

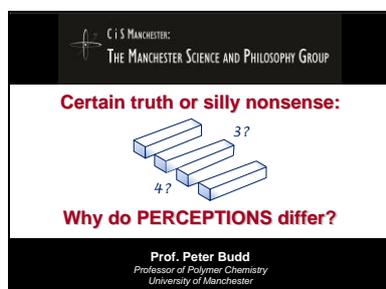
Certain truth or silly nonsense: Why do PERCEPTIONS differ?

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CiS Manchester: The Manchester Science and Philosophy Group

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I'm a Professor of Polymer Chemistry at the University of Manchester,
and also, as a Reader in the Church of England, I preach in church services.
So I find myself in two worlds that are often perceived as very different:
the scientific and the religious.

In both these worlds, we find claims about what is or isn't true.
And in both these worlds, and perhaps especially at the interface between them,
we find very different perceptions of what is or isn't true,
and, indeed, about whether there's any such thing as truth.

One person's certain truth, is another person's silly nonsense.
So why is it that two people can have the same information,
yet draw very different conclusions?

Why do perceptions differ?

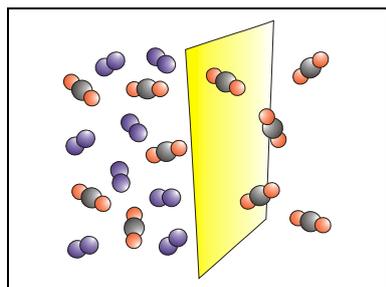
That's the focus of our discussion this evening.

I'm not an expert in this field.

I'm not a psychologist or a cognitive neuroscientist or anything like that.
I'm just someone who has to try to communicate
with people who may think very differently to me.

And I'm hoping that between us,
we may come to understand a little bit more about why perceptions differ,
and thus, perhaps, be able to communicate a little bit better.

One example of how people can see things very differently,
is in how we think about climate change.



In my scientific research,

I develop new materials that can be used to separate different kinds of molecules.

One thing we're trying to do,

is to capture carbon dioxide much more efficiently than it can be done at present.

We want to be able to capture carbon dioxide because, I'm convinced,

human activity is contributing to rising levels of carbon dioxide in the atmosphere,

and that in turn is leading to a rise in average global temperatures,

and that in turn is likely to have catastrophic effects for many people.

Now, as a scientist, I'm reluctant to use a word like "truth" for something like this,

because I'm aware of the assumptions involved in data analysis,

and that there's a degree of uncertainty in any projections.

But the accumulated evidence is enough to convince me, and many others,

that this really is something to worry about.

I'm convinced.



But not everyone is.

There are those who say the climate isn't changing.

And there are those who say it's changing, but it's a purely natural change.

And there are those who say it may be changing, and humans may have an influence,

but it's crazy to try to do anything about it.

And some very intelligent people say such things.

Those of us who're convinced

that anthropogenic climate change is a problem that needs tackling,

are baffled as to why bright people can't see the looming disaster.

Those who're sceptical about the whole business,

simply don't comprehend why anyone would threaten the economy,

with damaging regulations and costs.

Different perceptions.

Different perceptions, with potentially very real consequences for future generations.

And if a subject like climate change can throw up sharply differing viewpoints,

so can many other things.



Evolution, for example.

Personally, I'm completely bemused as to why some people see evolution
as something to argue about,
but some people clearly do, and vehemently so.

For me, as a scientist, it doesn't actually impact on the sort of research I do,
but I recognise that for many of my fellow scientists,
evolution is a very important explanatory theory.

And I understand evolution, in a scientific context,
as a process of adaptation and change, occurring over time.

For me, as a Bible-believing Christian, I understand God as the One responsible
for all processes occurring within creation.

And I find nothing in the Bible that rules out evolutionary processes.

But some people do,
and they're absolutely convinced their way of looking at the Bible is the only way.

Now this evening, we're not going to go through arguments for or against climate change,
or for and against evolution.

Those arguments have been run through many, many times,
in many, many places.



Why do PERCEPTIONS differ?

The question for this evening is,
why is it we can find ourselves going through the same old arguments,
time and time again,
without actually seeming to communicate anything?

Why can we get locked into ways of thinking,
that prevent us from seeing alternatives?

Why do perceptions differ?

As we go through life,
the experiences we have,
the people we interact with,
the culture we live in,
all contribute to the way we see the world: our **worldview**.

Worldview
The collection of beliefs we hold about life and the universe that influences our responses to the world around us

The term “worldview” can be used in various ways in different contexts, but here I’m talking about the collection of beliefs we hold about life and the universe, that influences our responses to the world around us.

We may not always be aware of just how different, different people’s worldviews can be. Particularly in cross-cultural communication.

Worldview
Guilt-innocence
Honour-shame
Power-fear

Cultural worldviews are often divided into three broad categories:

Guilt-innocence;
Honour-shame; and
Power-fear.

Within a society, and in an individual, these may be mixed in different proportions.

Worldview
Guilt-innocence

In the West, a **guilt-innocence** cultural worldview tends to dominate. This focuses on cause and effect, on good processes, and on adherence to external laws. It tends to be highly individualistic, and to see issues in black and white. Communication is direct, but can seem excessively blunt to those with other worldviews.



In many parts of Asia, an **honour-shame** cultural worldview is dominant. This focuses on the group rather than the individual. The important thing is to bring honour to the group – to the family or tribe – and to avoid shame. Communication is relationship-driven, affecting the honour-shame status of those involved.



In parts of Africa, and elsewhere, a **power-fear** cultural worldview dominates. This focuses on your level of power relative to those around you. The important thing is to understand your place in the pecking order, so as to exercise control over those below you, and to avoid friction with those above you. A power-fear worldview is often associated with animistic cultures, that see the world in both spiritual and physical terms, with the spiritual having power over the physical, so charms, curses, sacrifices and spirit worship, are all part of life.



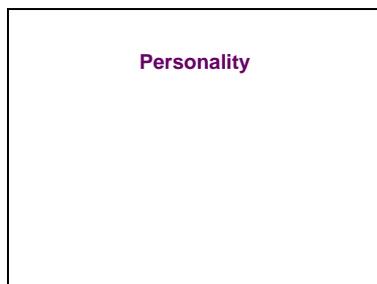
Our cultural worldview profoundly affects the way we approach science, and the way we think about religion.

In science, even within a group of people with science degrees, failures in communication can arise because of different cultural worldviews. As a Western scientist, with modes of thinking dominated by a guilt-innocence worldview, I try to encourage my research students to analyse data objectively,

and to seek out innovative ways of solving technical problems.
Yet, when talking with international students, I can be faced with blank stares.
They just don't get what I'm getting at.
Sometimes they're more concerned about my judgment of them as a person,
than in an objective analysis of their data,
because they come from an honour-shame culture.
Or they may want me to tell them exactly what to do,
rather than thinking for themselves,
because they come from a power-fear culture.

And if differing cultural worldviews can create confusion in a scientific context,
then they can do so even more in a religious context.
If, for example, you want to explain what is meant by the Christian gospel,
it needs to be presented differently for people with different worldviews.
For someone with a guilt-innocence worldview,
it may make perfect sense to talk about us being guilty of sin,
deserving the punishment of death,
and about Christ paying the price for our sin.
But for someone with an honour-shame worldview,
it may make more sense to talk about our shame before God,
about Christ restoring lost honour,
and accepting us into his family.
While for someone with a power-fear worldview,
it may be appropriate to talk about us being under the power of evil,
and about Christ demonstrating greater power,
through his death and resurrection,
so that evil is defeated and fear wiped away.
And the interesting thing is that in the Bible you'll find hints of all these approaches.
Something for every cultural worldview.

Our cultural worldview influences the way we perceive things.
But, of course, people from the same cultural background,
can still approach things very differently,
because of their different personalities.



There are various ways of classifying people according to their **personality type**.
One approach, that has become very popular in businesses,
and even in training for the Church of England,
is the Myers-Briggs personality type indicator.
Not everyone is convinced by it,
and perhaps especially not professional psychiatrists,

but many people find it a useful tool for comprehending
how others think and behave.

How many people here have, at some time or another,
done a Myers-Briggs personality type test?



Katharine Cook Briggs and Isabel Briggs Myers were a mother and daughter team
from Washington DC.

It was a hundred years ago, in 1918, that Isabel married Clarence Myers,
and they remained together until Clarence's death in 1979.

Isabel and Clarence got on well,
despite having very different personalities.

When Isabel's mother Katharine first met her prospective son-in-law,
she noticed that Isabel and Clarence had different ways of seeing the world.

That got her thinking and reading.

In the early 1920s, a book by the Swiss psychiatrist Carl Jung was published
on *Psychological Types*.

Katharine and Isabel took Jung's ideas further,
and in 1943 the first Myers-Briggs test questionnaire was published.

Myers-Briggs Type Indicator		
I	Introversion-extroversion	E
S	Sensing-intuition	N
T	Thinking-feeling	F
J	Judging-perceiving	P

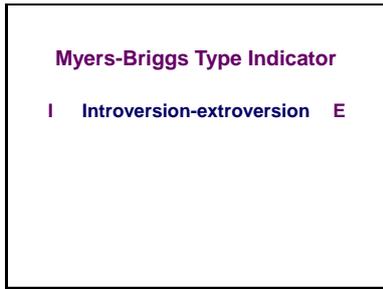
The Myers-Briggs system classifies people according to their natural preferences
in four areas:

Introversion-extroversion: I or E.

Sensing-intuition: S or N.

Thinking-feeling: T or F.

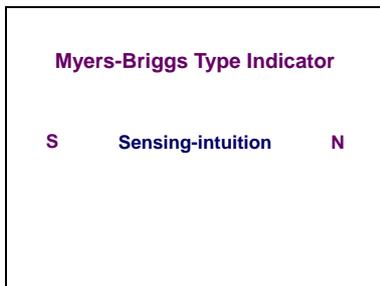
Judging-perceiving: J or P.



Introversion-extroversion is about whether we focus predominately on our own inner world, or on the outer world.

A person on the introvert side appreciates quiet reflection and seeks out privacy.

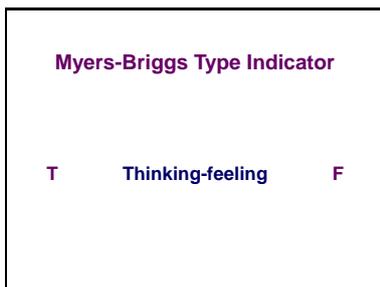
A person on the extrovert side works best by talking and interacting with others.



Sensing-intuition is about the sort of information we most trust.

A person on the sensing side is more likely to trust information that comes from the five senses, information that's direct, concrete and tangible.

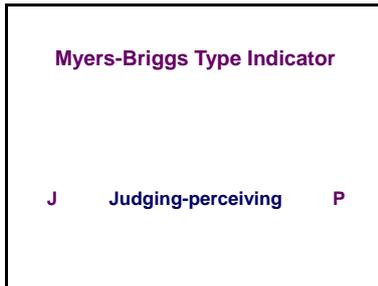
A person on the intuition side relies more on other sorts of information, they'll look for broad patterns, and think about future possibilities.



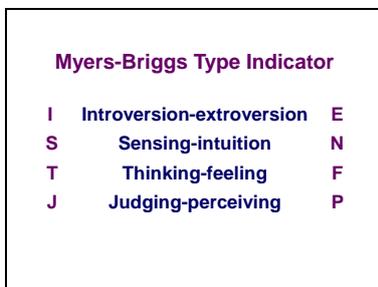
Thinking-feeling is about how we process information and make decisions.

A person on the thinking side tends to make decisions from a detached point of view, looking at what seems logical and consistent, in the light of known rules. They're concerned about what's "true".

A person on the feeling side prefers to empathise with a situation, looking at it from the inside, seeking an appropriate balance in the light of the needs of the people involved.



Judging-perceiving is about how we approach life.
 A person on the judging side seeks structure and order.
 They'll make plans and organise themselves to achieve goals.
 A person on the perceiving side likes to keep options open.
 They'll avoid, or put off, making decisions,
 preferring to adapt to whatever life throws at them.



By combining a person's preferences in these four areas,
 one arrives at one of 16 different personality types.
 In case you're interested, my type comes out as ISTJ.
 The ISTJ type can be described with words such as:
 Factual. Organized. Logical. Detailed. Conscientious.
 Analytical. Responsible. Pragmatic. Critical.
 If you know me, you can decide for yourself whether I fit the type.

Incidentally, Clarence Myers, the man Isabel married, was ISTJ like me.
 Whereas Isabel's type was INFP.
 Which can be described with words such as:
 Caring. Compassionate. Creative. Idealistic.
 Empathic. Inquisitive. Adaptable.
 It was that personality difference that set in motion the whole Myers-Briggs story.

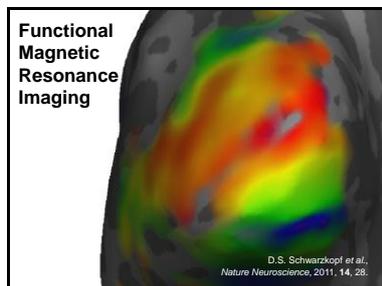
For me, one thing that really highlighted just how different,
 different people's personalities could be,
 was in a Myers-Briggs training day that took place in an old building.
 We were all sent into a large room and told to look around.
 Afterwards, we were asked to describe what we'd seen.
 What I'd seen was a faded hall, with rough old beams, dirty radiators,
 and bits of curling paint.
 But one man immediately jumped in and said simply "I didn't like it".
 Whereas I approached the room as an external observer,
 and would have described it in those terms,
 that man saw things purely through the lens of his own emotional responses.

That simple difference between whether we focus more on external evidence,
or on internal, emotional, evidence,
seems to lie at the heart of many intractable arguments.

In science, we need different personality types to work together.
We need those who're objective, logical and careful,
to analyse data reliably.
And we need those who're intuitive and creative,
to come up with new hypotheses,
and to find innovative solutions to problems.
And we need to understand where each other is coming from,
if we're to avoid a complete breakdown of communication.

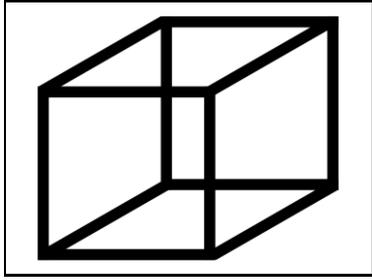
Religion, too, can bring very different sorts of people together.
In a Christian context, this is highlighted by the apostle Paul,
in his teaching about the body of Christ.
He says to the early church in Corinth (*1 Corinthians 12:17*)
“Now you are the body of Christ, and each one of you is a part of it.”
And he goes on to talk about how the body needs different kinds of gifts, or skills.

We need people with different personalities, different skills,
people who see things differently, to work together.
But what underlies the differences between people?
How do those differences relate to what goes on in the brain?



Nowadays, there are tools that enable brain activity to be explored
while people perform various tasks.
One tool for probing what's going on in the brain
is functional magnetic resonance imaging: fMRI.
Studies using techniques such as fMRI are showing
how differences in brain structure are reflected in the way we perceive the world.

For example, you may have come across bistable illusions.
Images that can be seen in two different ways.
Some people see one thing, some people see another.
Some people can switch between the two, others find it very difficult to do so.



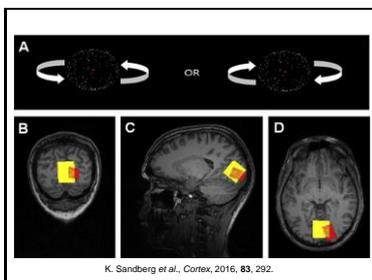
A simple example is the Necker cube,
a wire frame drawing of a cube that can be seen either with the lower left square,
or with the upper right square, as the front side.



Another well-known example is a picture that can be seen either
as the head of a young lady looking away,
or as the face of a grim old woman.



There are dynamic examples too,
such as a spinning dancer who appears to some people to spin clockwise,
and to others to spin anti-clockwise.



Studies of how people respond to ambiguous stimuli like these,
have shown correlations with the amount of grey matter
in specific areas in the parietal lobe.

(K. Sanberg et al., *Cortex*, 2016, 83, 292-305)

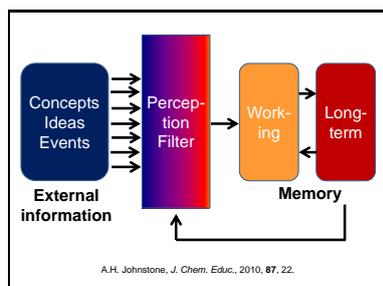
People have different worldviews, different personalities, different ways of seeing things,
and at least some of those differences may be reflected in their brain structure.

But the question still remains:

Why can we get locked into ways of thinking,
that prevent us from seeing alternatives?



Why is it that we can be, as expressed by the Old Testament prophet Isaiah, (*Isaiah 6:9*)
“ever hearing, but never understanding;
...ever seeing, but never perceiving.”



The problem is information overload.

We're continually bombarded with information: concepts, ideas, happenings.

We can't take it all in, we have to filter most of it out.

We have to select what interests us, what makes sense to us, what's important to us.

And reject the rest.

What we select depends on what we think we already know.

On our worldview. On our presuppositions. On our beliefs.

Educationalists sometimes call this our “perception filter”.

(A.H. Johnstone, J. Chem. Educ., 2010, 87, 22)

As someone who has to examine the students I've taught, I'm all too well aware of this.

I can put effort into preparing a lecture course,

rooting out ambiguities as far as possible,

presenting the information as clearly as I can.

And then comes the examination.

And I discover just how many different ways there are for a student to get it wrong.

Marking examinations is a depressing business.

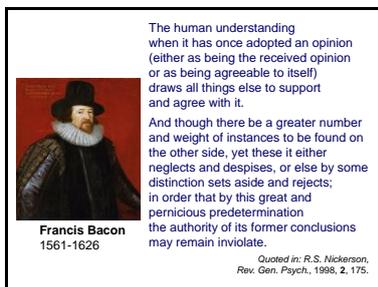
Confirmation bias

The tendency to
select information
that confirms
our pre-existing beliefs

A particular aspect of our perception filter
is what cognitive psychologists call **confirmation bias**:

The tendency we all have to select information that confirms our pre-existing beliefs,
and ignore that which doesn't.

The term "confirmation bias" was coined by the cognitive psychologist Peter Wason in 1960.



But this isn't a recent idea.

Back in 1620, the English philosopher and statesman, Francis Bacon,
wrote in his *Novum Organum*

The human understanding when it has once adopted an opinion
(either as being the received opinion or as being agreeable to itself)
draws all things else to support and agree with it.

And though there be a greater number and weight of instances
to be found on the other side,
yet these it either neglects and despises,
or else by some distinction sets aside and rejects;
in order that by this great and pernicious predetermination
the authority of its former conclusions may remain inviolate.

(quoted in: R.S. Nickerson, *Rev. Gen. Psych.*, 1998, 2, 175-220)

We all exhibit confirmation bias,

however careful and objective we may think we are.

In science, the process of peer review mitigates against it,
and yet the pressure to produce high impact publications
may easily distort the way we present our results.

In religion, to hold strongly to an opinion despite contrary evidence
is sometimes seen as faith.

Yet, to my mind, a real faith doesn't need to be afraid to face facts,
because a real faith is confidence in something solid and firm.

And at the interface between science and religion,
we encounter arguments where both sides
seem locked into their own confirmation bias,
unable to break out of a cycle of misunderstanding and miscomprehension.

We can't escape confirmation bias.
And, of course, just because we're biased, doesn't necessarily mean we're wrong.
But we can try to be aware of it in ourselves,
and recognise it in others,
if only to avoid getting sucked into pointless arguments
that'll never reach a conclusion.

Why do PERCEPTIONS differ?

Why do perceptions differ?
Our cultural worldview plays a part.
As does our personality.
And once we see something a certain way,
confirmation bias makes it very difficult for us to change the way we see things.
But what's your view?
We'll have a break for refreshments, then it'll be time for you to have your say.

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