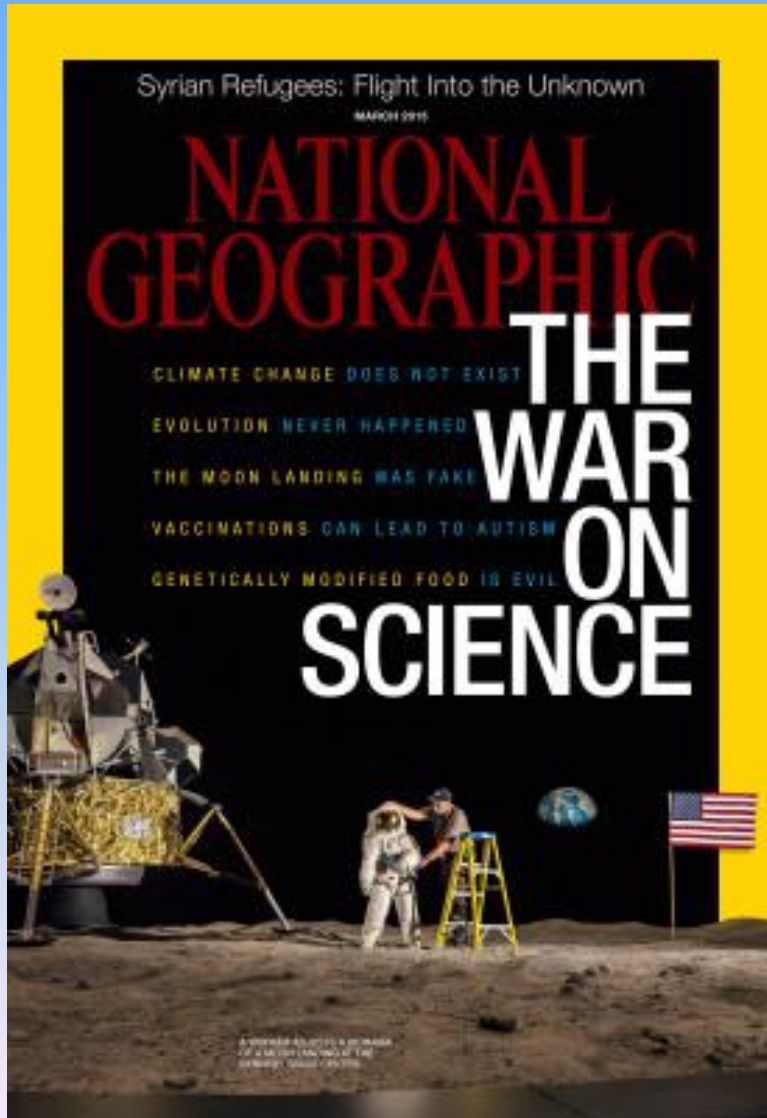


Science Literacy for the Church



Jack C. Swearingen

ASA Conference

July 2017

The Age of Disbelief

NATIONAL GEOGRAPHIC March 2015

- **Climate Change** does not exist
- **Evolution** never happened
- **The Moon Landing** was faked
- **Vaccinations** can lead to autism
- **Genetically Modified Food** is evil
 - Fluoride is a neurotoxin
 - EMR from cell phones and transmission lines cause cancer
 - Industrial farming practices are not sustainable
 - Gluten causes illness
 - (non) organic foods contain pesticides
 - Western medicine is reductionist and impersonal
 - Nuclear power is too dangerous
 -

Turkey to stop teaching evolution in high school



- The subject has been cut from the curriculum under changes made to eliminate "controversial" topics, Alpaslan Durmus—head of the national board of education—announced in a video address.
- The new curriculum will go into effect for the 2017-2018 school year.
- It was crafted to emphasize national values and highlight contributions made by Turkish and Muslim scholars.

“A fundamental disconnect exists between the cognitive state of individual humans and the cognitive demands of modern society”

Andrew Schtulman, *Science Blind: Why our Intuitive Theories about the World are So Often Wrong* (2017)

Is it worse in the church?

Is it worse in the *evangelical* church?

Does it matter?

- Inadequate apologetics/turning folk *away from* the Church
- Inability to discern truth from falsehood (alt facts)
- Engaging in environmentally damaging practices
- Incomplete participation in God's program of redemption/restoration/renewal/healing
- Undermining "herd immunity"
- Electing anti-science politicians
- Supporting public policies that are not based on science
- Discouraging children from studying STEM
- In some cases actually working *against* God's purposes

Right Thought  Right Action?

Phil 2:5, 3:15; 4:8

Romans 12:2

Six Reasons Young Christians Leave the Church

David Kinnaman: *You Lost Me*. 2011

1. Churches seem overprotective. *E.g. "ignoring the problems of the real world."*
2. Teens' and twentysomethings' experience of Christianity is shallow.
3. Churches come across as antagonistic to science. *"Christians are confident that they know all the answers."*
4. Young Christians' church experiences related to sexuality are often simplistic.
5. They wrestle with the exclusive nature of Christianity.
6. The church feels unfriendly to those who doubt.

Four main obstacles to the integration of science and faith for emerging adults

Science and Theology for Emerging Adult Ministries (STEAM)
Greg Cootsona and Dave Navarra, Fuller Theological Seminary

- 1) Perception (and, at times, belief) that Christianity is in conflict with science and vice versa
- 2) Seeming disconnection of science and religion from pressing life issues
- 3) Perception that the Bible is outdated and unscientific when it comes to the connection between science and religion
- 4) The dizzying choices 18- to 30-year-olds face, which often make it difficult to decide how to relate faith and science

Science Literacy for ~~the Church~~ (Evangelical?) (Protestant?) Congregations: A Focus for ASA

Walt Hearn, ~1950:

***“ASA was formed to tell the church about science, and
scientists about the Christian faith.”***

- *BioLogos* and *ICR* have a similar mission—but they focus on the creation-evolution debate.
- *Reasons to Believe* has a similar mission, with their own model for cosmic history.
- Several other Christian ministries would also identify with the mission—e.g. D.I., CTNS (Berkeley, CA).
- In my view ASA is uniquely positioned to address the many and recent aspects of the encounter between science and faith.



The March for Science

Earth Day 2017



SCIENCE
WHY IT MATTERS
WHY SCIENCE IS UNDER ASSAULT
& the Importance of the
MARCH FOR SCIENCE

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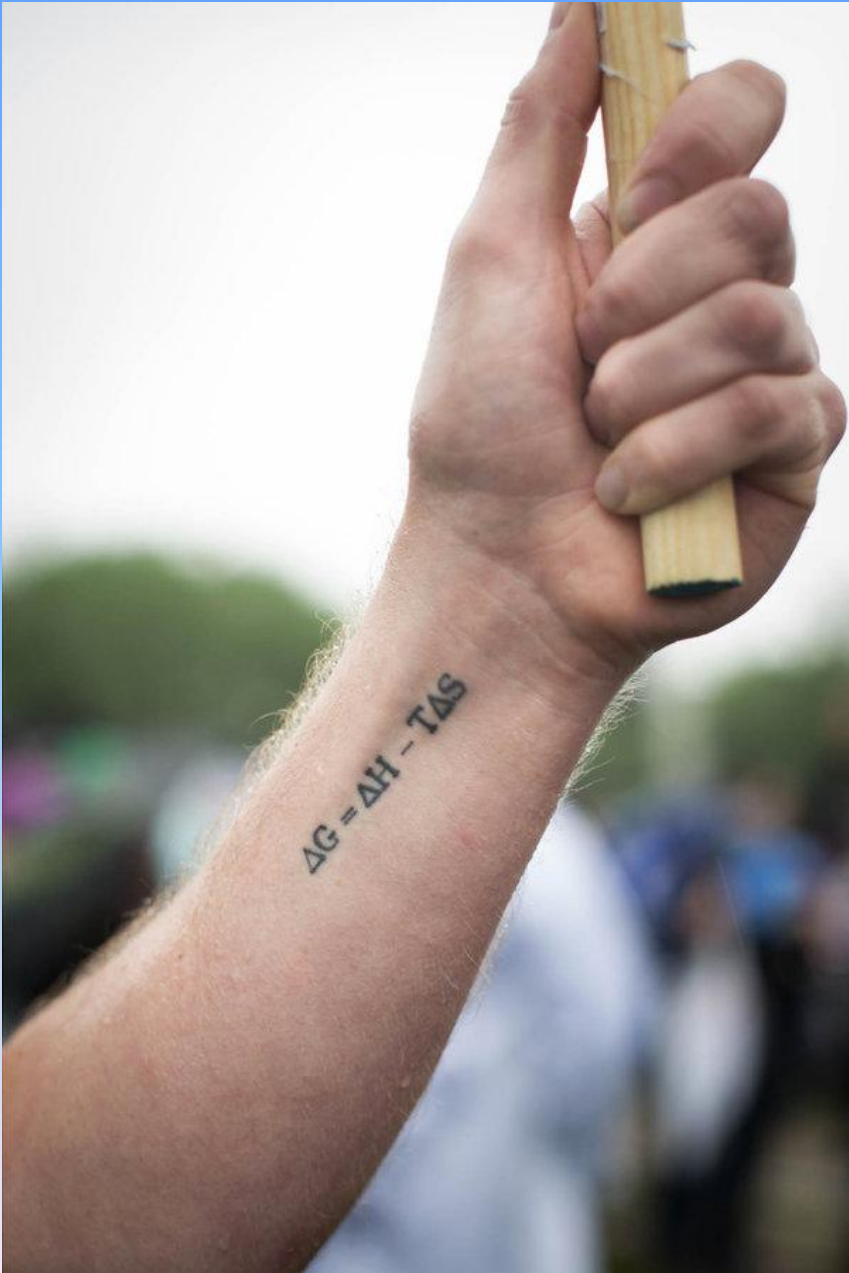
**THE TRUMP/PENCE REGIME IS ATTACKING
SCIENCE, TRUTH, AND THE ENVIRONMENT.**

**THREE REASONS
TO MARCH FOR SCIENCE APRIL 22:**

- 1. TRUTH MATTERS.**
Evidence is evidence. "Alternative facts" are *not* facts.
- 2. SCIENCE AMAZES.**
Science expands the mind and enriches one's
appreciation of the beauty and richness of the natural
world.
- 3. SCIENCE IS NEEDED TO SOLVE BIG PROBLEMS.**
Problems like global climate change, disease, and social
injustice cannot be solved without science.

MARCH WITH REFUSE FASCISM:
The Trump/Pence regime will repeatedly launch new highly
repressive measures, eventually clamping down on all
resistance and remaking the law... **IF THEY ARE NOT DRIVEN
FROM POWER.**
In the Name of Humanity –
We REFUSE to Accept a Fascist America!

SIGN UP TO MARCH WITH US BY CALLING 510-253-5551



Justifications for rejecting scientific authority

- ❑ The tribe is more important than the truth
- ❑ Conflicting claims: which to believe?
- ❑ Young Earth Creationist attacks on science
- ❑ Filter bubbles or confirmation bias
- ❑ Distrust of media that reports on science
- ❑ Science is biased by funding sources or quest for notoriety
- ❑ Someone we trust says that the scientists are wrong
- ❑ Net Present Value instinctively weighted to the near-term
- ❑ Errors in moral reasoning are public and impactful; whereas errors in scientific reasoning are private and inconsequential
- ❑ Dominion theology: “God wouldn’t let us destroy His creation”
- ❑ Platonism: “I’m safe in the arms of Jesus and don’t have to worry about such things”

Acceptance of scientific facts is not based solely on comprehension levels

Alan Lescher: “Bridging the Opinion Gap.” Science Magazine, 30 Jan 2015.

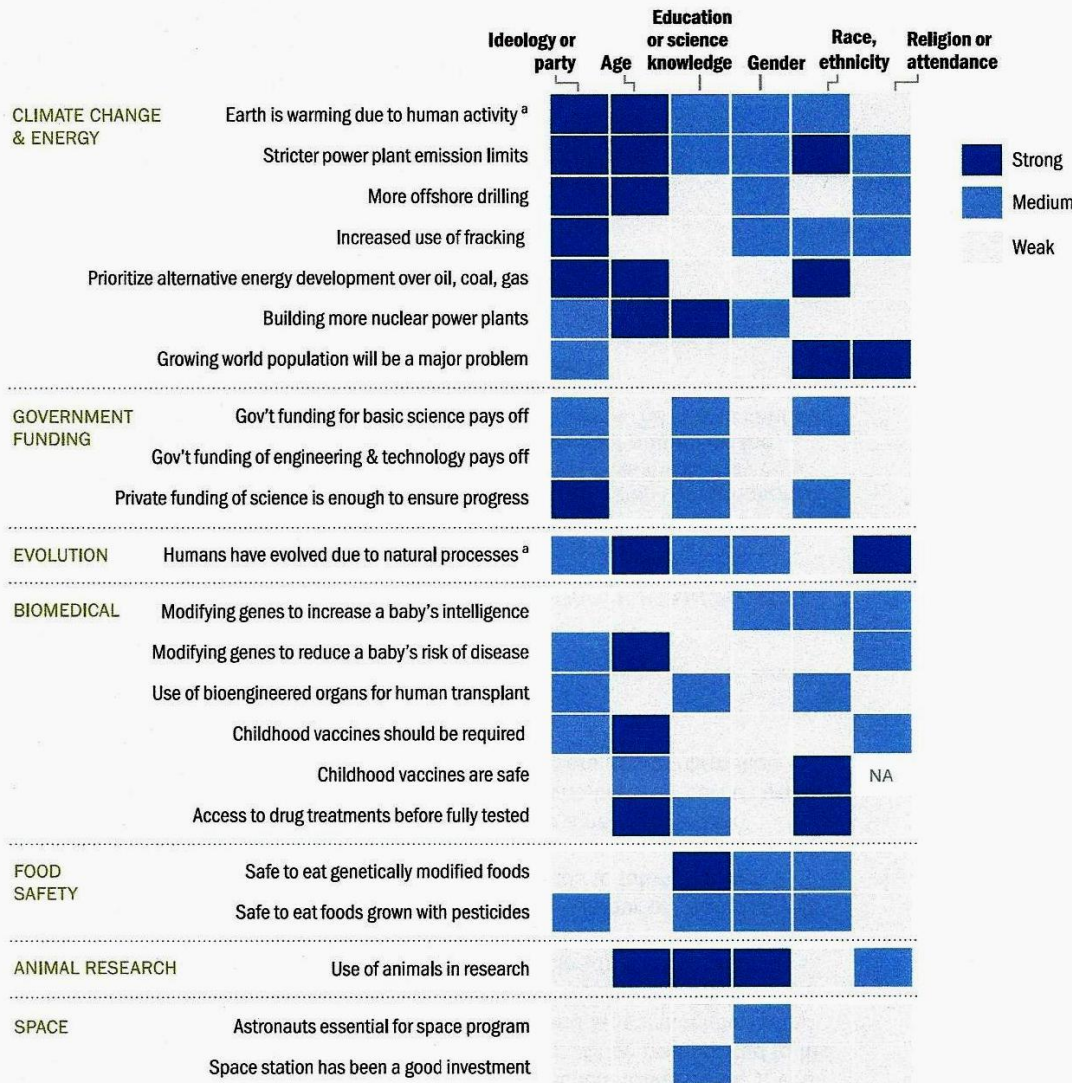
- It can be compromised whenever information confronts people's personal, religious, or political views
- or whenever scientific facts provoke fear or make people feel that they have no control over a situation
- The only recourse is to have genuine, respectful dialogues with people.

Skepticism of science is associated with concepts that are often intangible and defy simple analysis

- Complex systems
- Dynamic vs. static systems
- Processes vs. *things*
- Emergent outcomes

Wide Mix of Factors Influencing Public Views on 22 Science-Related Issues

Relative strength and statistical significance of each factor or set of factors



Sources: Survey of U.S. adults Aug. 15-25, 2014. Views on power plant emission limits from November 2014 survey. Views on prioritizing alternative energy sources from December 2014. Views on safety of childhood vaccines from February 2015 survey. Significance and relative size of factors are based on results of logistic regression analyses. ^a Factor strength for views on climate change and evolution are based on results from two models. NA indicates variable not available, not included in the model.

Political views are strongly linked to attitudes on climate and energy issues.

Politics is a less important factor on biomedical, food safety, space issues.

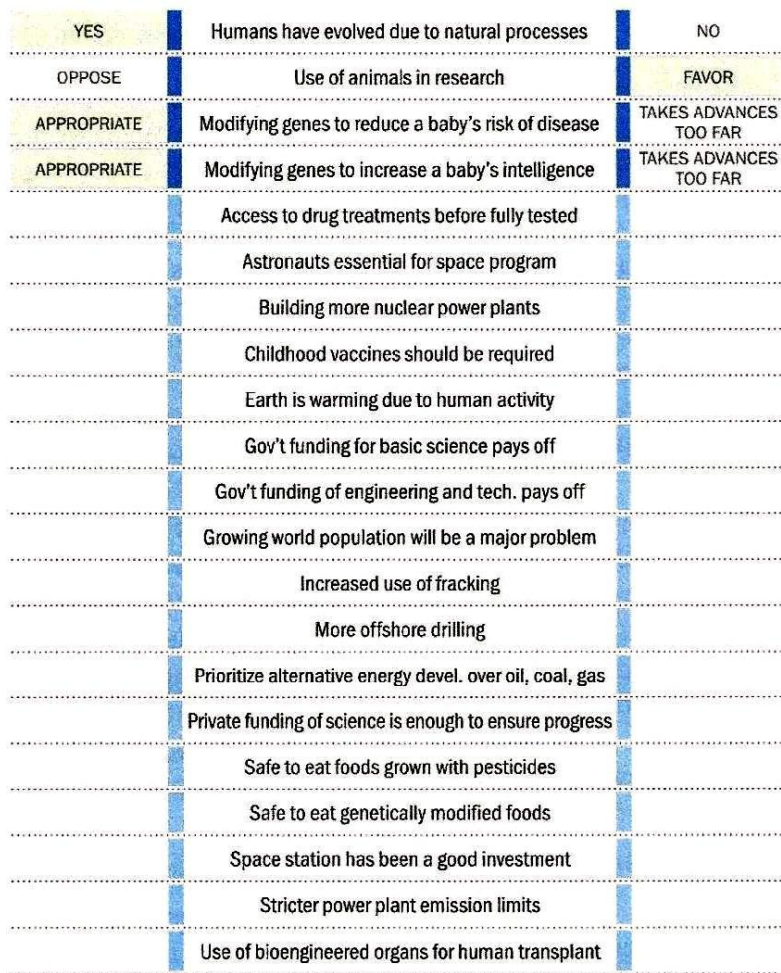
Differences by Frequency of Church Attendance Occur on Evolution, Animal Research and Genetic Modification

By comparison, those who attend church **seldom or never** are more likely to say ...

Religious attendance is a factor in predicting views on ...

■ STRONG ■ MEDIUM ■ WEAK

By comparison, those who attend church **weekly or more** are more likely to say ...



Survey of U.S. adults Aug. 15-25, 2014. Views on power plant emission limits from November 2014 survey. Views on prioritizing alternative energy sources from December 2014. Significance and relative size of factors are based on results of logistic regression analyses. Views on safety of childhood vaccines in the February 2015 survey did not include measures on religion.

Religious factors appear to be central to public views on only a handful of science topics. Foremost among these are people's beliefs about human evolution.

Religious group differences are particularly strong determinants of whether people perceive the existence of a scientific consensus about evolution and the creation of the universe.

Other key factors:

- political attitudes
- educational attainment

These surveys have identified so many variables that a clear and straightforward characterization of science skeptics and their decision-making processes is not possible.

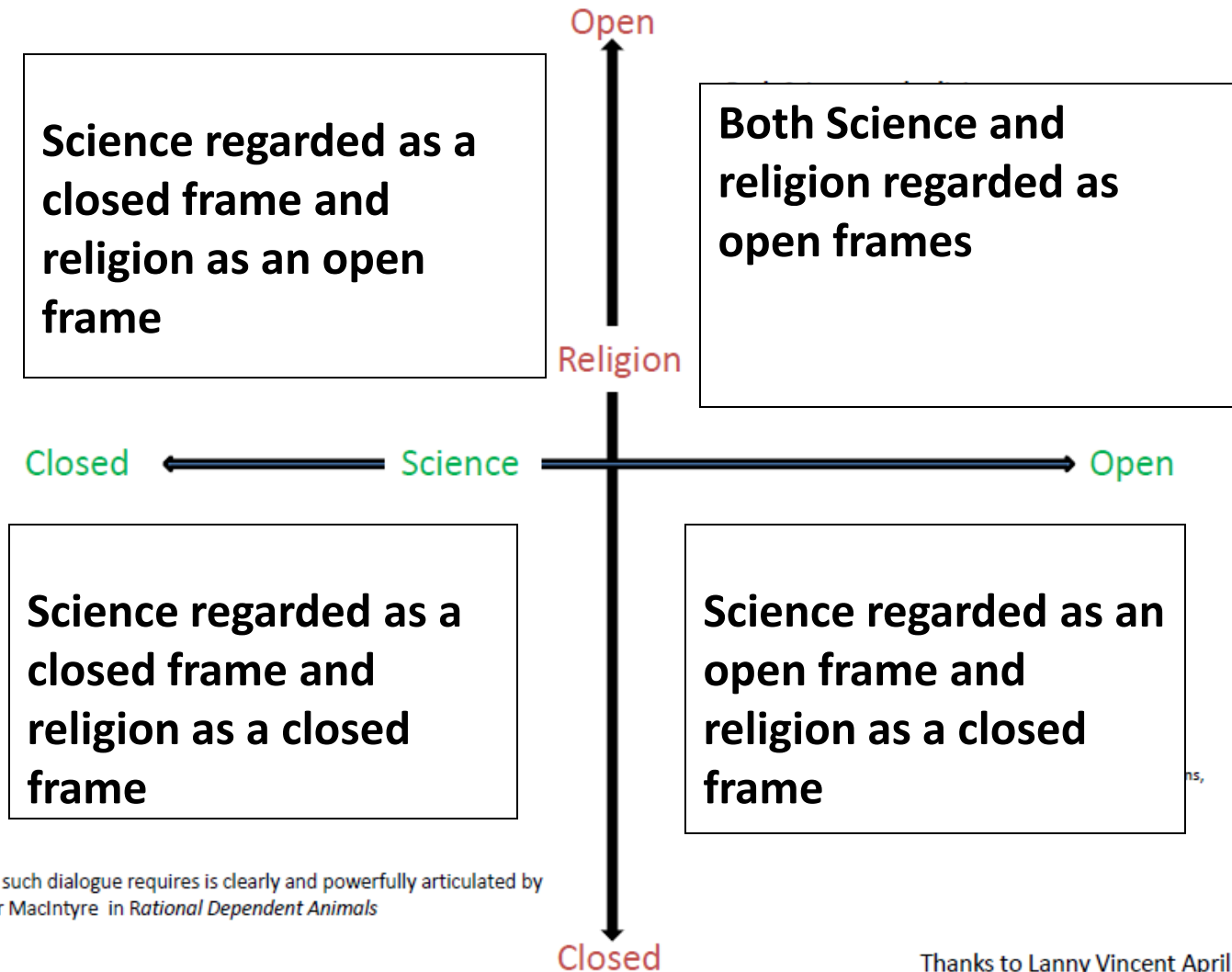
Logical inconsistencies abound: e.g. accepting biological evolution but rejecting AGW.

Consider a simpler frame for understanding:

Open—*to transcendent inputs (including belief in God)*

Closed—knowledge is complete, sufficient, or can be obtained only through “this” domain.

Open and Closed: Four Outcomes



† What such dialogue requires is clearly and powerfully articulated by Alasdair MacIntyre in *Rational Dependent Animals*

Where would you place yourself? How far out on the axes?

Where would you place

- ASA
- ICR
- BioLogos
- RTB
- Discovery Institute
- Overlapping magisteria
- God's two books
- Natural theology
- Blind watchmaker cosmology?

What makes a person closed vs. open?

—Some of the same drivers that already have been identified by the studies cited, plus:

- upbringing
- insecurity
- education
- tribal identity

• and “mind set”:

—intuitive world view theories that are often subconscious

Intuitive vs. cognitive world views

(Andrew Schtulman, *Science Blind* 2017)

“Most science deniers are not ignorant of science; they are *skeptical* of science.”

“We construct intuitive theories of natural phenomena because constructing scientific theories of those phenomena requires conceptual change.”

Proceeding with Humility

Many of the foregoing statements could be construed as asserting that scientific thinking is superior to intuitive thinking. They may create offense instead of understanding.

However,

Awareness of the role of intuitive theories should help our communication

- not only with Christians
- but with all science skeptics

Conclusions

- Successful participation in technological society requires basic proficiency in STEM as much as in cooking, cleaning, grooming, and mending.
- Scientists need to gain understanding of the reasons that underlie science skepticism.
- We need to construct new narratives that communicate outside our scientific tribe.
- Science lectures—even on the wonders of God’s Creation—may not persuade science skeptics. We need to add understanding of intuitive theories about how things work. But it must be done with humility.
- As a consequence of its broad purpose, ASA is especially equipped to bring science literacy to the Church.

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