HOW TO...

Publish a world class(?) paper
WHO IS THIS GUY?

ASSISTANT PROFESSOR, BEHAVIOURAL AND MOVEMENT SCIENCES: VISUAL NEUROSCIENCE

TOMAS Knapen
Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium.
WHAT DEFINES...

a “world-class” paper?

**Novelty**

BREAKS NEW GROUND

Your research findings show something that goes (far) beyond present knowledge.

Provide a new way of seeing things.

---

**Robust**

INSPIRES TRUST

Your research is conducted such that readers trust your findings.

You show you understand what you’re talking about.

---

**General**

NOT JUST YOUR FIELD

Researchers and lay people alike say “Wow!” when they hear about your finding.

How do you relate your findings broadly?

---

**Ideas & Results**

**Methods**

**Communication**
Not about papers (sorry UBVU), but about **who you are as a scientist**.

Scientists I admire invest in **Ideas & Results, Methods, Communication**

So they will be able to write world-class papers (and more than one)
NEW IDEAS

Think what no one has thought before…..

PRACTICE, PRACTICE, PRACTICE

_Time:_ Many hours of reading articles, conferences, journal clubs…

_Breadth:_ Reading widely sparks creativity

_Memory:_ Keep a journal of ideas

_Safety in numbers:_ Team up with like-minded people

*Find mentors!*

_To be at the forefront of your field, you have to overtake your field._
NEW IDEAS
Think what no one has thought before.....

First year PhD
01 GREAT IDEA!
✓ You wake up
✓ Insanely great idea!
✓ Literature search:
✓ Published in Nature, 1961

02 WHAT AN INSIGHT!
✓ Performing experiment
✓ Suddenly it hits you!
✓ Run to professor
✓ Published in Science, 1974

03 EVPEKA!
✓ In conversation with friend
✓ You suddenly see a link!
✓ You’re confident, start new experiment
✓ Finding already published in PNAS, 1990

BUT:
It’s about the process of generating ideas, not the ideas themselves!

Train your creativity!
METHODS

 invest in learning new techniques

TECHNIQUES ARE YOUR SCIENTIFIC MUSCLE.

The more techniques you master, the stronger you are.

- You solve problems faster: efficiency
- You can do things other people can’t: co-authorships…
- You understand better what you can and cannot conclude on the basis of results
- Brings proving your novel ideas within reach

Muscles need training: invest for the long run!

World keeps moving: Keep up!

Skills pay off outside of science!
COMMUNICATION

Simulate your story

Try out ways of talking about your research finding

1. practice your elevator pitch with friends & family
2. present your findings to the research group
3. present your findings at conferences

At each turn, listen very carefully and try to find out:

1. what makes people understand your findings
2. what makes people think your findings are cool
3. what makes people miss the point!
Answering a single question can be hard, but is straightforward: an easy path to the solution

Writing, conveying an idea is more complicated:

• who is your intended audience, and what:
  • do they already know?
  • do they find interesting?
  • are they suspicious of?

So many different possible paths!

FOCUS
COMMUNICATION

The structure of a paper: Mensh & Körding, Biornchiv 2017

**Context**, **Content**, **Conclusion**

**Abstract**

- The one question is:
  - Here we do
  - What we found
  - How it matters

**Introduction**

- Big problem in science
- Narrower problem in field
- Yet narrower paper Gap

**Summary**

**Field domain**

- What field knows
- Remaining gap

**Our approach**

- Our results
The structure of a paper: Mensh & Körding, Biorchiv 2017

**Context, Content, Conclusion**

**Results**

- **Methods summary**
  - Logic 1 (e.g. raw data)
  - Logic 2 (e.g. raw data)
  - Logic n (e.g. final stats)

**Our question**
- General methods
- Answer sought
- Figures support
- logic steps
- We need to show
- That is how we show
- We thus know
The structure of a paper: Mensh & Körding, Biorchiv 2017

**Discussion**

- Results -> **Conclusion**
- Limitations in filling gap
- Limits in generalization
- Contributions beyond
- Science is better now

**We found**
- We filled gap

**Our limitation**
- Details
- How to interpret/Fix

**Our strength**
- What it is useful for
- The difference made
Don’t take it personal, it rarely is.

Stay composed and friendly; the reply to reviewers is your chance to stage a come-back.

Win over the editor!

- Show you understand their concerns, if valid
- Argue, politely, that their invalid concerns are just that, invalid.
- Stay true to your own ideas, don’t let your paper become a zombie-Frankenstein paper!

UNLESS YOU’RE VERY LUCKY, YOU’LL RECEIVE REVIEWER COMMENTS THAT HURT

Dealing with rejection in the review process
Science is a slow enterprise, and there are many setbacks in science. This can wear you down...

Cheesy, but true, your personal strategy is all the more important:

• Successful scientists take setbacks in stride
• Are focused on long-term goals
• Are open to others, and new ideas
Plan, Practice, Persevere

“Genius is 1% inspiration and 99% perspiration”

Thomas A. Edison

PPP
THANK YOU