

Promotion of scientific research. Science communication.

Dariusz Aksamit

www.aksamit.info

This course has been supported by the Polish National Agency
for Academic Exchange under the STER Programme

Who am I?

2



Who am I – privately?

3



Who are you?

4



???

- Please introduce yourself while the match is burning



- First remarks:



- First remarks:



- Time is limited
- There can be surprises...
- Distractions – distracting you and audience
- Preparation/plan/practice is needed!

- What's your worst science communication experience?



- What's your worst science communication experience?
- ...and the best?



What kind of science communication do you know/like?

10

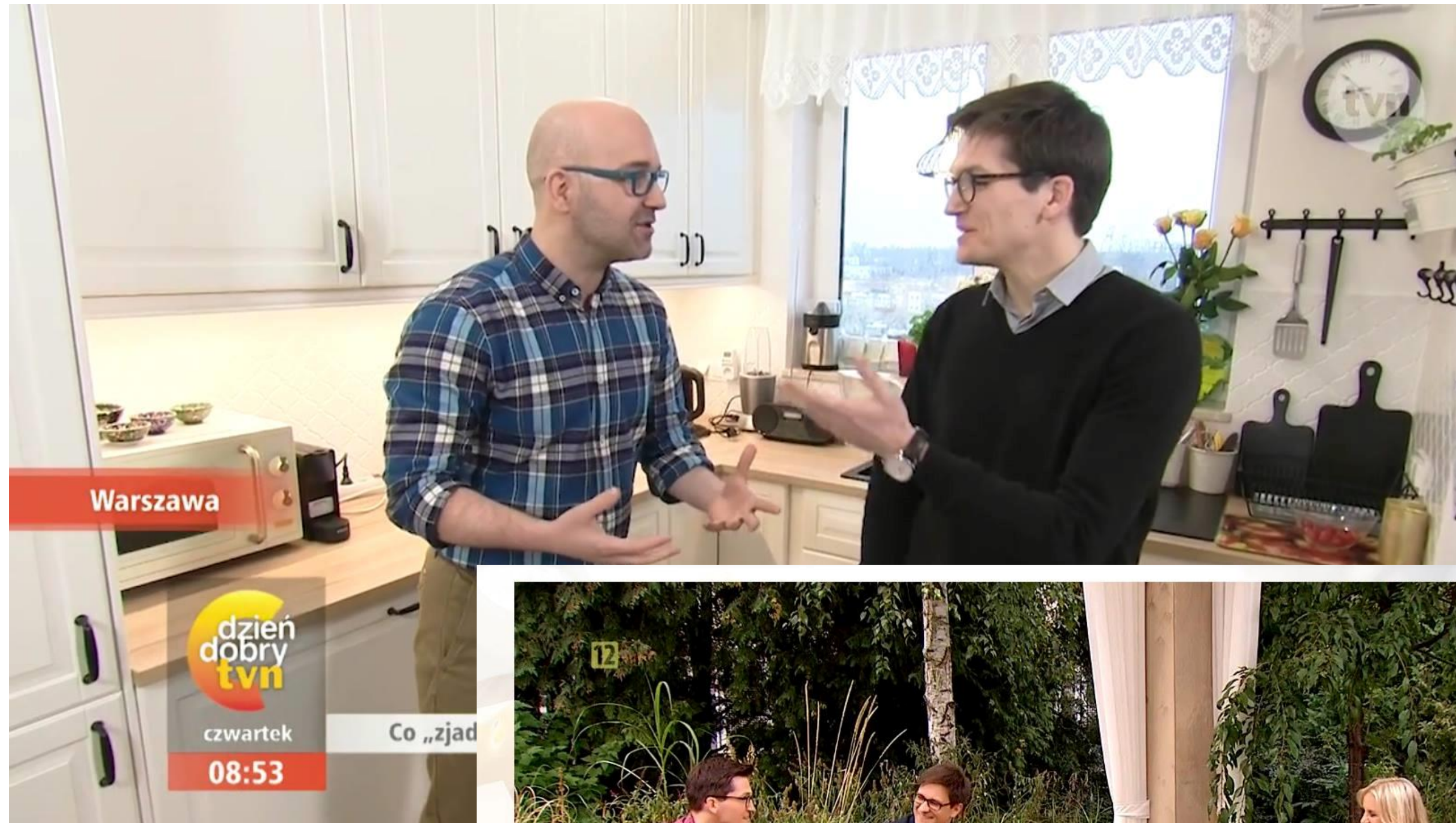


Why I'm conducting this training?

Because I have a lot of experience
– you can ask me about...

...live presentation in national media...

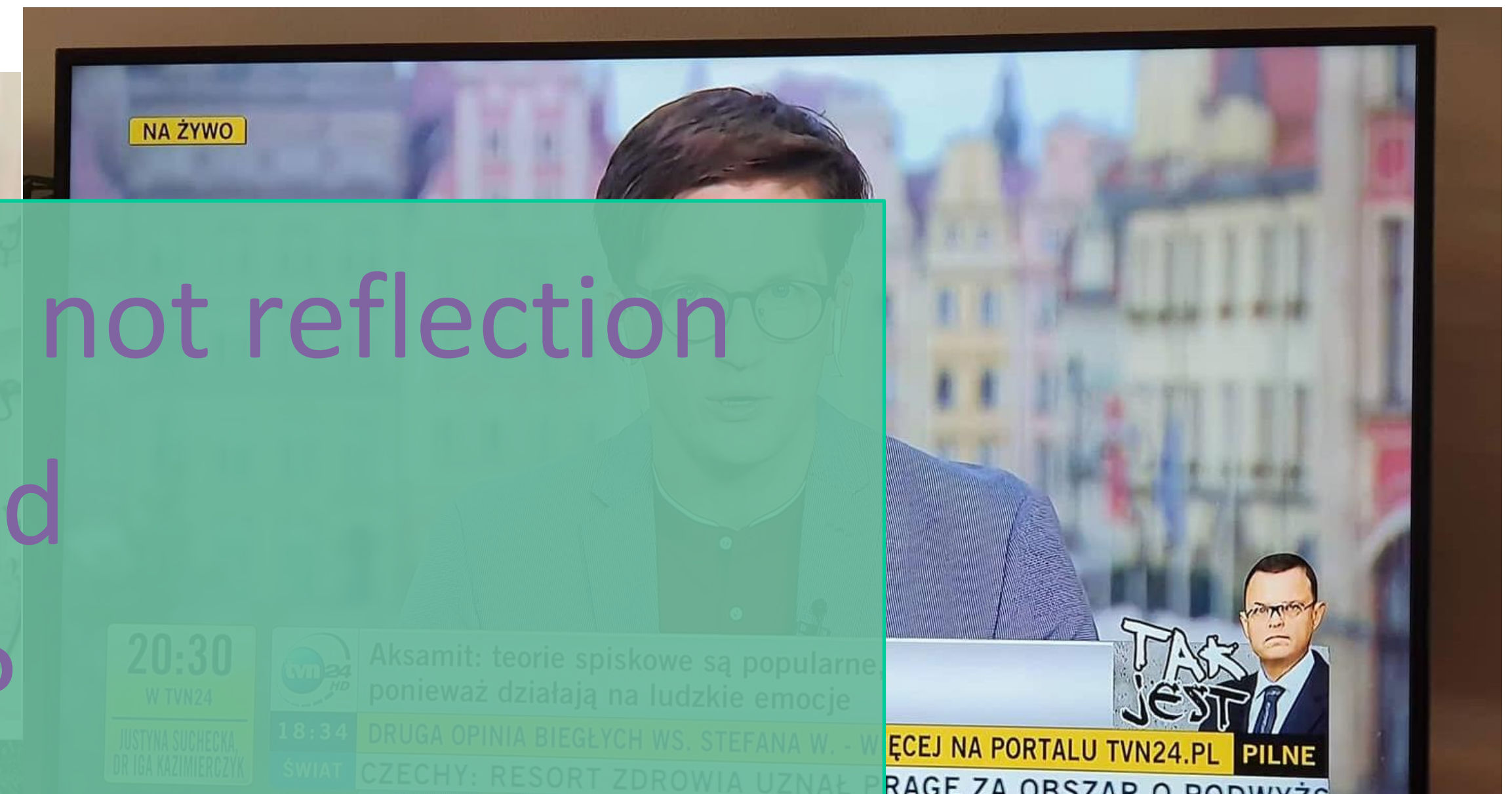
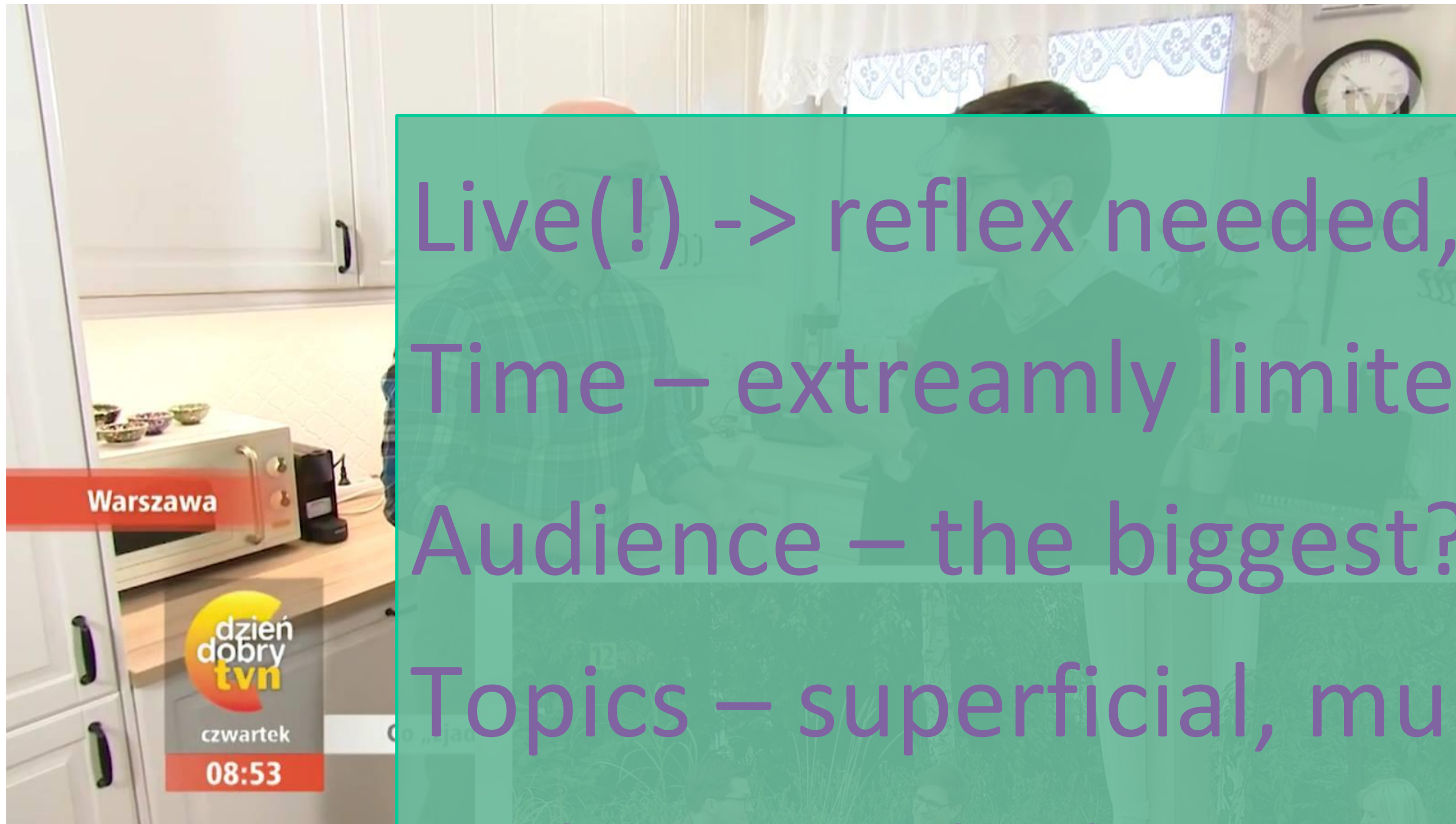
12



...live presentation in national media...

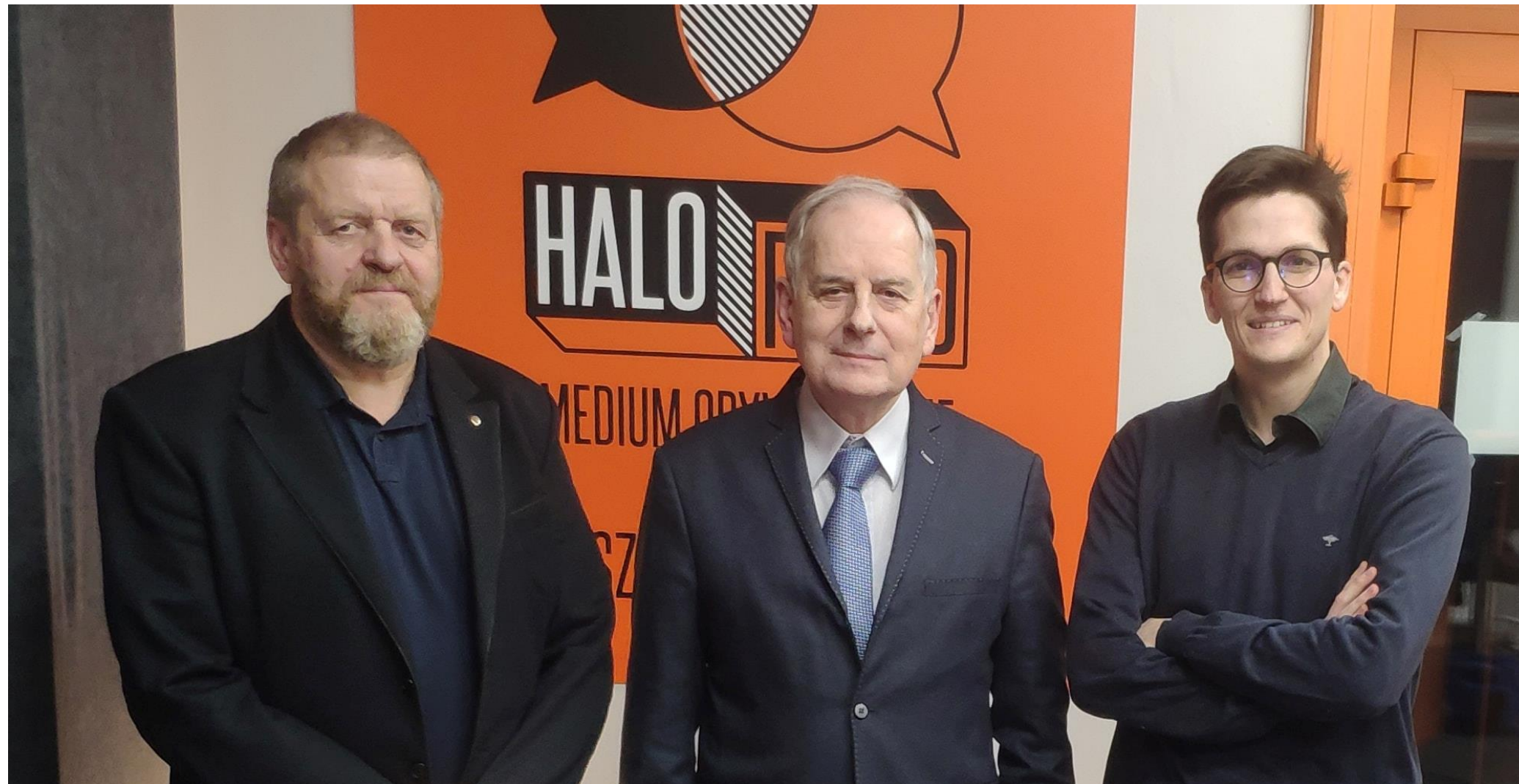
13

Live(!) -> reflex needed, not reflection
Time – extremely limited
Audience – the biggest?
Topics – superficial, mundane
High stress, high impact

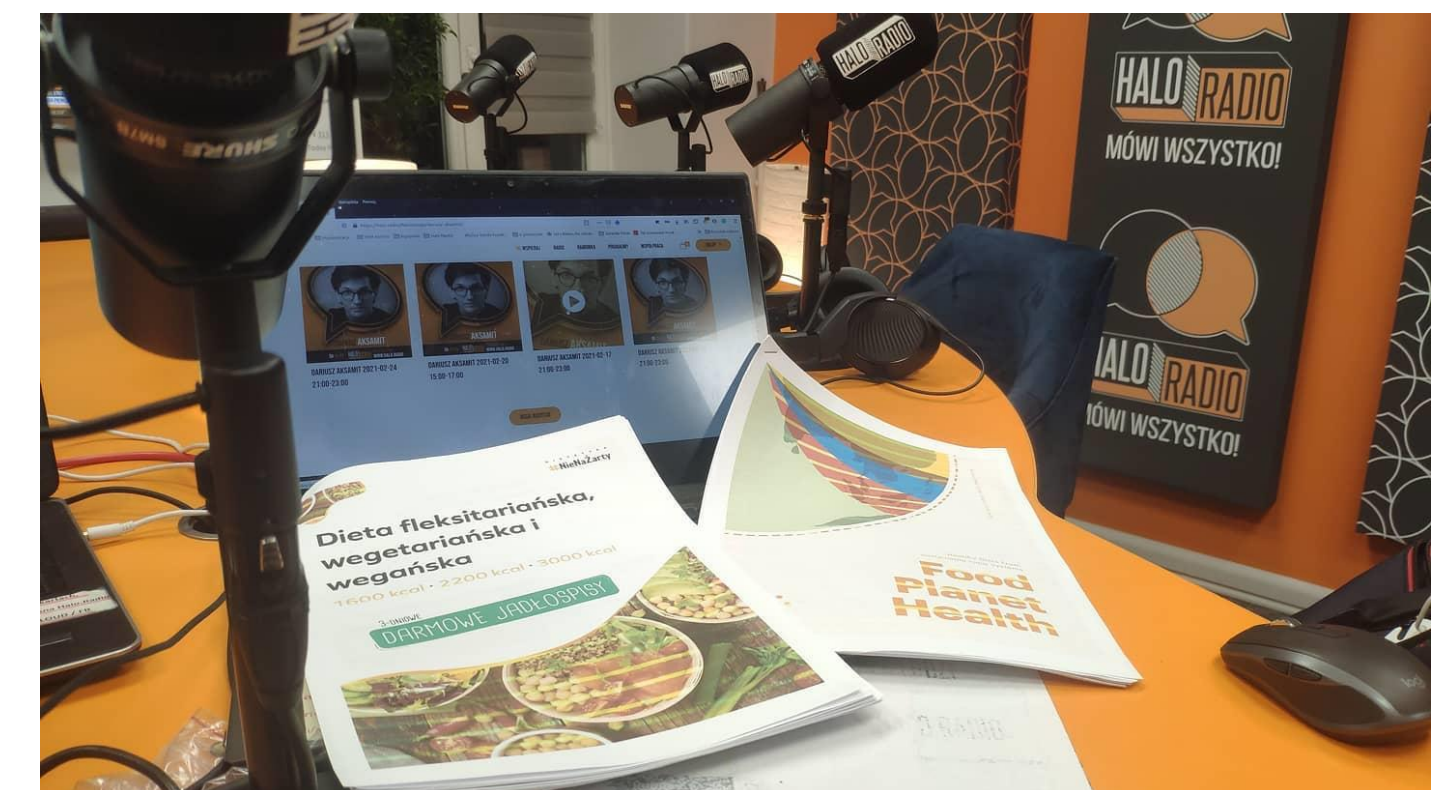


...live speaking on the radio or preparing a podcast...

14



Warsaw University
of Technology

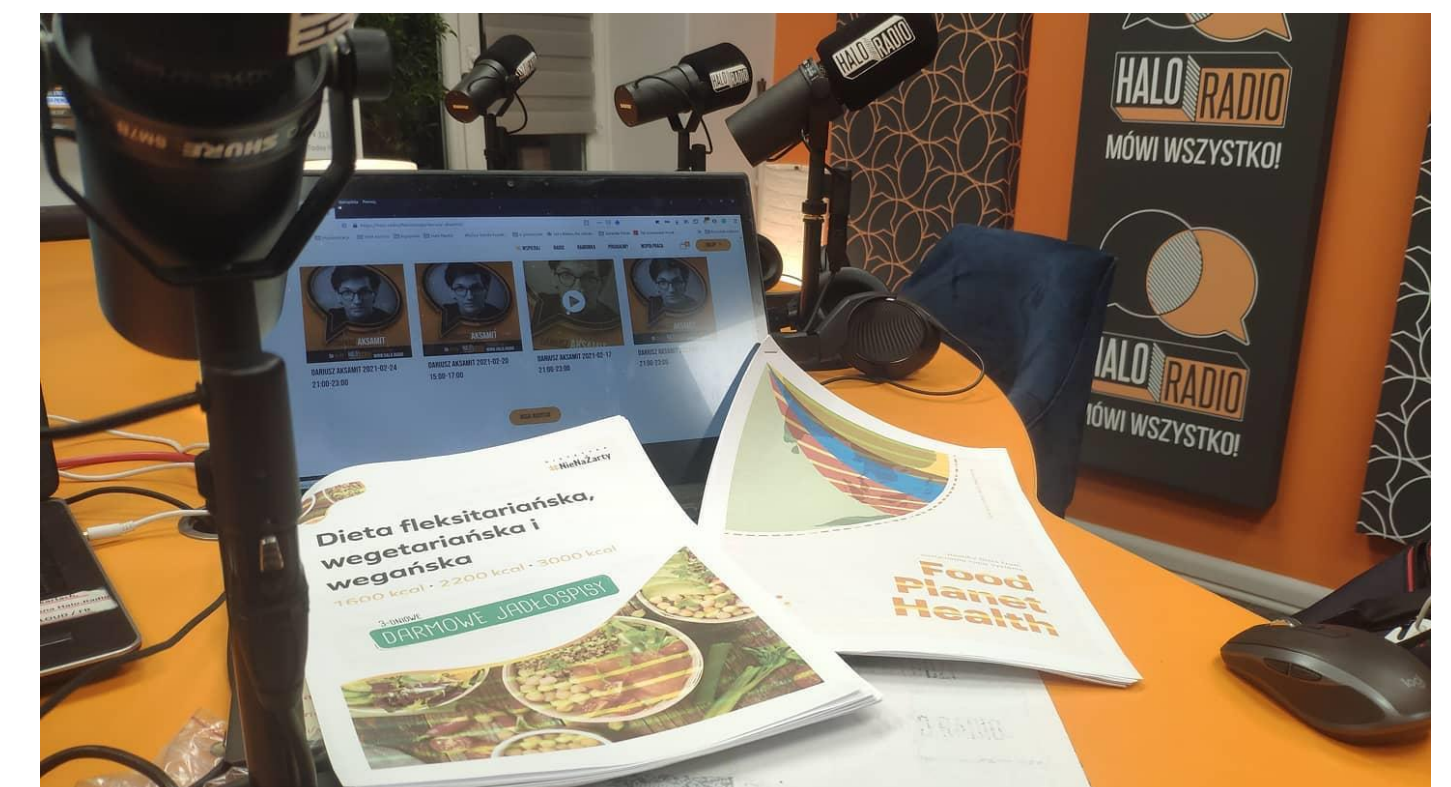


...live speaking on the radio or preparing a podcast...

15



No visual... -> pros and cons...
Where do you listen to the radio?



...how to give a TED talk and other public speaking...

16



Popularizing Science | Dariusz Aksamit | TEDxKazimierz

8 107 wyświetleń • 18 sie 2016

248

6

UDOSTĘPNIJ

ZAPISZ

...

...how to give a TED talk and other public speaking...

17

The most popular – and the most neglected!
Shorter speech means harder speech (inverse
squares law;))



Popularizing Science | Dariusz Aksamit | TEDxKazimierz

8 107 wyświetleń • 18 sie 2016

248


6

UDOSTĘPNIJ

ZAPISZ

...

...how to make educational videos and on-line lectures... 18




Przecinek i Kropka - Empikowa fizyka







6 filmów • 181 wyświetleń • Ostatnia aktualizacja: 12 sty 2021

Publiczna

Brak opisu

 **Dariusz Aksamit**

SORTUJ

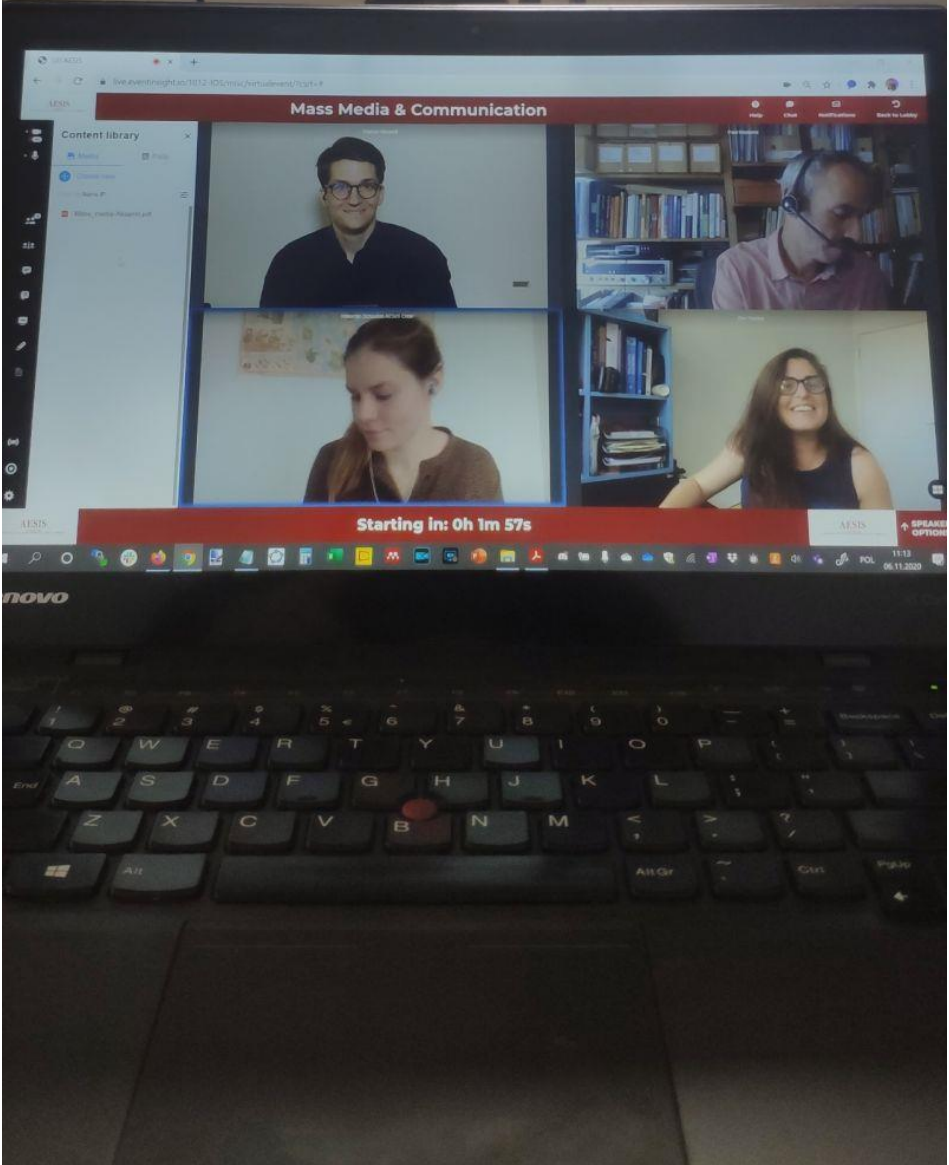
-  **Jak zobaczyć dźwięk? Warsztaty dla dzieci #wdomujestfajnieikropka | Przecinek i Kropka**
empik
-  **Co ma pływać, nie utonie. Wyporność - fizyka na wesoło. Warsztaty dla dzieci #wdomujestfajnieikropka**
empik
-  **Eksperymentuj z jajem! Warsztaty dla dzieci #wdomujestfajnieikropka | Przecinek i Kropka**
empik
-  **Jak zbudować własny zegar? Empickie ferie z #wiemikropka**
empik
-  **Czy w te ferie spadnie śnieg? Empickie ferie z #wiemikropka**
empik
-  **Czym jest ciśnienie? Empickie ferie z #wiemikropka**
empik




TVP VOD KATALOG PRZEGAPIŁEŚ W TV? STREFA ABO NA ŻYWO SZKOŁA Z TVP

Kurza stopa, to jabłko było do zjedzenia, czy do eksperymentów?:/

33:24/40:25



...how to make educational videos and on-line lectures... 19



Przecinek i Kropka - Empikowa fizyka


6 filmów • 181 wyświetleń • Ostatnia aktualizacja: 12 sty 2021

Publiczna

Brak opisu

Dariusz Aksamit

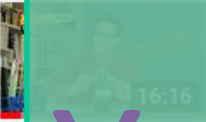
SORTUJ



Jak zobaczyć dźwięk? Warsztaty dla dzieci #wdomujestfajnieikropka | Przecinek i Kropka

empik


9:31



Co ma pływać, nie utonie. Wyporność - fizyka na wesoło. Warsztaty dla dzieci #wdomujestfajnieikropka

empik


16:16



Eksperymentuj z dźwiękiem! Warsztaty dla dzieci #wdomujestfajnieikropka | Przecinek i Kropka

empik


14:45



Jak zbudować własny zegar? Empickie ferie z #wiemikropka

empik


13:21



Czy w te ferie spadnie śnieg? Empickie ferie z #wiemikropka

empik

7:06



Czym jest ciśnienie? Empickie ferie z #wiemikropka

empik

14:27

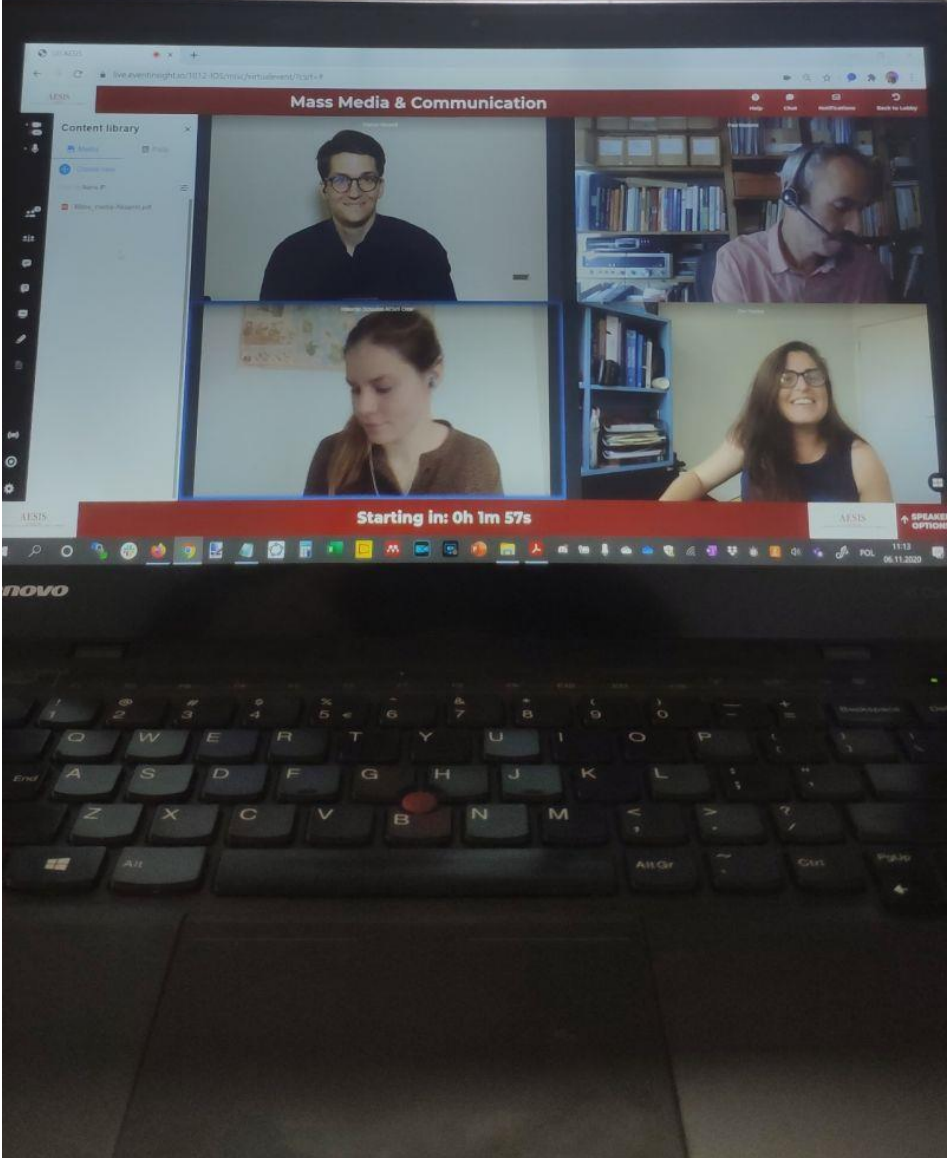
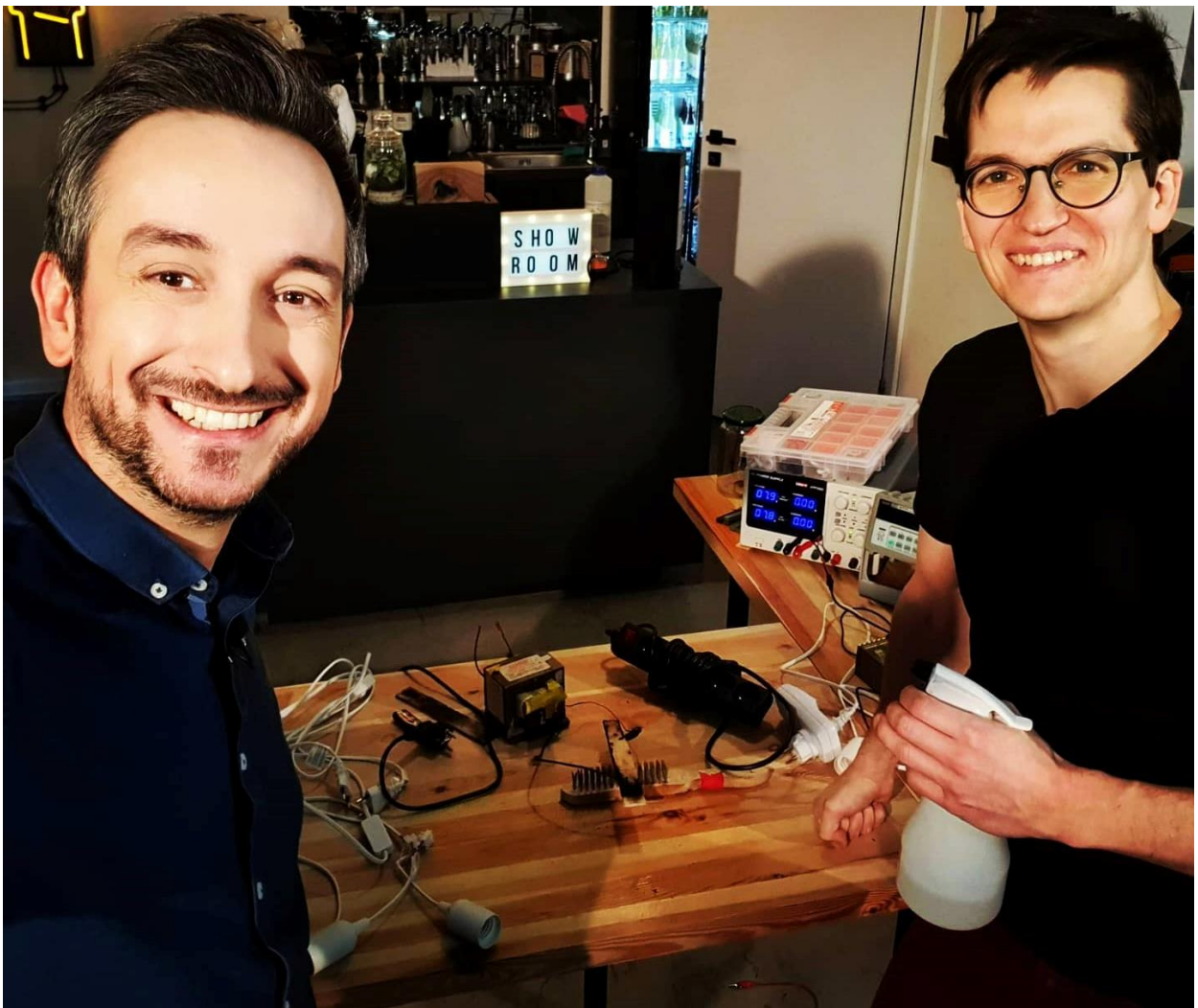
Yes, you can EARN on science communication!



TVP VOD KATALOG PRZEGAPIŁEŚ W TV? STREFA ABO NA ŻYWO SZKOŁA Z TVP

Kurza stopa, to jabłko było do zjedzenia, czy do eksperymentów?:/

33:24/40:25



... how to make YouTube videos – professional or amateur... 20

Spacerowe pogadanki ▶ ODTWÓRZ WSZYSTKIE

13 "KŁAMSTWO KLIMATYCZNE?"

15:39

#013 - Czas na termin "kłamstwo klimatyczne?"

Dariusz Aksamit

455 wyświetleń • 3 tygodnie temu

12 DIETA PLANETARNA

20:15

#012 - DIETA PLANETARNA

Dariusz Aksamit

431 wyświetleń • 1 miesiąc temu

11 TAJNE KOMPLETY. XXI WIEK

15:02

#011 - Tajne komplety, a edukacja XXI wieku...

Dariusz Aksamit

381 wyświetleń • 2 miesiące temu

10 KTO NAUCE "UFA"? AKTO JĄ OGARNIA...?

17:18

#010 - Kto nauce "ufa"? A kto ją ogarnia... 3M State o...

Dariusz Aksamit

339 wyświetleń • 2 miesiące temu

09 "WYCISZ WSZYSTKICH" CZYLI O POWROTCIE DO SZKOŁY

13:56

#009 - WYCISZ WSZYSTKICH, czyli o...

Dariusz Aksamit

418 wyświetleń • 3 miesiące temu

08 JAK ROBIĆ KONKRETNE PRZEWALY?

18:09

#008 - Jak zrobić konkretne przewalę? Czyli o nowej...

Dariusz Aksamit

1 tys. wyświetleń • 5 miesięcy temu

Energetyka jądrowa i nie tylko! ▶ ODTWÓRZ WSZYSTKIE

Izotopy w służbie medycyny

3:20

Dariusz Aksamit

884 wyświetlenia • 5 miesięcy temu

FUKUSHIMA 10 LAT PÓŹNIEJ

3:51

Dariusz Aksamit

498 wyświetleń • 5 miesięcy temu

Typy reaktorów jądrowych -

4:26

Dariusz Aksamit

1,1 tys. wyświetleń • 5 miesięcy temu

CZARNOBYL 35 LAT PÓŹNIEJ

3:19

Dariusz Aksamit

335 wyświetleń • 4 miesiące temu

Ochrona Radiologiczna, Dozymetria, Fizyka Medyczna ▶ ODTWÓRZ WSZYSTKIE

OR#001

11:30

OR#001 - Nauka dawca

Dariusz Aksamit

113 wyświetleń • 1 miesiąc temu

OR#002

7:55

OR#002 - NADPROMIENIOWANIE

Dariusz Aksamit

75 wyświetleń • 1 miesiąc temu

OR#003

8:53

OR#003 - Źródła promieniowania jonizującego

Dariusz Aksamit

85 wyświetleń • 1 miesiąc temu

OR#004

13:07

OR#004 - Źródła promieniowania

Dariusz Aksamit

1307 wyświetleń • 1 miesiąc temu

OR#005

8:47

OR#005 - TVDV

Dariusz Aksamit

847 wyświetleń • 1 miesiąc temu

Skądą nerwów na faka

4:51

Dariusz Aksamit

451 wyświetleń • 1 miesiąc temu

Filmy instruktażowe

Poznaj podstawy tworzenia filmów popularnonaukowych i ucz się na naszych doświadczeniach (i błędach!)

NAKRECONA NAUKA ..

ODCINEK 1

PIERWSZE KROKI

NAKRECONA NAUKA ..

ODCINEK 2

PLAN ZDJĘCIOWY I KADRY

NAKRECONA NAUKA ..

ODCINEK 3

JAK NAGRAĆ DŹWIEK?

NAKRECONA NAUKA ..

ODCINEK 4

MONTAŻ - PODSTAWY

NAKRECONA NAUKA ..

ODCINEK 5

MONTAŻ - EFEKTY DODATKOWE

NAKRECONA NAUKA ..

ODCINEK 6

NARRACJA FILMU

NAKRECONA NAUKA ..

ODCINEK 7

NARRACJA I PUBLICZNOŚĆ

NAKRECONA NAUKA ..

ODCINEK 8

JAK NAPISAĆ SCENARIUSZ?

NAKRECONA NAUKA ..

ODCINEK 9

PRACA PRZED KAMERA

NAKRECONA NAUKA ..

ODCINEK 10

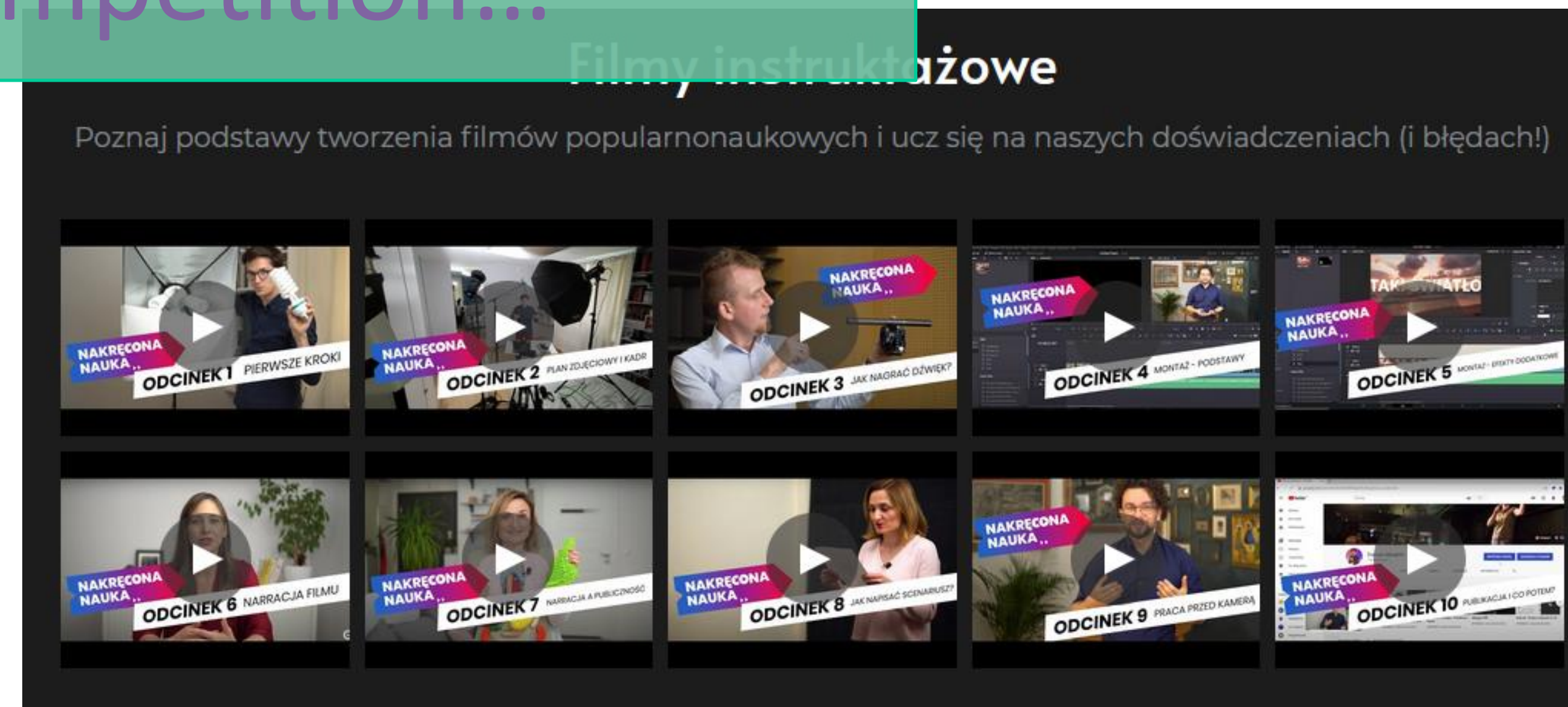
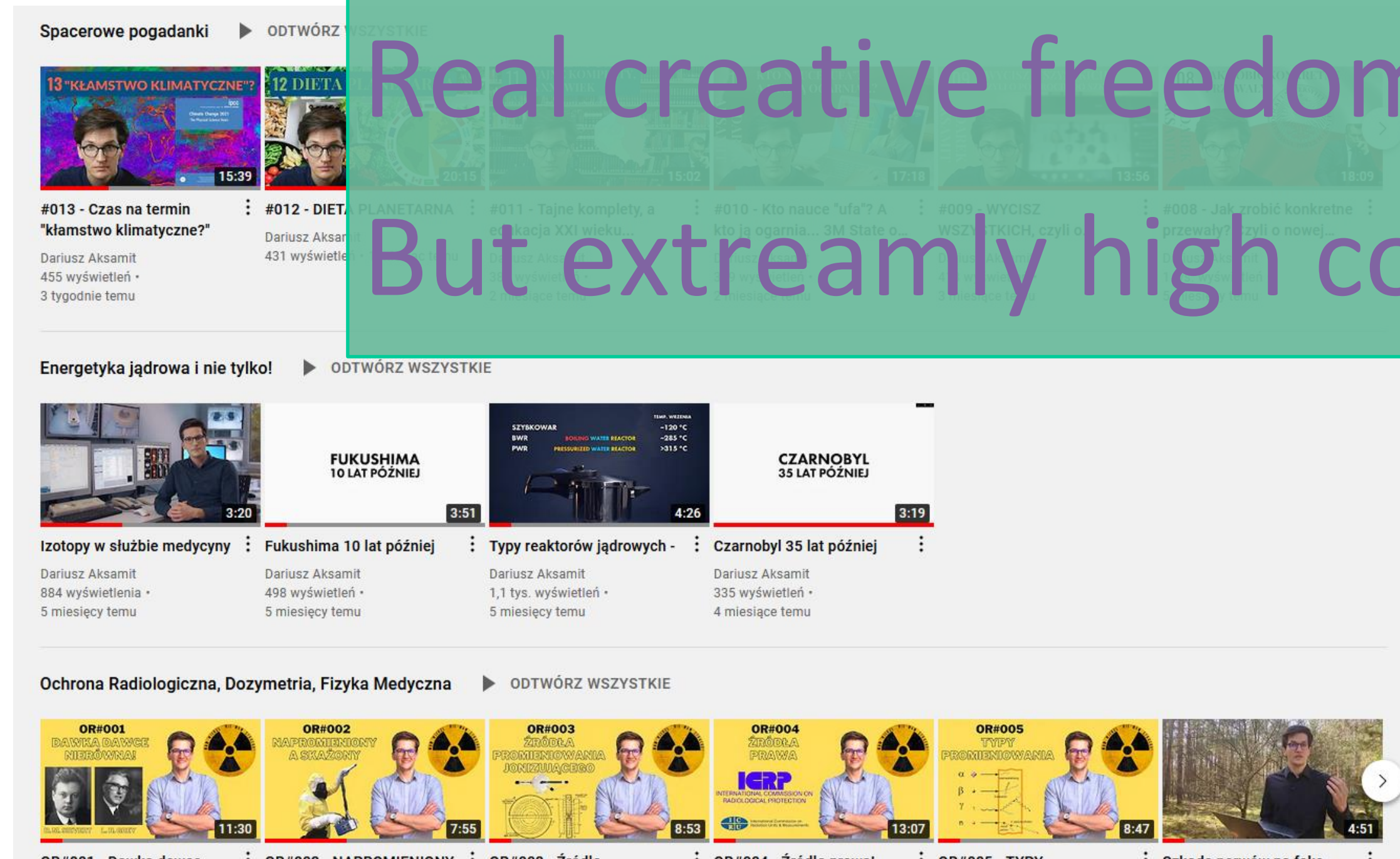
PUBLIKACJA I CO POTEM?

Warsaw University
of Technology

... how to make YouTube videos – professional or amateur...

21

Real creative freedom!
But extremely high competition...



...write an article to press or portal...

[O BLOGU](#)[AKTUALNOŚCI](#)[TEMATY](#)[AUTORZY](#)[KONTAKT](#)

DARIUSZ AKSAMIT

18 MAJA 2021

Jak badać wpływ promieniowania elektromagnetycznego na człowieka

Badania epidemiologiczne są kosztowne, żmudne i dłużej trwają niż badania o jednostce, tylko o populacji. Pomiary fizyczne są dokładne, ale to jest przybliżenie człowieka, a pomiar we wnętrzu żyjącego człowieka jest praktycznie niewykonalny (jeśli ten ma pozostać przy życiu). Jak w mózgu, gdy rozmawiamy przez telefon? Tu z pomocą przychodzi symulacja. Tylko jak „włożyć” do nich człowieka? I co to jest perfuzja?



Warsaw University
of Technology

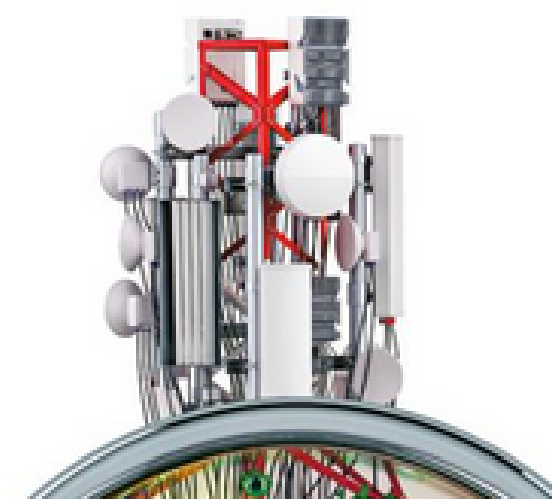
POLITYKA

[W NUMERZE](#)[KORONAWIRUS](#)[KRAJ](#)[ŚWIAT](#)[RYNEK](#)[KULTURA](#)[NAUKA I ZDROWIE](#)[BLOGI](#)

NAUKA

Sieć 5G, koronawirus i pseudonaukowe bzdury

21 SIERPNIA 2020 • 13 MINUT CZYTANIA



Naukowcy obalają mit na temat wpływu sieci 5G na system odpornościowy człowieka. "To bzdura"



Nelli Przybylska / Fundacja Digital Poland

20 kwi, 15:24 • 81 211



Wokół 5G mnożą się teorie spiskowe. Do tych powtarzanych od kilku miesięcy doszły nowe. W internecie coraz więcej pojawia się informacji, że 5G może osłabiać system odpornościowy człowieka, a tym samym zwiększać zachorowalność na koronawirusa. W rozmowie z Business Insider Polska Dariusz



Foto: materiały prasowe

...write an article to press or portal...



O BLOGU

AKTUALNOŚCI

TEMATY

AUTORZY

KONTAKT

wyszukaj...

DARIUSZ AKSAMIT

Jak badać wpływ promieni elektromagnetycznego na

Badania epidemiologiczne są kosztowne, zmuszają do ojednostce, tylko o próbach. Pomiar wewnątrz żyjącego człowieka, a pomiar wewnątrz żyjącego człowieka jest praktycznie niewykonalny (jeśli ten ma pozostać przy życiu). W mózgu, gdy rozmawiamy przez telefon? Tu z pomocą. Tylko jak „włożyć” do nich człowieka? I co to jest perfuzja



Warsaw University
of Technology

BUSINESS
INSIDER

E-MOBILITY

FIRMY

FINANSE

TWOJE PIENIĄDZE

GIEŁDA

TECHNOLOGIE

Naukowcy obalają mit na temat wpływu sieci 5G na system odpornościowy człowieka. "To bzdura"



Nelli Przybylska / Fundacja Digital Poland

20 kwi, 15:24 81 211



Time for reflection, consideration, caution...

Time consuming cooperation with editorial

office (that's why it's good!)

Wokół 5G mnożą się teorie spiskowe. Do tych powtarzanych od kilku miesięcy doszły nowe. W internecie coraz więcej pojawia się informacji, że 5G może osłabiać system odpornościowy człowieka i tym samym zwiększać zachorowalność na koronawirusa. W rozmowie z Business Insider Polska Dariusz



Foto: materiały prasowe

W NUMERZE

KORONAWIRUS

KRAJ

ŚWIAT

RYNEK

KULTURA

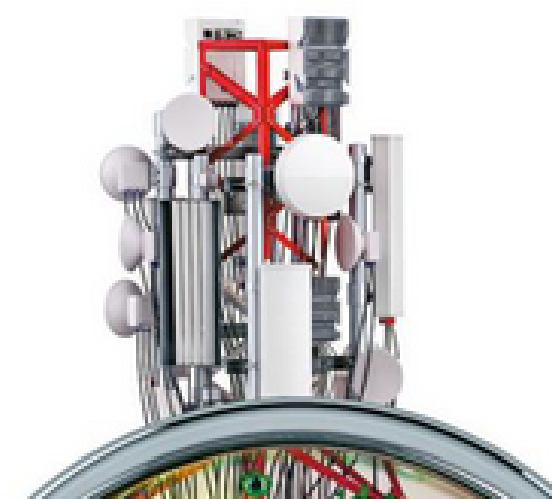
NAUKA I ZDROWIE

BLOGI

NAUKA

Sieć 5G, koronawirus i pseudonaukowe bzdury

21 SIERPNIA 2020 13 MINUT CZYTANIA



...organise/participate in event...



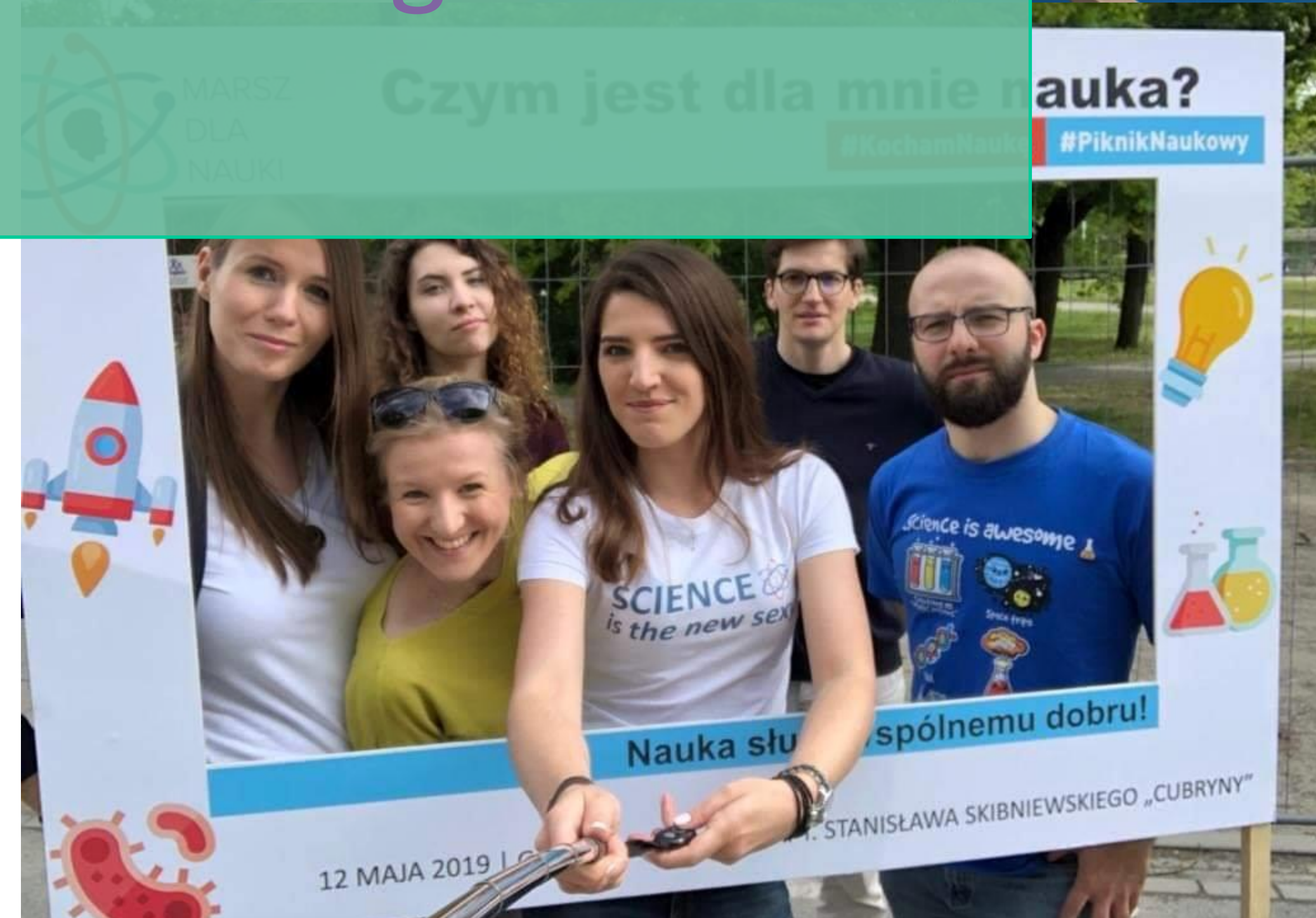
...organise/participate in event...



Creative!

Personal involvement, relation-making!

Limited reception?





NAUKA
W POLSCE



Or other things about
science communication!

Or medical/nuclear physics!;)



Warsaw University
of Technology

Purpose of SciCom

„Science Communication”

But....

WHY and FOR WHAT to do this?!

#WasteOfTime? #DoSomethingSerious!

#HaveYouDefendedThesis?:p

Your motivation?

30



INSIDE (I want)

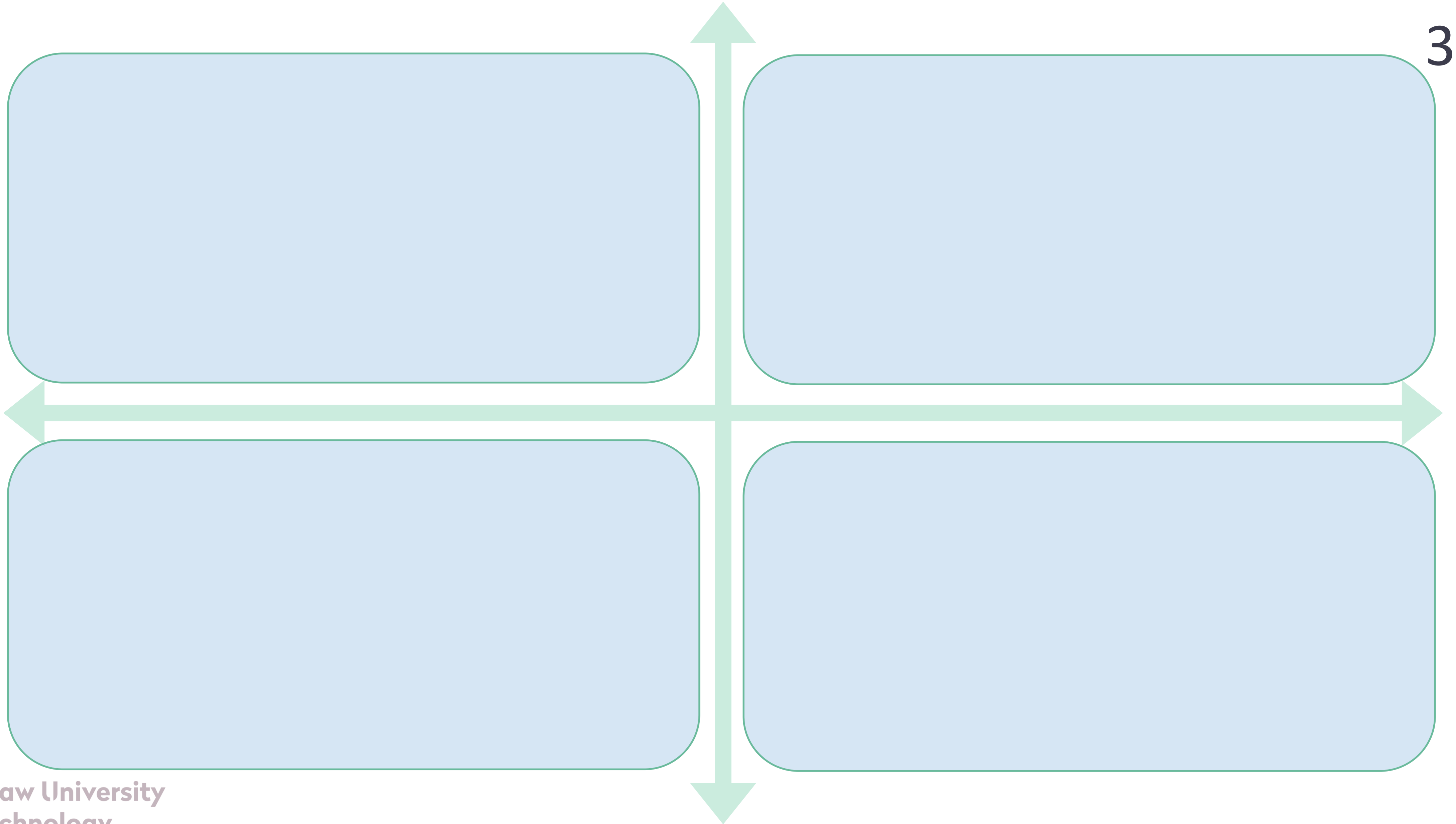
IDEA

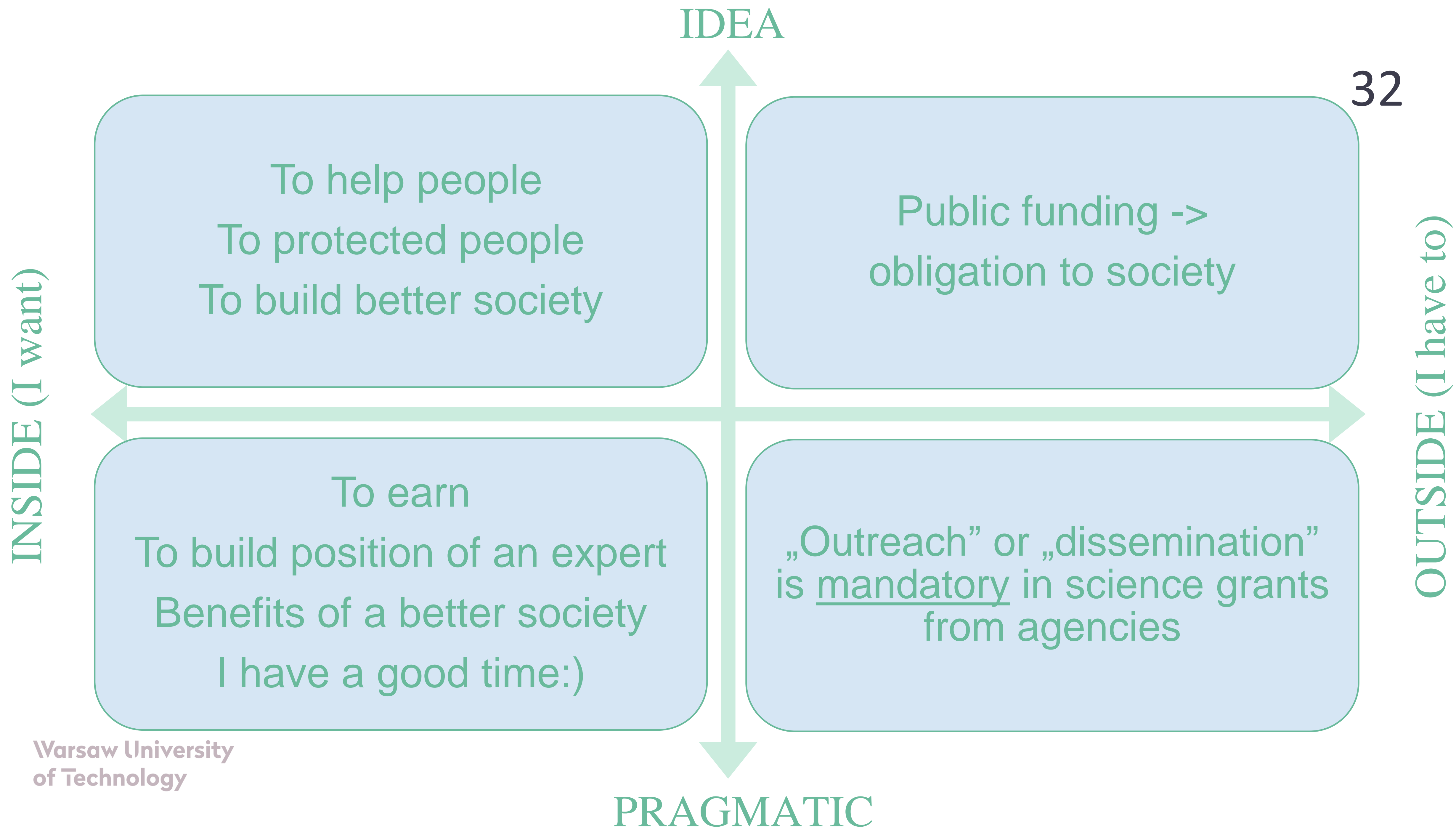
31

OUTSIDE (I have to)

Warsaw University
of Technology

PRAGMATIC





INSIDE (I want)

OUTSIDE (I have to)

IDEA

PRAGMATIC

GENERAL RULES ARE
THE SAME
(we'll get to them soon!)





Why are you here?

What kind of science communication you want to learn?

What kind of skill you'd like to gain or develop?

What's your goal?



Prepare and send me your „bio”
like half o A4 page with picture(!),
summarazing who you are,
what you do, what are you interessed in.

The importance of stupidity in scientific research

Martin A. Schwartz

Department of Microbiology, UVA Health System, University of Virginia, Charlottesville, VA 22908, USA

e-mail: maschwartz@virginia.edu

Accepted 9 April 2008

Journal of Cell Science 121, 1771 Published by The Company of Biologists 2008

doi:10.1242/jcs.033340

I recently saw an old friend for the first time in many years. We had been Ph.D. students at the same time, both studying science, although in different areas. She later dropped out of graduate school, went to Harvard Law School and is now a senior lawyer for a major environmental organization. At some point, the conversation turned to why she had left graduate school. To my utter astonishment, she said it was because it made her feel stupid. After a couple of years of feeling stupid every day, she was ready to do something else.

I had thought of her as one of the brightest people I knew and her subsequent career supports that view. What she said bothered me. I kept thinking about it; sometime the next day, it hit me. Science makes me feel stupid too. It's just that I've gotten used to it. So used to it, in fact, that I actively seek out new opportunities to feel

I'd like to suggest that our Ph.D. programs often do students a disservice in two ways. First, I don't think students are made to understand how hard it is to do research. And how very, very hard it is to do important research. It's a lot harder than taking even very demanding courses. What makes it difficult is that research is immersion in the unknown. We just don't know what we're doing. We can't be sure whether we're asking the right question or doing the right experiment until we get the answer or the result. Admittedly, science is made harder by competition for grants and space in top journals. But apart from all of that, doing significant research is intrinsically hard and changing departmental, institutional or national policies will not succeed in lessening its intrinsic difficulty.

The importance of stupidity in scientific research

Martin A. Schwartz

Department of Microbiology, UVA Health System, University of Virginia, Charlottesville, VA 22908, USA

e-mail: maschwartz@virginia.edu

Accepted 9 April 2008

Journal of Cell Science 121, 1771 Published by The Company of Biologists 2008

doi:10.1242/jcs.033340

I recently saw an old friend for the first time in many years. We had been Ph.D. students at the same time, both studying science, although in different areas. She later dropped out of graduate school, went to Harvard Law School and is now a senior lawyer for a major environmental organization. At some point, the conversation turned to why she had left graduate school. To my utter astonishment, she said it was because it made her feel stupid. After a couple of years of feeling stupid every day, she was ready to do something else.

I had thought of her as one of the brightest people I knew and her subsequent career supports that view. What she said bothered me. I kept thinking about it; sometime the next day, it hit me. Science makes me feel stupid too. It's just that I've gotten used to it. So used to it, in fact, that I actively seek out new opportunities to feel

I'd like to suggest that our Ph.D. programs often do students a disservice in two ways. First, I don't think students are made to understand how hard it is to do research. And how very, very hard it is to do important research. It's a lot harder than taking even very demanding courses. What makes it difficult is that research is immersion in the unknown. We just don't know what we're doing. We can't be sure whether we're asking the right question or doing the right experiment until we get the answer or the result. Admittedly, science is made harder by competition for grants and space in top journals. But apart from all of that, doing significant research is intrinsically hard and changing departmental, institutional or national policies will not succeed in lessening its intrinsic difficulty.

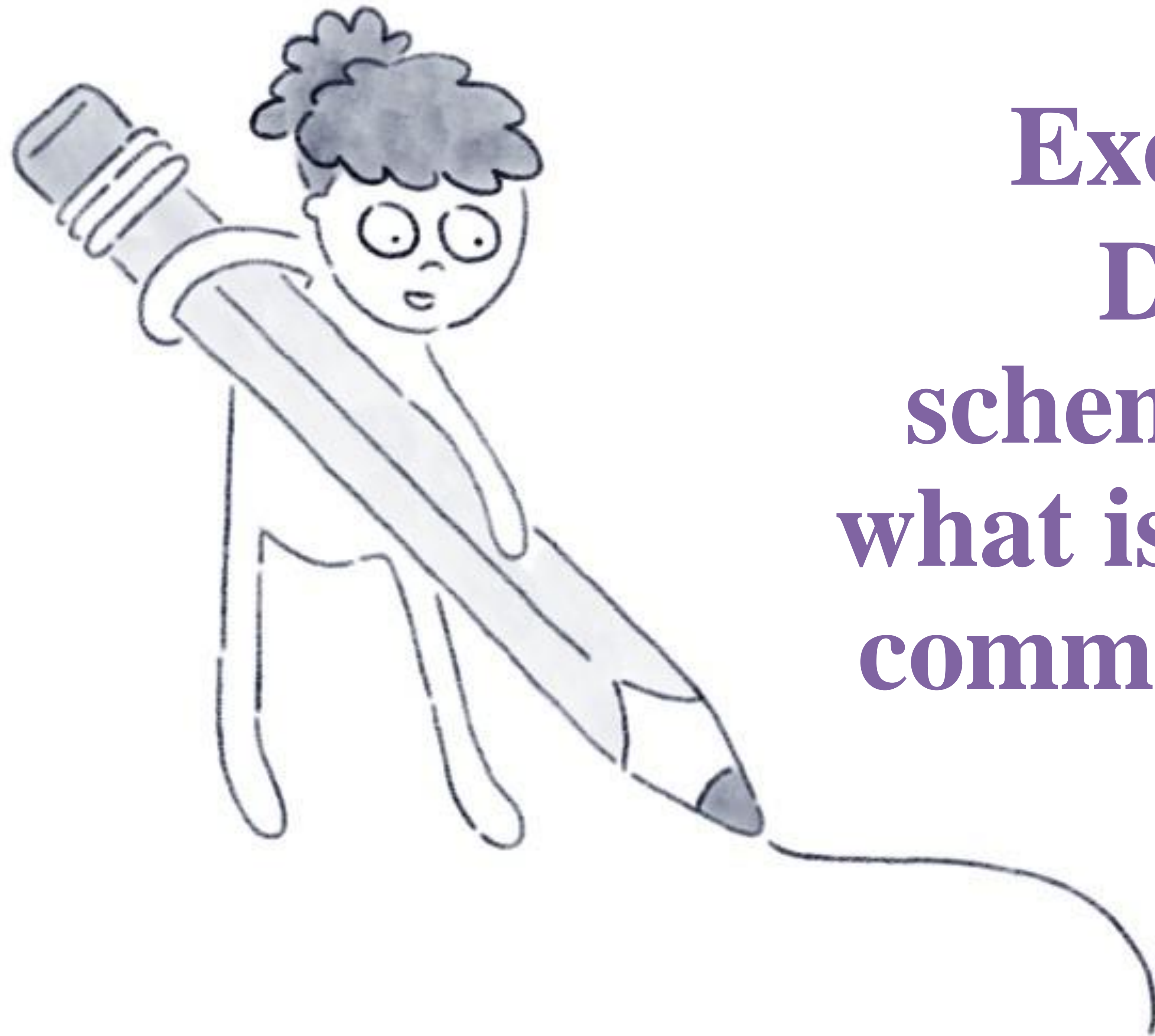
Second, we don't do a good enough job of teaching our students how to be productively stupid – that is, if we don't feel stupid it means we're not really trying.

A photograph of Sir Ken Robinson, a man with glasses and a suit, gesturing with his right hand while speaking. The background is dark with a large, semi-transparent red circle behind him. The quote is overlaid in white text.

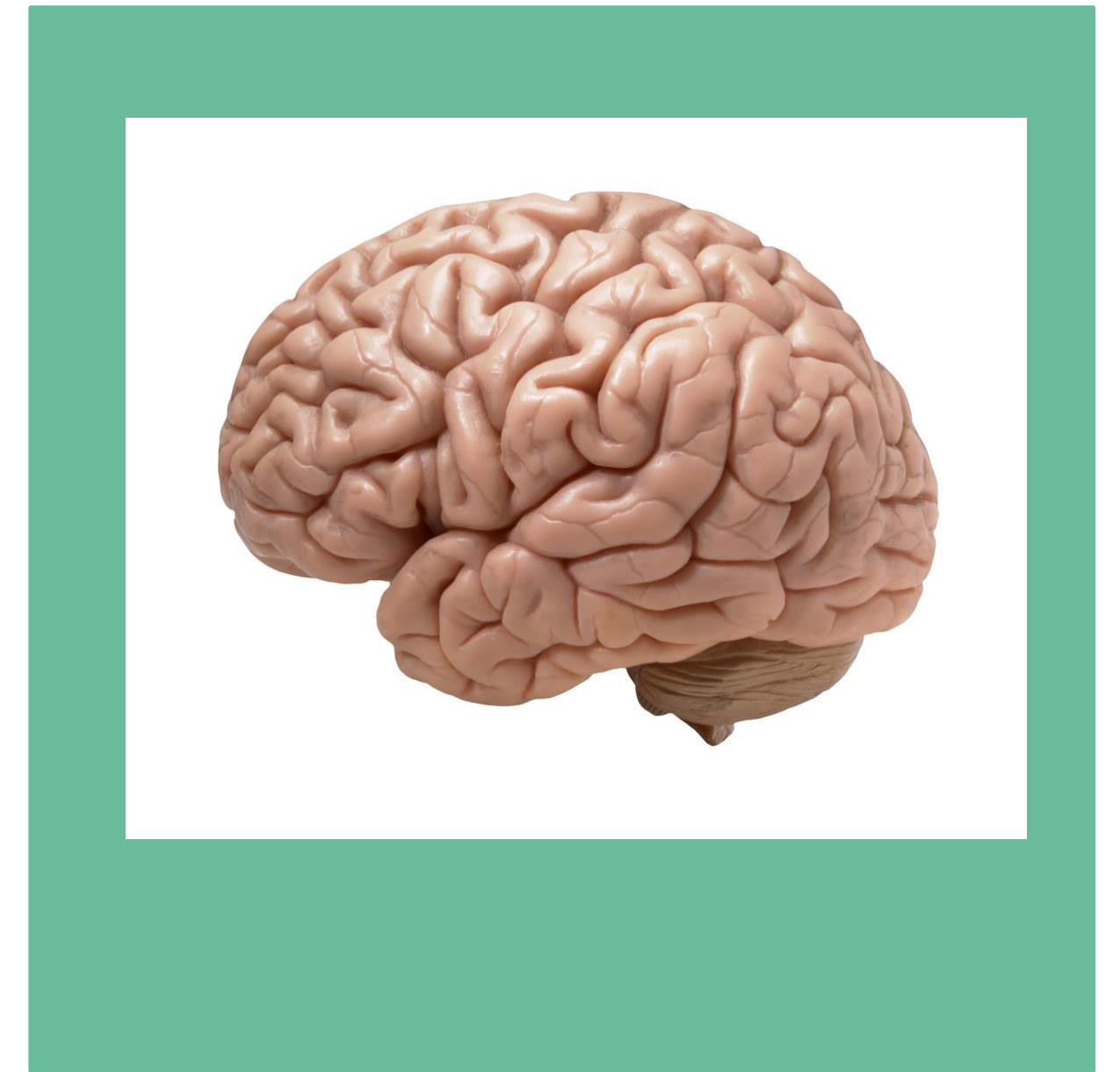
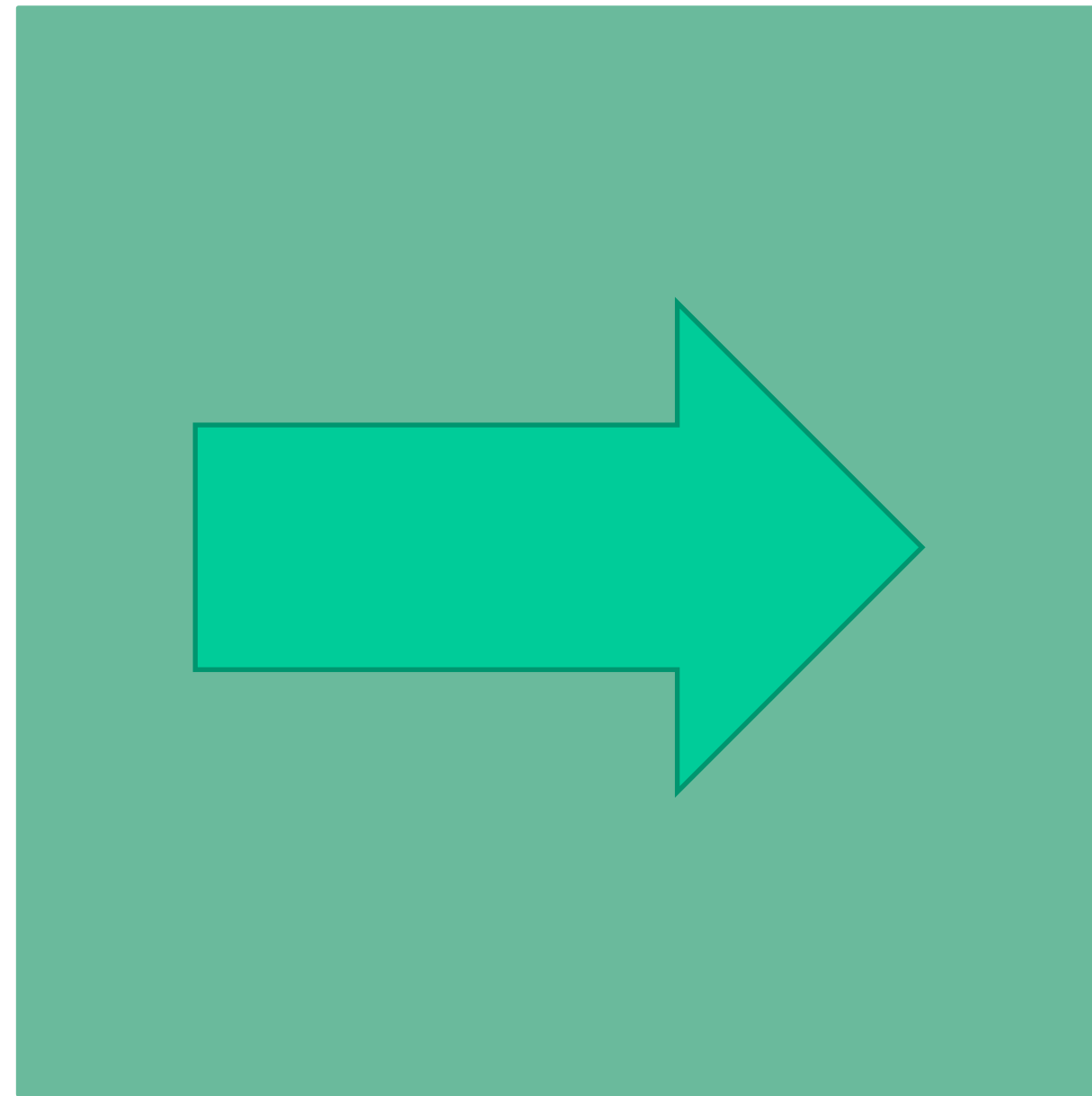
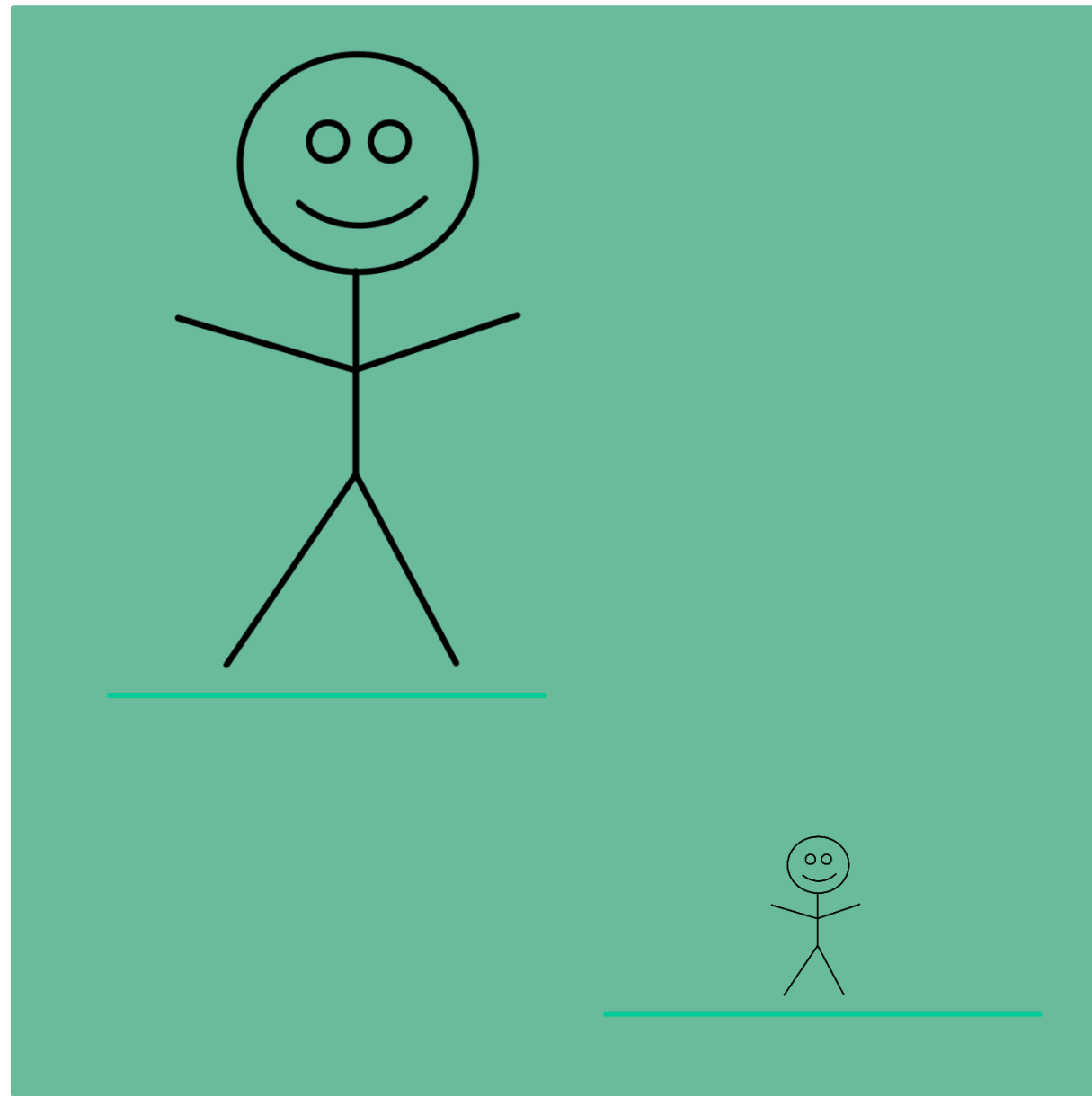
**“If you’re not prepared to be wrong, you’ll
never come up with anything original.”**

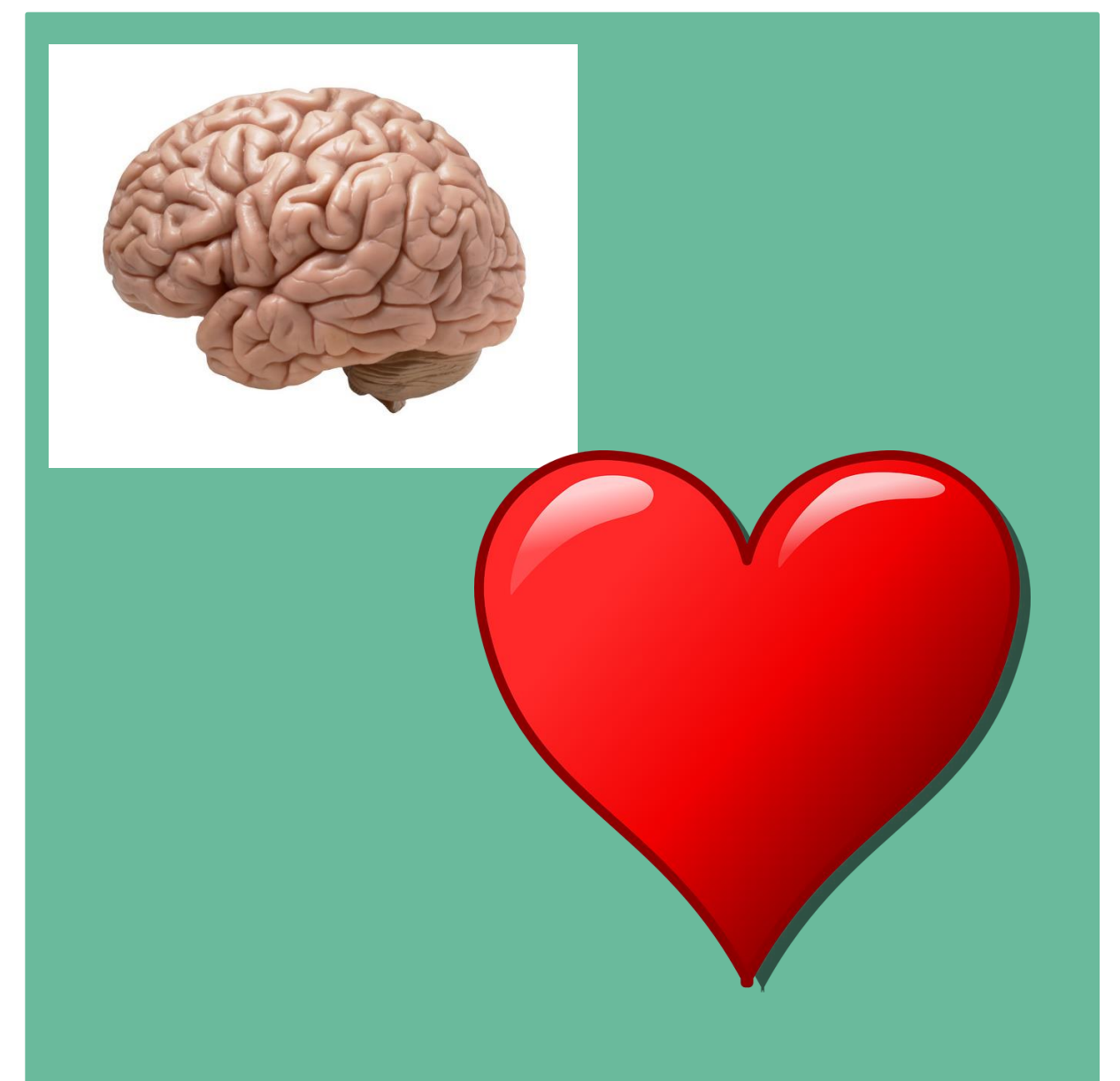
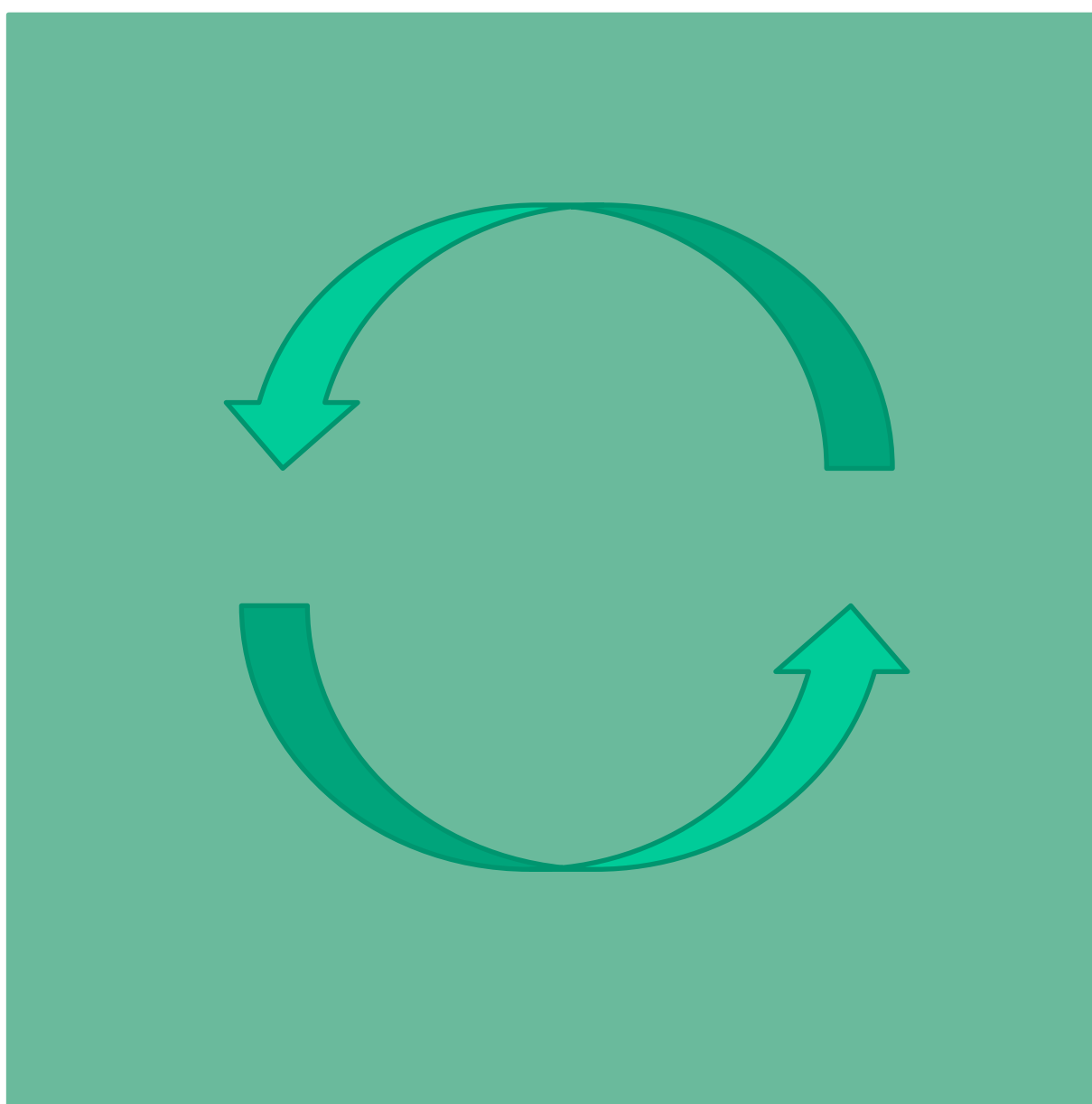
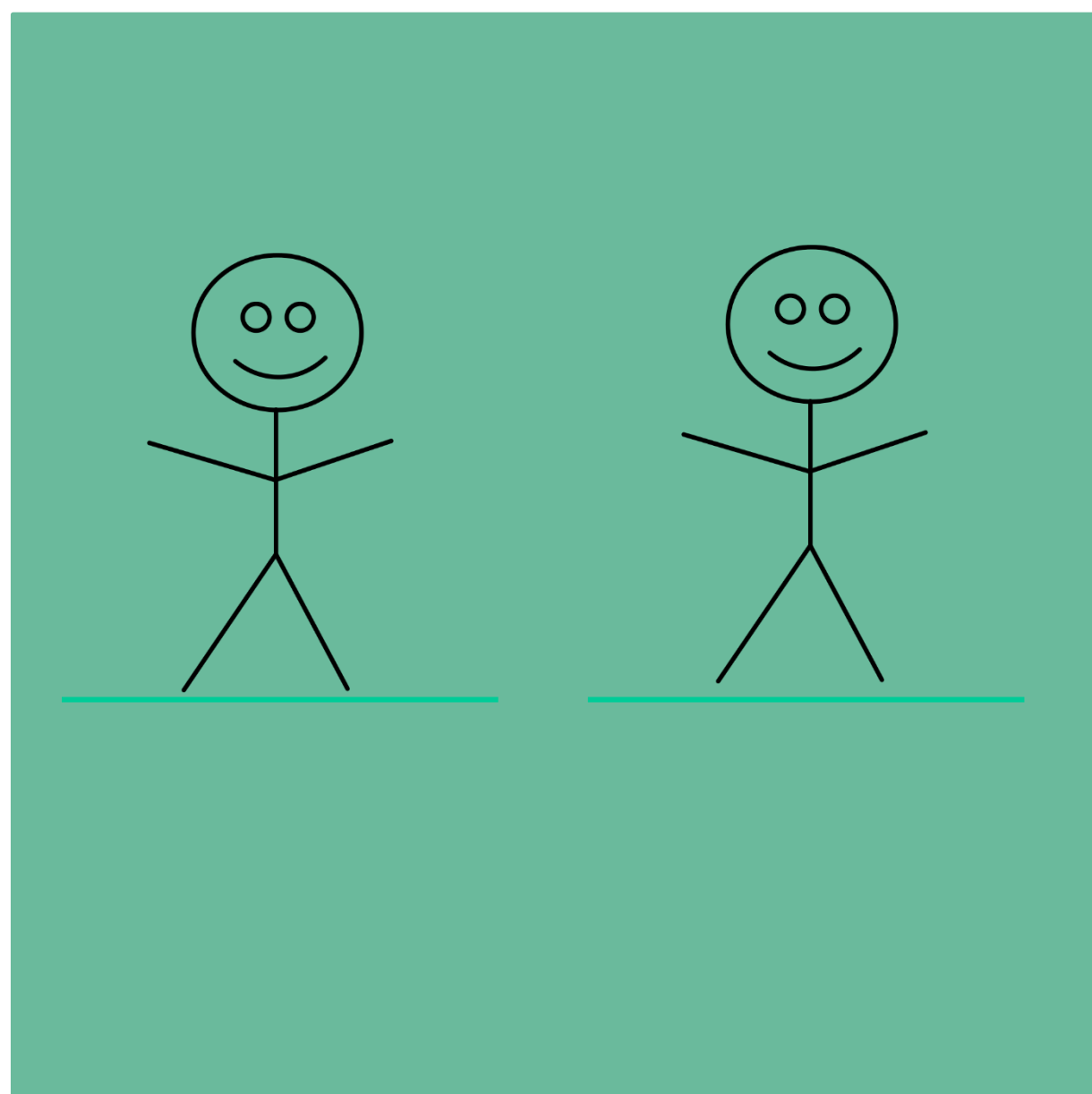
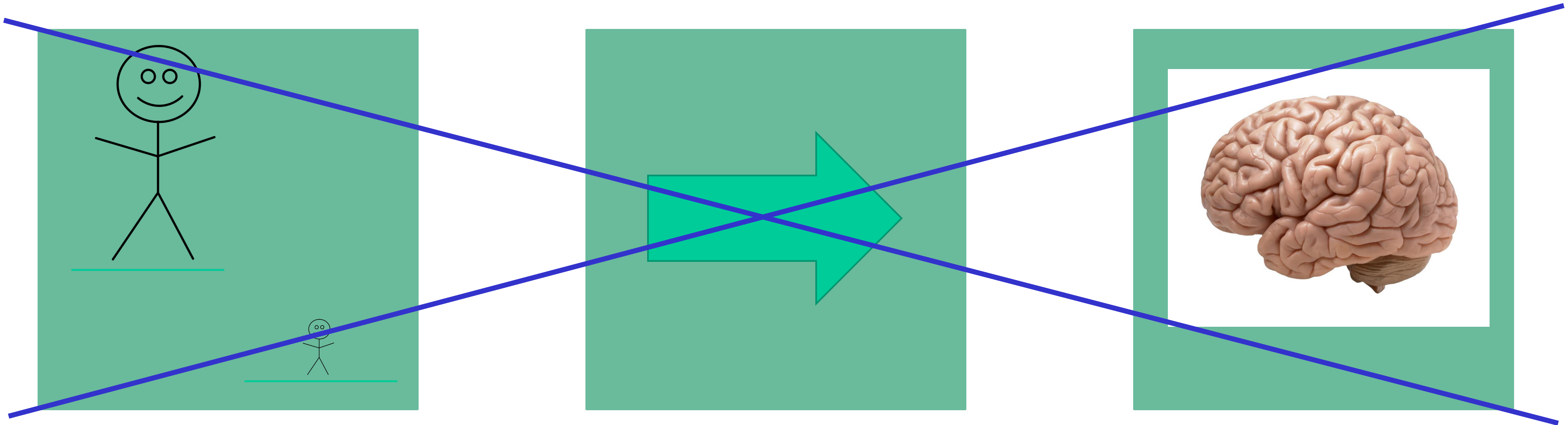
– SIR KEN ROBINSON

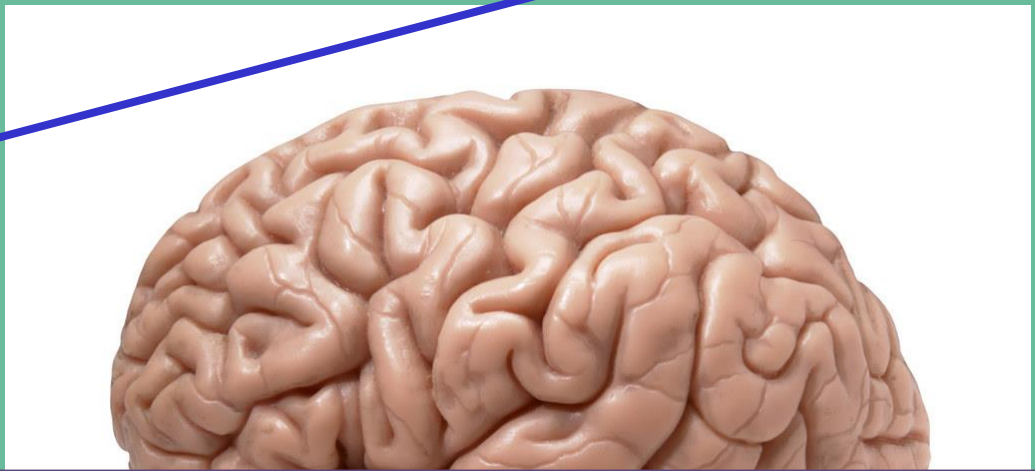
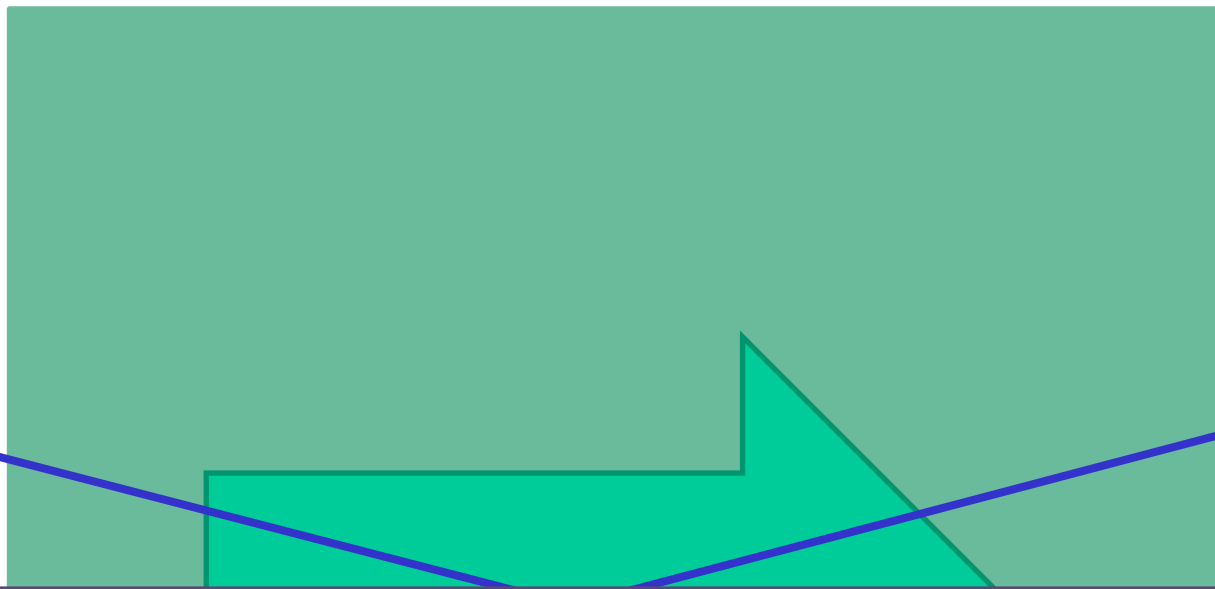
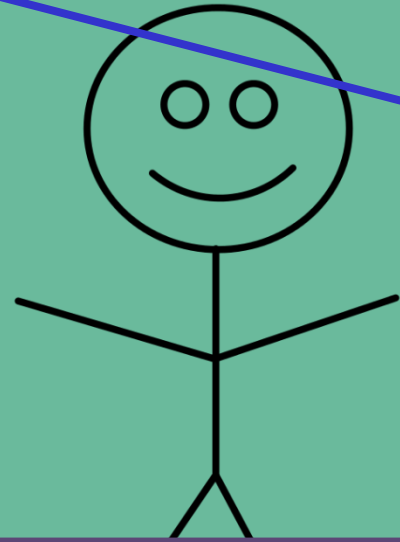
TED



Exercise:
Draw
schematically
what is a science
communication







COMMUNICATION

Dialog
Listening
Feedback

Respect
Understanding
Finding a
common ground

Recognition of
fundamental
role of
EMOTIONS

Why scientists are losing the fight to communicate science to the public

Richard P Grant

Scientists and science communicators are engaged in a constant battle with ignorance. But that's an approach doomed to failure



Be quiet. It's good for you. Photograph: Gareth Fuller/PA

<https://www.youtube.com/watch?v=sG8gLt4GChg>

BBC NEWS #QandA

I brought the graph...

0:53 / 1:30

BBC jest brytyjskim nadawcą publicznym. [Wikipedia](#)

Climate Change: Professor Brian Cox clashes with sceptic Malcolm Roberts - BBC News

147 084 wyświetlenia • 16 sie 2016

1,1 TYS. 323 UDOSTĘPNIJ ZAPISZ ...

BBC News 10,7 mln subskrybentów SUBSKRYBUJ

https://www.theguardian.com/science/occams-corner/2016/aug/23/scientists-losing-science-communication-skeptic-cox#utm_sguid=172491,bbcaead-bad1-2c90-c928-14d44e28e7e4

Why scientists are losing the fight to communicate science to the public

Richard P Grant

Scientists and science communicators are engaged in a constant battle with ignorance. But that's an approach doomed to failure



Be quiet. It's good for you. Photograph: Gareth Fuller/PA

Most science communication isn't about persuading people; it's self-affirmation for those already on the inside. Look at us, it says, aren't we clever? We are exclusive, we are a gang, we are family.

That's not communication. It's not changing minds and it's certainly not winning hearts and minds.

It's tribalism.

https://www.theguardian.com/science/occams-corner/2016/aug/23/scientists-losing-science-communication-skeptic-cox#utm_sguid=172491,bbcaead-bad1-2c90-c928-14d44e28e7e4

What is a common mistake during
CONVINCING people?

<https://www.cda.pl/video/15224635c>

(about 1:00h, sausage speech)

What ~~we~~ sausage did wrong?

47

Were offensive, abusing

Were taking something, not giving nothing in return (no offer)

Were brutal, drastic, appealed to negative emotions and violence

Did not listen his audience (broadcasting, not communicating, no communication)

IMPOSTING his opinions

Were without allies, Local Opinion Leaders



„One size
fits all”?

YOU AGENDA

fast

slow

THEIR AGENDA

fast

Congratulations!

It's not gonna work...

slow

It's not gonna work...

Congratulations

„KNOW YOUR AUDIENCE”



„KNOW YOUR AUDIENCE”

Who are they? Age? Education?

Why are they here? Why or for what should they listen to you?

Could we have to say something important to them?

What are their interests? How to reach them?

What language, vocabulary, symbols do they operate?

WHAT IS OUR COMMON GROUND?

BBVA FOUNDATION INTERNATIONAL STUDY ON SCIENTIFIC CULTURE UNDERSTANDING OF SCIENCE

The BBVA Foundation presents the results of its “International Study on Scientific Culture”, based on a wide-ranging survey as regards both sample size (1,500 interviewees in each of the 11 countries analyzed) and the variety of issues broached.

TASK:

- Start to be OBSERVANT about producing and receiving communicates – WHY you switch channel or radiostation and WHY are you fascinated by other text or podcast?
WHAT makes it interesting?