

a load off your mind

kia ora!

messages

motivations

cyclical

impact

inclusivity

audiences

welcome to the

'a load off your mind'

barriers

power!

vocabulary

science communication laundromat

theory-informed
"practice-able"
reflexive



a load off your mind

scicomm 101...

2

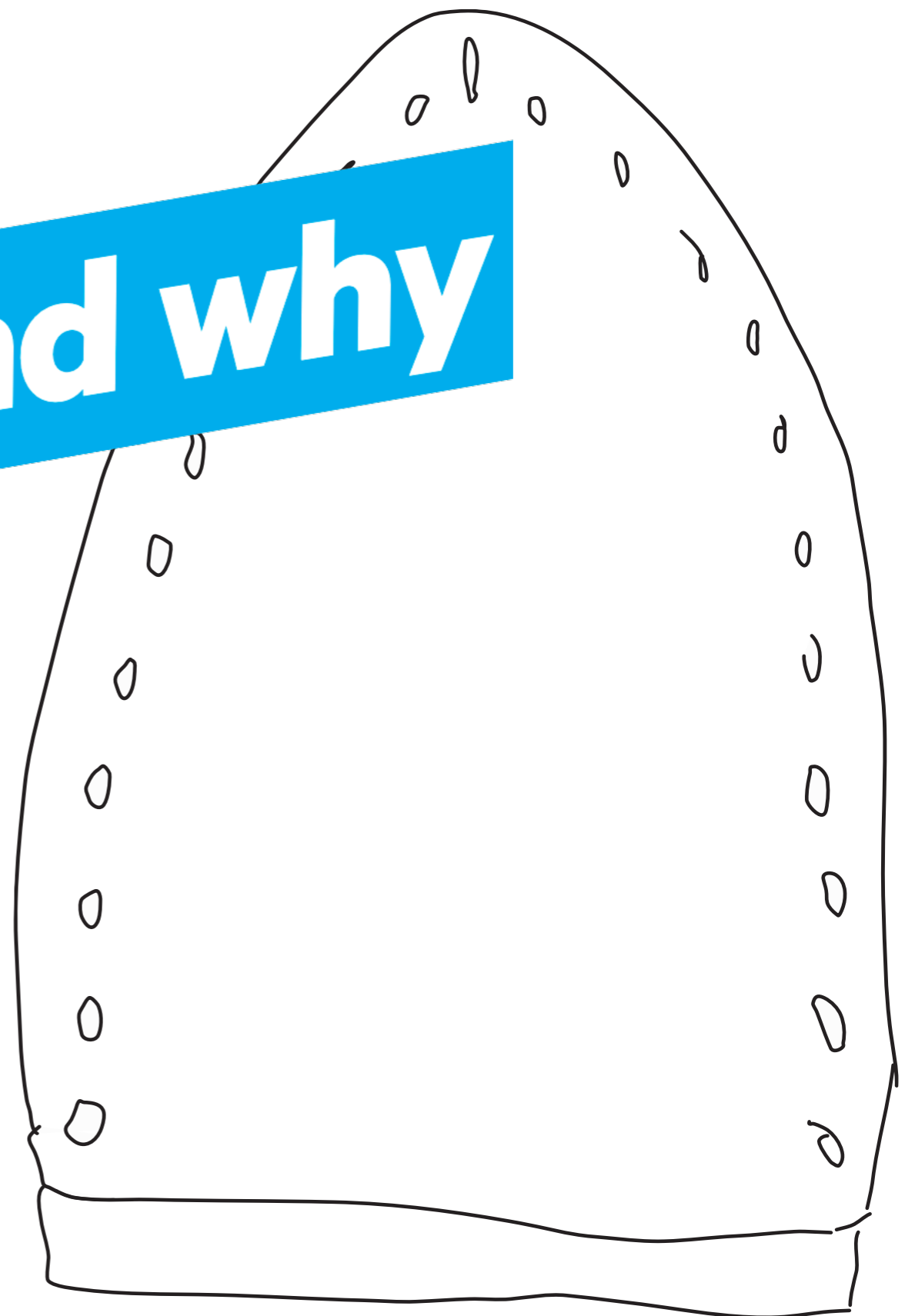
sort the
laundry



a load off your mind

a brief intro to the what, who, and why of scicomm*

*or PES(T): public engagement with science (and technology). let's not get too hung up on this yet!



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what even is scicomm?

organised, explicit, and intended actions that aim to communicate scientific knowledge, methodology, processes or practices in settings where non-scientists are a recognized part of the audience

- Horst, Davies & Irwin (2017, p.884)

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what even is engagement?

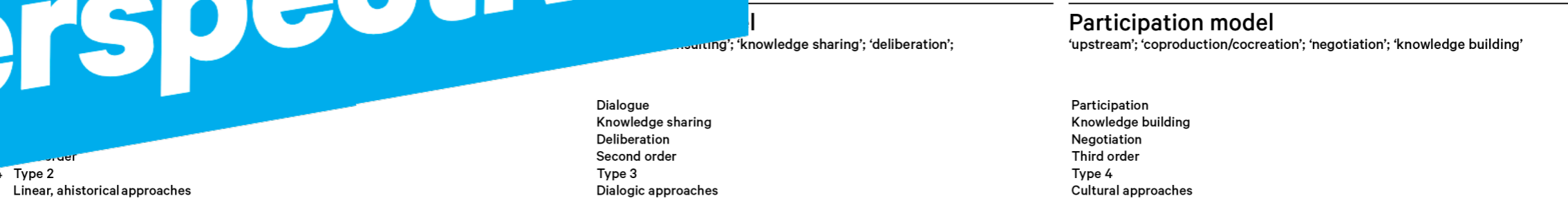
...intentional, meaningful interactions that provide opportunities for mutual learning between scientists and members of the public

- Nisbet & Marcowitz (2015, p.2)

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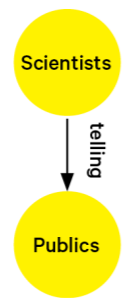
a historical perspective

PHASE



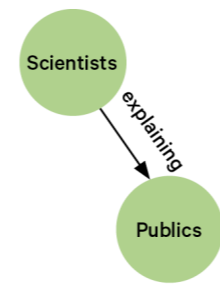
'Scientific Literacy'

One way dialogue from expert scientists to the public (who are ignorant and need to be given facts by scientists to fill the 'knowledge deficit'). A general sense that people should understand science and this knowledge could be tested like you test literacy or numeracy.



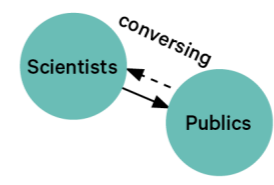
PUS: Public Understanding of Science

Concern about attitudes towards science led to the idea that science should interpret advances, and make them accessible to non-scientists. The theory was that this would improve public decision making and people would appreciate science more. Scicomm becomes more mainstream during this period.

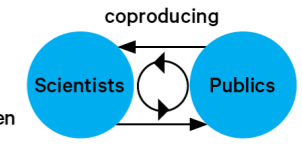


PEST: Public Engagement with Science and Technology

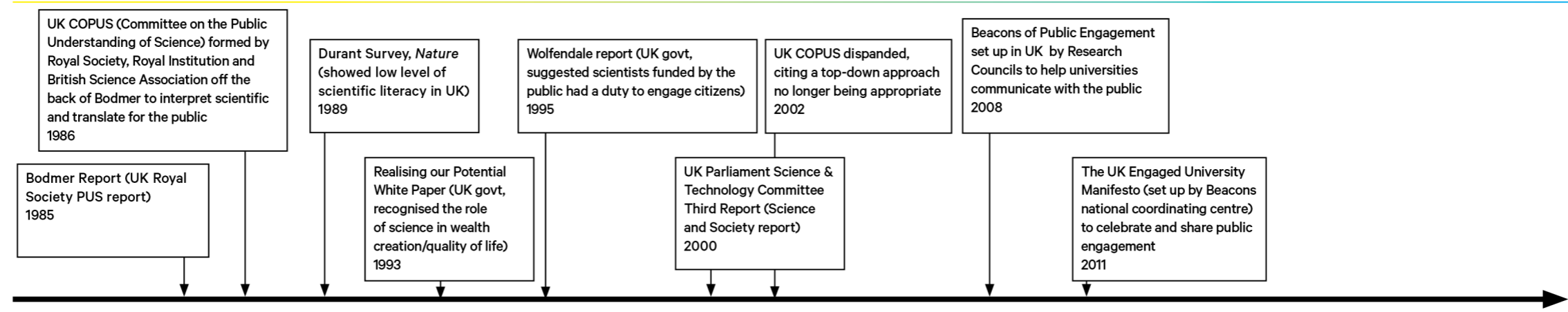
A focus on dialogue and two way engagement between scientists and the public; more equal and active. The theory is, scientists listen, converse and record the public opinion. Includes activities like 'Cafe Scientifique' and citizen juries. In practice though, do the public set the research agenda?



An increase in activities with a 'citizen science' component where public(s) engage in science with scientists and 'open science' where data, protocols etc are made available for public scrutiny, and coproduction, where researchers, practitioners and the public share power and responsibility for the work



KEY MOMENTS IN SCICOMM TIMELINE



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a historical perspective

creation myth?

Indigenous perspectives?

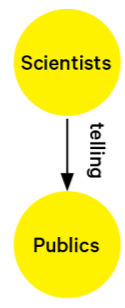
But giving a talk is one way and that still happens?

Different modes useful for different things?

PHASE

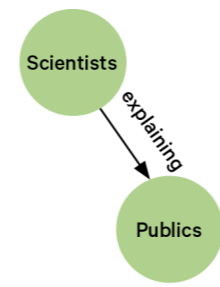
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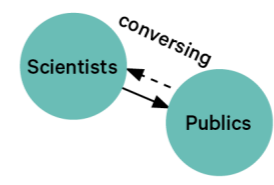
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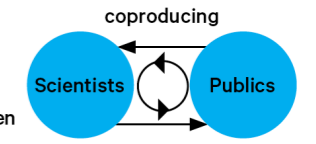


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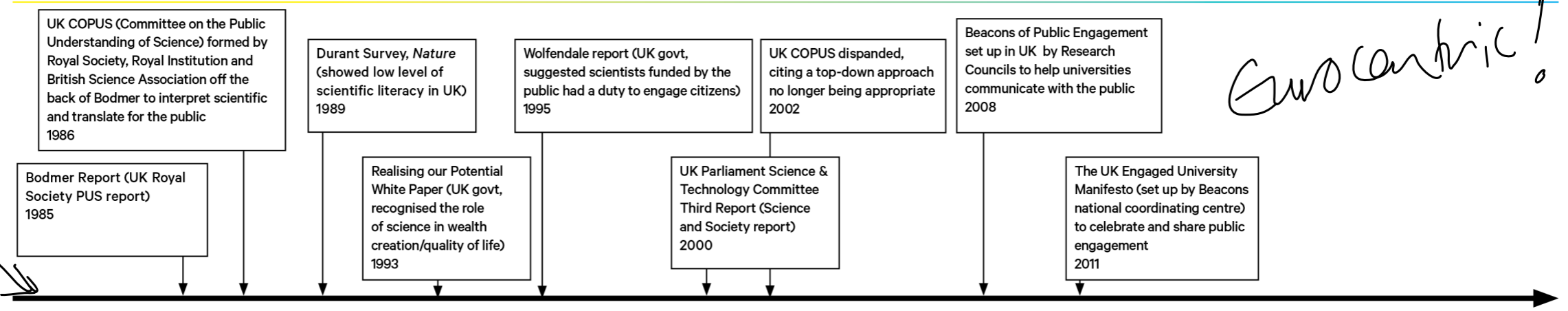
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KEY MOMENTS IN SCICOMM TIMELINE



no scicomm prior to the 80s?

Eurocentric!

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what's the purpose of scicomm?

From the perspective of
scientists
media
public(s)
policymakers

what's the purpose of scicomm?

From the perspective of

scientists

media

public(s)

polycymakers

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scientists...

"it's important"

"to encourage kids to study science"

"to demystify research"

"it's a good thing to do"

"because we're working on public money"

it's fun

"so people understand the issues behind"

"to address misconceptions"

"to show the process science"

Why do we get involved in education, outreach, & public engagement?

a load off your mind

scientists...

"to encourage kids to study science"

inspire a next generation of scientists

"it's important"

social responsibility

"it's a good thing to do"

"to demystify research"

to encourage public engagement with science

"...we're working with public money"

justify public funding

it's inherently fun and rewarding

"so people understand issues"

support communication and education professionals

"to increase scientific literacy"

increase scientific literacy

"to show the process science"

Why do we get involved in education, outreach, & public engagement?

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scientists...

commercial interests

inspire a next generation of scientists

"it's important"

attract students (recruitment)

social responsibility

have political influence

it's a good thing to do

"to demystify research"

to encourage public engagement with science

"... we're working with public money"

justify public funding

ego

Increase funding (public and private)

it's inherently fun and rewarding

"so people understand issues"

support communication and education professionals

reach politicians through public support (votes)

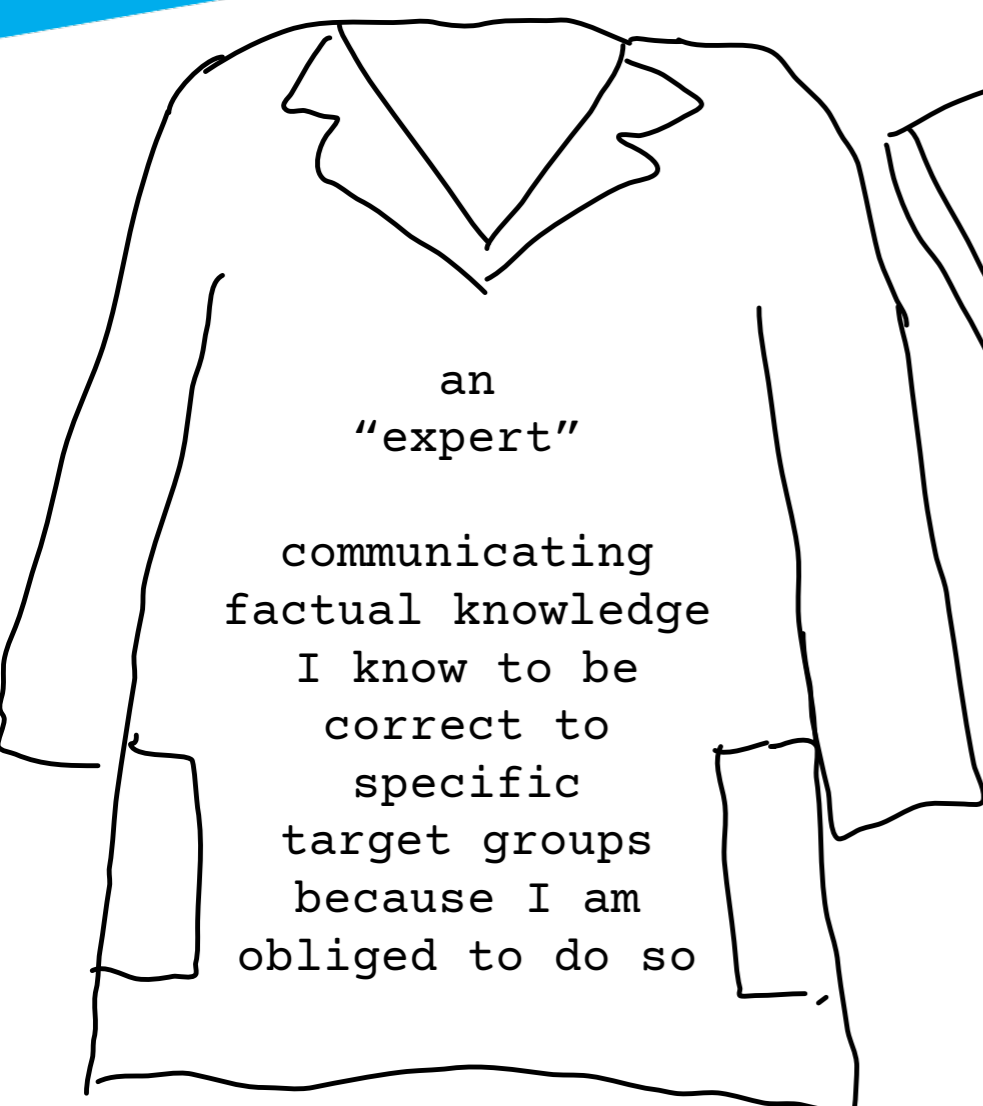
increase scientific literacy

visibility for yourself, your research, your group (marketing)

Why do we get involved in education, outreach, & public engagement?

a load off your mind

which 'science' are you representing?



an
"expert"

communicating
factual knowledge
I know to be
correct to
specific
target groups
because I am
obliged to do so



a
"research manager"

communicating
knowledge products
that show us in a
good light
(branding)
to stakeholders
because it is a part
of a managerial role



a "guardian of
science"

communicating about
rationality and
scientific method
to enhance
enlightenment
to citizens
because I am
personally committed

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what's the purpose of scicomm?

From the perspective of
scientists

media

public(s)

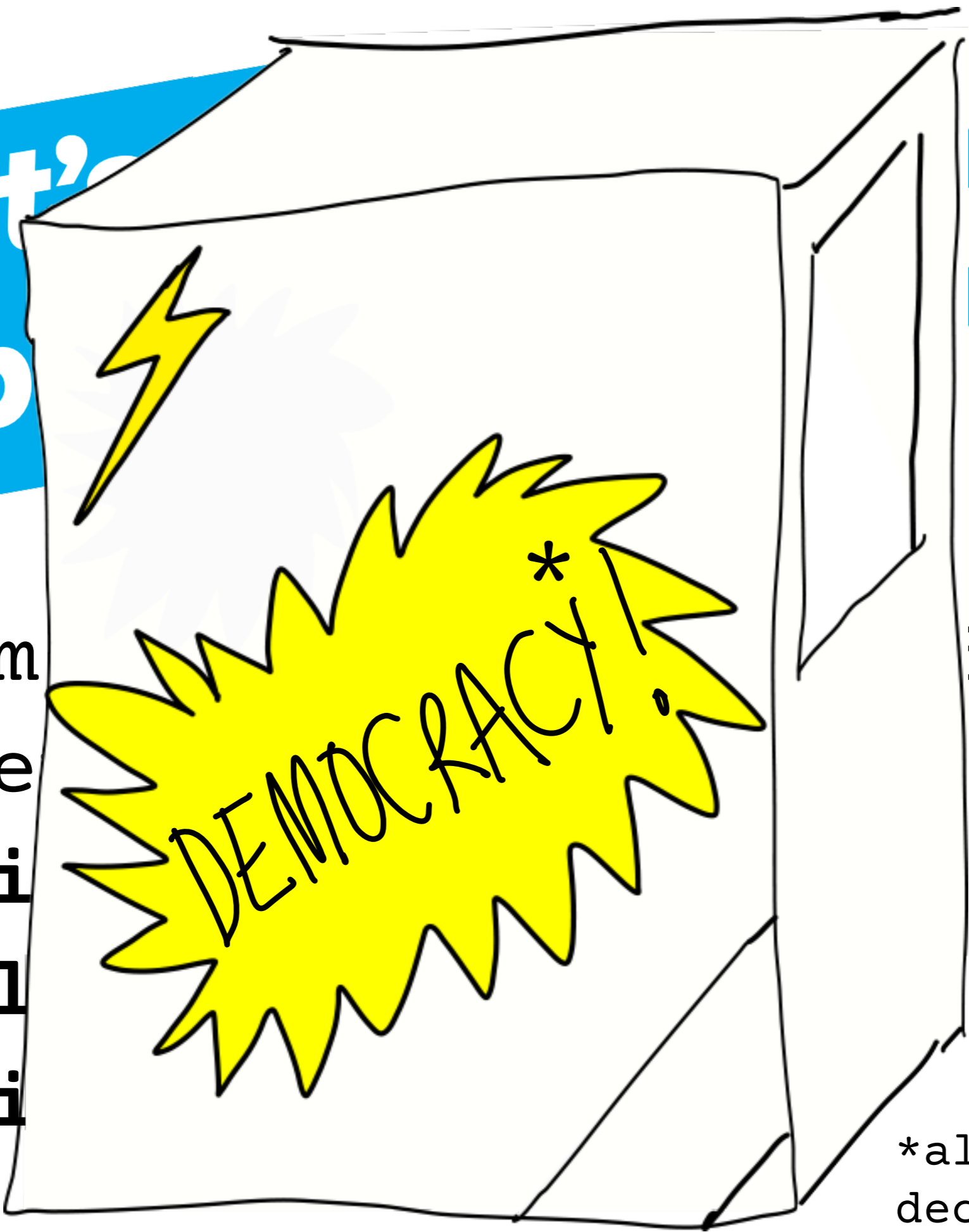
policymakers

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what's
purp

n?

From
scie
medi
publ
poli



...

*alt:informed
decision-making

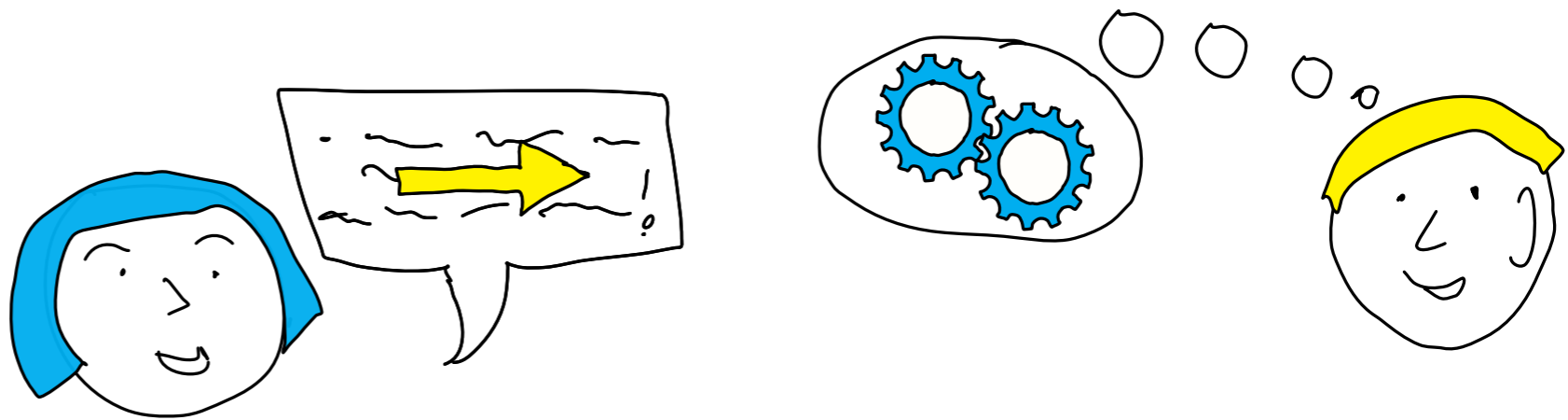
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shifts...

research does suggest that there has been a transition over the last forty-odd years from:

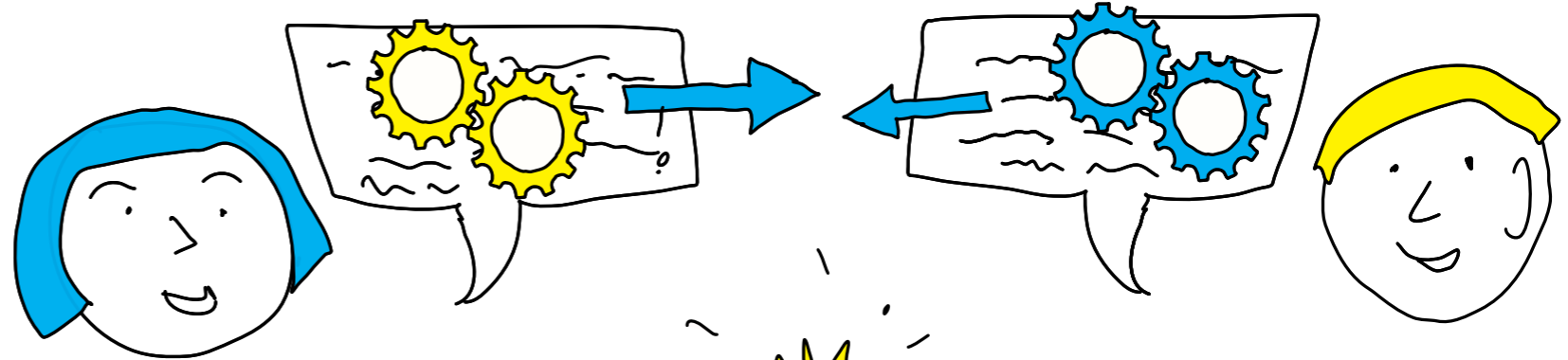
knowledge transfer

Wynne 2005, Irwin 2006, Trench 2008, Pouliot 2009



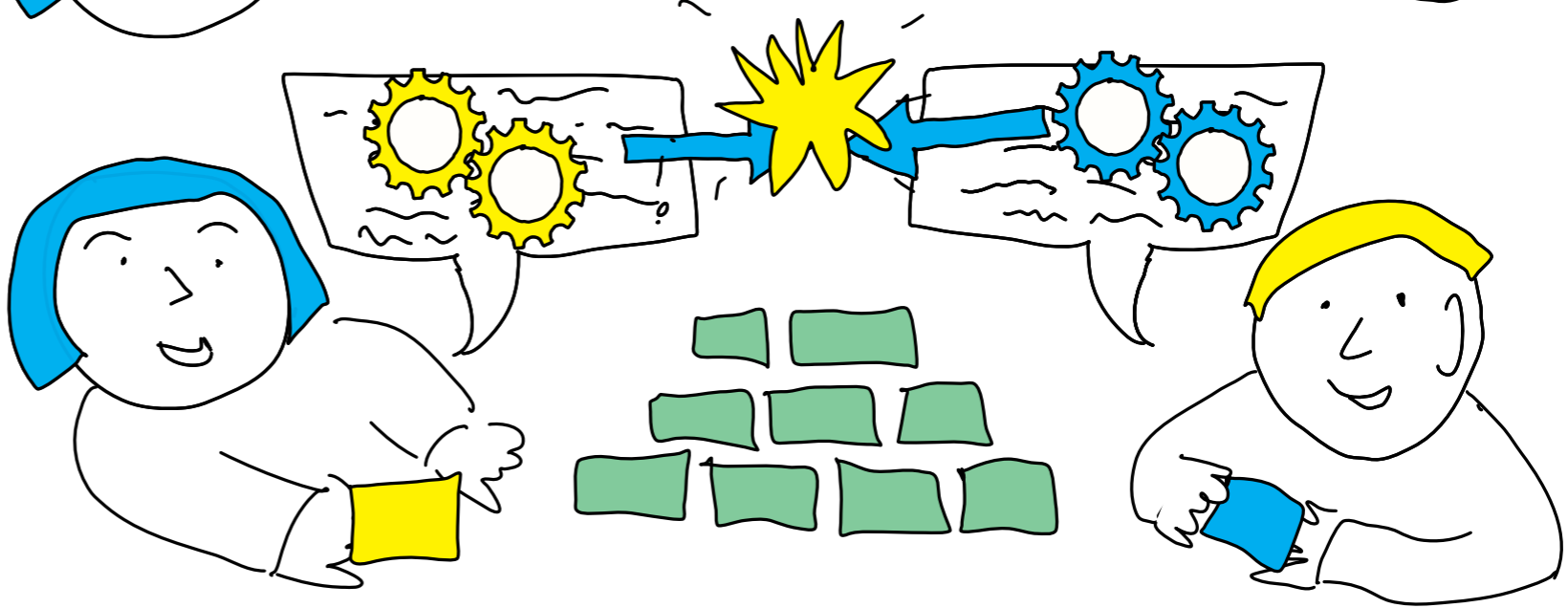
knowledge sharing

Jackson, Barbagello & Haste 2006, Benneworth 2009



knowledge building

Jolly & Kaufman 2008, Williams 2010

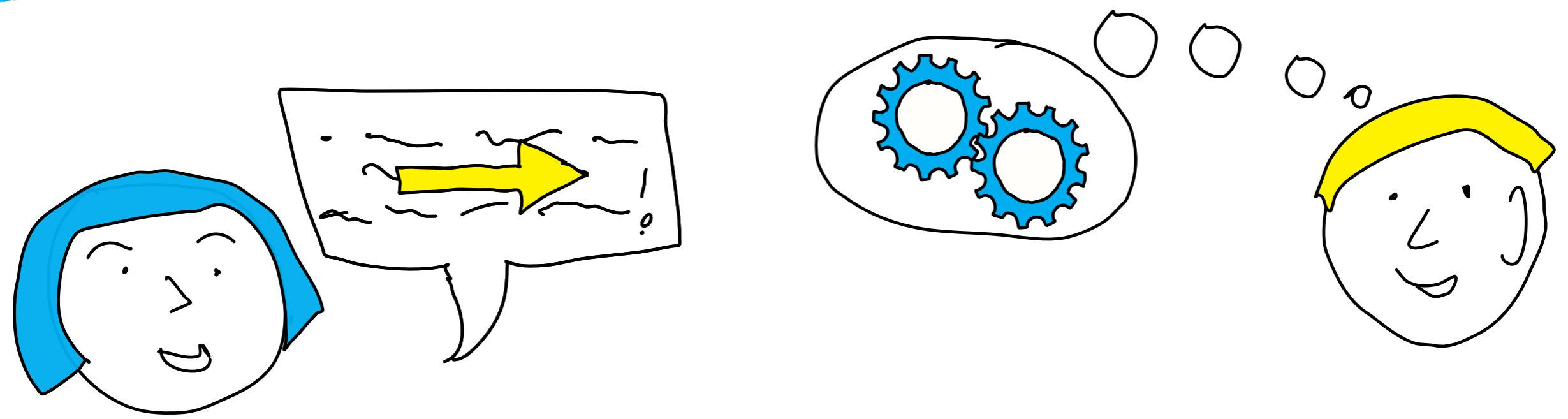


Terms taken from Stocklmayer (2013)

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knowledge transfer

e.g. articles
podcasts
presentations
infographics

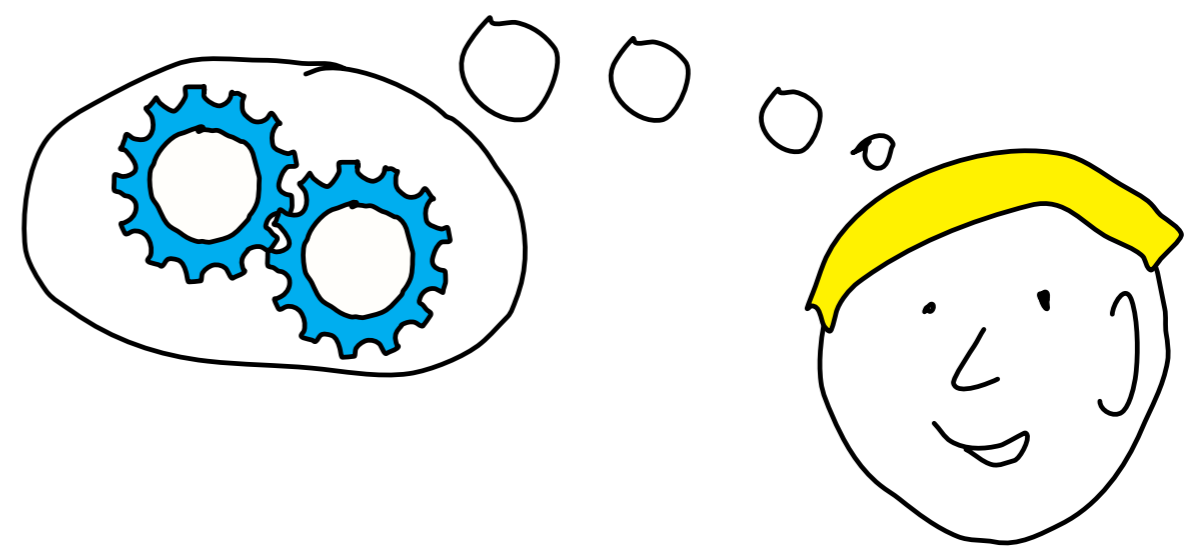
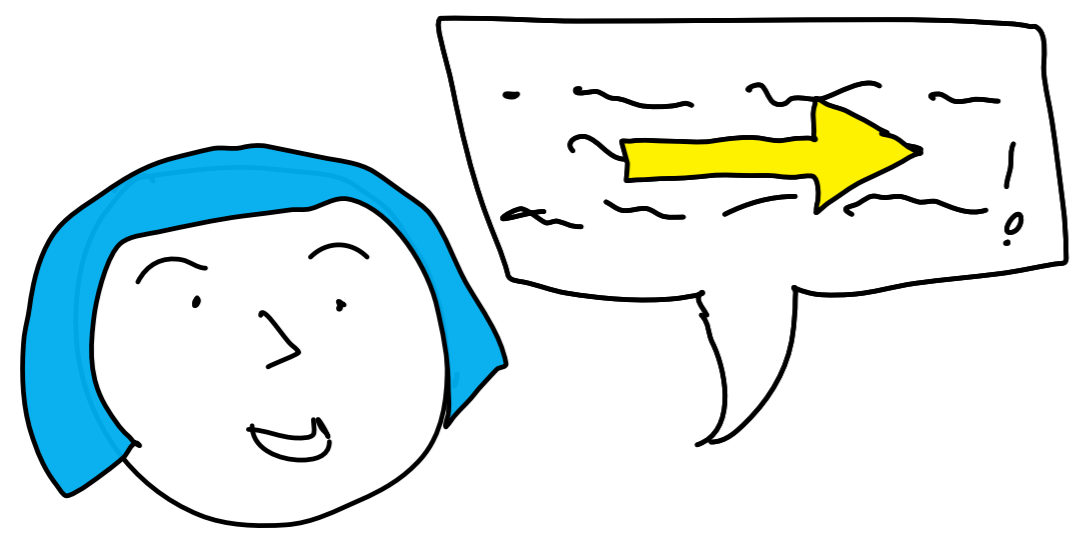


One-way transfer of content
based on commonly understood laws of nature
no impact or action required, little controversy

a load off your mind

knowledge transfer

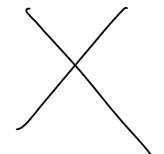
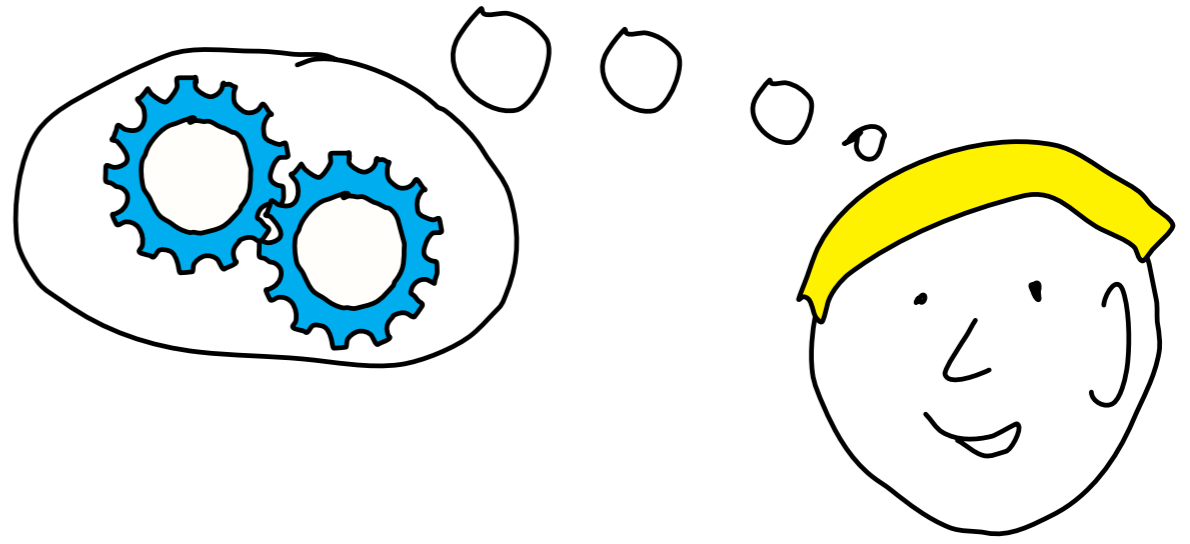
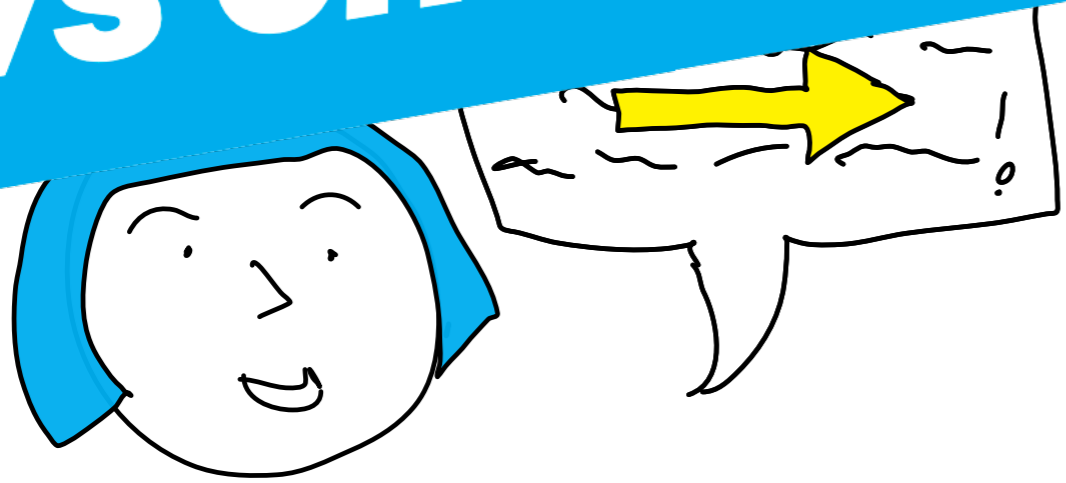
* Sometimes called the 'deficit model'



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deficit vs one way



The deficit mindset is an assumption that the public have a 'deficit' of knowledge, and this can be remedied through more science communication one way does not necessarily equal deficit.

One way communication is important for consensual, non-problematic concepts builds 'scientific literacy' and understanding of role & nature of science

Unhelpful framework for communication of controversial issues

no necessary causal progression from more knowledge to more acceptance

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knowledge transfer

suitable for simple, non-political issues with common frameworks, and requires no change in values, attitudes or behaviour

research or subject we want engage about

the engagement could change the direction of the research...

what we are working on with our research is...

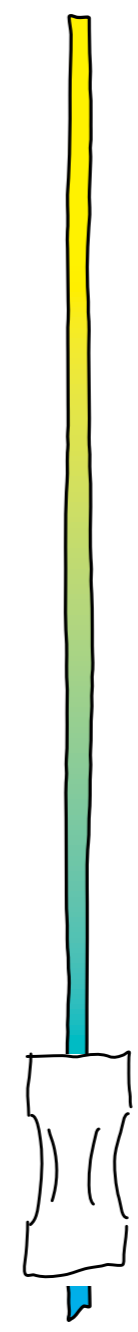
completely done and dusted

a lot - the research agenda can/should change based on what is learnt

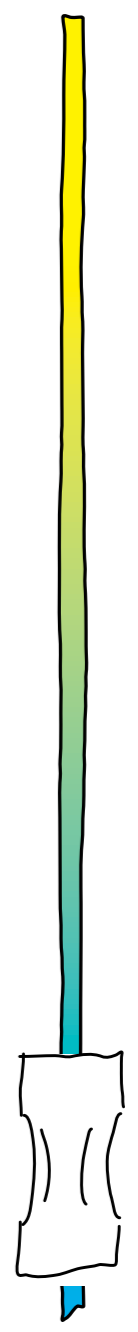
controversial or contentious with no community acceptance



not yet started



not at all - we just want to share the research

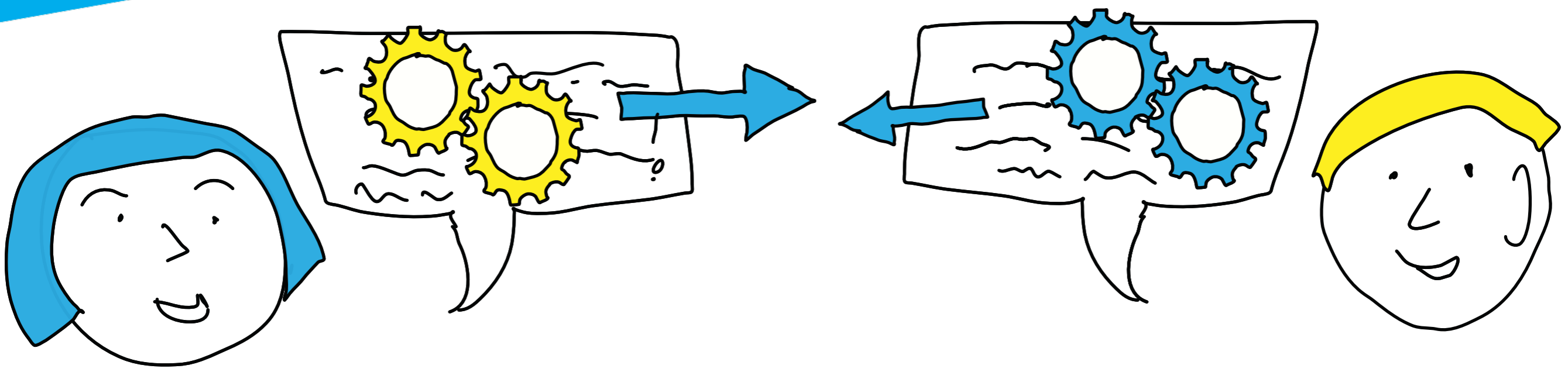


accepted by the public and not at all controversial

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Knowledge sharing

g. science cafe's
stakeholder meetings
workshops
games



two way discussion
negotiation / consultation
some consideration of context as well as content
experts might disagree on subject

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knowledge sharing

useful for topics with high public impact or areas of controversy or political interest

the research or project we want to engage about is...

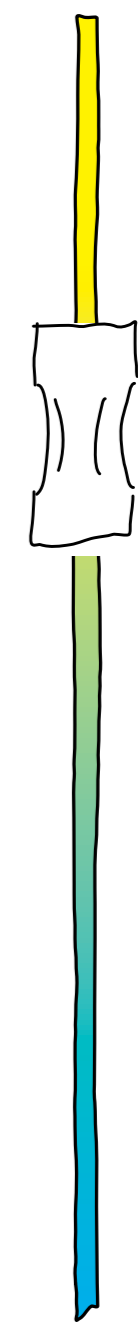
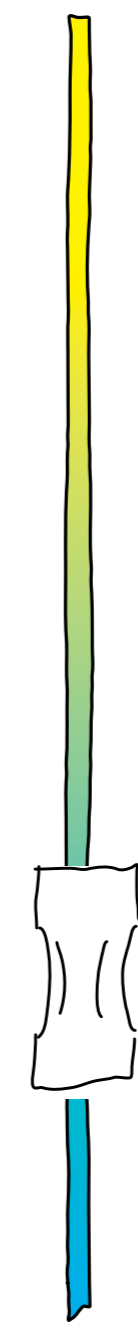
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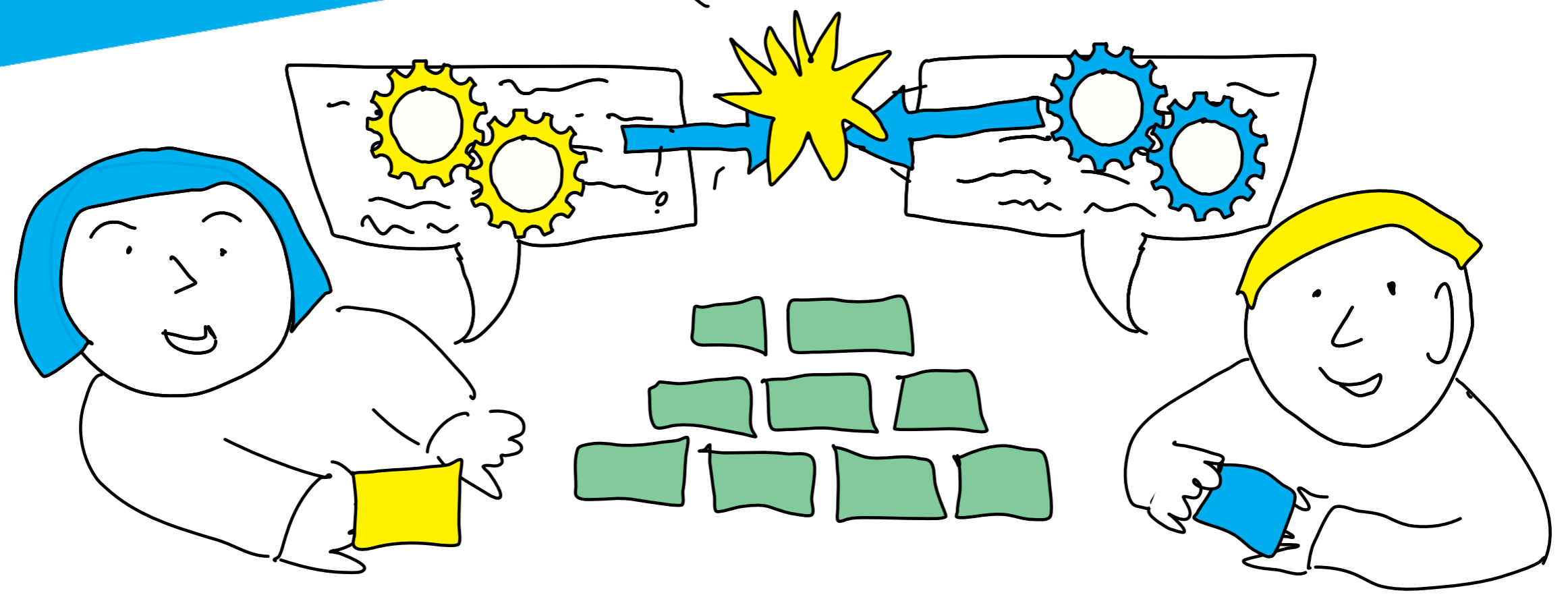
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a load off your mind

knowledge building

e.g. consensus conferences
stakeholder workshops
hackathons dialogues
co-production



Multi-directional co-production
considers content and context
participation and engagement

a load off your mind

knowledge building

useful for topics with high public impact or areas of controversy or political interest

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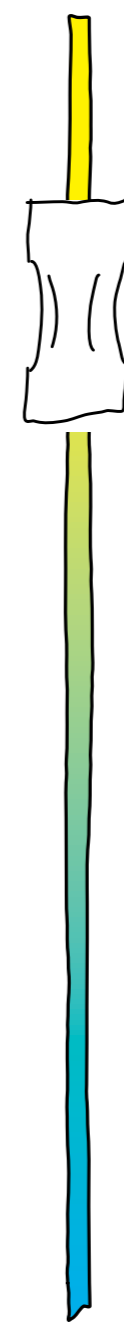
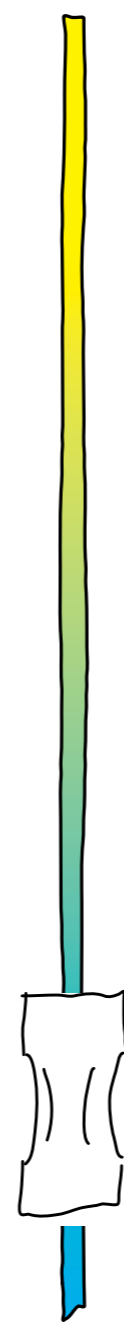
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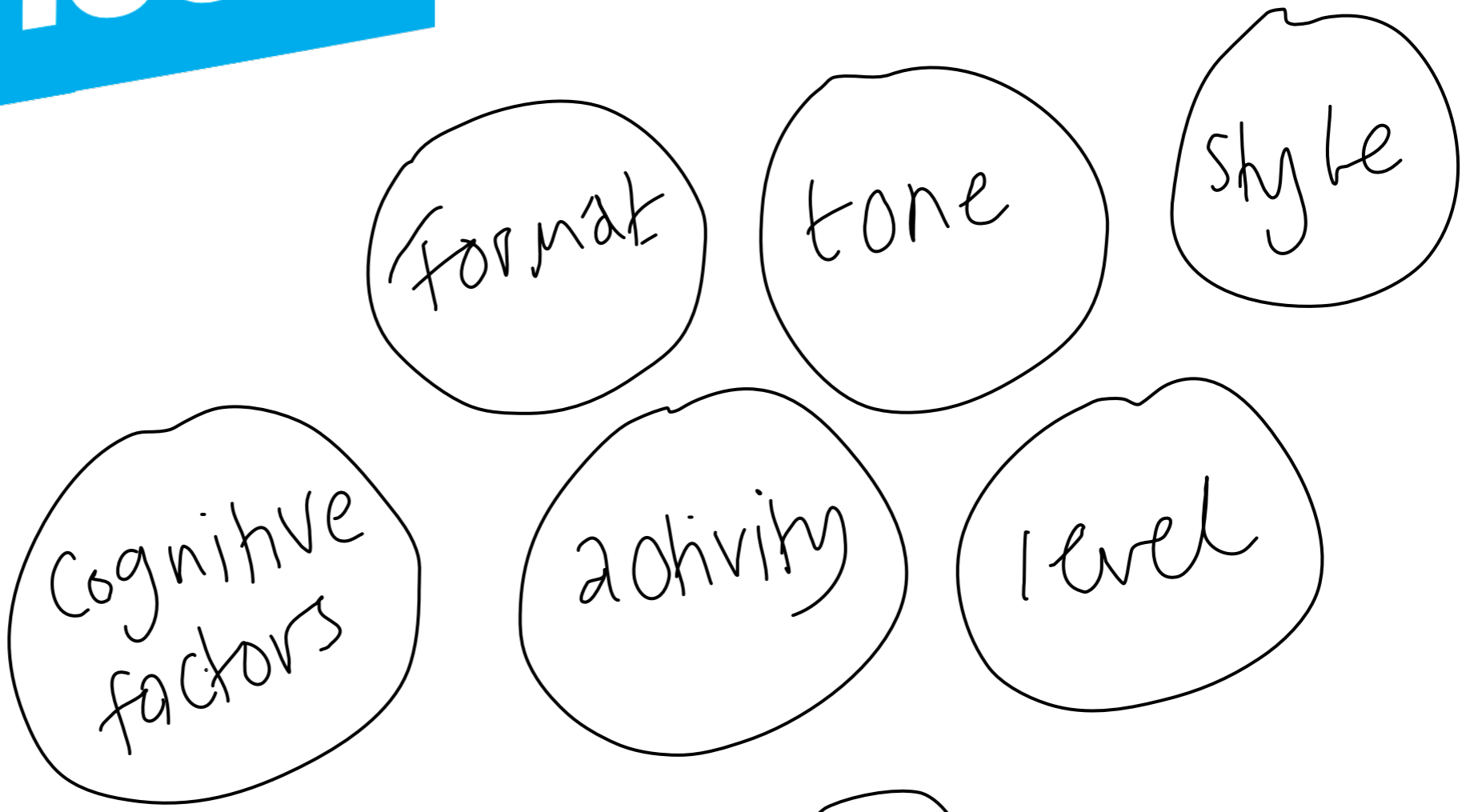
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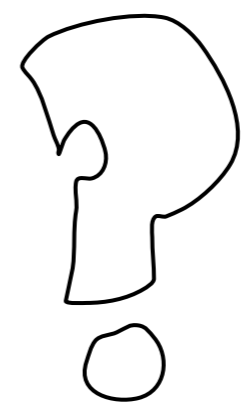
accepted by the public and not at all controversial

a load off your mind

audiences



to design effective communication we need to understand the goals of the communication 'event' and the audience...



a load off your mind

a note on 'the general public'

1. **The fans** – who love everything related to science
2. **People in the middle** – who have some interest in science
3. **Those who say 'I don't get it'** – who are interested in science, but have trouble understanding it
4. **'Too busy'** – those who don't have the time to pay attention to science
5. **Distrustful people** – who don't trust science and often hold anti-scientific beliefs.
6. **'I know it all already'** – those who feel they have nothing new to learn from science, but often have extreme anti-scientific beliefs.

references

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