



What is a Reader Supposed to Think?

In *Merchants of Doubt*, Naomi Oreskes and Erik Conway establish that there is a pattern of common tactics and strategies used by some individuals and groups to fight “the scientific evidence and spread confusion on many of the most important issues of our time” (9). But how is a reader supposed to identify when this smoke-screen of confusion and doubt is being used or when what they are reading or hearing is it legitimate skepticism. How is a reader supposed to be able to judge between credible opinion based upon legitimate information and opinion that seeks to promote disinformation and propaganda?

For Essay #4, you will find a newspaper opinion piece related to an issue where there is some scientific consensus or controversy. The article may involve an issue of regulation, but behind it is an issue of science. Your task is to determine from close analysis and research of this article whether a reader should believe this article’s opinion or discount it. Then, from your analysis you will present an argument/persuasion essay convincing us to either believe and take this article seriously or not believe it and be wary of it as propaganda? To make this argument, you should use what you have learned about the tactics of merchandising doubt and propaganda from *Merchants of Doubt* in your paper.

The Essay Question for this essay will be something like this:

- Should readers believe this author and this article or not?
- Is this article a legitimate opinion or a piece of propaganda?
- Is this article a work presenting legitimate information to help us make an informed decision and come to an informed decision? Or is this article purposefully working to fight scientific evidence and spread confusion?
- What is a reader supposed to think about this article?

Essay Requirements:

This essay should be 1000-1250 word argument/persuasion essay that incorporates a minimum of FIVE research sources. A minimum of three of these sources need to be from the SAC Library databases (such as MasterFile or LexusNexus Complete). The essay should be correctly documented using MLA Documentation Style and in MLA Manuscript Format.

Choosing Your Article

You should choose an opinion piece of substantial length published in a newspaper. It could be a “pro-science” based article or a “doubt-science” based article (see the examples on the next page). You can find an opinion piece on a historical topic described in *Merchants of Doubt* like smoking, acid rain, or nuclear winter. You could also take on an editorial related to the current topic of climate change, but there are other current issues that have science at the heart of them like sugar, genetically modified crops, pharmaceuticals, or pesticides.

Researching Your Article

Your first and most important task will be to read your article closely and research what it is talking about. Fact-check its information and claims. Research the author and uncover his or her credentials and past history (perhaps related to this issue or others). Can you detect any bias that this author might have? What might be his or her motives or agenda? Can you identify tactics of merchandising doubt or other logical fallacies at work? Or does his or her logic hold true? Research the references the author makes or any sort of outside sources that support his or her case. How credible are these sources?

Constructing an Argument

You will need to build your case for or against this article's credibility upon firm reasons. These reasons should be based upon clear criteria for credibility of information. These criteria could include:

- Author's credentials and authority for speaking
- --Author's bias and motivations
- Accuracy and trustworthiness of information
- Legitimacy of reasoning (use of logical fallacies or legitimate argumentative appeals)
- Presence or absence of strategies for merchandising doubt
- Other possible reasons you establish

Using *Merchants of Doubt*: As you make your case, you will need to identify and define these criteria and strategies based from what you have learned in *Merchants of Doubt* by referencing information and examples from the book. (Yes, you still need to use quotes from *Merchants*.)

ANOTHER VIEW by Bernard L. Weinstein

EPA plan a hothouse of politics, threat to economy

President Barack Obama frequently cites climate change as one of the greatest threats facing the future of civilization. For example, while visiting Alaska last month, he proclaimed, "Climate change is already disrupting our agriculture and ecosystems, our water and food supplies, our energy, our infrastructure, human health and human safety. That's why this administration is taking action to reduce greenhouse gas emissions and combat climate change." In his "State of the Union" address, the president said his "climate action plan" is the principal legacy of his second term.

To that end, the Environmental Protection Agency is proposing three sweeping and expensive regulatory initiatives to lower carbon emissions from vehicles, carbon emissions from power plants, and methane emissions from oil and gas production.

Ground-level ozone, which helps produce smog, has been falling for years. As our economy has grown 20 percent since 2000, ozone levels have dropped 40 percent -- and that's with 10 million more vehicles on the road. Through new regulations, we will tighten the book, the EPA now wants to lower accessible levels by another 40 percent. According to a recent study prepared for the National Association of Manufacturers, because smog abatement costs involve nearly every sector of the economy -- i.e., automobiles, trucks, buses, factories, power plants and consumer products -- that could be one of the costliest regulations ever adopted in terms of reduced economic output and lower job creation. The EPA bases the health benefits from lower ozone levels, despite that ozone is the major cause of asthma and

other diseases. But science backs up his claim. In fact, the incidence of asthma has been rising as ozone levels have been falling, and the National Association of Manufacturers claims climate change air pollution is the cause of asthma. In July, the EPA proposed a set of regulations designed to further reduce carbon emissions, or CO₂, from the nation's electric power plants. To achieve this 21 percent reduction by 2020, hundreds of coal-fired generators will have to be mothballed while some gas-fired plants may have to close down as well. In addition, the EPA is mandating that utilities include more "flexible" energy sources like wind and solar in their generation mix, but then another energy is given short shrift.

The EPA has acknowledged neither the fact that CO₂ emissions are higher than 20 years ago nor the huge cost of new energy production that will be a result of shutting America's lowest cost power plants. According to the Energy Information Administration, while natural gas prices averaged \$43 per megawatt-hour, wind power averages \$100 per megawatt-hour, wind power

reduction of emissions within 20 years.

Again, the EPA is looking for a solution in search of a problem. Methane emissions from natural gas production have declined 60 percent since 2000 while those from hydraulically fractured wells have dropped 70 percent. Hydraulically fractured wells will not be an overnight oil and gas production boom. The EPA should be required to conduct transparent and peer-reviewed cost-benefit assessments of all their proposed regulations.

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President Barack Obama holds a puppy while posing with a member in Kotzebue, Alaska. Obama was above the Arctic Circle to urge swift action against climate change, but his positions are based more on politics than science.

Example Article
"EPA plan a hothouse of politics, threat to economy" by Bernard L. Weinstein

Published in the San Antonio Express-News Sept. 21, 2015

<http://www.mysanantonio.com/opinion/commentary/article/EPA-overreach-based-on-politics-6514540.php>

ANOTHER VIEW by Gunnar Schade

Don't cherry-pick the science on methane

Rep. Lamar Smith is the chairman of the House Committee on Science, Space, and Technology. One would expect he measures his public statements with care. He has done so in the past, but his statements on the last possible carbon dioxide source, methane, are not. Unfortunately, similar to his position on climate change, the San Antonio Express-News editorial on possible regulation of methane emissions from the oil and gas industry is not based on what the science says.

Methane concentrations in our air have increased threefold since preindustrial times, and the reason for that increase are all man-made. One of the dominant sources to the atmosphere is the mining and use of fossil fuels, such as natural gas, estimated to release 100 million metric tons of methane per year world-wide, roughly a fifth of the total source. Other large man-made sources include landfills, the largest methane source, and rice fields. The largest methane source are wetlands.

A major line of research on the breakdown of the suggested methane regulation that Rep. Smith refers to involves and is the case of "natural" methane. The EPA estimates emissions of methane and other greenhouse gases via a sophisticated inventory, a type of study, developing, seemingly also held by Rep. Smith, is that this inventory is an accurate measure of emissions. It is not. Rather, it is a bare bones of true emissions based on estimates based on sparse input data for its calculations. EPA's oil and gas-related methane inventory, which largely relies on industry provided input data, has been known for years to be at odds with measured atmospheric abundances of methane.

Only the recent U.S. fracking boom led to independent estimates of actual emissions. The majority of these studies so far have confirmed the regional methane emissions are higher than what EPA calculates for its inventory.

When these studies show lower methane emissions than what EPA calculates, it is not because of a "cherry-pick" methodology as low as an EPA estimate. However, one of industry's favorite strategies, though not explicitly industry's, is to report only the most favorable data, to be used that as an indicator that can lead to certain methane emission underestimates. That comes by means of independent methane emissions, which based on limited data and only achieved due to lower estimates from gas-producing states, such as the Marcellus. More methane emissions from other high production areas, such as the Eagle Ford, are pending analysis and publication, hopefully indicating a lower natural estimate.

Decision-makers like Smith should also know that the direct competition in use of methane produced, industry estimates, that EPA's estimates of methane emissions are 1.5 percent of a methane estimate of the climate benefits of natural gas use and methane emissions. This means, however, that these benefits are only fully realized if all natural gas

emissions could be electricity production, which is not the case. It also notes that while industry may have improved its production efficiency, its methane emissions have not. In fact, methane emissions are increasing, at least regionally, as a result of more air quality measurements throughout the region.

EPA regulations are intended to not only limit methane emissions but, as a co-benefit, the emissions of oil and gas production. Both the measurements on the ground and in the air have shown that there remain methane emissions from oil and gas production, gathering and distribution, and that the nation's largest energy projects in air basin production has failed to and decreased its methane emissions.

These issues can be addressed effectively, as has also been demonstrated via atmospheric methane measurements. Making use of the known methane-based solutions, such as a price on carbon, are being blocked, and one reasonable regulation or emissions program, as long as the proposed one, is being blocked, but not all looking at methane emissions in the view. This is not to say carbon also has important utility and economically lower carbon footprint compared to other greenhouse gas reduction strategies, it would be well to have a strategy and economy in pricing them wisely.

Gunnar Schade is an assistant professor of atmospheric science at Texas A&M University. His current research includes air quality regulations in the Eagle Ford shale area.



Example Article
"Don't cherry-pick the science on methane" by Gunnar Schade

Published in the San Antonio Express-News Sept. 8, 2015

<http://www.mysanantonio.com/opinion/commentary/article/Don-t-cherry-pick-the-science-on-methane-6486290.php>



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