

After this talk,

- you may feel **greatly encouraged**, or
- you may awake **greatly rested**.

Communication in Computer Science

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The complete title

Tips and Tricks
for Communication in Computer Science:
Reviews, Papers and Talks

This may happen to you

- giving a talk
- writing a paper
- being exposed to peer review

This may happen to you

- giving a talk (PhD defense, job interview)
- writing a paper
- being exposed to peer review

This may happen to you

- giving a talk (PhD defense, job interview)
- writing a paper (thesis, progress report)
- being exposed to peer review

This may happen to you

- giving a talk (PhD defense, job interview)
- writing a paper (thesis, progress report)
- being exposed to peer review (criticism)

It does happen to others

- You attend talks.
- You read papers.
- You exercise your judgment.

The symmetry of communication

- the spoken word
- the written word
- criticism

This was then, and this is now

- Then: school,
learning (“**ap**prendre”).
- Now: university,
understanding (“**com**prendre”).

A concrete example: handling questions at the end of a talk

- Most students rush to answer,
as if they were passing an exam.
- But look, e.g., at Eleni Stroulia:
she first **puts the question into perspective.**
Learn from her.

The problem with questions

- They are rarely clear.
- Not everybody in the room hears them.

The problem with questions

- They are rarely clear.
So how can their answer be clear?
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The problem with questions

- They are rarely clear.
So how can their answer be clear?
- Not everybody in the room hears them.
So how can their answer be useful to all?

The real problem about questions

It is harder to ask a sensible question
than to supply a sensible answer.

(Persian proverb)

How to handle a question

The goal is **to communicate.**

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How to handle a question

The goal is **to communicate**.

- Show that you **understand the question**.
- Are you able to **repeat the question**?
- You may even need to **restate it**.
- Only answer it once you **both agree about it**.

Then you will **truly communicate**.

Plan

1. the medium
2. two key actors
3. structure and interpretation of paper titles

One language to rule us all

One language to rule us all

English

One language to rule us all

English

How many native speakers here?

Recommendation

Improve your English ASAP:

- the spoken word (ear, mouth);
- the written word (eyes, pen / keyboard).

Homework (1/2)

- View your DVDs **in English**
with subtitles in English.
- See some TV series **in full** (Firefly, ...),
and then see the best episodes again
without the subtitles.
- Read some audiobooks (Percy Jackson, ...).

Homework (1/2)

- View your DVDs **in English** **with subtitles in English.**
- See some TV series **in full** (Firefly, ...), and then see the best episodes again **without the subtitles.**
(Yes, that means: all of them for Firefly.)
- Read some audiobooks (Percy Jackson, ...).

Homework (2/2)

Read books about technical writing:

- [The Elements of Style](#) (Strunk and White)
- [A Handbook for Scholars](#) (Van Leunen)
- [Towards Clarity and Grace](#) (Williams)
- [How to Write Mathematics](#) (Steenrod)
- [Lessons from a Lifetime of Writing](#) (Morrell)

Homework (3/2)

Heck, also read books about writing from your favorite author:

- [On Cooper's Writing](#) (Twain)
- [Writing Magic](#) (Levine)
- [How to Write Science Fiction & Fantasy](#) (Card)
- [The Craft of Writing](#) (King)
- [Why I Write](#) (Orwell)

Plan

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Which key actors?

You and your PhD advisor

Your overall goal

To move on with a PhD degree.

Your intermediate goal

To acquire your PhD degree.

Your likely milieu: a PhD school

The scientific analogue of

- a plant nursery, and
- a training ground for the Olympic Games.

On the one hand

Generically:

- Clear rules
(number of ECTS points, etc.).
- Clear milestones
(qual exam, stay abroad, etc.).

On the other hand

Specifically:

- Original work
(including peer-reviewed publications).
- Specialized supervision
(therein lies the rub).

Your PhD supervisor and you

- He is **shaping you** (positively or negatively).
- He will **manage your discontinuity**
from student to researcher.
- He will **follow your career.**

Example: managing the discontinuity

A natural transition point: a stay abroad.

Before the stay abroad: a student.

After the stay abroad: a researcher.

Example: following you

- Reference letters.
- Career opportunities.

Example: following you

- Reference letters.
- Career opportunities.

And one day, you will outgrow him.

In Denmark

- The person in charge of a PhD student has to be a permanent employee.
- There can be two PhD supervisors.

In France

- PhD: habilitation to do research;
- and then: habilitation to direct research

In France

- PhD: habilitation to do research;
- and then: habilitation to direct research (though not necessarily like a GPS).

Terminology

- PhD supervisor (or advisor)
- PhD vejleder
- Doktorvater
- Directeur de thèse

Varieties galore

- A variety of topics.
- A variety of students.
- A variety of supervisors.

To say nothing of gender.

The variety of topics (1/2)

- foundational
- theoretical
- applied
- experimental
- developmental
- etc.

The variety of topics (2/2)

- Pre-determined or open ended?
- If pre-determined:
the 80%/20% Google model?

The variety of students

- young / older
- local / national / international
- isolated / among others

The variety of supervisors

- inexperienced / experienced
- local / national / international
- only expert / in a group of experts

A common point

One day,
maybe not so long ago,
your PhD supervisor
was a PhD student.

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your PhD supervisor
was a PhD student.

(“not so long ago” is a very subjective measure)

Communication

- How you may see your PhD supervisor.
- How he may see you.

Communication

- How you may see your PhD supervisor.
- How he may see you.

(Yes, it sounds like whining.

But it is **sincerely felt.**)

View from the student (yin)

- Why does he not **listen to me**?
- Why does he not **support me**?
- Why does he not **help me**?

View from the student (yang)

- Can't he just **tell me what to do?**
- What I do is **never good enough.**
- He expects **too much of me.**
- **I would like to do more.**

More of the same

phdcomics.com

View from the supervisor (yin)

- He **never does what I want**.
- What he does is **nowhere near perfect**, ever.
- He **never takes an initiative**.
- He **is so slow** and he **stops too soon**.

View from the supervisor (yang)

- I managed OK without supervision,
why can't he?

View from the supervisor (yang)

- I managed OK without supervision,
why can't he?

(sigh)

Heard at a seminar for supervisors

“He only comes to see me at 16h00
when I have to leave to get my kid
at the day care.”

Heard at a seminar for supervisors

“He only comes to see me at 16h00
when I have to leave to get my kid
at the day care.”

But a PhD student should not be supernumerary
in the PhD supervisor's calendar.

The essence of the problem

- **Egos get in the way** (“me, me, me”).

The essence of the problem

- **Egos get in the way** (“me, me, me”).
- Ask not what the other can do for you.

The essence of the problem

- **Egos get in the way** (“me, me, me”).
- Ask not what the other can do for you.
- Ask not what you can do for the other
either.

Antoine de Saint-Exupéry in 'Citadel'

Look in the same direction.

Learn to know each other

Criteria:

- respect;
- esteem.

Learn to know each other

Criteria:

- respect;
- esteem.

Empathy helps too.

Empathy

Example:

The sight of a PhD supervisor
attending a talk
given by his PhD student.

Empathy

Example:

The sight of a PhD supervisor
attending a talk
given by his PhD student.

- From reading his e-mail

Empathy

Example:

The sight of a PhD supervisor
attending a talk
given by his PhD student.

- From reading his e-mail
- to taking notes.

Understand why he is weird

Your PhD supervisor is subjected to:

Understand why he is weird

Your PhD supervisor is subjected to:

- management duties,

Understand why he is weird

Your PhD supervisor is subjected to:

- management duties,
- funding pressure,

Understand why he is weird

Your PhD supervisor is subjected to:

- management duties,
- funding pressure, and
- peer reviewing.

Establish an **intellectual communion**

- Share the same culture
(be it technical or non-technical).

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- Read what he wrote.
- Join his endeavors.

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(Communing helps to communicate.)

Empathy test

- Can he be happy for you?
- Can you be happy for him?

So, you and your PhD supervisor

- Learn to know each other.
- Learn to cooperate.
- Remember that in the end,
the message is more important
than the messenger(s).

Plan

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3. structure and interpretation of paper titles

Your title

- The spearhead of your paper.
- Subject and predicate.
- What and how.

Subject and predicate

Subject: the topic of your work.

Predicate: your spin on this topic.

Form matters!

Use line breaks to support your message.

Typical slide with a bad line break

A long time ago in a galaxy far,
far away....

With a better line break

A long time ago

in a galaxy far, far away....

With a better line break,
with an extra comma

A long time ago,
in a galaxy far, far away....

With a better line break,
with an extra comma,
and with a proper ellipsis

A long time ago,
in a galaxy far, far away...

With a better line break,
with an extra comma,
and with a proper ellipsis

A long time ago,
in a galaxy far, far away...

(I too find this lack of grammar disturbing.)

Title with unsupportive line breaks

Implicit and Explicit Aspects of Scope and
Block Structure

Implicit and
Explicit Aspects of Scope and Block
Structure

Title with supportive line breaks

Implicit and Explicit Aspects
of
Scope and Block Structure
Ulrik Pagh Schultz (1997)

Rise from the anecdote to the principle

Don't stop at the “**how**”: seek the “**what**”.

- The “**how**” of Ulrik's thesis is **λ -lifting** and **λ -dropping** (i.e., two program transformations).
- The “**what**” of Ulrik's thesis is **lexical scope** and **block structure**.

Rise from timeliness to timelessness

What was considered modern not so long ago
is terribly passé today.

Rise from timeliness to timelessness

What was considered modern not so long ago
is terribly passé today.

Coco Chanel:

“Fashion is what goes out of fashion.”

Common patterns

- **Just the facts**: noun
adjective noun
- **Qualification**: X of Y
- **Enumeration**: X and Y
X, Y and Z
- **Empowerment**: X {for|with|using|in} Y
- **Action**: doing X
- **Substantiation**: X: Y

X

Linear Logic

The Zipper

X of Y

Principles of Programming Languages

The Lord of the Rings

X and Y

Word and Object

Romeo and Juliet

Communication and Concurrency

There and Back Again

X, Y and Z

Call-by-name, call-by-value **and** the λ -calculus

And more

Partial Evaluation
and
Automatic Program Generation

Automata, Languages, **and** Programming

X for Y

Here at GTTSE 2011:

Megamodels **for** O/R/X Mapping

Requirements **for** Self-adaptation

And more

A Domain-specific Wiki

for

Programming Technologies

Dynamic Program Analysis

for

Database Reverse Engineering

X with Y

Compiling **with** Continuations

Variation Programming **with** the Choice Calculus

X in Y

Logic **in** Computer Science

Compilation **in** the 21st Century

(X and Y) for doing Z

Methods **and** Tools

for

Analyzing Software Evolution

doing X in (Y and Z)

Finding Patterns

in

Biological and Molecular Data

doing (X of Y) with Z

Managing the Evolution **of** F/OSS
with Model-Driven Techniques

A in B: C and D

Model Management **in** the Wild:
Foundations **and** Applications

Recommendations

- Seek **linear, one-pass titles**.
- **Don't** pile up adjectives and nouns.

Exercise

- Analyze other titles.
- Construct a title with the following structure:

“A and B for C in D: E, F and G”

- Mindfully compose your own title.

Summary

Your title should be

- accurate,
- simple,
- punchy, and
- memorable,

and its form should support its content.

Plan

1. the medium ✓
2. two key actors ✓
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The two other lectures

- receiving and offering criticism
- reading and writing
- attending a talk and giving one

Thank you.