



**POWER
WRITING**
for science & tech people

Lodz, October 18, 2018

**About
today**

RULES

1. You are in charge, I'm at your service. Use the time wisely.
2. Questions are welcome anytime.
3. Laptop or mobile is ok, but please don't drift away!

GENERAL GOALS

1. Start thinking about communication in another way.
2. Practice some skills
3. Start a learning process.

**About
yours
truly**

Olle Bergman

M.Sc. Chemical Engineering

**“Communications Consultant,
Public Speaker & Professional
Writer with a passion for
people, science, language &
history.”**





Eskilstuna



Sigismund
Zygmunt III Waza
1566–1632

Kung av Sverige
1592–99

*Król Polski i wielki
książę litewski*
1587–1632





LUNDS
UNIVERSITET

NE
Ad
agency
Gambro



Self-
employed
consultant



1990

2000

2010

Ms Sc Dpt of
Chem. Neuro-
Eng. Chemistry,
Lund
University









NS Honeybee swarms act like superorganism

Säker <https://www.newscientist.com/article/2179592-honeybee-swa...>

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DAILY NEWS 17 September 2018

Honeybee swarms act like superorganisms to stay together in high winds



A bee swarm is like a superorganism
Tim Graham/Getty

By Yvaine Ye

A swarm of **honeybees** acts like a superorganism that responds to physical stress by changing shape – even though doing so comes at a physical cost to some individuals.

Colonies of European honeybees reproduce by releasing a queen from the nest accompanied by an entourage of colony workers. This swarm often attaches itself to the underside of a tree branch – taking on the shape of an inverted cone with the queen safely at the centre – while scout bees search for a good place to build a new nest.

Researchers already know that the cone can withstand temperature changes and rain by changing its shape and appearance. During high winds the cone changes too, typically becoming flatter and hugging closer to the underside of the branch.

To understand how individual bees work together to generate a swarm-wide response, Orit Peleg at Harvard University and his colleagues attached a bee cluster to the underside of a board hanging in their laboratory and shook the board horizontally to mimic the physical stress of high winds.

Bee quake

Collective mechanical adaptation

Säker <https://www.nature.com/articles/s41567-018-0262-1>

nature.com > nature physics > letters > article a nature research journal

Search E-alert Submit Login

Letter | Published: 17 September 2018

Collective mechanical adaptation of honeybee swarms

O. Peleg, J. M. Peters, M. K. Salcedo & L. Mahadevan

Nature Physics (2018) | Download Citation

Download PDF

Sections Figures References

Abstract

Main

Additional information

References

Acknowledgements

Author information

Supplementary information

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About this article

Abstract

Honeybee *Apis mellifera* swarms form large congested tree-hanging clusters made solely of bees attached to each other¹. How these structures are maintained under the influence of dynamic mechanical forcing is unknown. To address this, we created pendant clusters and subject them to dynamic loads of varying orientation, amplitude, frequency and duration. We find that horizontally shaken clusters adapt by spreading out to form wider, flatter cones that recover their original shape when unloaded. Measuring the response of a cluster to an impulsive pendular excitation shows that flattened cones deform less and relax faster than the elongated ones (that is, they are more stable). Particle-based simulations of a passive assemblage suggest a behavioural hypothesis: individual bees respond to local variations in strain by moving up the strain gradient, which is qualitatively consistent with our observations of individual bee movement during dynamic loading. The simulations also suggest that vertical shaking will not lead to significant differential strains and thus no shape adaptation, which we confirmed experimentally. Together, our findings highlight how a super-organismal structure responds to dynamic loading by actively changing its morphology to improve the collective stability of the cluster at the expense of increasing the average mechanical burden of an individual.

Main

Collective dynamics allow super-organisms to function in ways that a single organism cannot, by virtue of their emergent size, shape, physiology and behaviour². Classic examples include the physiological and behavioural strategies seen in social insects (for example, ants that

*Start a learning
process to ...*

- ▶ **Deepen and
broaden your
view regarding
communication**

- ▶ **The Inverted Pyramid**
- ▶ **Writing a lede**
- ▶ **The 5 Ws**

- Do you consider yourself a skilled communicator?
- Have you been writing news or web texts?
- Are you a great writer?

Basic principles of communication

§ why rhetoric is still relevant in AD 2018

1
**Define
your task.**

Microsoft[®]

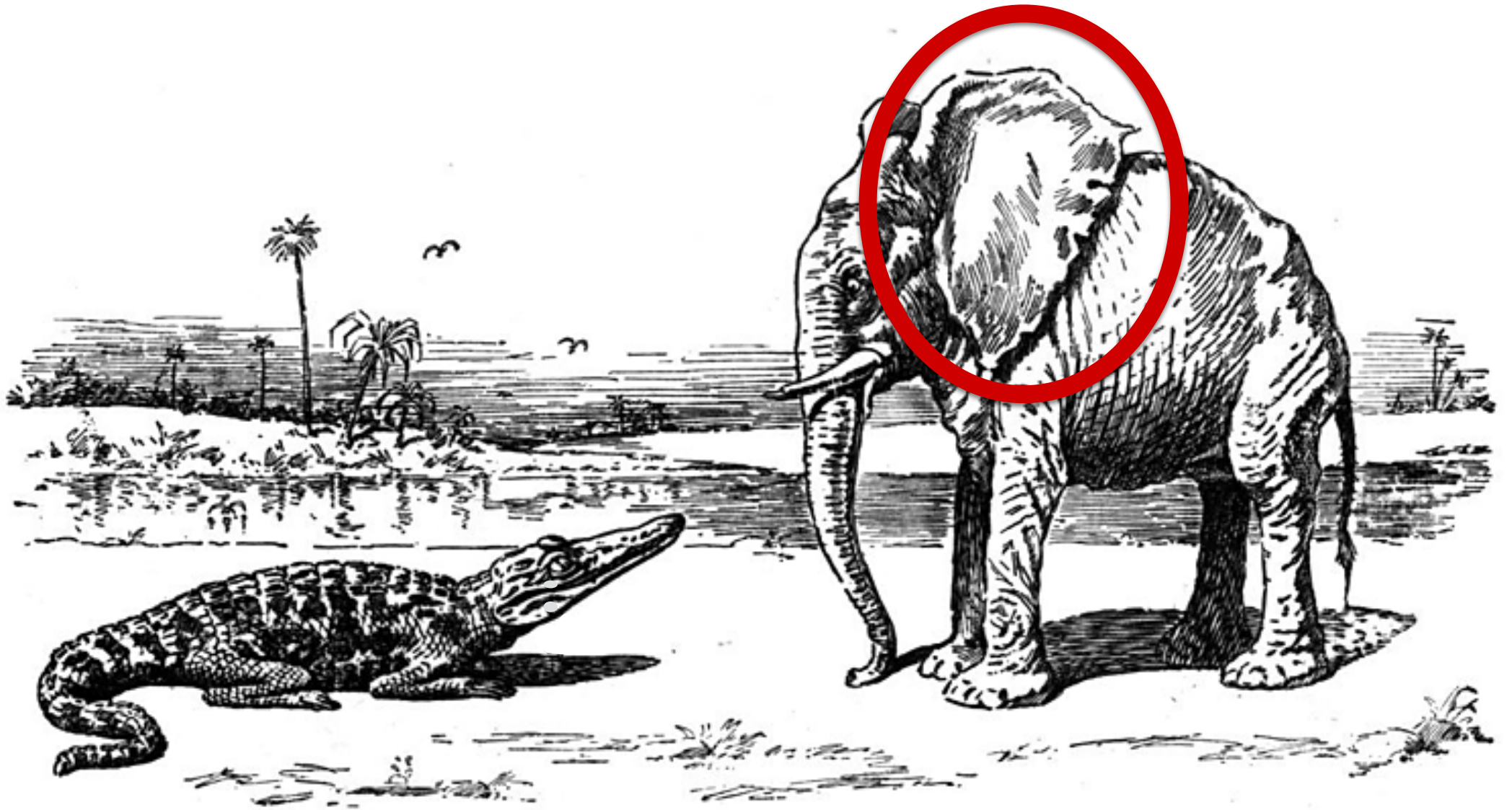
WHERE DO YOU WANT TO GO TODAY?[™]



- ▶ **Transfer information?**
- ▶ **Create understanding?**
- ▶ **Convince opponent?**
- ▶ **Sell an idea or a product?**
- ▶ **Influence decisions?**
- ▶ **CHANGE THE WORLD!!**

**Analyze your
target group.**

A large, bold, yellow number '2' is centered on the page, overlapping the text 'Analyze your target group.' The number is thick and has a slight shadow effect, making it stand out against the blue background and the white text.



What ...

- ▶ ... do they know?
- ▶ ... do they want?
- ▶ ... do they need?
- ▶ ... motivates them?



Australopithecus afarensis

HOMEOSTASIS

SECURITY

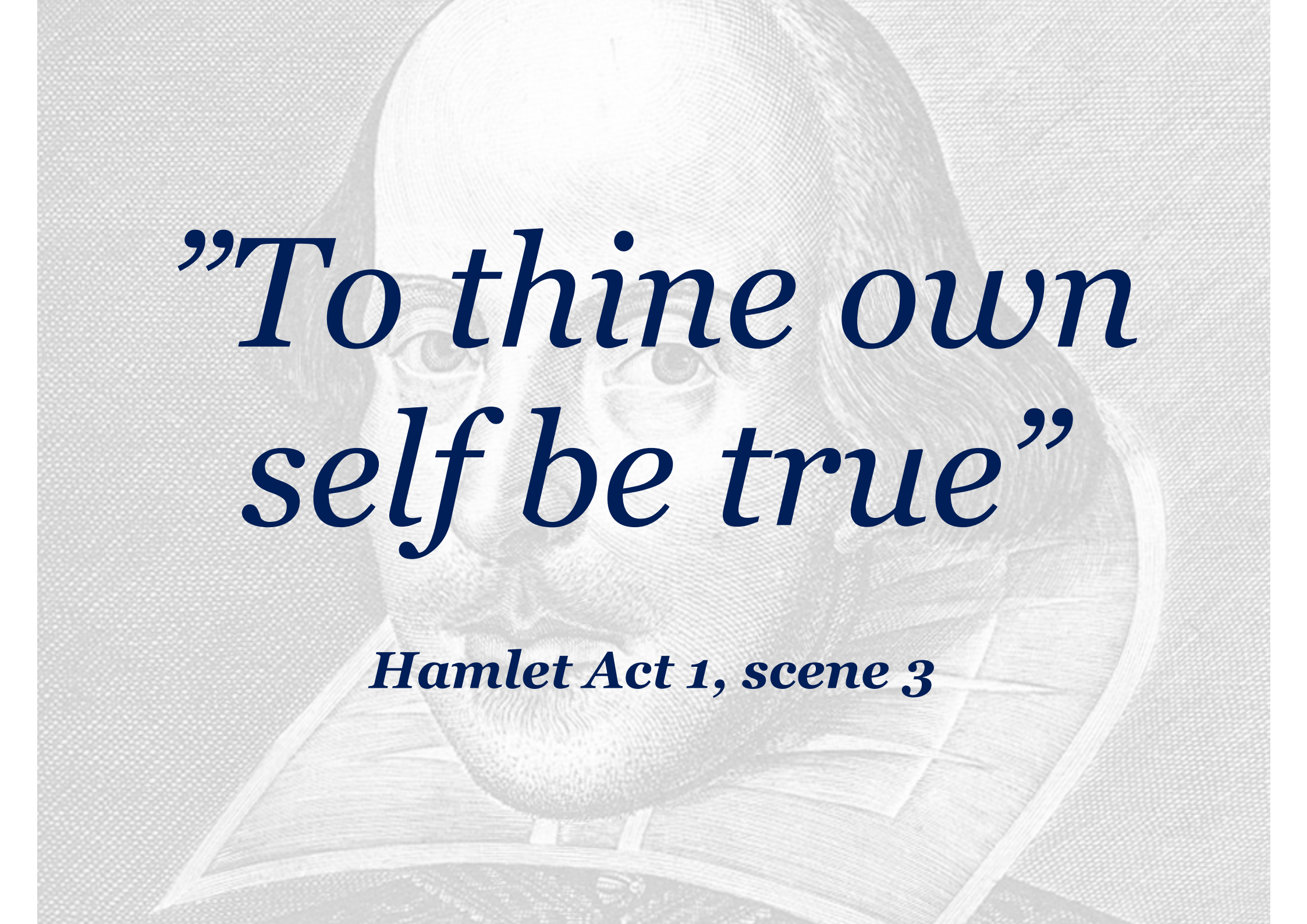
HIERARCHY

REPRODUCTION

What ...

- ▶ ... do they think they know?
- ▶ ... do they want to be?
- ▶ ... makes them feel insecure?
- ▶ ... boosts their ego?

3
Know yourself.



*”To thine own
self be true”*

Hamlet Act 1, scene 3



Passion

**Understand
the limitations
at hand.**

A large, bold, yellow number '4' is centered over the text, partially obscuring the words 'Understand', 'the', and 'at hand'.





5
**Seek inspiration
in all types of
communication.**





RHETORIC

▶ *Exordium*

▶ *Narratio*

▶ *Propositio*

▶ *Probatio*

▶ *Refutatio*

▶ *Peroratio*

▶ *Introduction*

▶ *Background*

▶ *Thesis*

▶ *Proof*

▶ *Refutation*

▶ *Conclusion*

- ▶ **Title**
- ▶ **(Abstract)**
- ▶ **Introduction**
- ▶ **Materials & Methods**
- ▶ **Results**
- ▶ **Conclusions**
- ▶ **References**
- ▶ **Acknowledgements**



TOOL

#1

ΕΤΗΘΟΣ

ΡΑΤΗΘΟΣ

ΛΟΓΟΣ

ΕΤΗΘΟΣ

ΡΑΤΗΟΣ

LOGOS



A man with short, dark hair, wearing a dark suit jacket, a light green shirt, and a patterned tie, is smiling slightly. He is holding a smartphone in his right hand. The background is a blurred office environment with papers and a desk. The word "Marketing" is written in a large, elegant, black cursive font across the center of the image.

Marketing

Attention

Interest

Desire

Action



A woman with glasses is sitting on a couch, reading a book to two young children. The children are looking at the book. The scene is dimly lit, suggesting an evening or indoor lighting. The woman is wearing a dark top, and the children are wearing light-colored clothing. The background shows a window with curtains.

Storytelling



Nobel Prizes and Laureates

Medicine Prizes  < 2008 >

▶ [About the Nobel Prize in Physiology or Medicine 2008](#)

▼ Harald zur Hausen

[Facts](#)

[Biographical](#)

[Nobel Lecture](#)

[Banquet Speech](#)

[Interview](#)

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[Photo Gallery](#)

[Prize Presentation](#)

[Other Resources](#)

▶ [Françoise Barré-Sinoussi](#)

▶ [Luc Montagnier](#)

[All Nobel Prizes in Physiology or Medicine](#)

[All Nobel Prizes in 2008](#)



The Nobel Prize in Physiology or Medicine 2008

Harald zur Hausen, Françoise Barré-Sinoussi, Luc Montagnier

Share this:      8 

Harald zur Hausen - Facts



Photo: U. Montan

Harald zur Hausen

Born: 11 March 1936,
Gelsenkirchen, Germany

Affiliation at the time of the
award: German Cancer Research
Centre, Heidelberg, Germany

Prize motivation: "for his discovery
of human papilloma viruses causing
cervical cancer"

Field: disease transmission, medical
oncology, virology

Prize share: 1/2

Share this:      8 





**Writing
with
IMPACT**

- ▶ **The Inverted Pyramid**
- ▶ **Writing a lede**
- ▶ **The 5 Ws**

The writer

Write **FASTER** in a
STRUCTURED way.

The reader

Find **RELEVANT** texts
and **ENJOY** them more
and **UNDERSTAND**
them better.



TOOL

#2

The inverted pyramid



Really interesting stuff

Not so
interesting
stuff

"The Lead": The most important info

Who? What? Where? When? Why? How?

Approximately 30 words (1-2 thin paragraphs)

May include a "hook" (provocative quote or question)

"The Body": The crucial info

Argument, Controversy, Story, Issue

Evidence, background, details, logic, etc.

Quotes, photos, video, and audio that support, dispute, expand the topic

"The Tail": extra info

Interesting/Related items

May include extra context

In blogs, columns, and

other editorials: the

assessment of the

journalist



TOOL

#3

The lede

“A lead paragraph (sometimes shortened to lead; also spelled **lede**) is the opening paragraph of an article[or other written work] that summarizes its main ideas.”

Wikipedia

“Never bury the lead” is a common phrase from journalism. In a news story, the “lead” (aka lede) is the first few sentences that quickly convey the gist of the story. When done right, whether in a newspaper article, resume or LinkedIn profile, a good lead makes the reader want to keep reading. Burying it, on the other hand, can cause a reader to lose interest.

Forbes

Ketamine, a drug that’s shown promising results in a number of small studies as a treatment for depression, could be producing its effects by lighting up the brain’s opioid system, the circuitry that controls pain, reward, and sometimes addictive behavior, NPR reports.

Science

Australia’s new prime minister has abandoned the country’s policy for cutting greenhouse-gas emissions. Climate scientists say the move means the government has effectively dropped its commitment to the 2015 Paris climate agreement.

Nature



TOOL

#4

▶ **What?**

▶ **Who?**

▶ **When?**

▶ **Why?**

▶ **Where?**

▶ **How?**

A woman with long brown hair, wearing a white button-down shirt, is holding a grey pen in her right hand. She is looking towards the camera with a neutral expression. The background is a light, slightly blurred grey. Overlaid on the image is the text "TIME TO WRITE!" in large, bold, red, sans-serif capital letters. The text is arranged in three lines: "TIME" at the top, "TO" in the middle, and "WRITE!" at the bottom. There are some faint, glowing white lines in the background, possibly representing a signal or a thought process.

**TIME
TO
WRITE!**

- ▶ **The Inverted Pyramid**
- ▶ **Writing a lede**
- ▶ **The 5 Ws**

goo.gl/N1cHuL



Getting through to Granny

– a reflection on popularization

“To explain something simply, you have to do quite a lot of work.”

BRIAN COX



1
**Know your
subject well.**



**Find the
right level.**



**Find the
right format.**

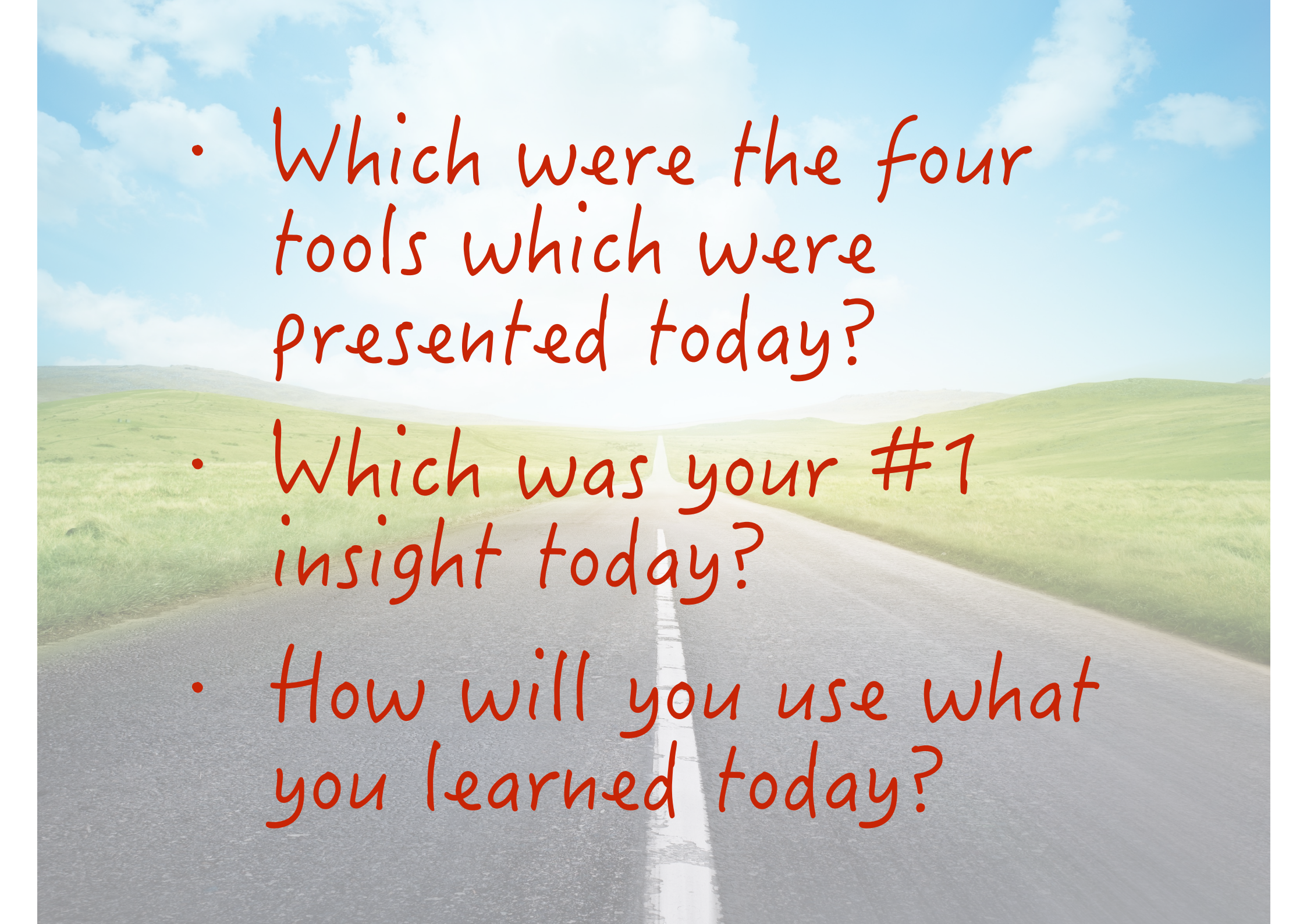
**Explains the
4 communication
tools.**

5

Motivate

your audience.

- ▶ **Metaphors.**
- ▶ **Visuals.**
- ▶ **Props.**
- ▶ **Demonstrations & experiments.**
- ▶ **The human factor & storytelling**


- 
- Which were the four tools which were presented today?
 - Which was your #1 insight today?
 - How will you use what you learned today?

A close-up photograph of a red brick wall. The bricks are arranged in a standard running bond pattern. The color of the bricks varies slightly, showing natural variations in the clay. The mortar joints are a light, off-white color. Overlaid on the wall is text written in a white, chalk-like font. The text is arranged in four lines, reading from top to bottom: 'A NEW WAVE', 'of communicators', 'of science'. The word 'of' is written in a smaller, lowercase font and is positioned to the left of the main words. The overall appearance is that of a hand-drawn message on a public wall.

A NEW WAVE
of communicators
of science



**3 weaknesses
of scientific communication**

- 
1. **Poor emotional engagement.**
2. **Strong, yet dysfunctional conventions.**
3. **Widespread DIY culture.**



Scientists **Officials**
Students **Politicians**
PhD students **Healthcare**
Corporations **NGOs**
Entrepreneurs **Influencers**

Science communicators *Science teachers*



crastina.se