

# Science and the Media

Understanding how the media interprets and presents scientific information

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## -Introduction

Scientific information is all around us. While finding scientific information in magazines, websites, textbooks, newspapers, and blogs is easy, it is important to understand that these sources are not all equal. Some sources of scientific information are higher quality than others. The following activity will test your ability to identify the quality of a source, and what happens to scientific information as it moves through the media.

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## -Part 1: Identify the Source

Below are a number of quotes pulled from various sources in the media. All of the quotes are dealing with the release of the 2007 climate change assessment by the Intergovernmental Panel on Climate Change (IPCC), an international United Nations organization. Using your "Source Quality Pyramid" as a guide, try and identify the source of each media quote. Once you make a decision, discuss with your group and underline parts of the text that helped you make your decisions. While reading each source, use the check boxes below each quote to help you.. When using the checkboxes, keep these things in mind:

- **Author**
  - Who wrote the text? Is it obvious, or difficult to tell?
  - Is the author a reliable source of information?
- **Writing style**
  - What audience do you think the text was written for?
  - Is the author giving you information, or telling a story?
- **Sources**
  - Is it easy to tell where the author is getting their information?
  - Is it primary (the original source of the information) or secondary?
- **Fairness**
  - Does it seem like the author is biased?
  - Is the author trying to be objective, or stating a personal opinion?

## Source Quote 1

The debate on global warming is over.

That's the ultimate message from the report released in Paris today by the Intergovernmental Panel on Climate Change (IPCC), the U.N. body of leading researchers charged with analyzing climate science and producing the final word on what is happening — and will happen — to our planet. IPCC scientists now say that it is "very likely" that global warming is chiefly driven by the buildup of carbon dioxide (CO<sub>2</sub>) and other greenhouse gases caused by human activity, and that dangerous levels of warming and sea rise are on the way...

...The new report effectively completes a scientific revolution that began at the end of the 19th century, when a Swedish geochemist named Svante Arrhenius first proposed that CO<sub>2</sub> released into the atmosphere by burning fossil fuels could change the planet's climate. "The message of this report is that the time for sitting on the fence is finished," says Robert Watson, chief scientist at the World Bank and a former chair of the IPCC. "Now is the time for action."

Author:    ☐ **Scientist**    ☐ **Organization**    ☐ **Journalist**    ☐ **Other (specify):** \_\_\_\_\_

Writing Style:    ☐ **Professional**    ☐ **Informal**    ☐ **Narrative**

Sources:    ☐ **Primary source**    ☐ **Cites Source**    ☐ **Mentions Source**    ☐ **No Sources**

Fairness:    ☐ **Personal Opinion**    ☐ **Objective**    ☐ **Biased**

**1. Where do you think this quote came from?**

**2. What helped you make your decision? Underline 3 examples in the text.**

**Source Quote 2**

Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level (Figure SPM.1). {1.1}

Eleven of the last twelve years (1995-2006) rank among the twelve warmest years in the instrumental record of global surface temperature (since 1850). The 100-year linear trend (1906-2005) of 0.74 [0.56 to 0.92]<sup>°C<sup>[1]</sup></sup> is larger than the corresponding trend of 0.6 [0.4 to 0.8]<sup>°C</sup> (1901-2000) given in the Third Assessment Report (TAR) (Figure SPM.1). The temperature increase is widespread over the globe and is greater at higher northern latitudes. Land regions have warmed faster than the oceans (Figures SPM.2, SPM.4). {1.1, 1.2}

Rising sea level is consistent with warming (Figure SPM.1). Global average sea level has risen since 1961 at an average rate of 1.8 [1.3 to 2.3] mm/yr and since 1993 at 3.1 [2.4 to 3.8] mm/yr, with contributions from thermal expansion, melting glaciers and ice caps, and the polar ice sheets...

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Sources: [ ] **Primary source** [ ] **Cites Source** [ ] **Mentions Source** [ ] **No Sources**

Fairness: [ ] **Personal Opinion** [ ] **Objective** [ ] **Biased**

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**Source Quote 3**

Advance details of the United Nations' latest report on global warming are already sending mixed signals to scientific observers around the world. While the study is expected to predict climate impacts significantly less dramatic than previous reports, some long time alarmists have begun to attack the report itself as flawed and bureaucratically timid.

This week will see the release of the advance summary of the United Nations Intergovernmental Panel on Climate Change's Fourth Assessment Report, an extensive review of the current science surrounding the global warming debate, involving the collaboration of hundreds of scientists over the course of several years...

... Despite the alarmist-leaning nature of the Summary for Policymakers, the underlying science from the full report itself will predict climate change impacts over the next century more modest than previous reports, and far below claims made by organizations and individuals predicting imminent catastrophic changes.

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**Source Quote 4**

Talk about the danger of rising sea levels, at least in my experience, is usually accompanied by verbal images of Florida flooding, Manhattan and London under water, and similar catastrophes. If the IPCC figures are correct, the upper end of the range of what might actually happen is a rise of less than a meter over a century--considerably less than the distance between high tide and low. Popular talk about global warming, again in my experience, is usually put in terms quite a bit more apocalyptic than the IPCC's upper estimate of four degrees Celsius by 2100.

So far the only report I have seen is on CNN, but I will be pleasantly surprised if any newspaper headlines the story with "Global Warming a Wet Firecracker? International Panel finds temperature and sea level effects over the next century real but small."

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**1. Where do you think this quote came from?**

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**Source Quote 5**

The vast majority of scientists now agree that rising concentrations of greenhouse gases such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O) in the atmosphere are changing global climate patterns. This was the overarching conclusion of the assessment report released by the Intergovernmental Panel on Climate Change (IPCC) in 2007. Thousands of scientists and policymakers from more than 100 countries participated in producing the report, which is based on data published in hundreds of scientific papers.

The signature effect of increasing greenhouse gases is the steady increase in the average global temperature, which has risen 0.8°C over the last 100 years, with 0.6°C of that increase occurring over the last three decades. Further increases of 2 to 4.5°C are likely by the end of the 21<sup>st</sup> century, depending on the rate of further greenhouse gas emissions. Ocean temperatures are also rising, in deeper layers as well as at the surface. But the temperature increases are not distributed evenly around the globe. Warming is greater over land than sea, and the largest increases are in the northernmost regions of the Northern Hemisphere.

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**-Part 2: Questions for discussion**

1. Rank each of the five source quotes from low quality (1) to high quality (5).

Low Quality					High Quality
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>Source Quote 1</u>
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>Source Quote 2</u>
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>Source Quote 3</u>
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>Source Quote 4</u>
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>Source Quote 5</u>

2. Was it difficult to make a decision about the source of each quote?  
Which quotes gave you the most difficulty? Which were easiest?

3. Besides the text itself, what other things might you be able to use to help you make an informed decision about the scientific quality of a source?