HOW WE ALL MAKE SENSE OF (UNCERTAIN) SCIENCE … AND WHY LITERACY IS ONLY A SMALL PIECE OF THE PUZZL

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NASEM, Environmental Impact of Sunscreens
July 13, 2021 (virtual)

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TODAY

- Why it's not just about getting information across
- Heuristics as decision rules
- Why we look at the same facts differently
- Levers for communicating the best available science

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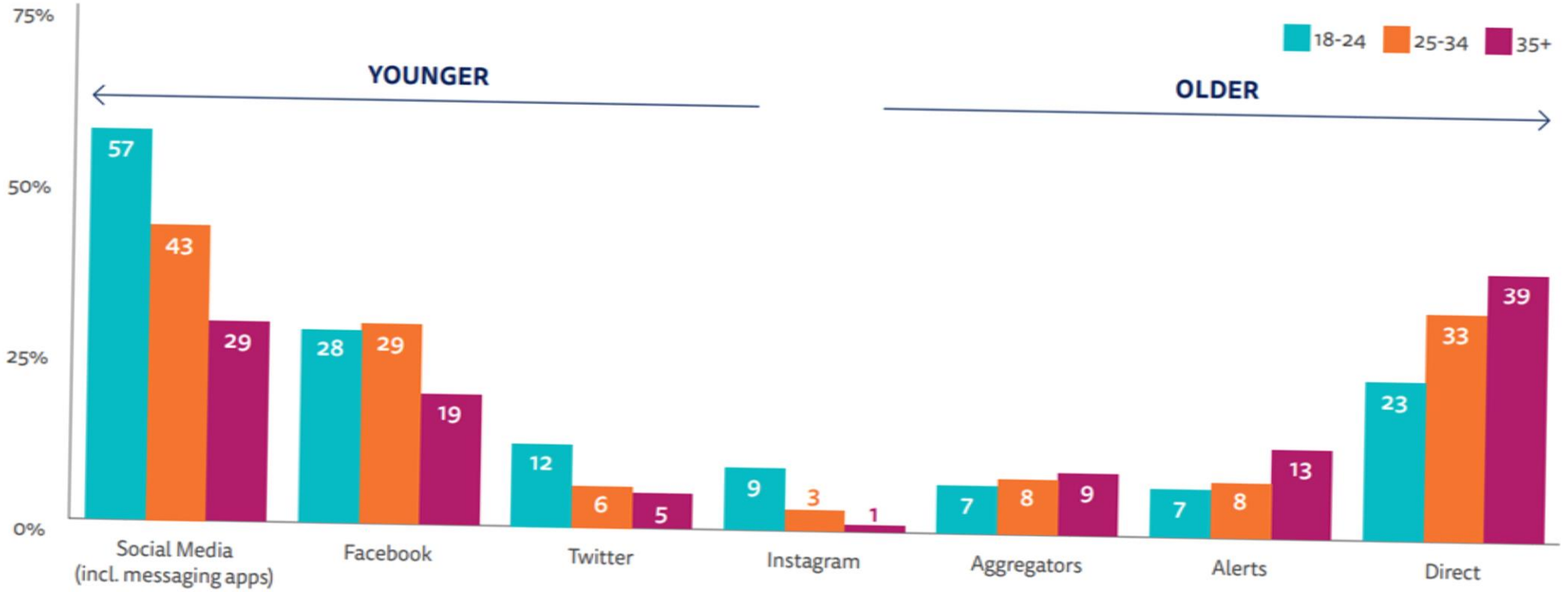
SOME OF THE CHALLENGES

PROPORTION THAT USES EACH DURING FIRST CONTACT WITH NEWS IN THE MORNING VIA SMARTPHONE BY AGE – SELECTED MARKETS



Q9d_2016_rc5. You mentioned that your FIRST contact with news in the morning is using internet via smartphone, in which ONE of the following places do you typically find your first news? *Base: 18-24/25-34/35+: selected countries = 842/1195/2982. Note: Data from US, UK, France, Italy, Spain, Ireland, Norway, Finland, Netherlands, Japan.*

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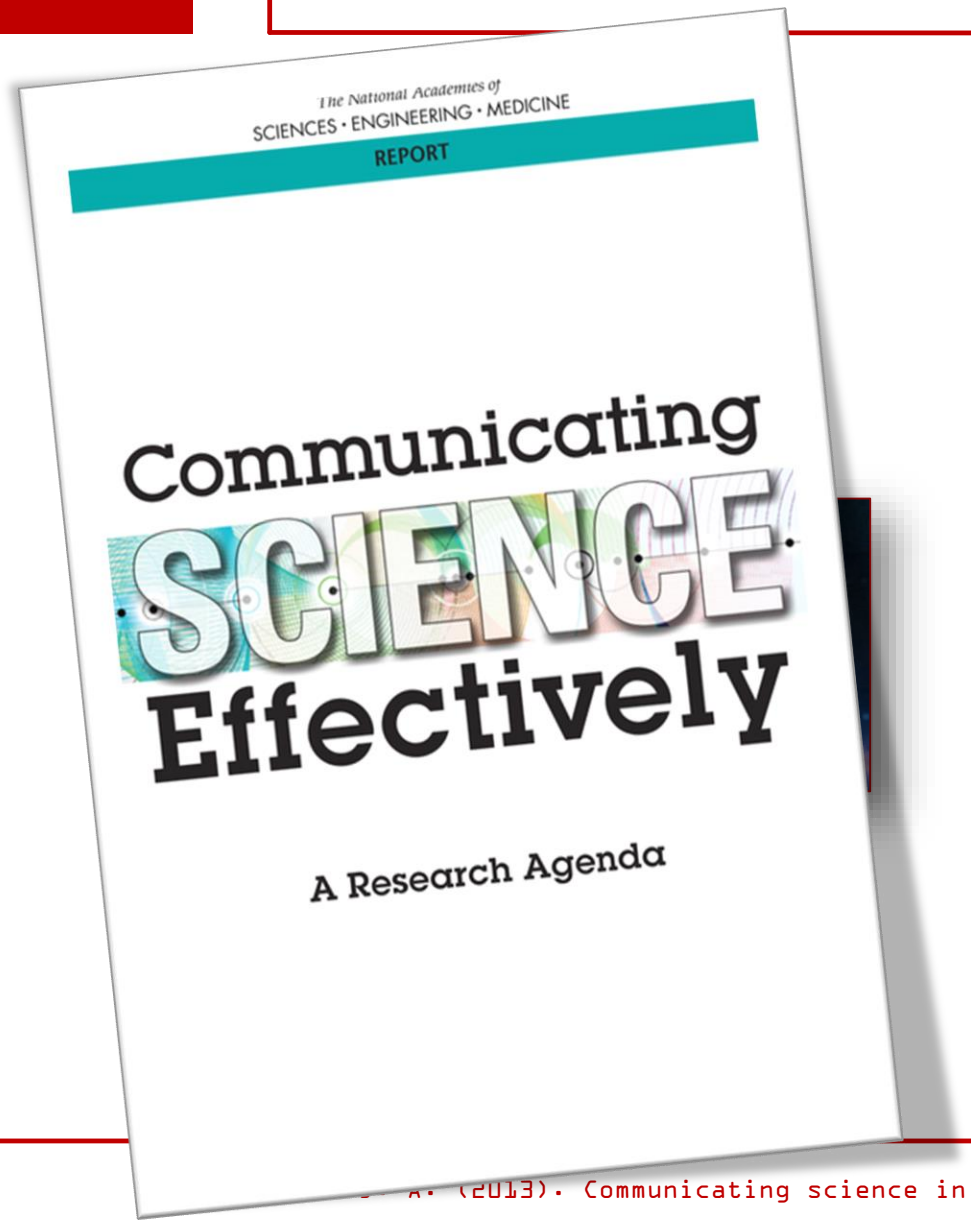
HOW THE SCIENTIFIC COMMUNITY TYPICALLY RESPONDS



- "We need to get the message out"
- Or what social science calls the knowledge deficit model; it assumes that …
  - if people were only more informed, they would draw same conclusion as experts
  - effective communication is about better public understanding
- The irony: The knowledge deficit model is at odds with best available scientific evidence

. A. (2013). Communicating science in social settings. *Proceedings of the National Academy of Sciences, 110*(Supplement 3), 14040-14047. doi:10.1073/pnas.1213275110

WE DO OR DON'T DO A LOT OF THINGS IN SPITE OF KNOWING THAT SCIENCE TELLS US OTHERWISE

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EVEN DOING THE *RIGHT* THING OFTEN HAS NOTHING TO DO WITH KNOWING WHY

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WHY INFORMATION BY ITSELF DOESN'T CHANGE HEARTS AND MINDS

- Two key principles
  - Cognitive misers
  - Low information rationality
- Shortcuts, heuristics, etc. become powerful information replacements for all of us …
- … especially for issues we don't think about all that much

CBS News, national CATI survey, June 12, 2015 - June 16, 2015, N = 1,018

Scheufele, D. A. (2006). Messages and heuristics: How audiences form attitudes about emerging technologies.
In J. Turnow (Ed.), *Engaging science: Thoughts, deeds, analysis and action* (pp. 20-35). London:

HEURISTICS THAT ROUTINELY INFLUENCE OUR ATTITUDES AND CHOICES …

- Social contagion
- Influencers / opinion leaders
- Accessibility, anchoring, etc.
- Framing
- "Intuitive numeracy"
- etc.

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HEURISTICS ARE NOT JUST *REPLACEMENTS*, THEY ALSO SERVE AS *FILTERS* FOR INFORMATION

- Motivated reasoning
  - (Dis)confirmation biases
  - Biased assimilation
  - Identity protection

- The same (scientific) facts mean different things to different people

political communication. *Proceedings of the National Academy of Sciences, 111*(Supplement 4), 13585-13592. doi:10.1073/pnas.1317516111

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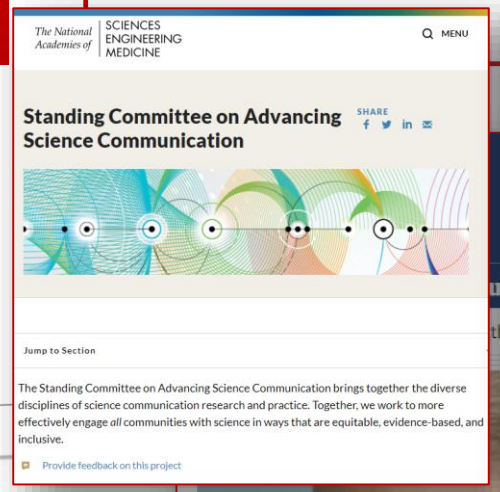
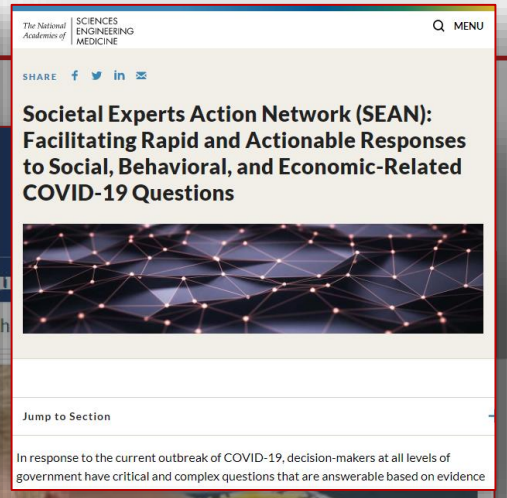
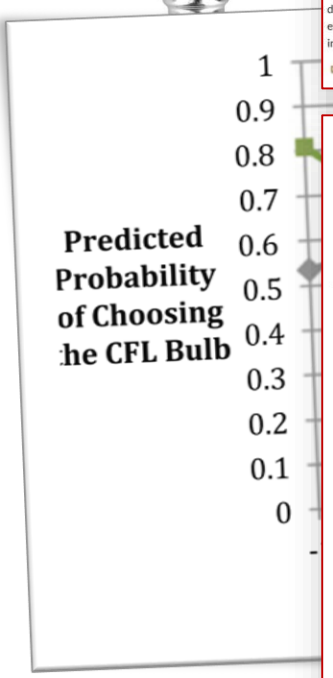
REACHING PUBLICS WITH THE BEST SCIENCE







The Consumer Products Inventory lists over 1,600 products which are identified by the manufacturer as containing nanoparticles - particles between one and 100 nanometres (between one and 100 billionths of a metre) across. So let's take a look at what's inside your household items. Last

How do we engage publics on choices that are influenced but not determined by science?

- Language that speaks to shared values rather than (what might unfairly be considered) tribal identities
- Answer questions that publics *are* asking rather than what science thinks they *should* be asking
- Finding (unlikely) partners

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THANK YOU

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