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# Evidence for Flossing: Solid or Suspect?

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## Evidence for Flossing: Solid or Suspect?

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In the second chapter of Naomi Oreskes' *Why Trust Science*, she utilizes case studies to explore the five themes of producing reliable science and elaborates on times when science was either flawed or wrong altogether. Oreskes delineates the five themes as: evidence, consensus, humility, values, and method. One of the case studies analyzed the commotion that followed the removal of the recommendation on flossing from the national Dietary Health Guidelines. However, Oreskes explains that the attention that the science around flossing received in August of 2016 was actually "a case of journalists getting it wrong, and scientists getting blamed" (Oreskes 120). Of the themes used to produce reliable science, consensus, values, and humility were the most applicable to Oreskes' case study on flossing.

To explain the controversy that surrounded this case, Oreskes cites a multitude of articles refuting the effectiveness of dental floss. Oreskes points out that there is strong evidence that flossing reduces gingivitis, a gum disease that also happens to be the first stage in periodontal disease. Journalists conflated this information, arguing truthfully that the evidence on flossing's benefit is not extensive. However, they falsely correlated this knowledge with the conclusion that flossing has no benefit. Oreskes points out that we don't have "gold standard" clinical trials about flossing because such trials would require self-reporting by participants, which is generally regarded as unreliable. Better trials would also require some participants to abstain from flossing for the better part of their lives, which would be unethical. Ultimately, Oreskes debunks the myth that flossing doesn't work and explains where the confusion occurred.

The case study clearly illustrates the role consensus plays in how we trust science. Oreskes points out that we don't have more extensive trials because of how, "widespread the belief is that flossing does help" (Oreskes 123). Despite the attention flossing received in 2016, no new studies in the area have emerged since then and dentists continue to recommend it. This is extremely important because, "to the extent that science can be said to progress, it is because scientists have mechanisms by which they reach agreement and *then move on*" (Oreskes 141). As Oreskes argues, without scientific consensus, science cannot advance. Typically, achieving consensus takes years of studies on various aspects of a scientific question or problem, before all scientists accept the accuracy of the findings. Given that consensus is very difficult to achieve in the scientific community, when it is reached on a subject, it should be highly regarded and considered trustworthy.

Another applicable method in the flossing case study is values. Oreskes demonstrated that values undoubtedly play a role in science. Not only do people's values affect what science they're likely to trust, they also play a role in scientists' approach to a problem and ultimately their findings. Given that all scientists have values, Oreskes identifies the importance of diversity in science. She argues that, "a homogeneous community will be hard-pressed to realize which of its assumptions are warranted by evidence and which are not" (Oreskes 137). Our values inevitably cause us to have certain biases and scientists are not exempt from this factor of human nature. Oreskes explains that, "Diversity is a means to correct for the inevitability of personal bias" (Oreskes 144). While it is true that diversity is necessary to prevent personal biases from affecting scientists' work, it is impossible to eliminate the role their values play. However, if people share scientists' values, they will be more likely to trust their scientific findings. Therefore, it is important that some scientists have recently begun publicly sharing their values.

These scientists, “believe that their values *are* broadly shared and therefore a basis for building bonds of trust” (Oreskes 155).

Just as scientists have begun sharing their values, journalists should too. Considering how the public reacted to the news of flossing, it is clear that journalism plays a large role in people's perception of the truth. It is rare to come by an article that is bias free, and readers are forced to make an effort to decipher an author's values within every piece they read. Since the public generally learns about scientific findings through journalism, what they learn is colored by the journalist's biases as well. To prevent this, both scientists and journalists should make their values explicit so as to build credibility.

Given this, the case study on flossing brings up the question: had scientists and journalists shared each other's values, would the debate over flossing have gone differently? The case study highlighted the belief most people hold that their professions are eminently important. Both journalists and scientists tend to be proud of their careers. However, they do not necessarily regard each other's work very highly. Rather, they frequently clash. Scientists publish findings, which journalists may misinterpret or falsely convey the scientific information. In turn, scientists disparage journalists for the way they report science. The debate over flossing was not ultimately about whether or not flossing was beneficial. Rather, it was a competition between journalists and scientists. Journalists felt that they had finally beaten scientists, and scientists felt that journalists had, once again, spread misinformation. Journalists' egos caused them to want to discredit scientists and attack them for their false findings. The scientific evidence for flossing was ultimately credible, but scientists refused to take the criticism that their evidence of the benefits of flossing was weak and conduct further studies on flossing.

This demonstrates the role that humility plays in the science of flossing. Oreskes argues that, “scientists should not expect us to accept their claims solely on trust. Scientists must be prepared to explain the basis of their claims and be open to the possibility that they might be wrongly dismissing or discounting evidence” (Oreskes 141). While it is important for scientists to be open to certain criticisms, in the same way, it is important for people to be open to science that contradicts their values. However, Oreskes identifies the three categories of people other than scientists who scholars have deemed worthy of attention. They include, “professionals who have relevant information [...], people who may not have professional training, but whose daily experiences may lead them to relevant knowledge and understandings [...], and ‘amateur professionals’” (Oreskes 131). The journalists who disseminated misleading information do not fall under any of these categories. Therefore, their criticism should not be regarded as highly as proven scientific evidence.

In Chapter Two, Oreskes dives into the standards that are necessary to produce reliable science. In the case of flossing, the scientific evidence should be trusted by the public and journalists, because scientific consensus was reached about the benefits of flossing. However, journalists' conflicting values led them to question and deny the validity of scientists' claims. While scientists should make a conscious effort to maintain humility, and some criticism should be taken under real consideration, “sometimes a ‘skeptic’ is just a sore loser” (Oreskes 146). The controversy surrounding the benefits of flossing illustrates the importance of each of these key themes, which are vital for our trust in science. After analyzing the case study on flossing with the five themes in mind (evidence, consensus, humility, values and method), the evidence was overwhelming, and the science should be trusted.

**Bibliography**

Oreskes, Naomi. *Why Trust Science?* Princeton, New Jersey, Princeton University Press, 2019.