SOCIETY FOR EXPERIMENTAL BIOLOGY

The GLOBAL PLANT COUNCIL

Public Acceptance Considerations

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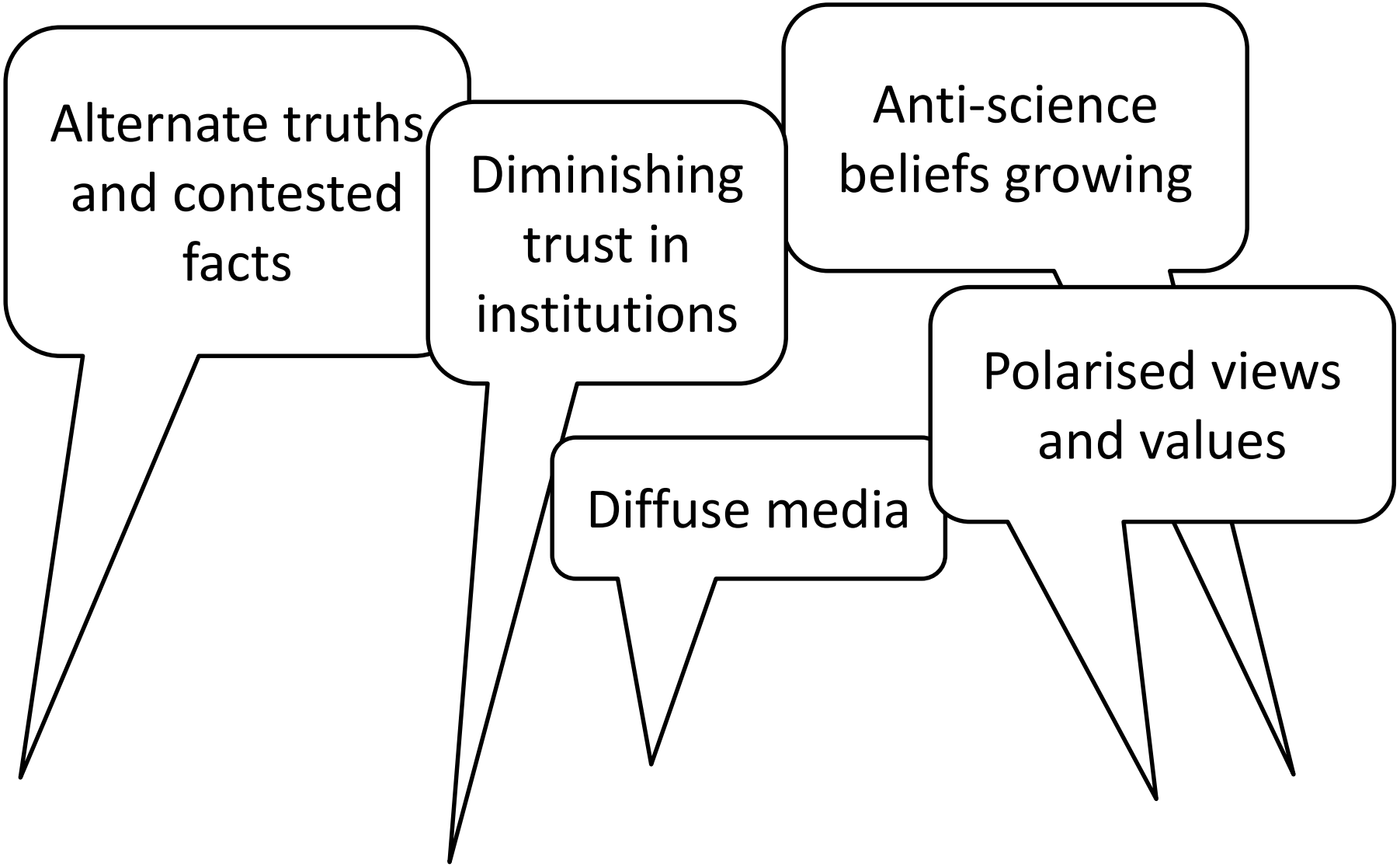

Alternate truths and contested facts
Diminishing trust in institutions
Anti-science beliefs growing
Diffuse media
Polarised views and values

Summary: what drives our attitudes about science and technology

1. When **information is complex**, people make decisions based on their **values and beliefs**.
2. People seek **affirmation of their attitudes** (or beliefs) – no matter how fringe – and will **reject** any information or evidence that are **counter** to their attitudes (or beliefs).
3. Attitudes that **were not formed by scientific information** are **not influenced** by scientific information.
4. People **most trust** those whose **values mirror their own**.
5. **Initial framing** of NBTs will largely **govern** the public debate.

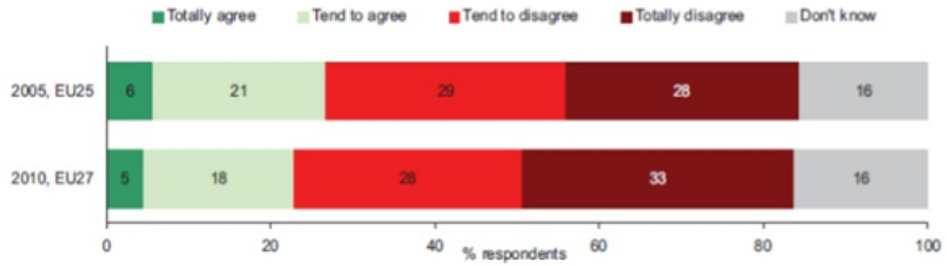
Hands up which group you belong to

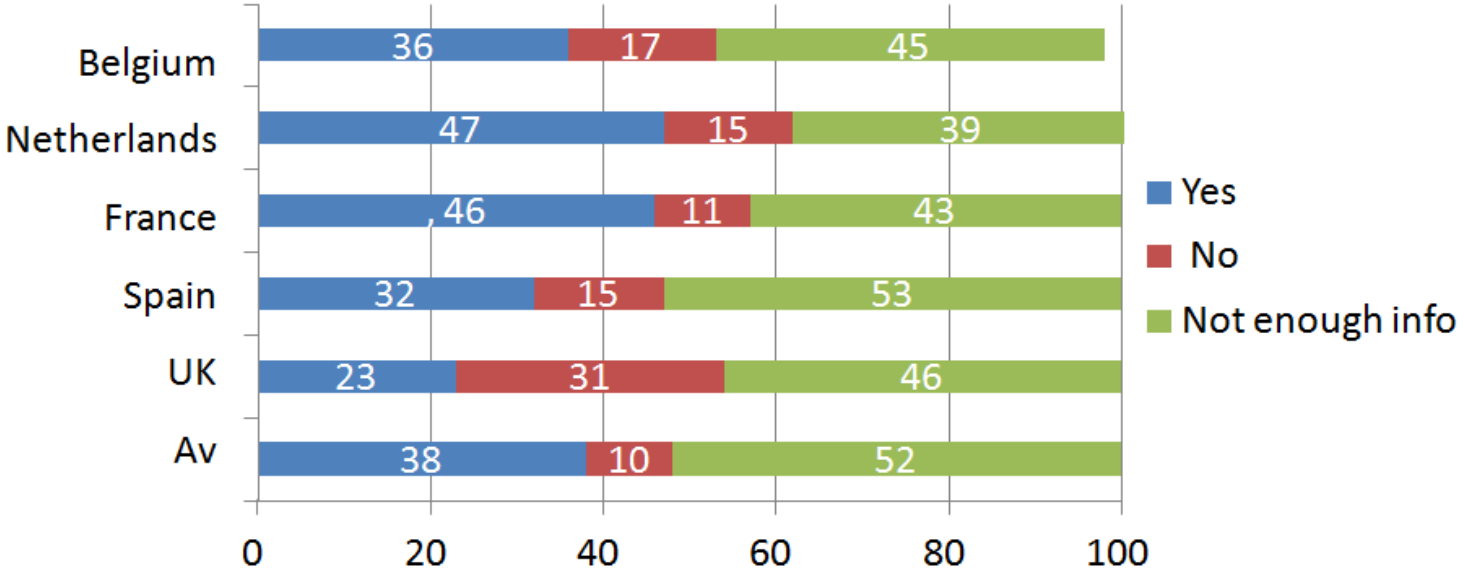
1.Science and technology creates more problems than they solve

2.People shouldn't tamper with nature

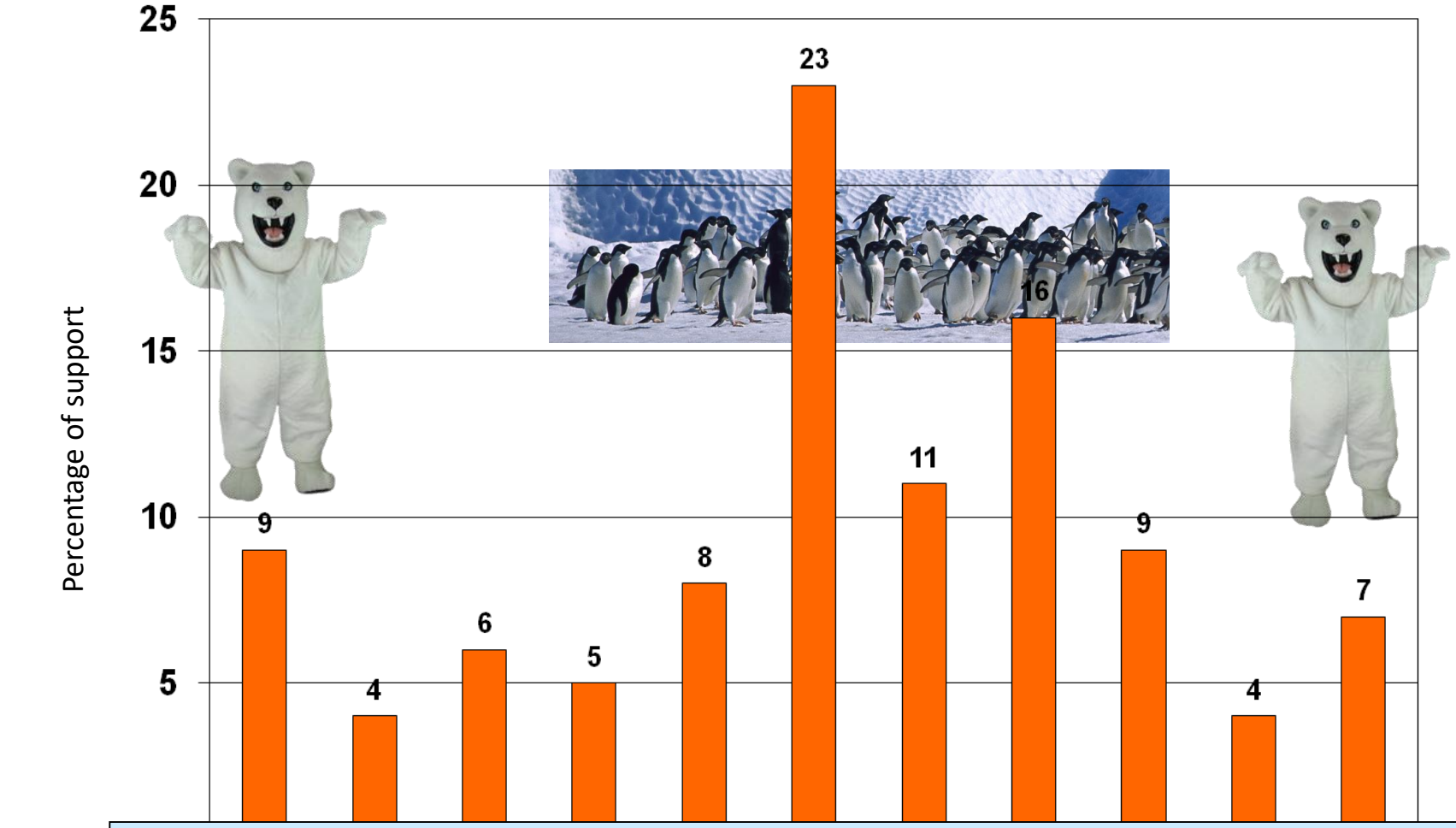
Lots of surveys on WHAT people think – but fewer on WHY

Eurobarometer



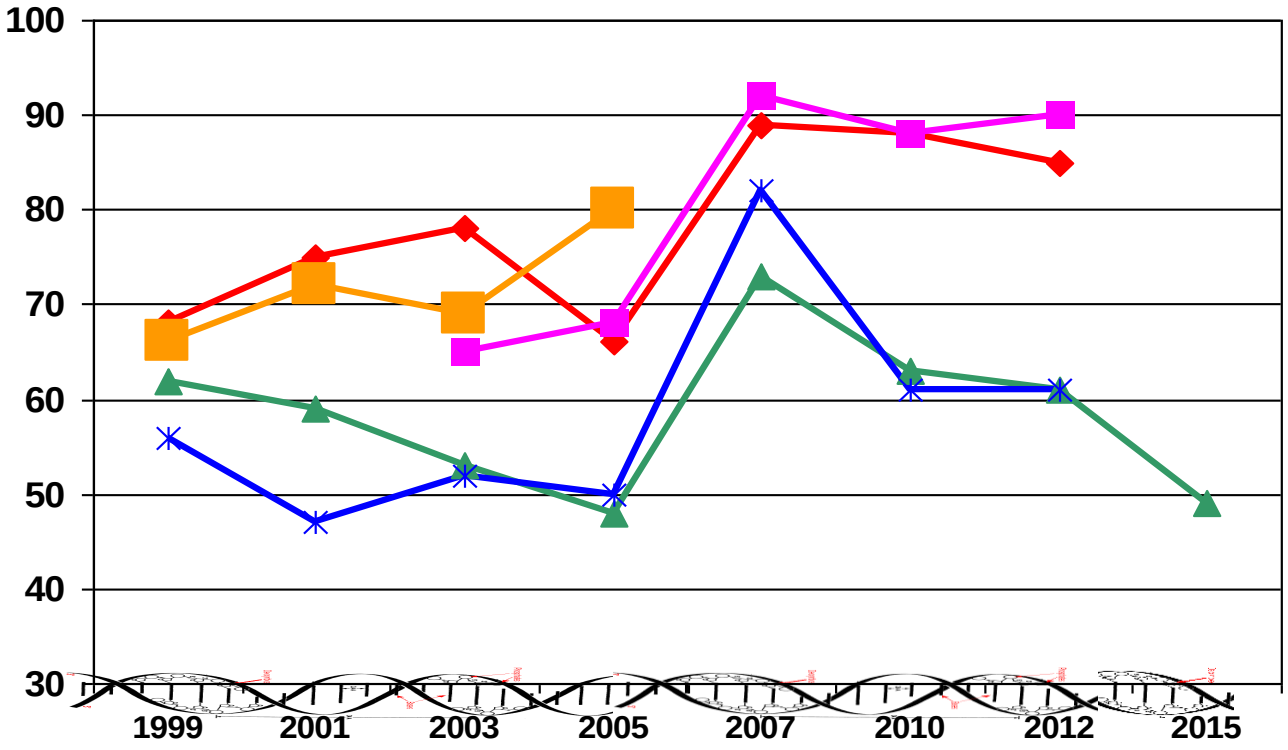


Four key things to know: #1



Key learning: Attitudes spread across a wide spectrum and don't mistake polar bears for penguins

Four key things to know: #2

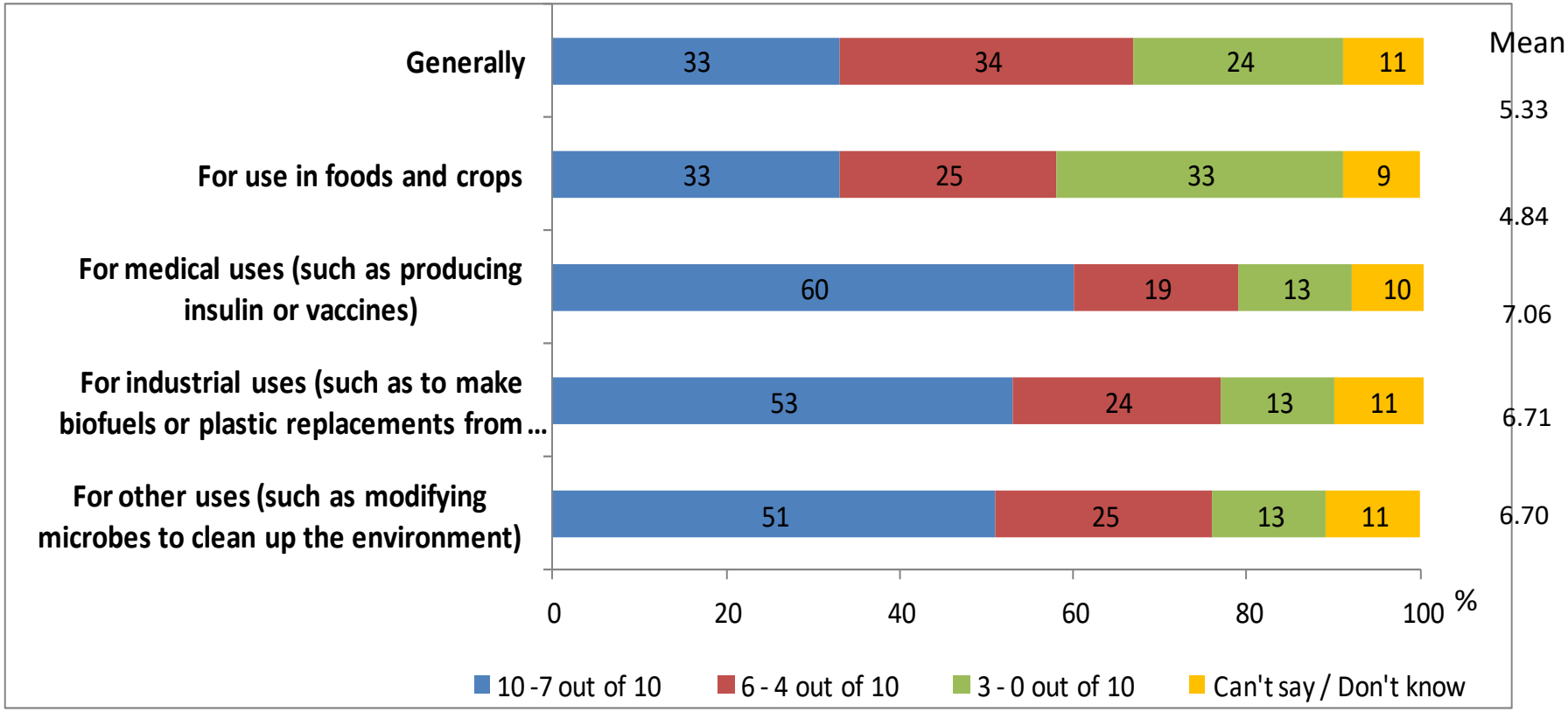


- Use human genes in medicines/ vaccines
- Make plants more pest resistant
- Using Stem cells to conduct medical research and treat diseases
- Using gene technology in food and drinks
- Using human genes in animals for growing organs

Anti-globalisation	War on Terror	Climate change	Global financial crisis	Era of uncertainty	Lack of trust
Mistrust	High risk concerns	Global citizens	nesting	fracturing	High risk Concerns

Key learning: Attitudes changes over time and are often linked to global paradigms

Four key things to know: #3

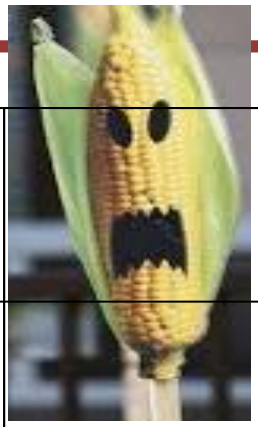


Q5.

Base

Key learning: There can be very different attitudes depending on the application and its outcome.

Four key things to [illegible]v: #4

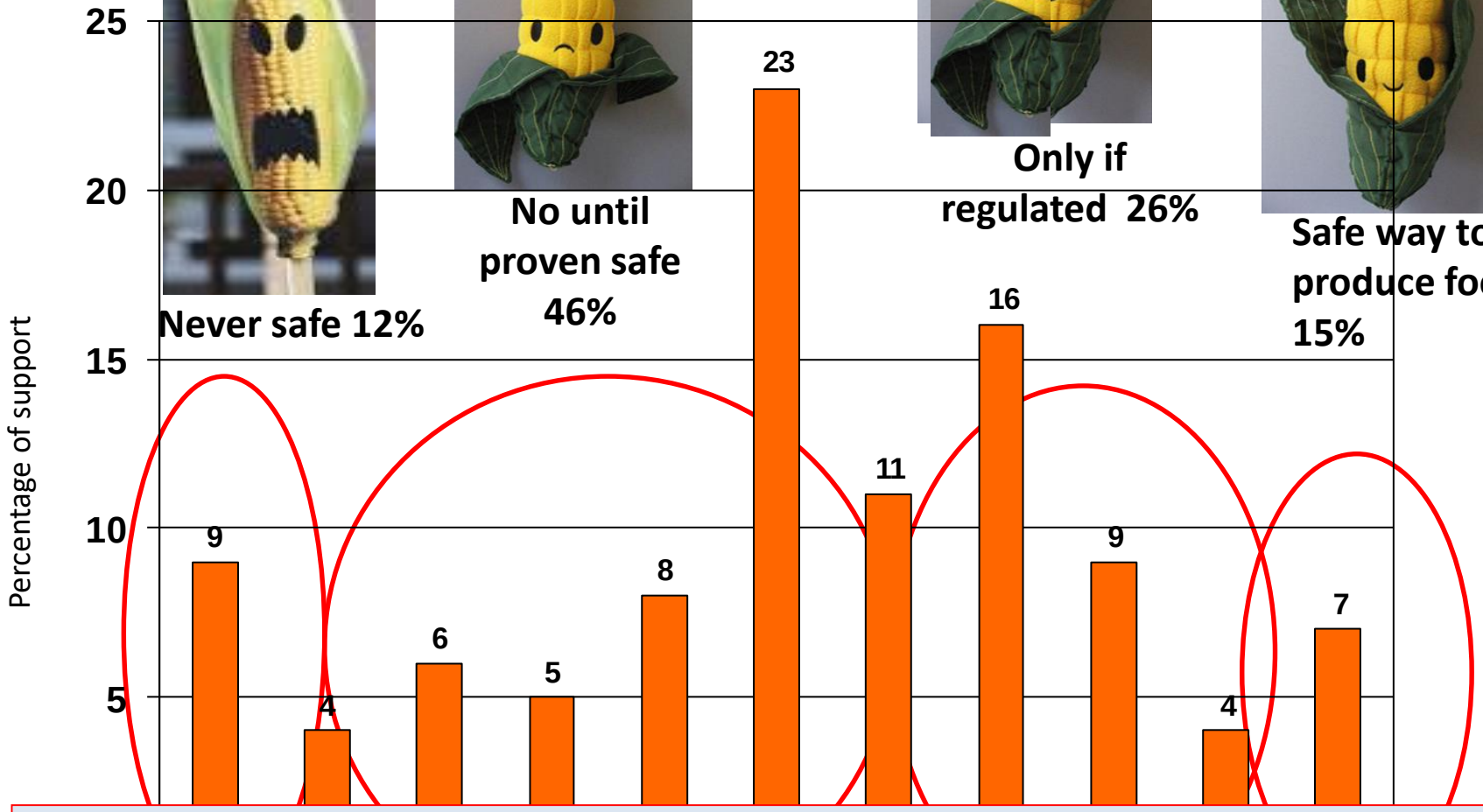


Never safe 12%

No until proven safe 46%

Only if regulated 26%

Safe way to produce food 15%



Lesson: There tend to be four key segments by attitudes to GM foods based around perceived safety.

Value driven attitude formation

- When faced with an issue related to science and technology we tend to adopt an **initial position of support or opposition**, based on a variety of **mental shortcuts** and our **predisposed values, or beliefs,** rather than scientific evidence.

Eg: **Climate change** denial = **anthropocentricism.**

Anti GM foods = natural values.

Anti-embryonic stem cells = right to life.

We respond to things emotionally before we respond to them cognitively.

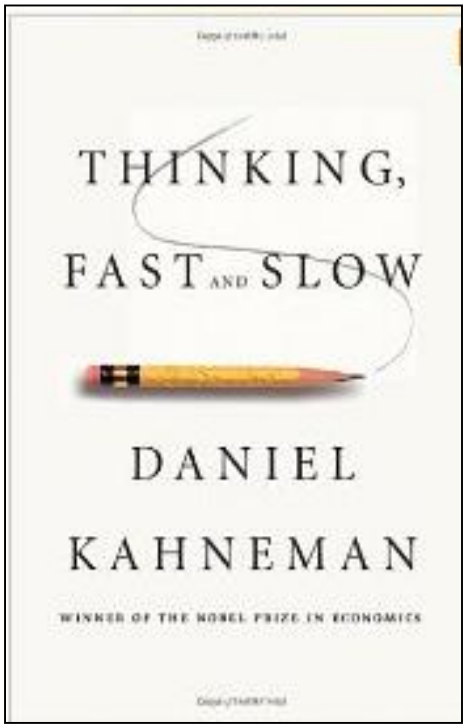
[Dr. Andrew Binder, at North Carolina State University]

The heart of the problem: how we think

- When we are **time poor**, **overwhelmed** with data, **uncertain**, driven **by fear or emotion**, we tend to assess information on **mental shortcuts** or VALUES not LOGIC.
- And opinions that were **NOT formed** by **LOGIC** are **not then** able to be easily **influenced by LOGIC**.

What is all means in practice

- **Fast thinking** uses **mental shortcuts** and is prone to the **errors** they bring
- **Slow thinking** needs a lot **of energy**, uses more **analytical** and critical thinking, but is still **prone to errors** by **limited information** we have at hand



- We can **spot biases** in **other's thinking**, but **rarely** in our **own!**

Value driven attitude formation

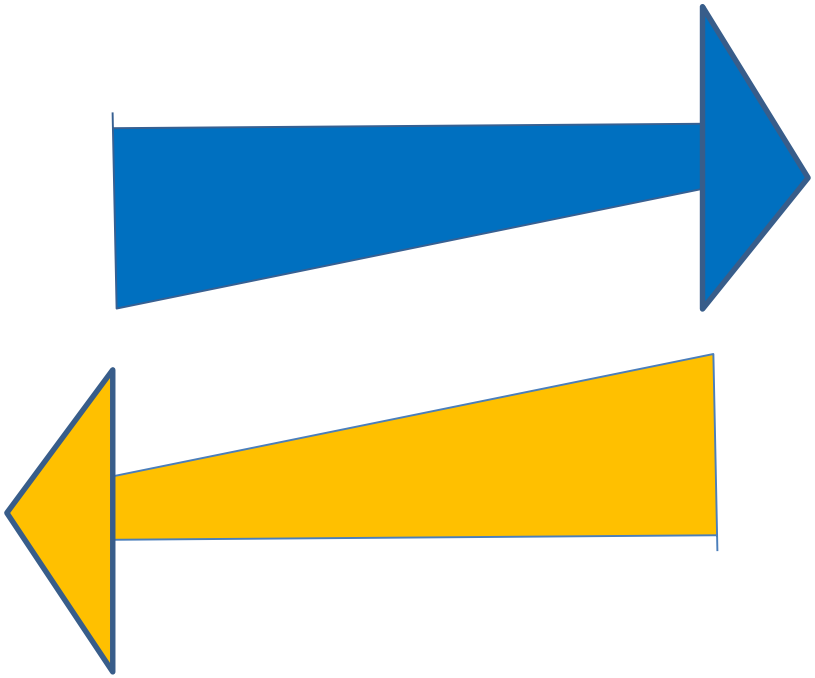
Understanding how values drive attitudes helps explain how:

Having **pro-development values** can lead to you saying **respect the science** on **GM foods**, but the **science** on **climate change** is **dubious**,

yet

Having **pro-environment values** can lead to you saying **respect the science on climate change**, but the **science** on **GM foods** is **dubious**.

One of the core problems with communicating science is that public and scientists' opinions are often far apart



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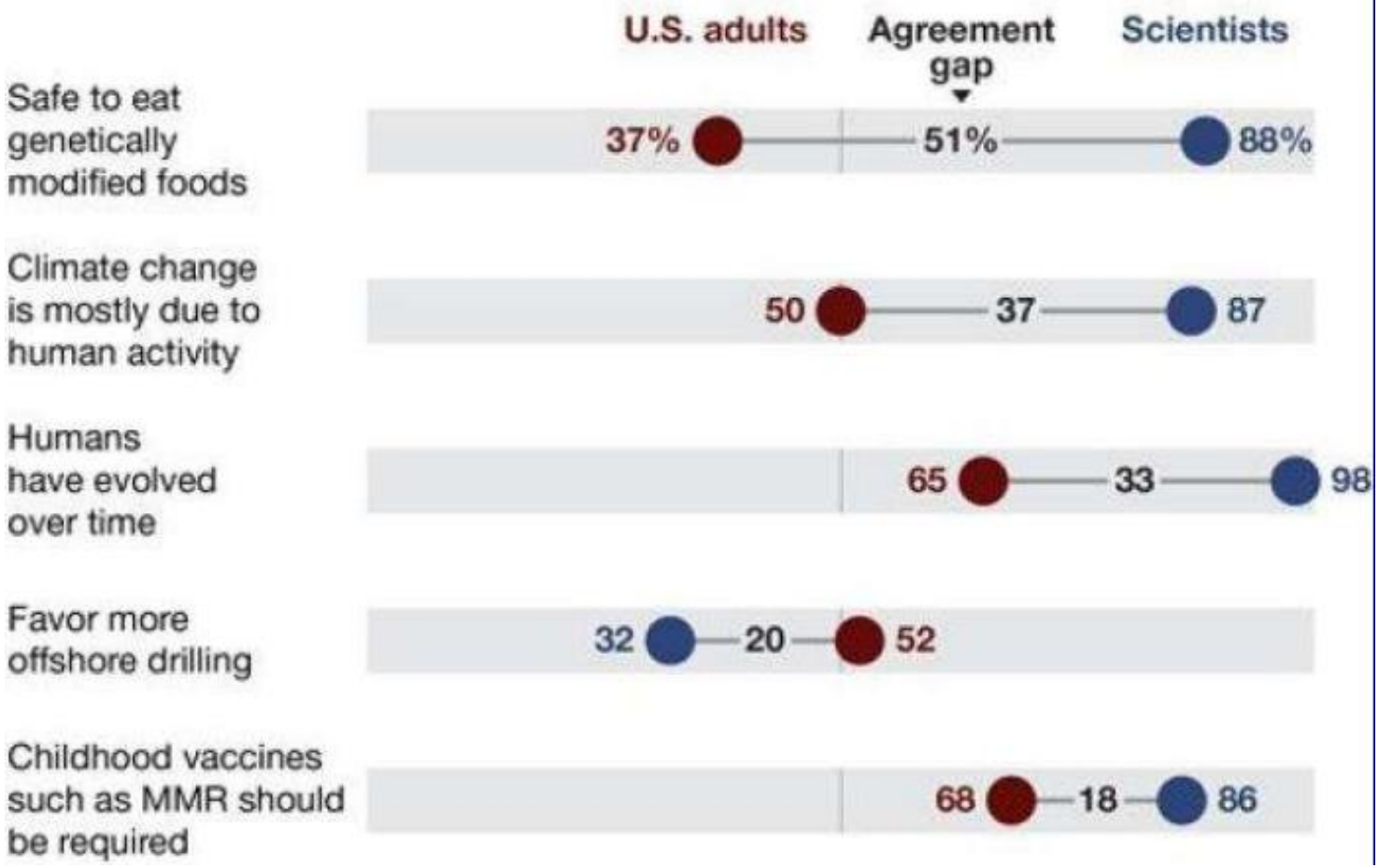
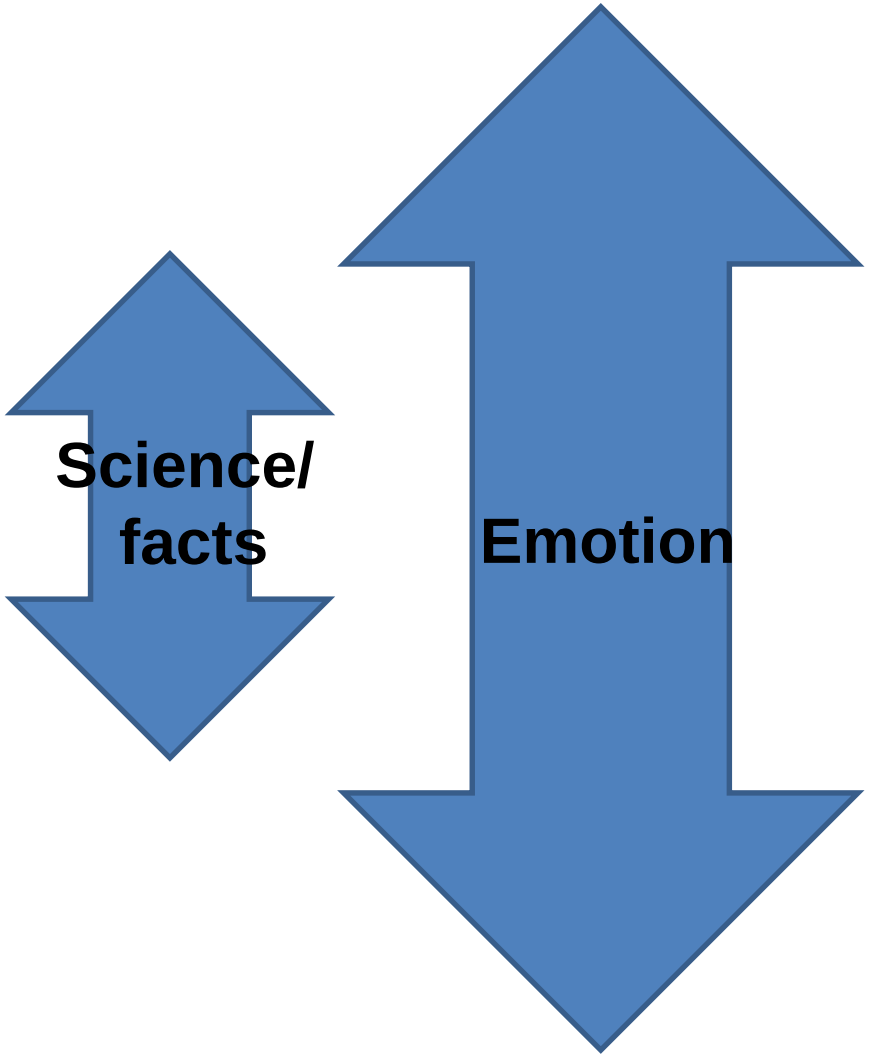


Public perceptions of risk vs Scientific view of risk



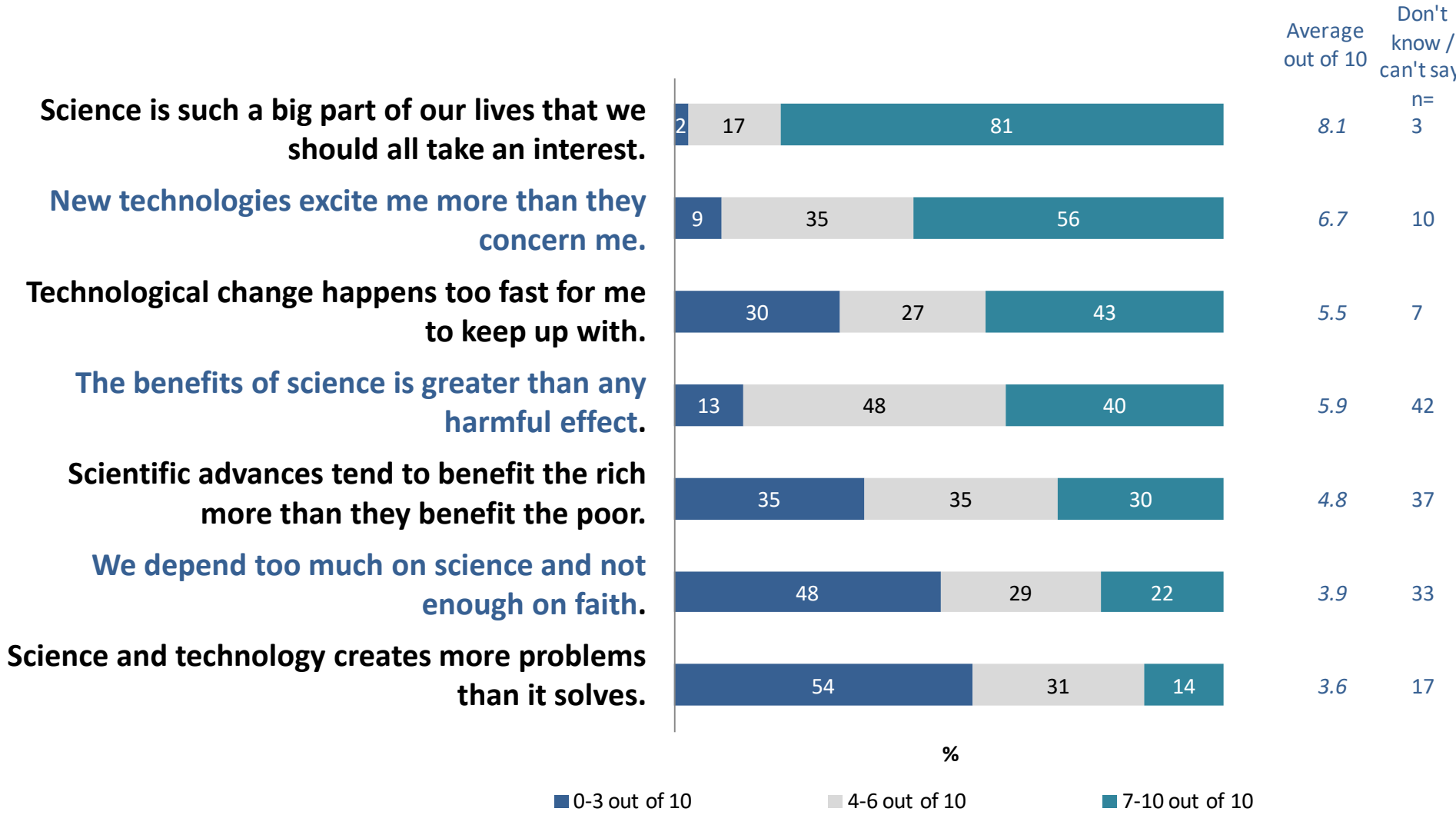
Public perceptions of risk vs Scientific view of risk

Scientific view of risk:	Public view of risk:
Risk = Probability x Impact	Risk = OMG x WTF

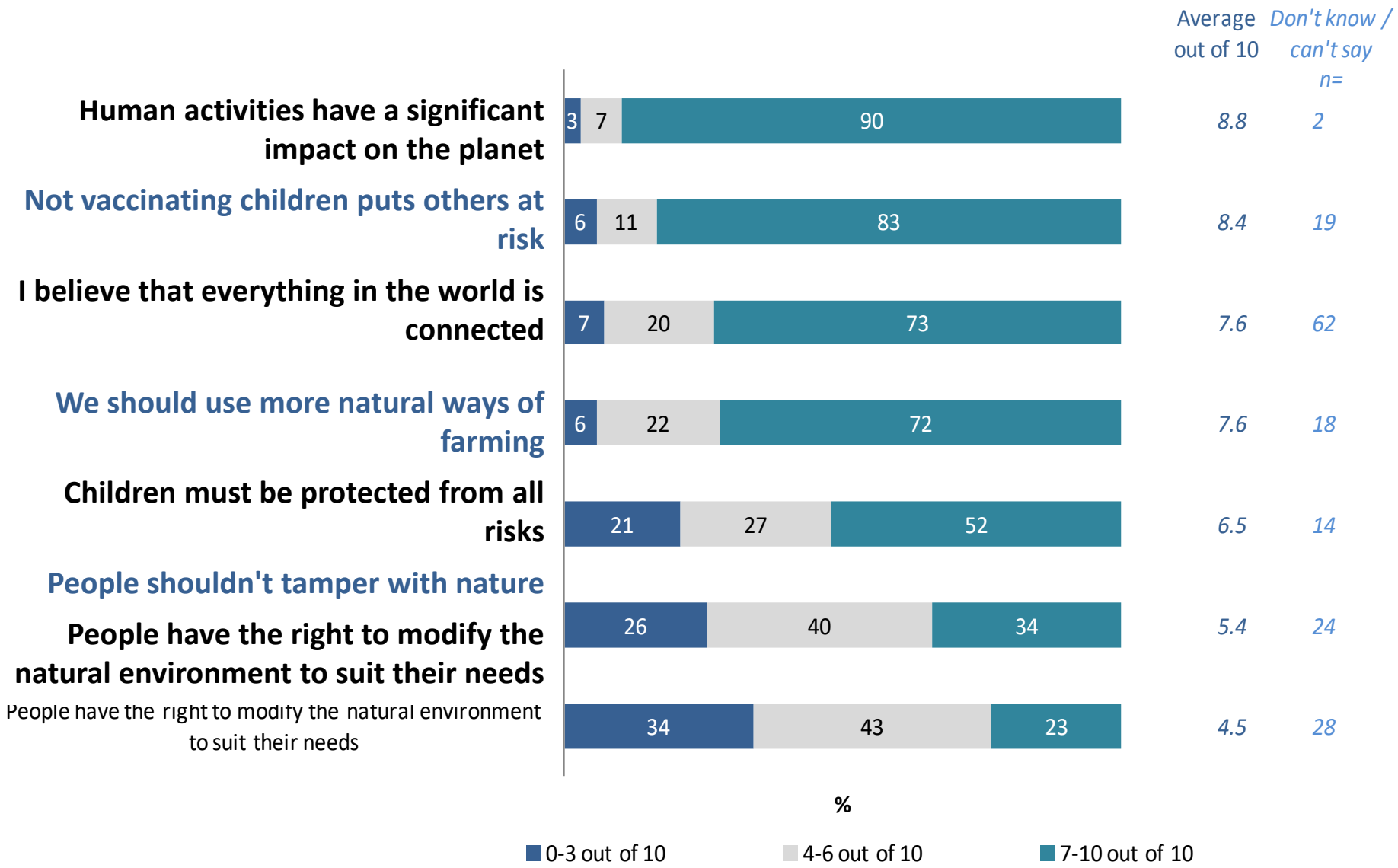
Understanding the different segments of the population

…or the different ways that people think – by attitude and by values.

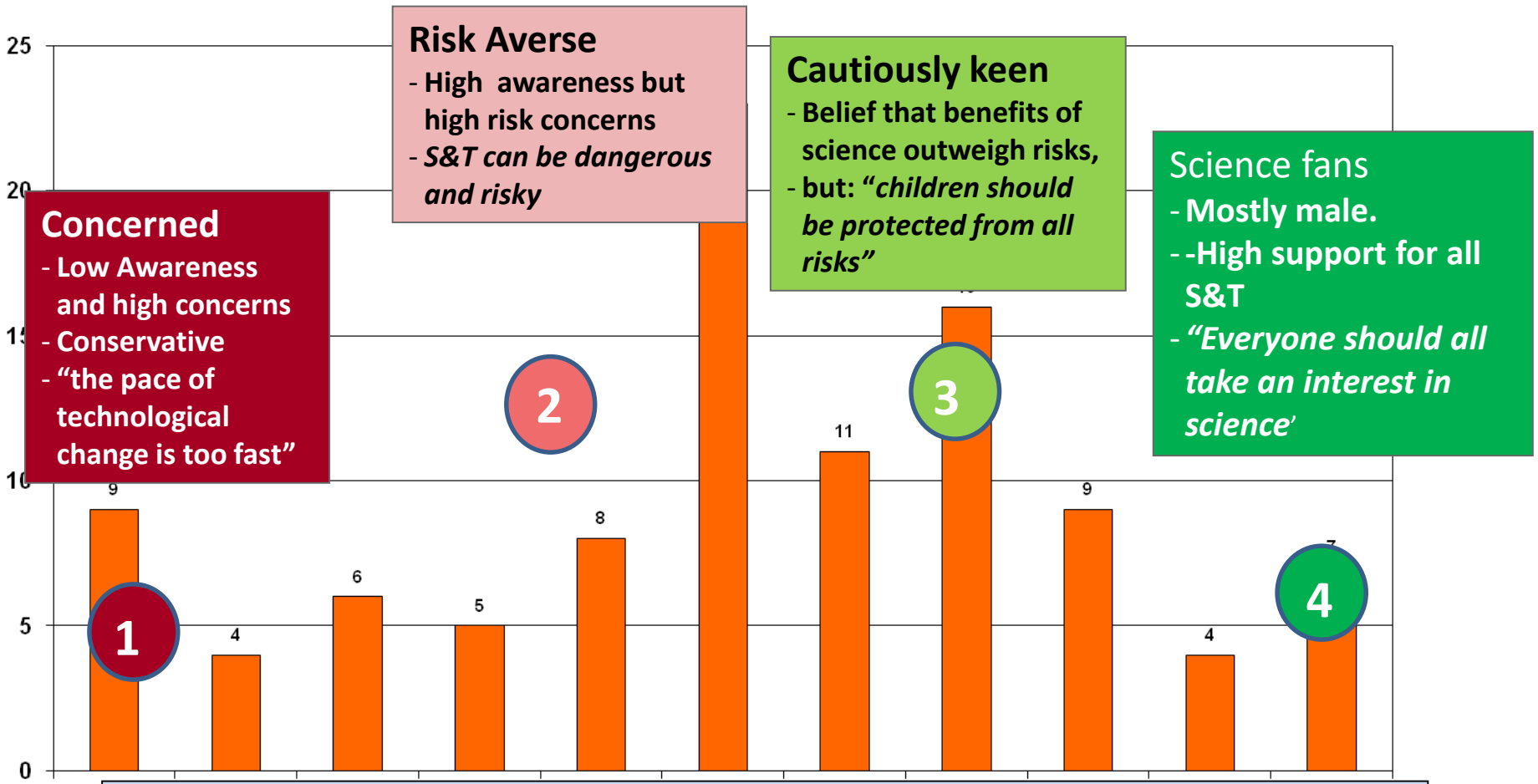
Understanding attitudes towards S&T



Understanding attitudes towards the world around us

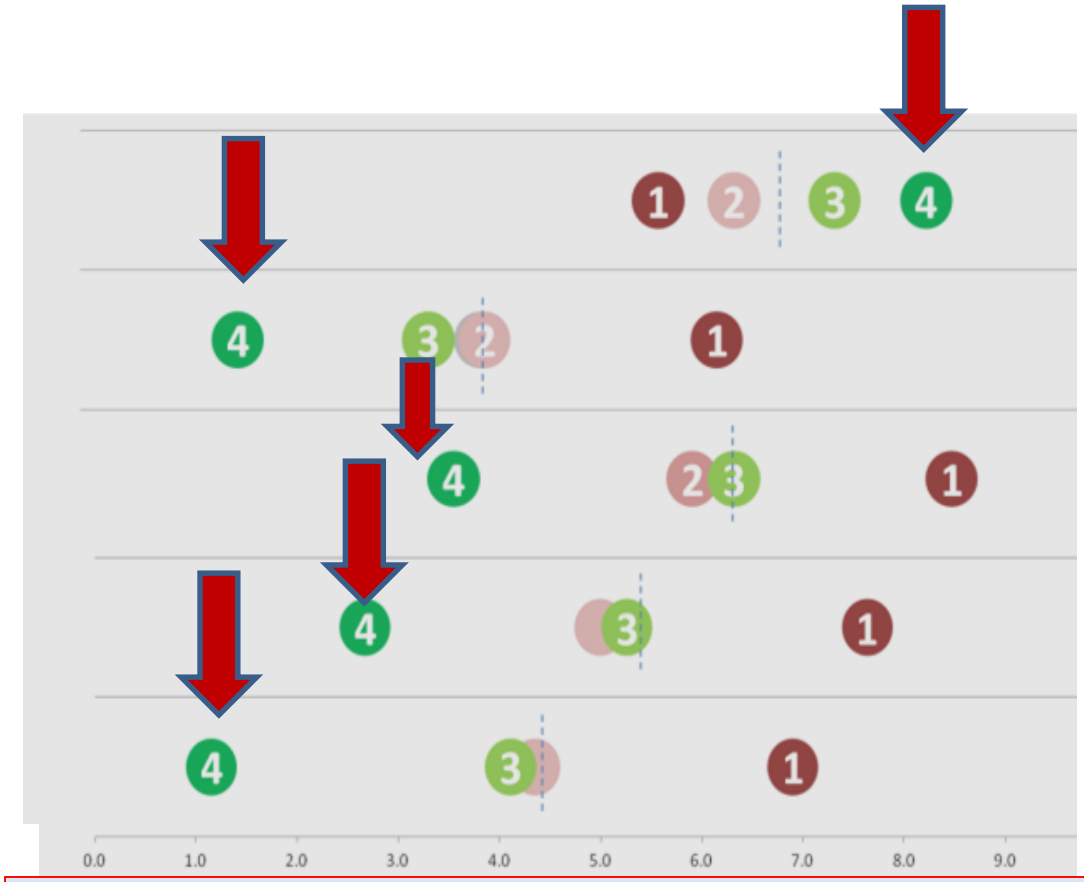


Cluster analysis of values gives 4 values segmentation profiles



Hands up the 1, 2, 3 and 4s in the room.

Understanding values segment divides



Values

New technologies excite me more than they concern me

Science and technology creates more problems than it solves

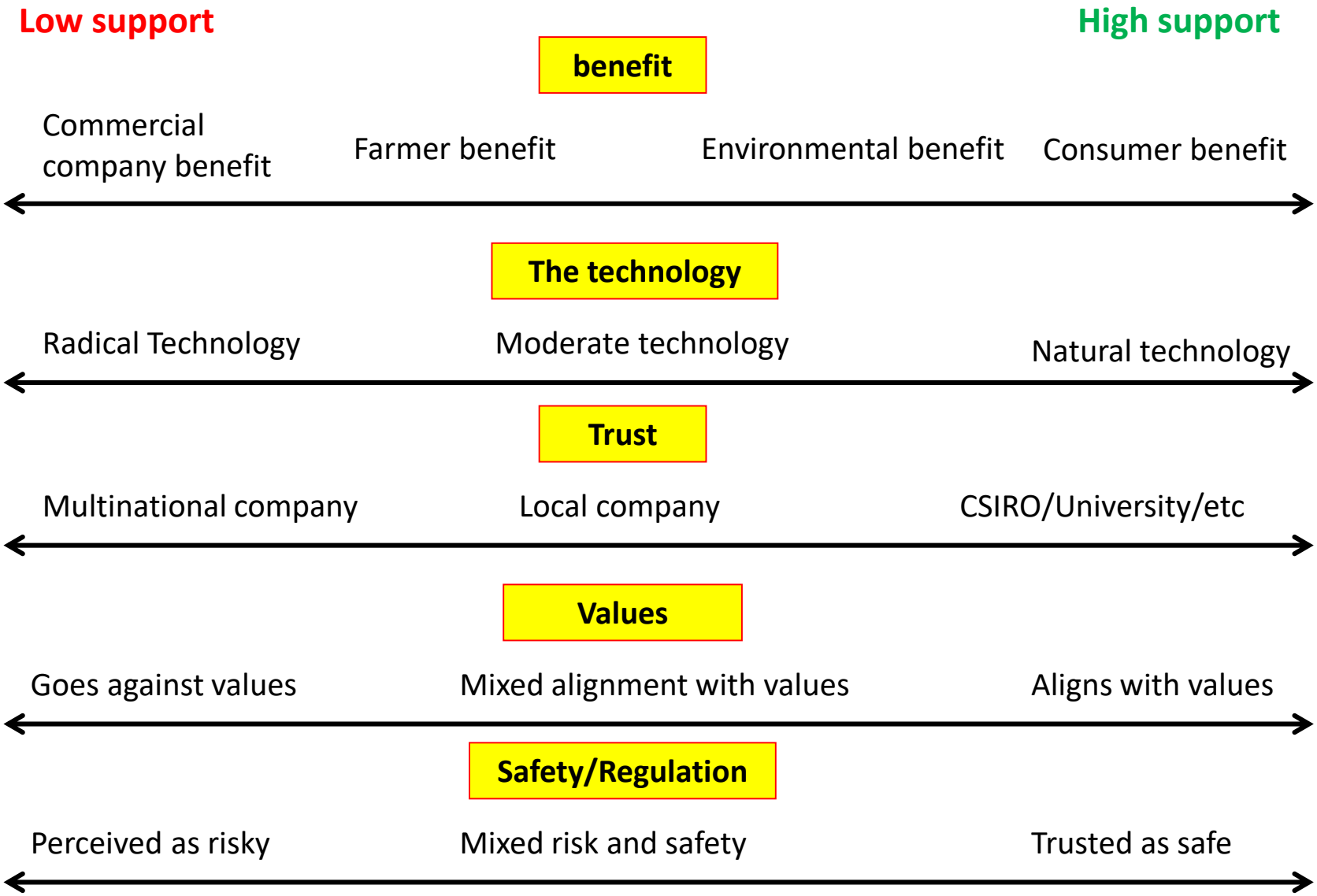
People shouldn't tamper with nature

Technological change happens too fast for me to keep up with

We depend too much on science and not enough on faith

Science Fans are outliers – more further from the average point than any other segment group - and Segment 4 has as much trouble understanding the other segments as they have of understanding you.

Mapping support or rejection of new technologies



Planting the flagpole of public debate

Get in first, make an impact and hold that ground!

Who ever first successfully plants the ‘flagpole’ of public debate (framing the debate) defines where the public debate will be centred. NGOs, interest groups, industry and researchers all compete for this.

So what can be done about it?

1. Don’t debate the science, look for the **values** that underline your audiences decisions and **debate on values,**
2. If possible **frame messages** that **align** with those values,
3. Confront **emotive defences** with **emotive arguments,**
4. Talk about the **outcomes** of the research, not the **processes**
5. Use **spokespeople** your target audience **trust,**
6. Use **pictures and graphs** over text explanations.

Any questions?