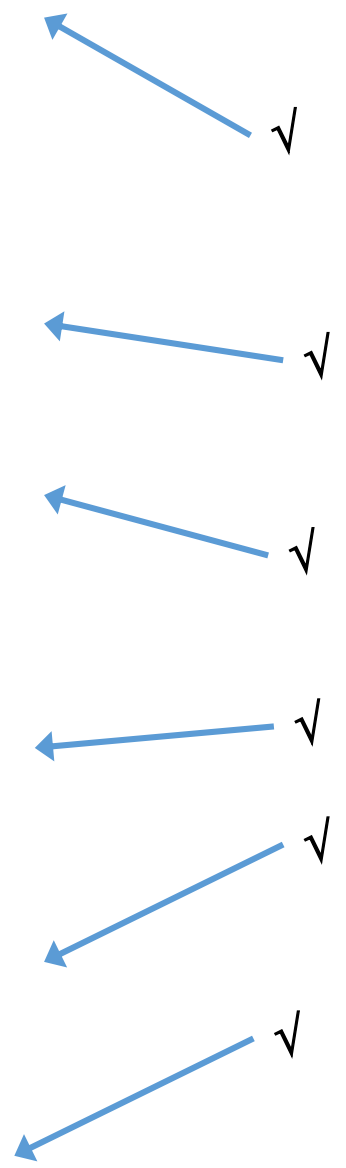
Storyline	<ul style="list-style-type: none"> • Logical • Consistent • Attractive • Clear 	Excellent <input type="checkbox"/> Good <input type="checkbox"/> Improvable <input type="checkbox"/>
Illustrations Pictures	<ul style="list-style-type: none"> • Fitting/Adequate • Granularity • Power of Expression • Support of Speaker 	Excellent <input type="checkbox"/> Good <input type="checkbox"/> Improvable <input type="checkbox"/>
Animation	<ul style="list-style-type: none"> • Focussed (emphasizing the message of the slide) • Speed • Unnecessary effects • Timing 	Excellent <input type="checkbox"/> Good <input type="checkbox"/> Improvable <input type="checkbox"/>
Density	<ul style="list-style-type: none"> • Too dense (per slide or per time unit) • Too slow (more material per slide or per time unit) • Balance of slides • Bullet point lists 	Excellent <input type="checkbox"/> Good <input type="checkbox"/> Improvable <input type="checkbox"/>
Delivery	<ul style="list-style-type: none"> • Personal style • Interaction with the audience • Complementary speech/illustrations 	Excellent <input type="checkbox"/> Good <input type="checkbox"/> Improvable <input type="checkbox"/>

<https://www.kulahub.com>

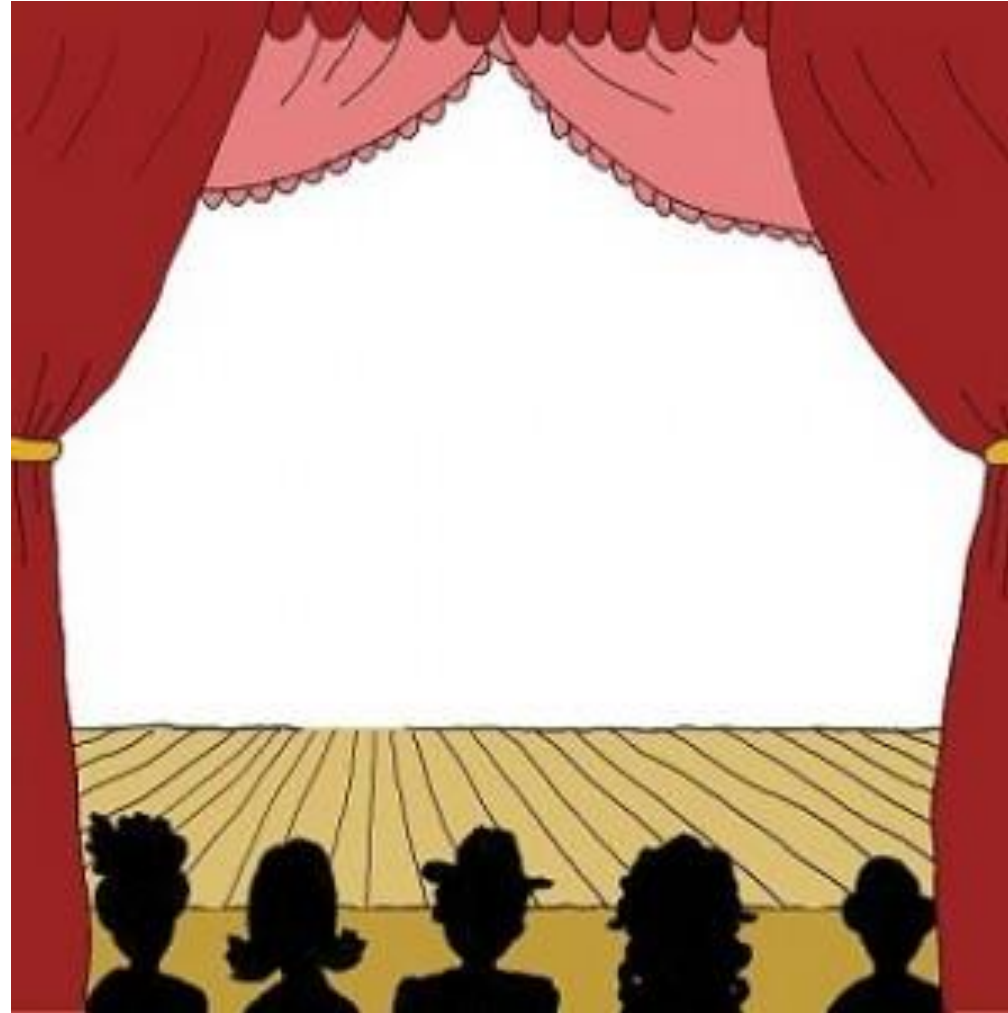


Objective for
2nd presentation:
6 x «excellent»

Storyline	<ul style="list-style-type: none"> • Logical • Consistent • Attractive • Clear 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>
Illustrations Pictures	<ul style="list-style-type: none"> • Fitting/Adequate • Granularity • Power of Expression • Support of Speaker 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>
Animation	<ul style="list-style-type: none"> • Focussed (message of the slide) • Speed • Unnecessary effects • Timing 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>
Density	<ul style="list-style-type: none"> • Too high • Too low • Balance of slides • Bullet point lists 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>
Delivery	<ul style="list-style-type: none"> • Personal style • Interaction with the audience • Complementary speech/illustrations 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>
Message	<ul style="list-style-type: none"> • Precise • True • „catching“ 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>



Name	Presentation	Feedback
Furrer, Frank J.: <i>Introduction</i>	09:20 – 10:20	
Fuhrmann Robert	10:20 – 10:40	10:40 – 10:45
Hilbert Hannes	10:45 – 11:05	11:05 – 11:10
Break	11:10 – 11:25	
Ludwig Heiner	11:25 – 11:45	11:45 – 11:50
Schoenicke Daniel	11:50 – 12:10	12:10 – 12:15
Furrer, Frank J.: <i>Final Comments</i>	12:15 - 12:30	
Final Discussion	12:30 – 12:40	



... the stage is yours!

Storyline	<ul style="list-style-type: none"> • Logical • Consistent • Attractive • Clear 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>
Illustrations Pictures	<ul style="list-style-type: none"> • Fitting/Adequate • Granularity • Power of Expression • Support of Speaker 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>
Animation	<ul style="list-style-type: none"> • Focussed (message of the slide) • Speed • Unnecessary effects • Timing 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>
Density	<ul style="list-style-type: none"> • Too high • Too low • Balance of slides • Bullet point lists 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>
Delivery	<ul style="list-style-type: none"> • Personal style • Interaction with the audience • Complementary speech/illustrations 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>
Message	<ul style="list-style-type: none"> • Precise • True • „catching“ 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>

Robert Fuhrmann

✓

✓

✓

✓

✓

✓

Hannes Hilbert

Storyline	<ul style="list-style-type: none"> • Logical • Consistent • Attractive • Clear 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>
Illustrations Pictures	<ul style="list-style-type: none"> • Fitting/Adequate • Granularity • Power of Expression • Support of Speaker 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>
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Density	<ul style="list-style-type: none"> • Too high • Too low • Balance of slides • Bullet point lists 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>
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✓

✓

✓

✓

✓

✓



Name	Presentation	Feedback
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Animation	<ul style="list-style-type: none"> • Focussed (message of the slide) • Speed • Unnecessary effects • Timing 	Excellent <input type="checkbox"/> Good <input type="checkbox"/> Improvable <input type="checkbox"/>
Density	<ul style="list-style-type: none"> • Too high • Too low • Balance of slides • Bullet point lists 	Excellent <input type="checkbox"/> Good <input type="checkbox"/> Improvable <input type="checkbox"/>
Delivery	<ul style="list-style-type: none"> • Personal style • Interaction with the audience • Complementary speech/illustrations 	Excellent <input type="checkbox"/> Good <input type="checkbox"/> Improvable <input type="checkbox"/>
Message	<ul style="list-style-type: none"> • Precise • True • „catching“ 	Excellent <input type="checkbox"/> Good <input type="checkbox"/> Improvable <input type="checkbox"/>

Heiner Ludwig

✓

✓

✓

✓

✓

✓

Daniel Schoenicke

Storyline	<ul style="list-style-type: none"> • Logical • Consistent • Attractive • Clear 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>
Illustrations Pictures	<ul style="list-style-type: none"> • Fitting/Adequate • Granularity • Power of Expression • Support of Speaker 	<p>Excellent <input type="checkbox"/></p> <p>Good <input type="checkbox"/></p> <p>Improvable <input type="checkbox"/></p>
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✓

✓

✓

✓

✓

✓

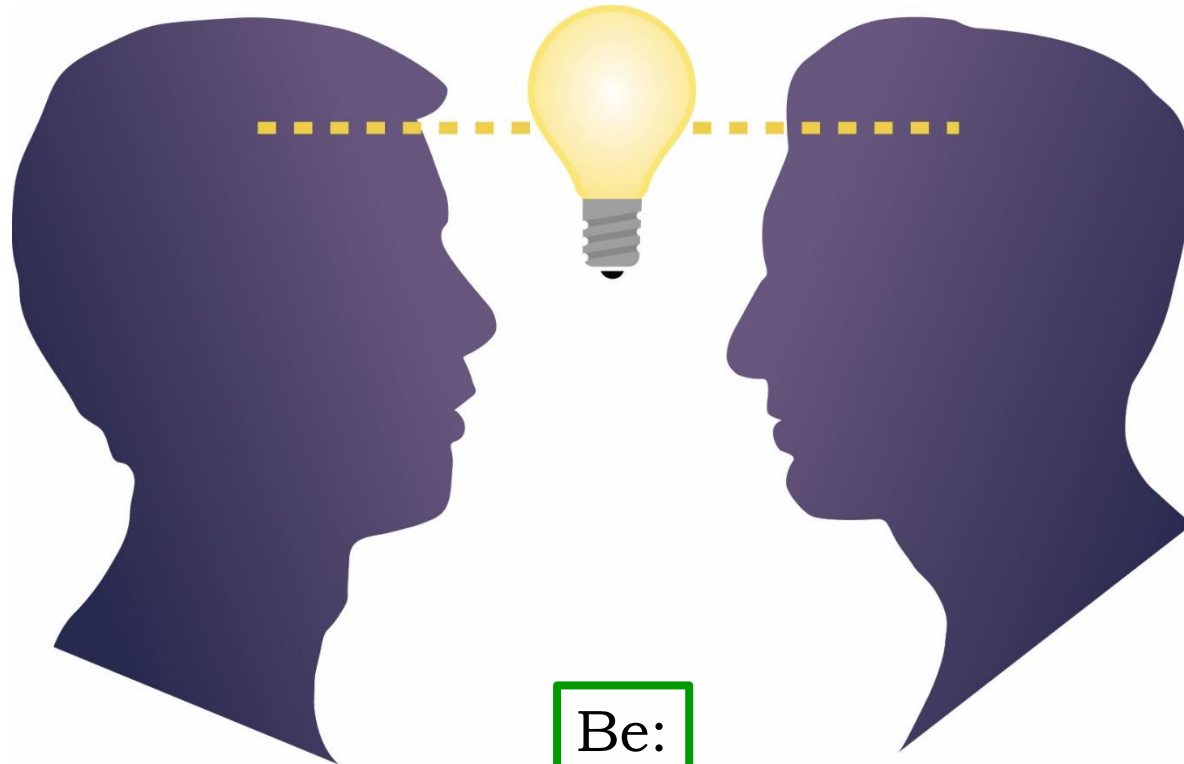
Content:

1. Introduction (F.J. Furrer)

2. Presentations and Feedback (all)

3. Final Words (F.J. Furrer)

Papers and Presentations do *transport* ideas



Be:

- focussed

- precise

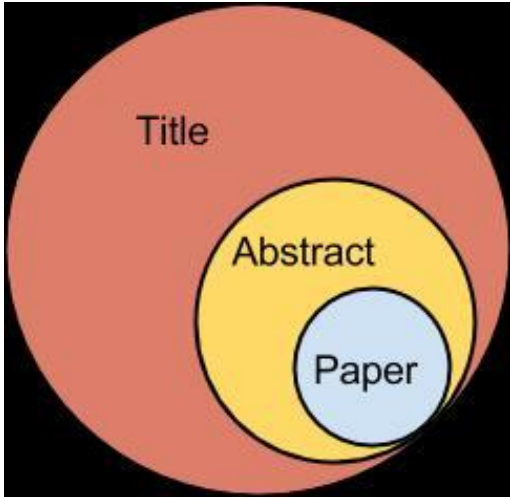
- interesting

- understandable

- direct

3 main areas of improvement:

Title



<http://blogs.nature.com/naturejobs/2014/11/03>

- ... catching
- ... promising
- ... seducing

Storyline



<http://www.hans-und-renate.de/2011/09>

- ... logical
- ... "simple"
- ... convincing

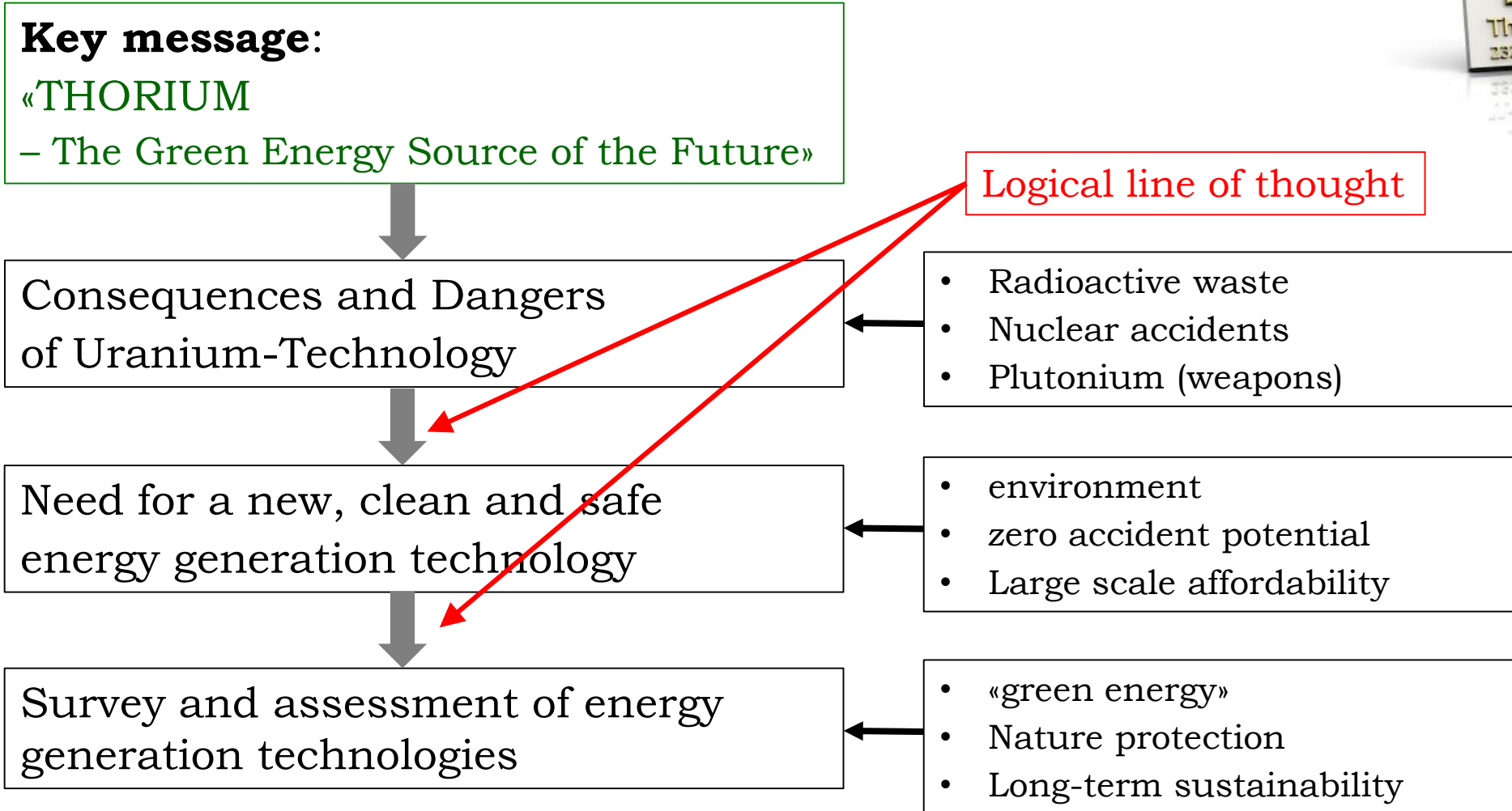
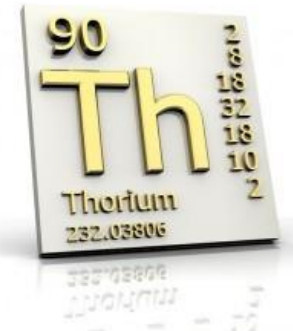
Unnecessary Concepts

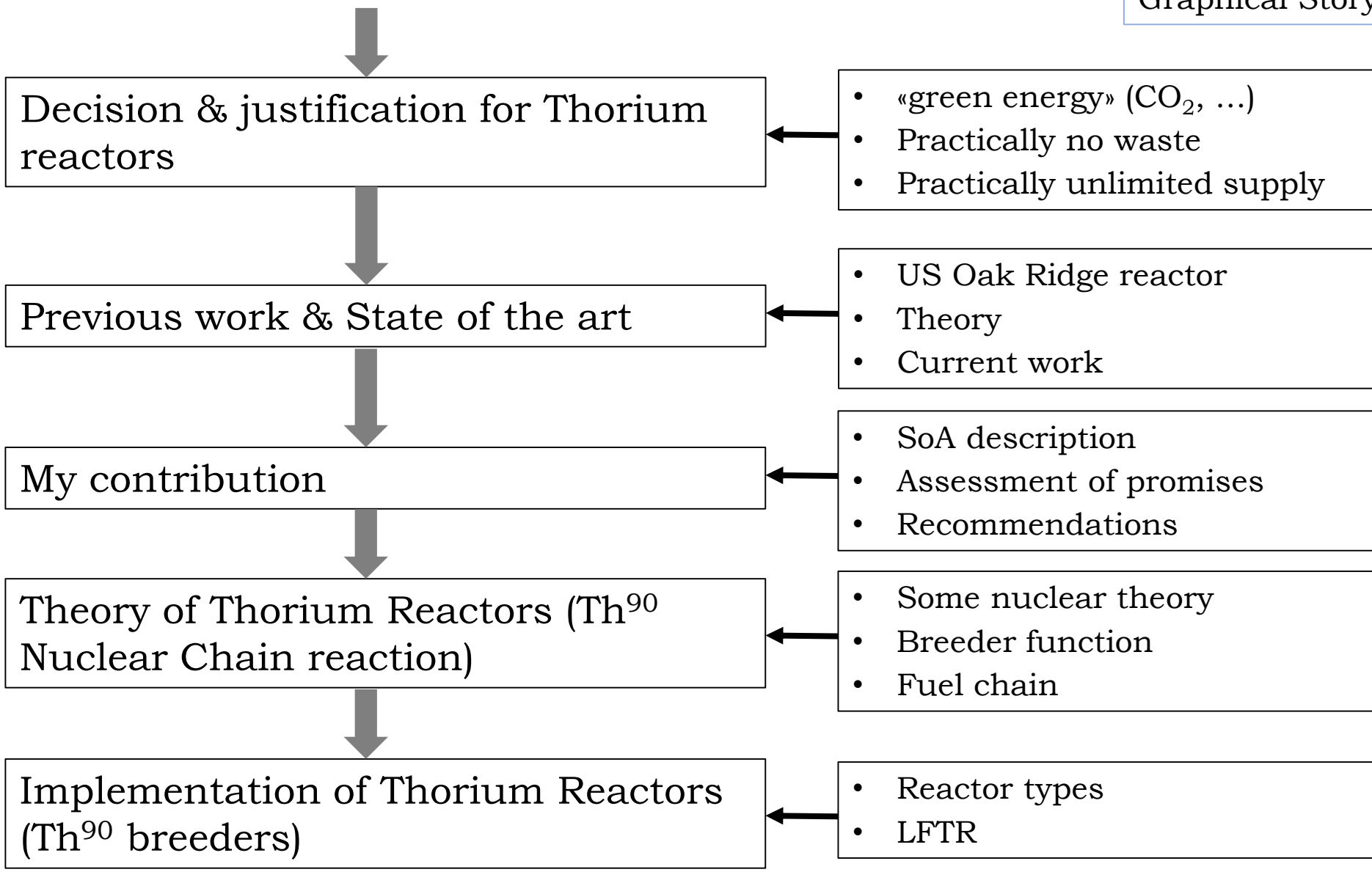


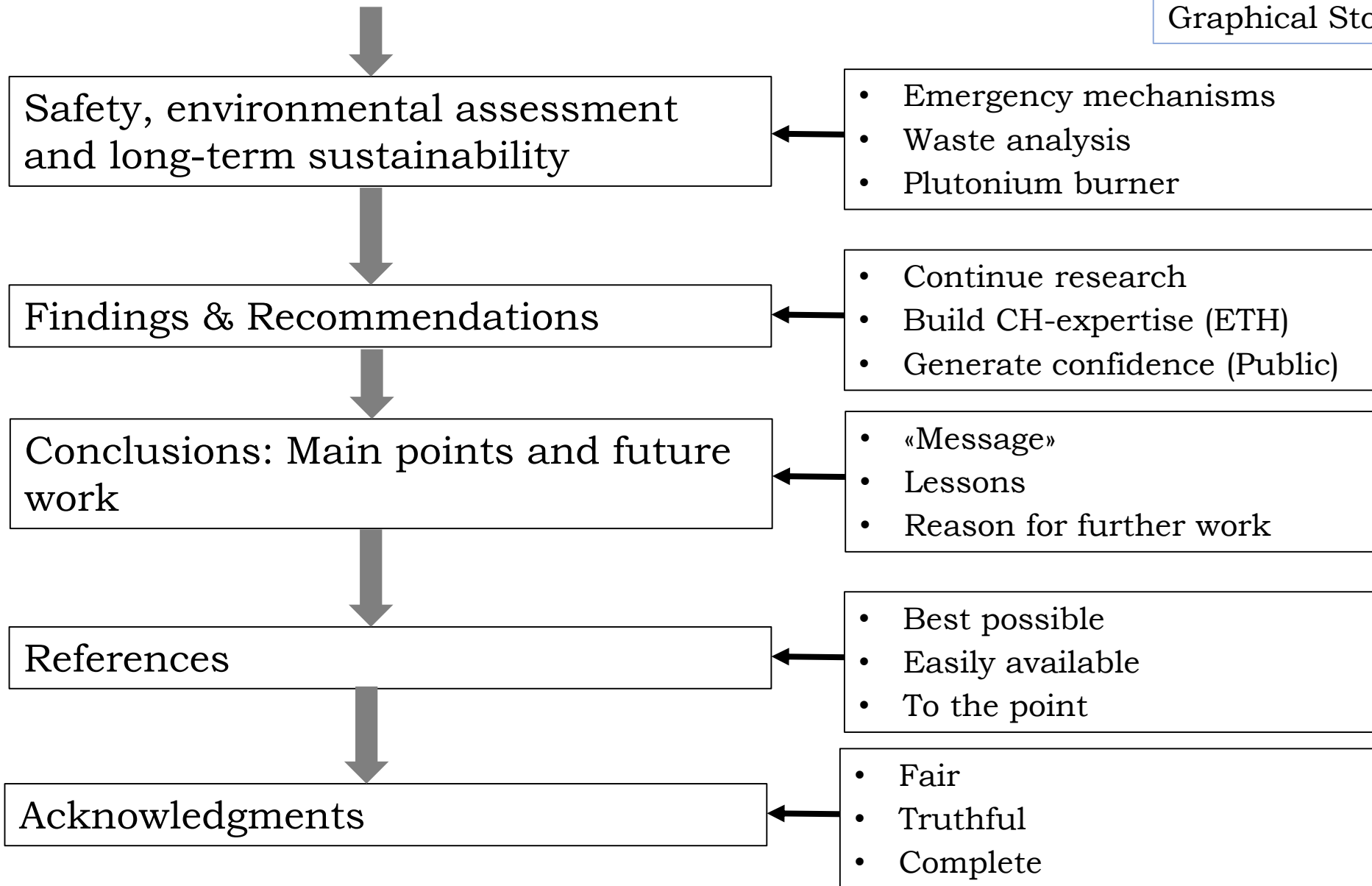
<http://www.deviantart.com/morelikethis>

- ... minimize
- ... define
- ... consistency

Graphical Storyline Check





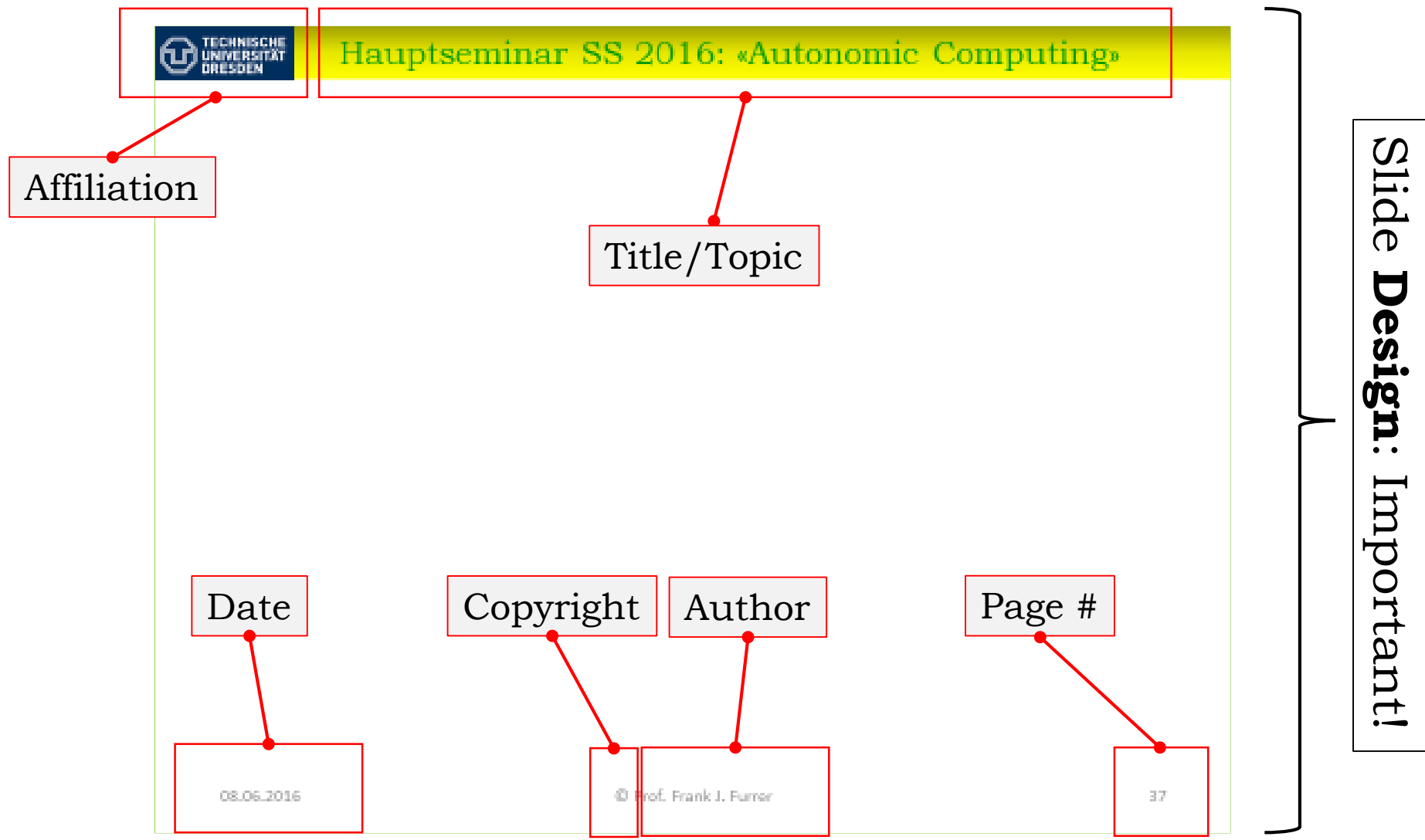


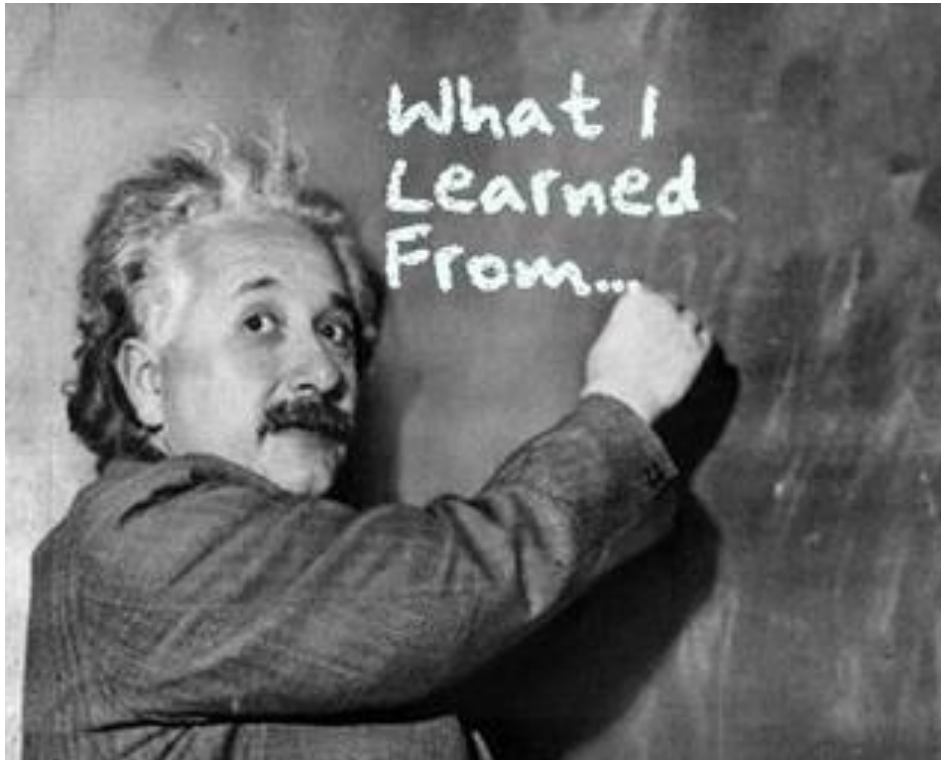
Eliminate unnecessary concepts



- Mark all **concepts** in your paper
- Is each concept really necessary?
⇒ if not, eliminate the ~~concept~~
- Are all the concepts well and precisely defined? ⇐ *ambiguity?*

Format of the Slides \Rightarrow Navigation Help!





<http://s574.photobucket.com>

What must your audience take home?



<http://www.proiothema.gr>

Your Message!

... and the methods, insights, results of your work

Your Message

<http://footage.framepool.com>

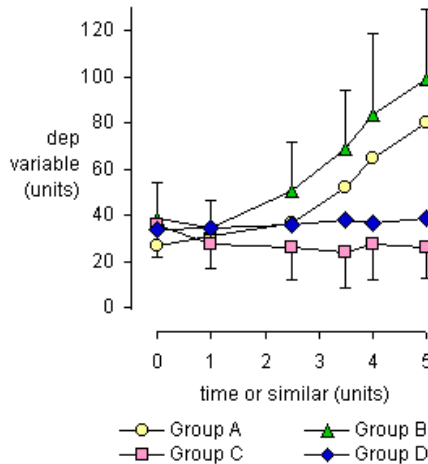
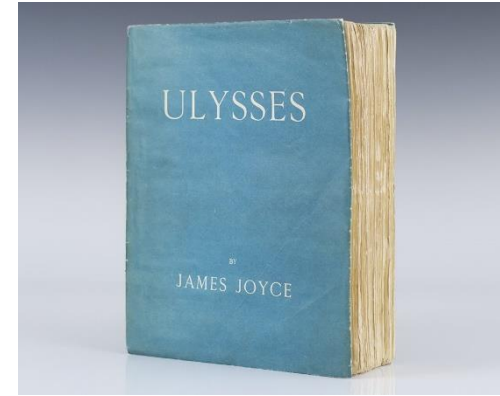


	yes	no	
Clear ?	<input type="checkbox"/>	<input type="checkbox"/>	✓
True ?	<input type="checkbox"/>	<input type="checkbox"/>	✓
Important ?	<input type="checkbox"/>	<input type="checkbox"/>	✓

Intellectual Property Ownership (1/2)

Intellectual property (IP) is a category of property that includes **intangible creations of the human intellect**

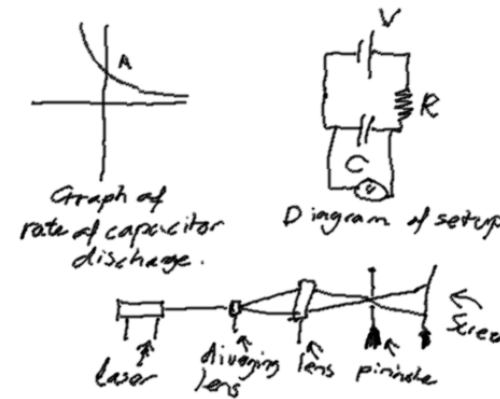
https://en.wikipedia.org/wiki/Intellectual_property



<http://www.sportsci.org>



<https://medium.com>



<https://askubuntu.com>

Dies ist ein Blindtext. An ihm lässt sich vieles über die Schrift ablesen, in der er gesetzt ist. Auf den ersten Blick wird der Grauwert der Schriftfläche sichtbar. Dann kann man prüfen, wie gut die Schrift zu lesen ist und wie sie auf den Leser wirkt. Dies ist ein Blindtext. An ihm lässt sich vieles über die Schrift ablesen, in der er gesetzt ist. Auf den ersten Blick wird der Grauwert der Schriftfläche sichtbar. Dann kann man prüfen, wie gut die Schrift zu lesen ist und wie sie auf den Leser wirkt.

Intellectual property is often protected and needs permission to be reused

Intellectual Property Ownership (2/2)

Four types of intellectual property:

- Trade Secrets
- Trademarks TM
- © Copyrights
- Patents



<https://www.nutraceuticalsworld.com>

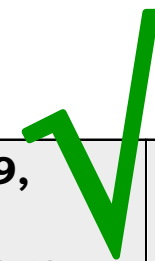
1) Make sure that you have the correct rights of use for the intended usage

2) Clearly state © Copyrights and Trademarks TM if you reuse

3) Strictly name sources (References, etc.)

4) No plagiarism (Never, not intentional nor accidental)

Next Steps

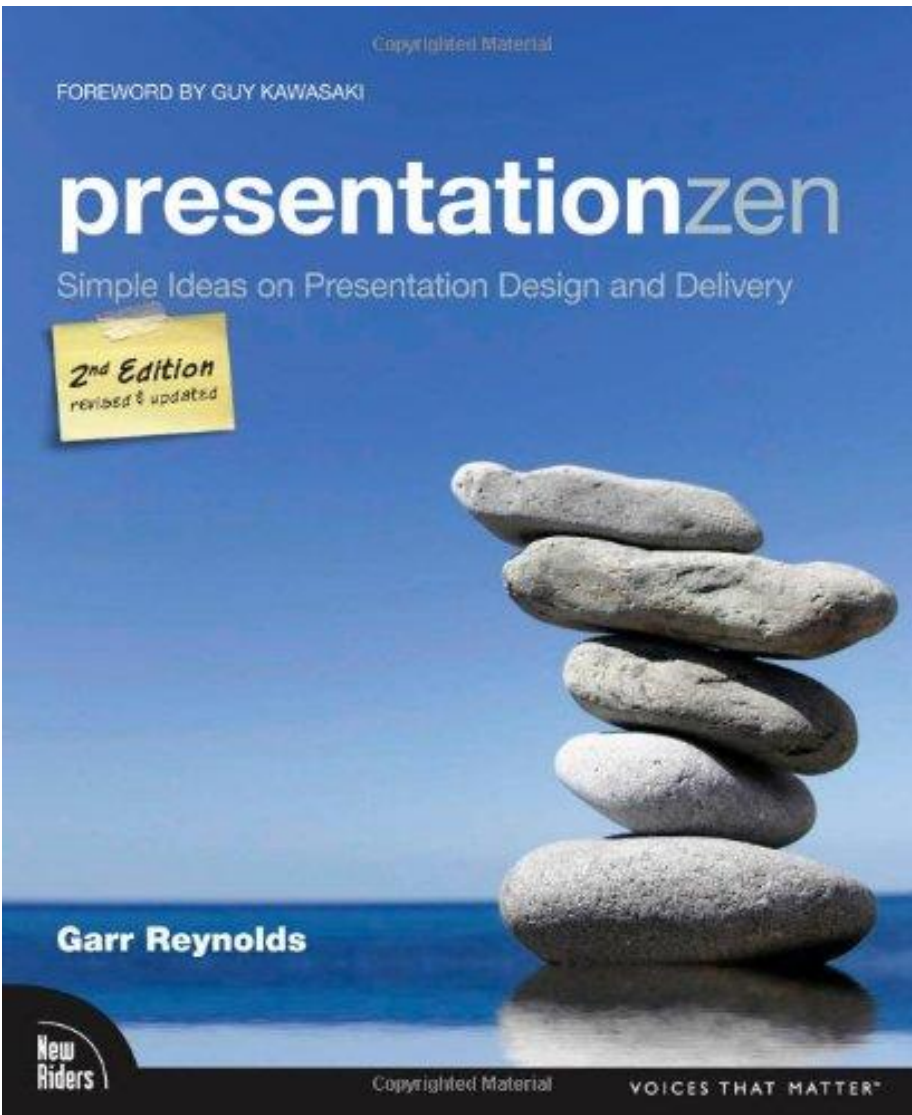


1st Seminar Day	Wednesday, June 19, 2019: 09:20 – 10:50/11:10 - 12:40 (2. + 3. DS), Room APB/INF 2101	<ul style="list-style-type: none"> • Participants presentations • Peer discussions, Feedback on style & content
Deliver 2 nd , improved draft of your paper to your peer reviewers (No storyline update required)	Friday, June 28, 2019	e-mail your paper: <ul style="list-style-type: none"> • Your peer reviewers • frank.j.furrer@bluewin.ch
Feedback from Reviewers	Monday, July 8, 2019	By e-mail from: <ul style="list-style-type: none"> • Your peer reviewers • frank.j.furrer@bluewin.ch

However, a **graphical storyline check** is recommended and welcome

Planning & Time Management





Garr Reynolds:

Presentation Zen

Simple Ideas on Presentation
Design and Delivery

New Riders, 2nd revised edition, 2011
ISBN 978-0-3218-1198-1

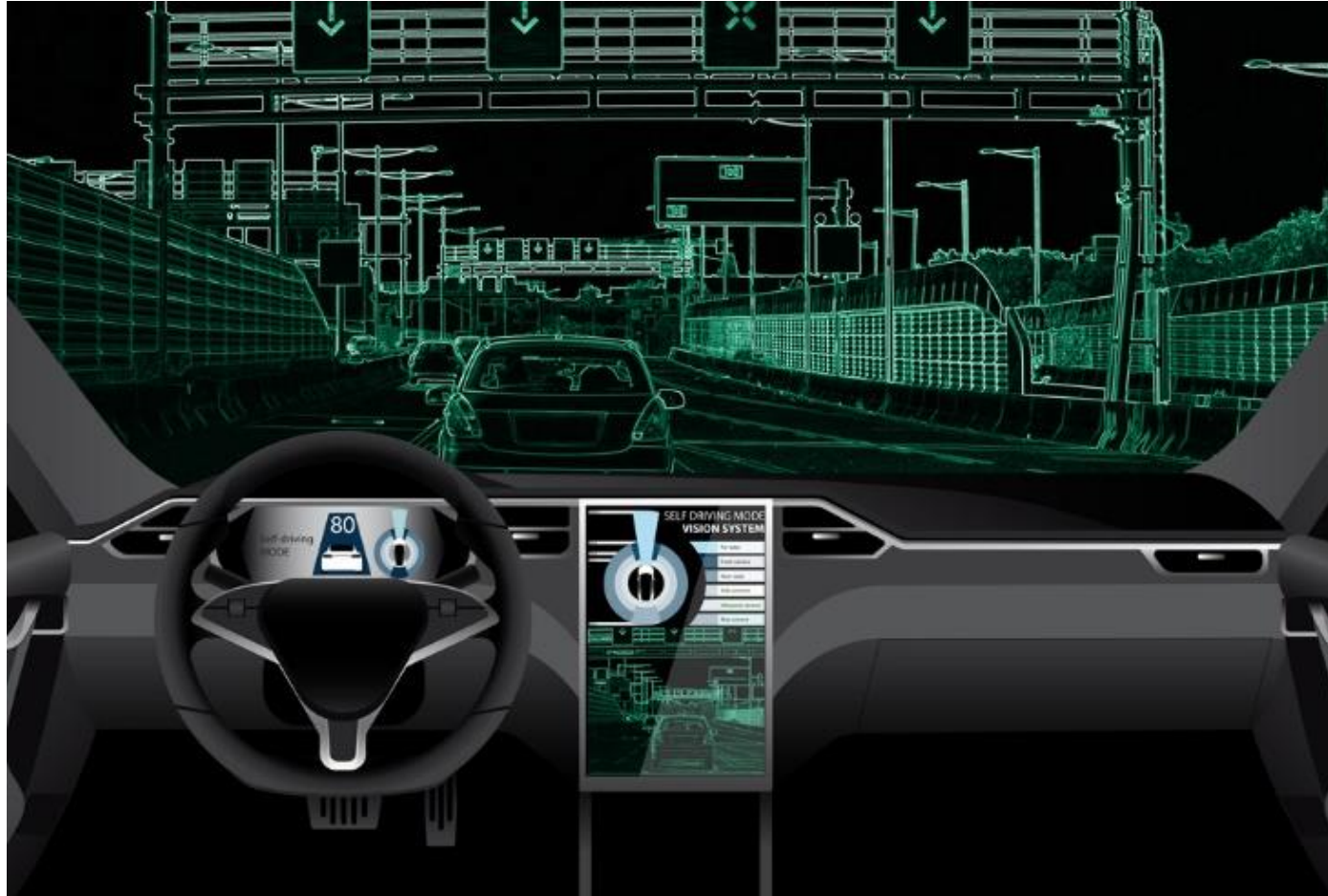
Communication Channel:

- Paper
- Slides
- Web-Pages
- «Back of the envelope»
- etc.



The first objective is to ensure
that what **you** think you have said
is the same
as what the **reader** thinks you have said

David Lindsay, 2013, ISBN 978-0-643-10046-6



Questions or Comments ?

2nd Seminar Day

**Wednesday, July 10,
2019: 09:20 –
10:50/11:10 - 12:40 (2. +
3. DS), Room APB/INF
2101**

- 2nd participants presentation
- Peer discussions, Feedback on style and content

