Science Communication

Why does it matter?

Agenda

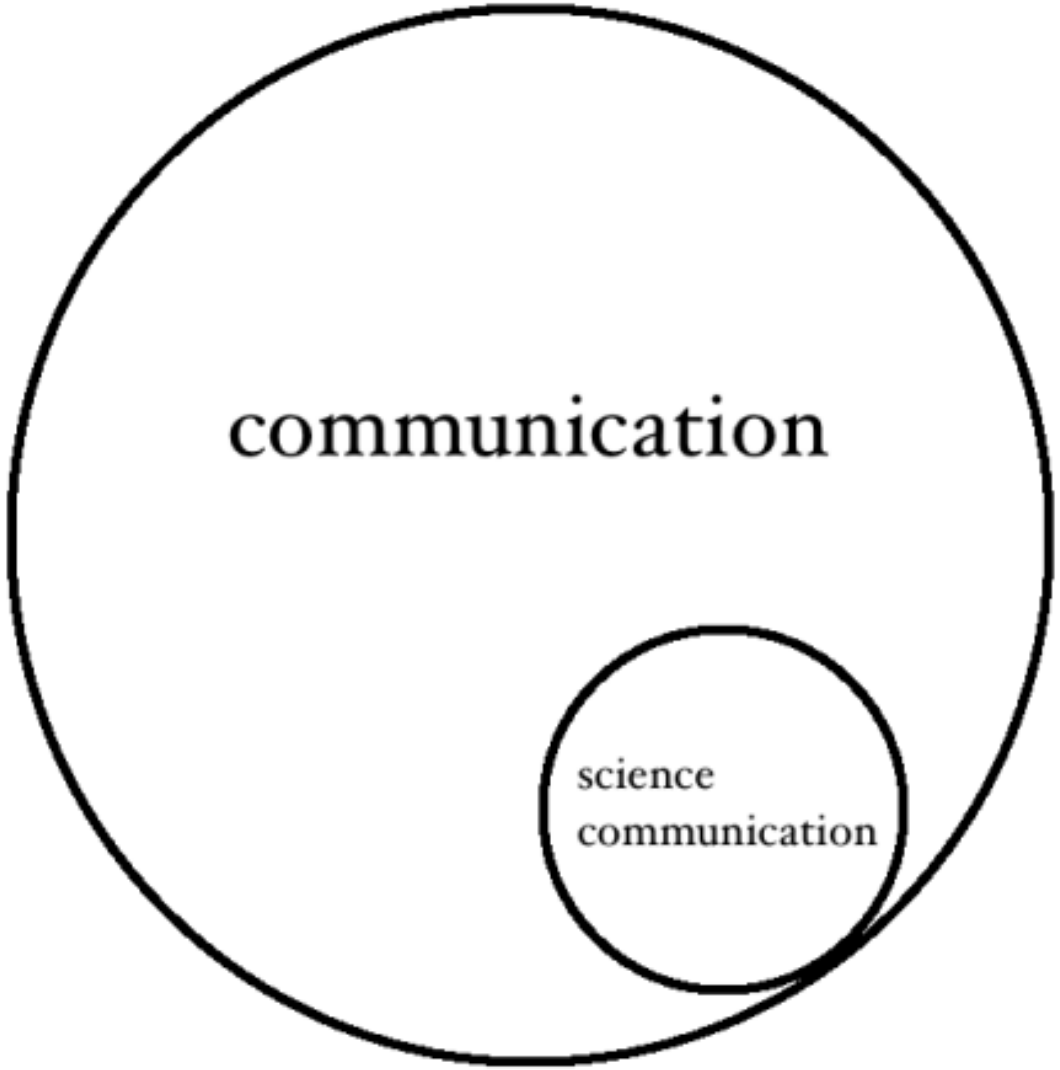
01 **Basic concepts in science communication**

02 **Importance of science communication in the developing world**

03 **Where does science communication ends and science journalism begins?**

04 **Concepts in science journalism**

05 **Ethics**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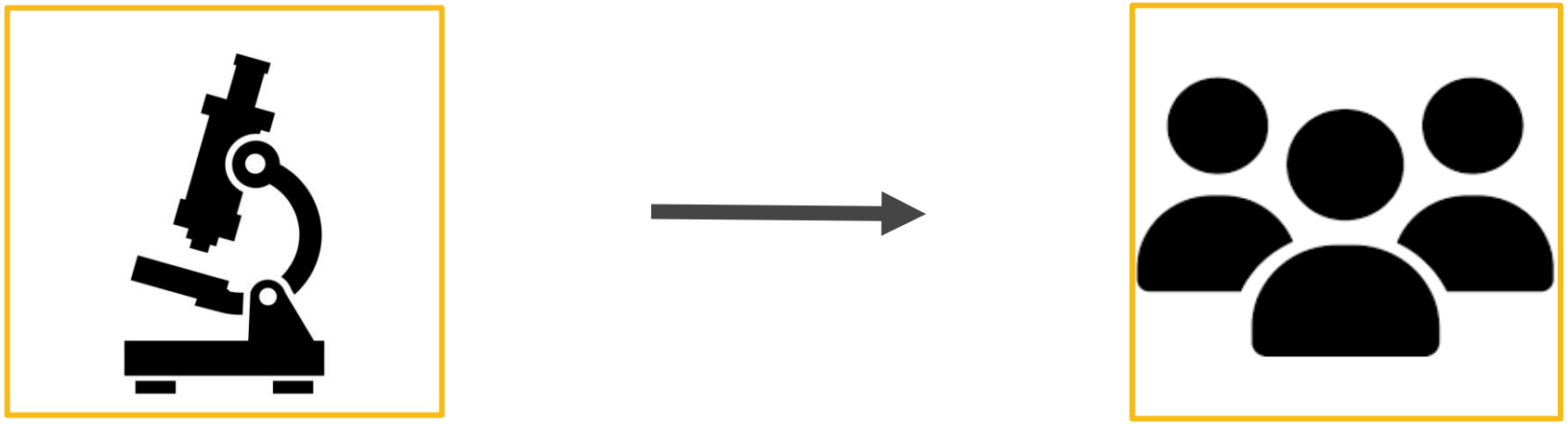
Science Communication (Burns, et al; 2003)

- The use of appropriate skills, media, activities, and dialog to produce one or more of the following personal response to science:
  - **Awareness,** including familiarity with new aspects of science
  - **Enjoyment** or other affective responses, e.g. appreciating science as entertainment or art
  - **Interest,** as evidenced by voluntary involvement with science or its communication
  - **Opinions,** the forming, reforming, or confirming of science-related attitudes
  - **Understanding** of science, its content, processes, and social factors.

Models of Science Communication

The Deficit Model



- This model assumes that public skepticism about science is caused by the public's lack of relevant knowledge.
- In this approach, scientists can remedy the "deficit" by sharing their knowledge with the public.
- The hope is that addressing the knowledge "deficit" will lead to more public support for science.
- In the deficit model, the transfer of knowledge is one-way and top-down.

The Contextual Model

- What does my audience already know about this topic?
- Why does my audience need the information I am communicating to them?
- What will my audience do with the information I am communicating to them?
- How will my audience feel about my methods?
- What is the future of my research and how will it apply to my audience?

The Participation Model

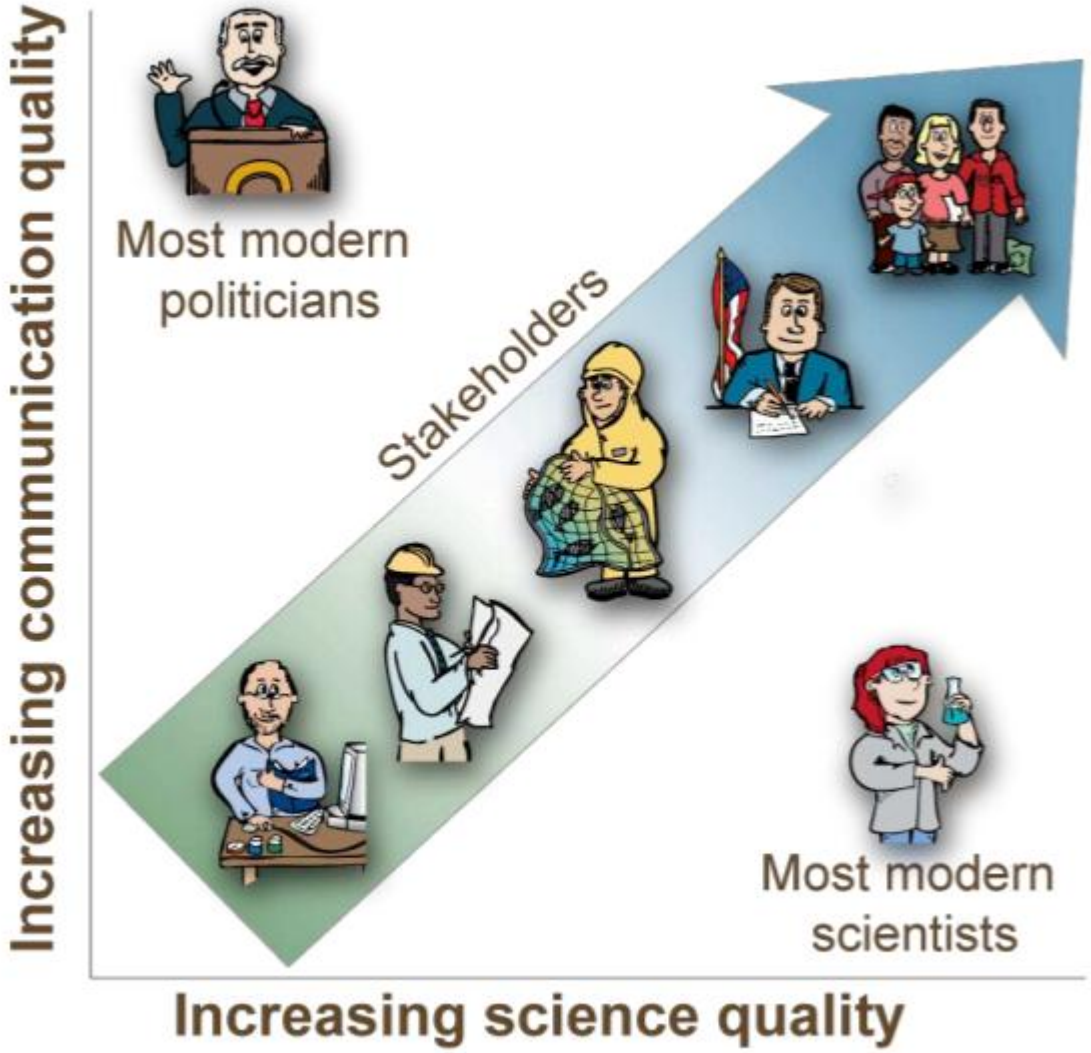
- In this model, scientists, the public, and policymakers participate equally in discussions and debates about issues in science and technology.
- Activities based on the participation model encourage members of the public to learn about a scientific topic and its implications for society.
- These activities also strengthen relationships between scientists and the public and inspire further public participation in scientific debates.

Why science communication is important in the developing world?

Classic Peanuts

By Charles Schulz

Increasing science quality (Donovan/UMCES, 2015)



AsianScientist

In Search Of A Good Dam On The Mekong

Plans to harness hydropower potential in the Lower Mekong Basin for the first time has led to a search for a good dam.

SHARE

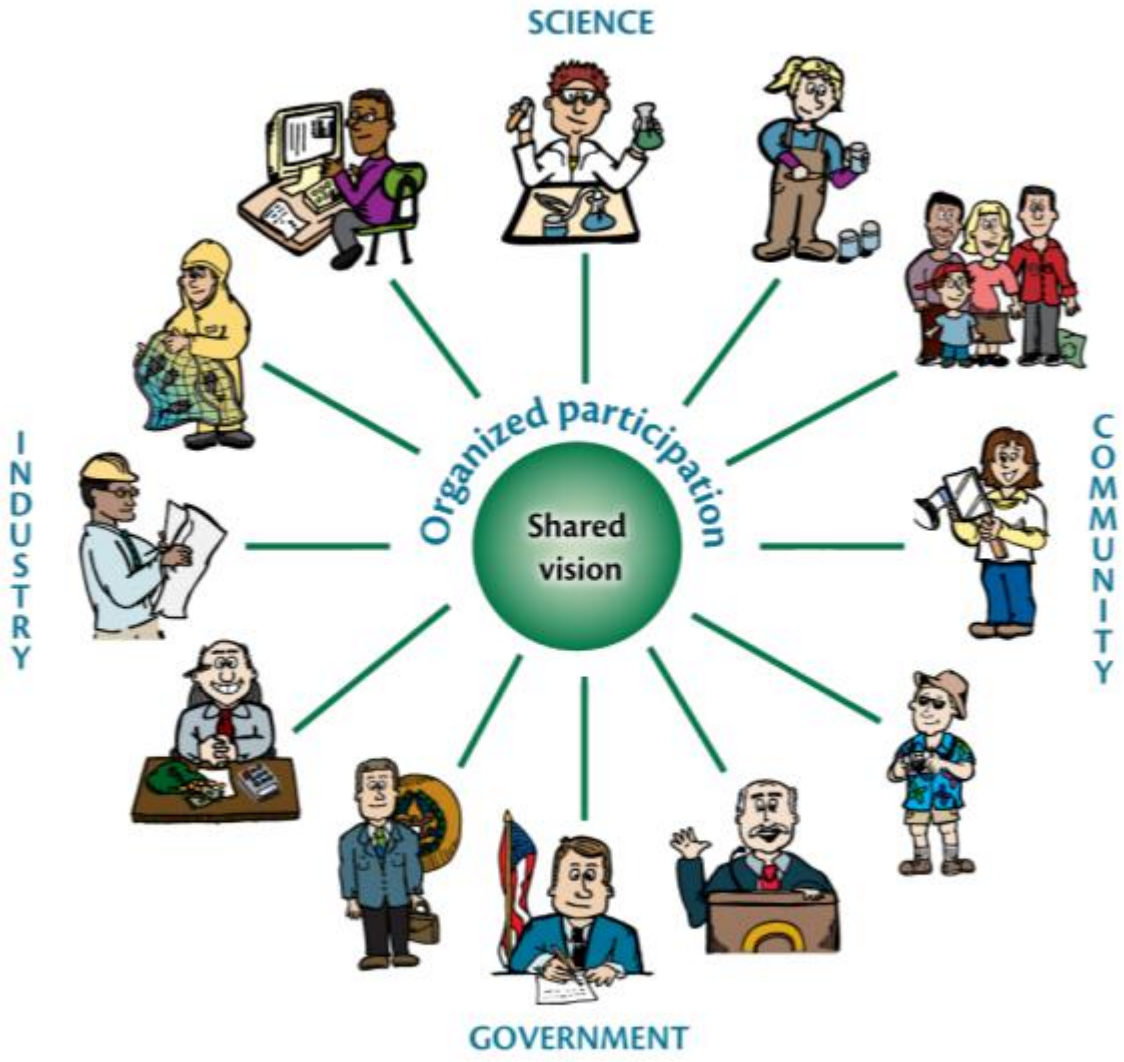
AsianScientist

An Algorithm For Responsible Damming

Scientists in the US have created an algorithm to better manage hydropower dams so as to avoid compromising food production along the Mekong River.

SHARE

Shared vision (Donovan/UMCES, 2015)

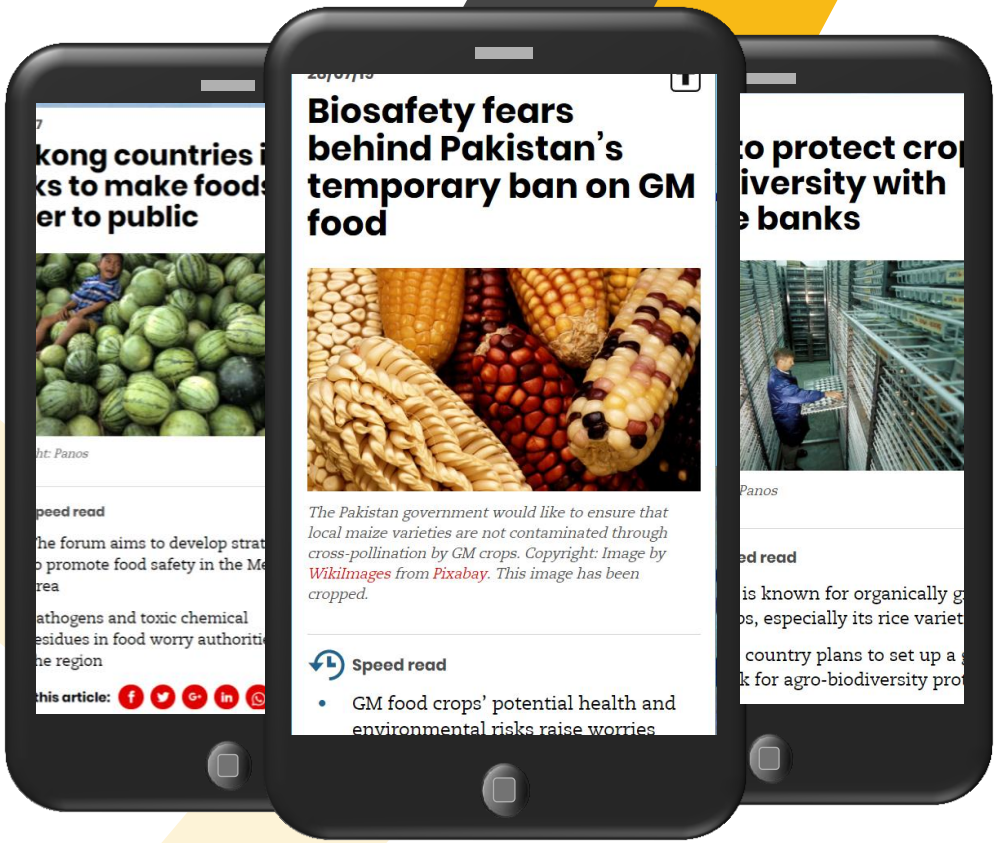


“It deals with an issue that is important not only, or even mainly, for the scientific community but also for the nation as a whole and for each individual within it. More than ever, people need some understanding of science, whether they are involved in decision-making at a national or local level, in managing industrial companies, in skilled or semi-skilled employment, in voting as private citizens or in making a wide range of personal decisions. In publishing this report the Council hopes that it will highlight this need for an overall awareness of the nature of science and, more particularly, of the way that science and technology pervade modern life, and that it will generate both debate and decisions on how best they can be fostered.”

-The Public Understanding of Science, The Royal Society, London 1985.

“The biggest single factor determining any country’s potential for achieving sustainable social and economic growth – and particularly, in the case of developing countries, of attaining the Millennium Development Goals – is its ability to access and apply the fruits of modern science and technology in a responsible manner.”

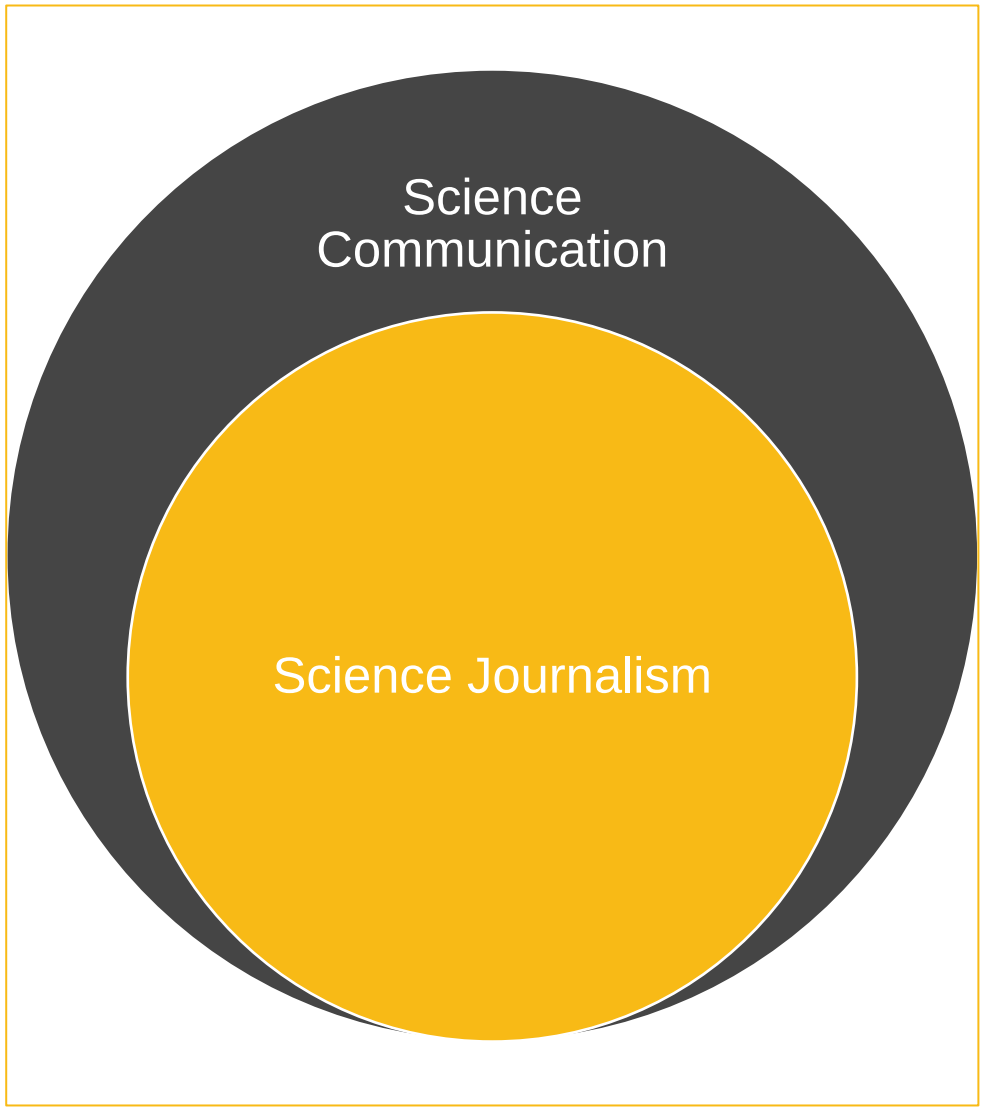
-David Dickson, Editor and founding director, SciDev.Net (2012)



"The role of science in this context is promoting a mindset of evidence-based decision making, teaching the language of the scientific method, and establishing platforms to communicate and apply findings at scale in some of the most remote, rural places on the planet."

-Jeffrey Marlow, 2012

Science Communication and Science Journalism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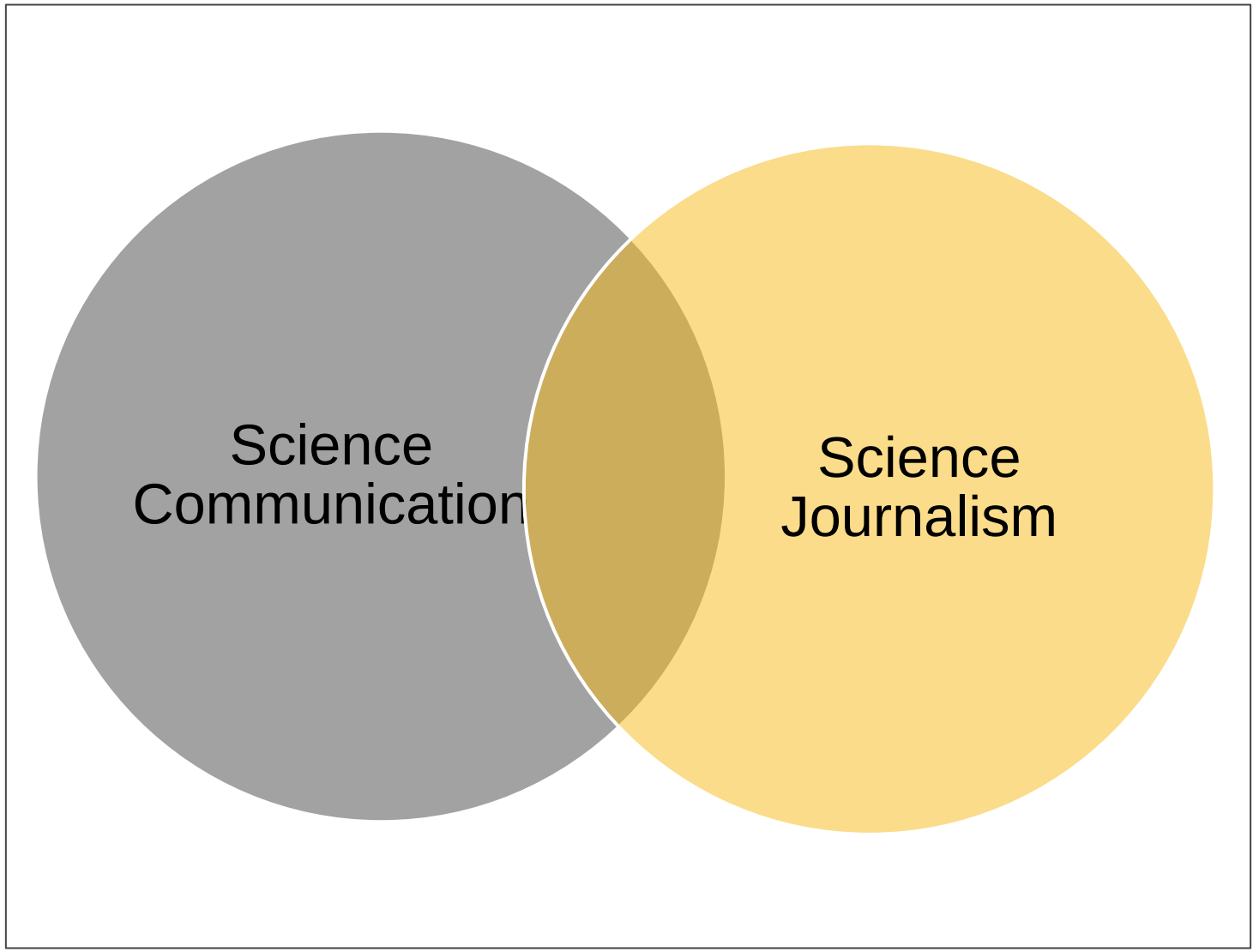
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Science Journalism

- In a nutshell, science journalism is a field that reports back to the general public about scientific matters. Science journalists are a special sub-group within the greater journalistic field.

- This is because science journalists must wear two hats at all time. The first hat is that of a scientist - a professional who can read and comprehend the often detailed and complex reporting that comes out of the scientific and research fields. The second hat is that of a reporter who is then tasked with communicating that complex knowledge in an easy-to-understand way that the lay public can easily understand and make use of.

But what is science?

Science begins with: I want to know

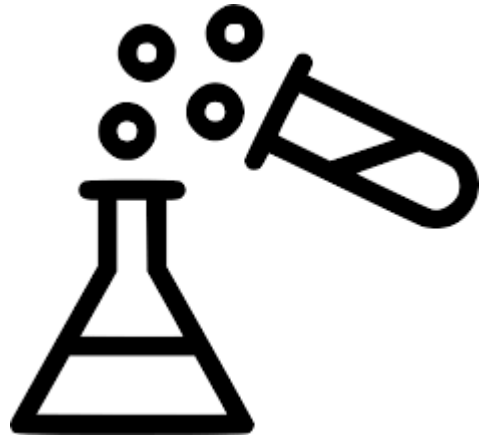
Within the context of science, to "know" means to exercise curiosity, **to observe** and **collect sufficient** information and intelligence to **identify, distinguish and describe the different features** of reality in a most truthful way. This reality can be real, virtual, concrete, natural, artificial, abstract, physical or metaphysical. **Exercising curiosity produces knowledge.**

Science as systematic knowledge

- If art is a question of taste, **science is the business of producing a truthful description of nature**. Here, to systematize means to deepen, weigh, measure, time, argue, reason, and construct logically, refusing subjectivism, putting aside one's own preferences, and keeping oneself out of the picture.

- Modern science deduces truth from facts, **verified by methodical experimentation**. Experiments tell how things and phenomena measure, how much they weigh, how long they last, in which direction they are going, etc. Experiments give mathematical data.

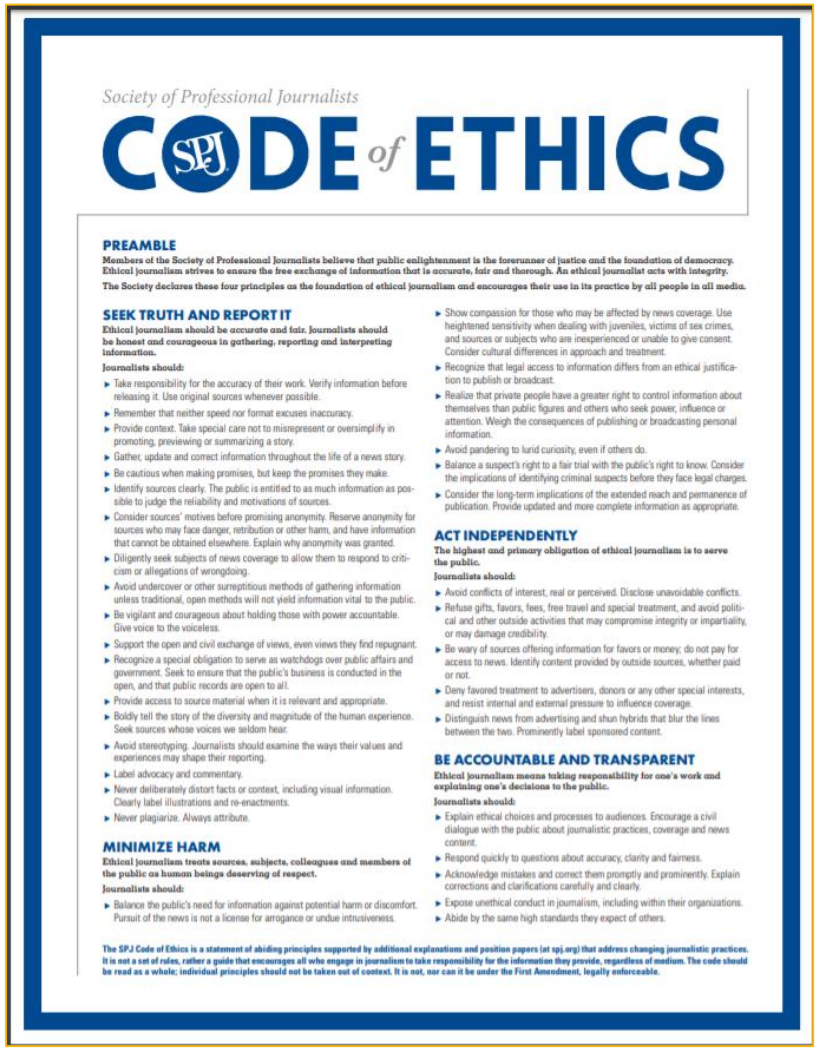
- Whereas ancient science attempted to explain the "why" of things, **modern science aims to answer the "how"** of things.



Journalists’ Ethics

SPJ Code of Ethics

- Seek Truth and Report It
- Minimize Harm
- Act Independently
- Be Accountable and Transparent



Society of Professional Journalists

CODE of ETHICS

PREAMBLE

Members of the Society of Professional Journalists believe that public enlightenment is the forerunner of justice and the foundation of democracy. Ethical journalism strives to ensure the free exchange of information that is accurate, fair and thorough. An ethical journalist acts with integrity.

The Society declares these four principles as the foundation of ethical journalism and encourages their use in its practice by all people in all media.

SEEK TRUTH AND REPORT IT

Ethical journalism should be accurate and fair. Journalists should be honest and courageous in gathering, reporting and interpreting information.

Journalists should:

- Take responsibility for the accuracy of their work. Verify information before releasing it. Use original sources whenever possible.
- Remember that neither speed nor format excuses inaccuracy.
- Provide context. Take special care not to misrepresent or oversimplify in promoting, previewing or summarizing a story.
- Gather, update and correct information throughout the life of a news story.
- Be cautious when making promises, but keep the promises they make.
- Identify sources clearly. The public is entitled to as much information as possible to judge the reliability and motivations of sources.
- Consider sources' motives before promising anonymity. Reserve anonymity for sources who may face danger, retribution or other harm, and have information that cannot be obtained elsewhere. Explain why anonymity was granted.
- Diligently seek subjects of news coverage to allow them to respond to criticism or allegations of wrongdoing.
- Avoid undercover or other surreptitious methods of gathering information unless traditional, open methods will not yield information vital to the public.
- Be vigilant and courageous about holding those with power accountable. Give voice to the voiceless.
- Support the open and civil exchange of views, even views they find repugnant.
- Recognize a special obligation to serve as watchdogs over public affairs and government. Seek to ensure that the public's business is conducted in the open, and that public records are open to all.
- Provide access to source material when it is relevant and appropriate.
- Boldly tell the story of the diversity and magnitude of the human experience. Seek sources whose voices we seldom hear.
- Avoid stereotyping. Journalists should examine the ways their values and experiences may shape their reporting.
- Label advocacy and commentary.
- Never deliberately distort facts or context, including visual information. Clearly label illustrations and re-enactments.
- Never plagiarize. Always attribute.

MINIMIZE HARM

Ethical journalism treats sources, subjects, colleagues and members of the public as human beings deserving of respect.

Journalists should:

- Balance the public's need for information against potential harm or discomfort. Pursuit of the news is not a license for arrogance or undue intrusiveness.
- Show compassion for those who may be affected by news coverage. Use heightened sensitivity when dealing with juveniles, victims of sex crimes, and sources or subjects who are inexperienced or unable to give consent. Consider cultural differences in approach and treatment.
- Recognize that legal access to information differs from an ethical justification to publish or broadcast.
- Realize that private people have a greater right to control information about themselves than public figures and others who seek power, influence or attention. Weigh the consequences of publishing or broadcasting personal information.
- Avoid pandering to lurid curiosity, even if others do.
- Balance a suspect's right to a fair trial with the public's right to know. Consider the implications of identifying criminal suspects before they face legal charges.
- Consider the long-term implications of the extended reach and permanence of publication. Provide updated and more complete information as appropriate.

ACT INDEPENDENTLY

The highest and primary obligation of ethical journalism is to serve the public.

Journalists should:

- Avoid conflicts of interest, real or perceived. Disclose unavoidable conflicts.
- Refuse gifts, favors, fees, free travel and special treatment, and avoid political and other outside activities that may compromise integrity or impartiality, or may damage credibility.
- Be wary of sources offering information for favors or money; do not pay for access to news. Identify content provided by outside sources, whether paid or not.
- Deny favored treatment to advertisers, donors or any other special interests, and resist internal and external pressure to influence coverage.
- Distinguish news from advertising and shun hybrids that blur the lines between the two. Prominently label sponsored content.

BE ACCOUNTABLE AND TRANSPARENT

Ethical journalism means taking responsibility for one's work and explaining one's decisions to the public.

Journalists should:

- Explain ethical choices and processes to audiences. Encourage a civil dialogue with the public about journalistic practices, coverage and news content.
- Respond quickly to questions about accuracy, clarity and fairness.
- Acknowledge mistakes and correct them promptly and prominently. Explain corrections and clarifications carefully and clearly.
- Expose unethical conduct in journalism, including within their organizations.
- Abide by the same high standards they expect of others.

The SPJ Code of Ethics is a statement of abiding principles supported by additional explanations and position papers (at spj.org) that address changing journalistic practices. It is not a set of rules, rather a guide that encourages all who engage in journalism to take responsibility for the information they provide, regardless of medium. The code should be read as a whole; individual principles should not be taken out of context. It is not, nor can it be under the First Amendment, legally enforceable.

Transparency Rule

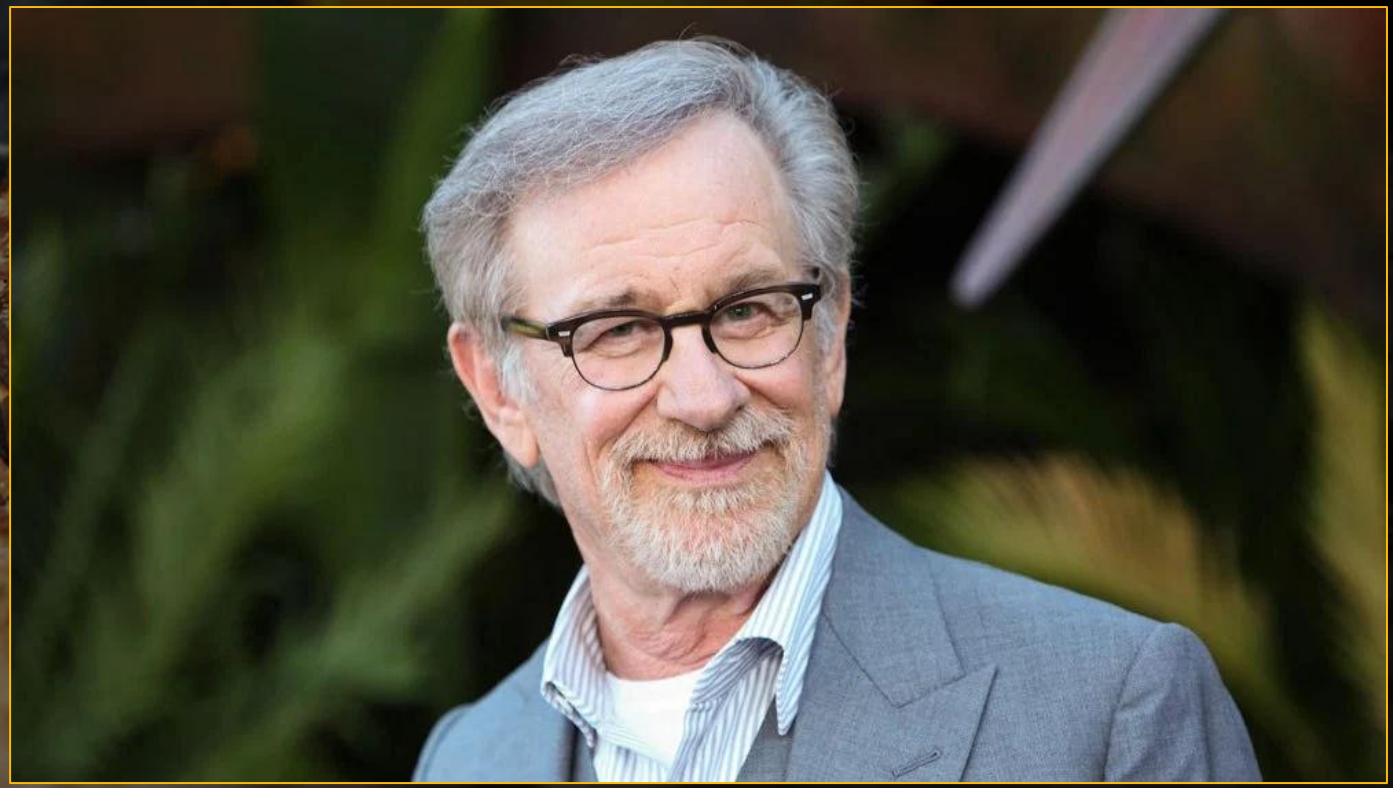
- Often in developing countries, journalists may only have the opportunity to cover a conference because they have been sponsored to attend. This can lead to an ethical dilemma for the journalists if the sponsors then put pressure on them to report favourably on the conference. The same can be true of press conferences where businesses may offer travel expenses and an attendance fee to journalists, and may in return demand positive coverage.

- **It is important that journalists remember to retain their editorial independence and not be swayed by bribes to suspend their critical judgement.**If it means losing that sponsorship in future, this can be a difficult decision. But to maintain their professional reputation for being a 'seeker of the truth,' independence is a must.

- **In general, transparency is a very good rule.** If someone pays for your trip you should let your editor know and, if possible, also your audience e.g. with a little box at the bottom of an article that reads: "The trip for this report has been sponsored by..." Also, it helps to discuss ethical problems and experiences with colleagues in order to learn for the future.

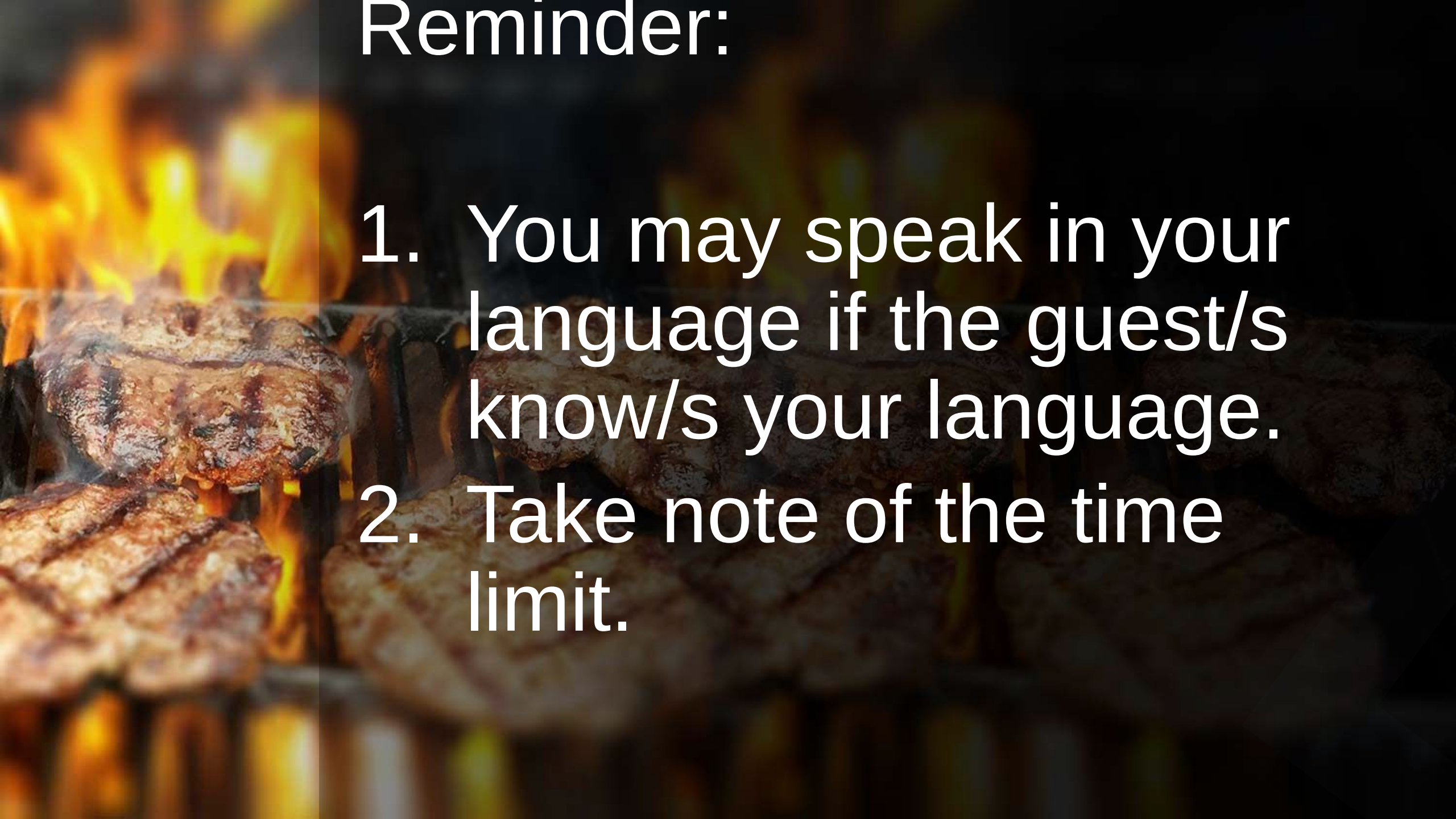
But first, a game!

The Steven Spielberg Test



Mechanics:

1. Each country-group will think of a food safety issue that you want to communicate.
2. Each person in every group will have **30 seconds** to speak about the story. (But you don't know who will go first ;)
3. The next person to speak should be able to continue what the other person was saying.
4. Pretend that your audience is Steven Spielberg, a non-science, non-media person.
5. Twist: Steven's got company. You will find out his **surprise guest/s** whom you need to talk to as well.



Reminder:

1. You may speak in your language if the guest/s know/s your language.
2. Take note of the time limit.