

Establishing Ethos with Nontraditional Credibility  
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## **Introduction**

Science is a discipline that uniquely relies upon credibility. Experts in their respective fields are expected to study a topic, analyze its meaning, and disseminate that information to a lay public. For any recommendations to hold sway, the public must believe these experts to be credible. However, with the advent of the internet, the evaluation of information has changed drastically, and faith in US institutions has eroded. Doubt over scientifically established phenomena, such as the efficacy of vaccines and the reality of climate change have taken root and spread across online platforms. Understanding how this information that lacks the traditional backing of expertise is able to establish credibility among digital consumers is thus a crucial means to understand the changing nature of ethos in the digital age. This paper will use a critical approach to analyze the anti-fluoridation efforts of the Fluoride Action Network in order to better characterize the means by which ethos is established on this digital platform.

## **Ethos**

Ethos is one of the three basic components of rhetoric classically established by Plato and Aristotle. Traditionally linked to the character of a speaker, the definition expanded to encompass overall credibility (LaGrandeur, 2003). However, these evaluations have shifted dramatically with the advent of the internet. Indeed, research suggests that users utilize these traditional markers of credibility, including expertise, credentials, and content, in conjunction with surface evaluations, including design, interactivity, usability, and speed of loading (Wathen & Burkell, 2002, pg. 141). These sorts of heuristics are a necessary tool in light of the type of information available on the Web. Burbules (2001) highlighted the problems inherent to the web in regards to evaluating credibility, specifically discussing the volume of the Internet, reliance on credibility information from within the network we're evaluating, and the speed of the Web.

These factors contribute to an overwhelming amount of information where credibility is challenging to objectively untangle and misinformation is difficult to retract. We often rely on the priority developed by search engines, and once we find a site, judge its design, style, and digital quality as markers of digital credibility (Burbules, 2001).

These markers, while useful, are by no means foolproof or truly indicative of academic quality. Relying on the choices of our search engines makes us vulnerable to the weaknesses of algorithms. One of the most egregious examples of this was famously publicized in 2016, when it was reported that the top result of “did the holocaust happen” was a white supremacist site (Roberts 2016). While Google adjusted their algorithm to address these complaints, this event highlights our susceptibility to misinformation on the Web. Indeed, polished digital ethos, especially in regards to images, can have a downside.

“They look so professional, so polished, so authoritative-yet they are so easy to manipulate, and it is so easy to learn how to do so. Not surprisingly, there is a negative side to the relative ease with which one can learn how to create impressive images in digital formats. Graphics sometimes lend undue credibility to otherwise weak arguments. Even sophisticated typography and layout, graphic elements that were, before the digital age, available mainly to professional publishers, can have this result.” (LaGrandeur, 2003, p. 130)

Burbules (2001) in particular anticipated the tendency for groupthink to occur in digital spaces. “There is an even greater capacity to locate information that will tend to confirm one’s existing views and prejudices rather than challenge them (Burbules, 2001, 443).

Credibility is clearly a difficult entity to authentically establish. Warnick's (2007) later work on digital credibility provides insight on why traditional markers of ethos may not apply to online spaces, especially in regards to sites that rely upon pseudoscience and conspiracy.

“The standards [users] apply will depend on the characteristics of the field in which the site is located. Therefore, in studying how online credibility operates, recourse to a field-independent criterion such as source expertise is ill-advised. Critics studying rhetorical credibility in Web-based environments should, therefore, consider the role of field dependency in judging online credibility's role as a component of the persuasive effects of public discourse.” (Warnick, 2007, 67)

Scholars must understand the differing standards that apply to different genres of information online in order to properly understand the persuasive power of sites that lack traditional credibility.

### **The Fluoride Debate**

To illustrate these modern shifts to our understanding of ethos, this paper examines the opposition to fluoridated water. Public policy advocates and regulators who support fluoridation have the markers of expertise traditionally ascribed to ethos. Numerous expert organizations have supported fluoridation. Fluoridation is advocated as a premiere method of improving oral health. The American Dental Association states, “More than 70 years of scientific research has consistently shown that an optimal level of fluoride in community water is safe and effective in preventing tooth decay by at least 25% in both children and adults” (ADA). Due to the success of this public policy measure, the CDC has named fluoridation one of the “Ten Great Public Health Achievements” of the 20<sup>th</sup> Century (CDC). Fluoridation is also viewed as an equalizer, allowing all members of a given community to benefit without regard for status or money.

Provided that a community has a piped water supply, water fluoridation is the most effective method of reaching the whole population, so that all social classes benefit without the need for active participation on the part of individuals. Water fluoridation has been endorsed by the world's leading science and health organizations, including WHO, the International Association for Dental Research (IADR) and FDI World Dental Federation (O Mullane et al., 2016, p 78).

However, opposition to fluoridated water still remains and is a prevalent undercurrent of fluoride policy debate. A quick google search of the simple term “fluoride” produces an anti-fluoride website as the third search result.

The screenshot shows a Google search for "fluoride". The search bar contains the word "fluoride" and the search button is visible. Below the search bar, there are navigation tabs for "All", "News", "Images", "Shopping", "Videos", "More", "Settings", and "Tools". The search results show "About 37,100,000 results (0.38 seconds)". The first three results are:

- Fluoride: Risks, uses, and side effects - Medical News Today**  
<https://www.medicalnewstoday.com/articles/154164.php>  
 Feb 21, 2018 - Adding fluoride to the water supply reduces the incidence of tooth decay. ... Too much fluoride can lead to dental fluorosis or skeletal fluorosis, which can damage bones and joints. ... A fluoride content of 0.7 ppm is now considered best for dental health. ... Exposure to high concentrations ...  
[Risks](#) · [Uses](#)
- Fluoride - From MouthHealthy.org**  
<https://www.mouthhealthy.org/en/az-topics/f/fluoride>  
 Fluoride, a naturally-occurring mineral, helps prevent cavities in children and adults by making the outer surface of your teeth (enamel) more resistant to the acid attacks that cause tooth decay. ... After teeth erupt, fluoride helps rebuild (remineralize) weakened tooth enamel and ...
- Fluoride - Dangers of Fluoridation | Mercola.com**  
<https://fluoride.mercola.com/>  
 Learn about the dangers of fluoride and why the practice of water fluoridation should be ended now. Dr. Bill Osmunson Talks about ... · [Public Health Warning Issued ...](#)

On the right side of the search results, there is a knowledge panel for "Fluoride". It includes a share icon, a description: "Fluoride is an inorganic, monatomic anion with the chemical formula F<sup>-</sup>, whose salts are typically white or colorless. Fluoride salts typically have distinctive bitter tastes, and are odorless. [Wikipedia](#)", ChEBI ID: 17051, and "People also search for: Fluorine, Chloride, Toothpaste, MORE". Below this, there is a section titled "Fluoride chemical" with a "View 10+ more" link. It shows four chemical representations: Calcium fluoride (a ball-and-stick model), Potassium fluoride (a ball-and-stick model), Hydrofluoric acid (a small bottle), and Hydrogen fluoride (a chemical structure diagram).

Fig. 1: A screenshot of a Google search conducted Apr. 21, 2019, in which an anti-fluoride website is the third result.

More specific queries lead to similar results, including the Fluoride Action Network: the source of analysis.

The image shows a Google search interface for the query "water fluoridation". The search bar at the top contains the text "water fluoridation" and a search icon. Below the search bar, navigation tabs for "All", "News", "Images", "Shopping", "Videos", "More", "Settings", and "Tools" are visible. The search results section indicates "About 1,730,000 results (0.63 seconds)".

The search results list several entries:

- Community Water Fluoridation | Division of Oral Health | CDC**  
<https://www.cdc.gov/fluoridation/index.html>  
For 70 years, people in the United States have benefitted from drinking water with fluoride, leading to better dental health.  
Water Fluoridation Basics · Water Fluoridation Data ... · FAQs | Community Water ...
- Water fluoridation - Wikipedia**  
[https://en.wikipedia.org/wiki/Water\\_fluoridation](https://en.wikipedia.org/wiki/Water_fluoridation)  
Water fluoridation is the controlled addition of fluoride to a public water supply to reduce tooth decay. Fluoridated water contains fluoride at a level that is effective for preventing cavities; this can occur naturally or by adding fluoride. ... Bottled water typically has unknown fluoride levels.  
Water fluoridation controversy · Fluoridation by country · Dental fluorosis · Fluoride
- Fluoride Action Network | Water Fluoridation**  
<https://fluoridealert.org/issues/water/>  
Water fluoridation is the practice of adding industrial-grade fluoride chemicals to water for the purpose of preventing tooth decay. One of the little known facts ...
- Top Ten Reasons to Oppose Water Fluoridation - IAOMT**  
<https://iaomt.org> · IAOMT · Top Ten Reasons to Oppose Water Fluoridation  
Dec 3, 2018 - Some of the reasons to oppose water fluoridation include concerns about its lack of safety and its impact on human health and the environment.

On the right side of the search results, there is a "Water fluoridation" knowledge panel. It includes a definition: "Water fluoridation is the controlled addition of fluoride to a public water supply to reduce tooth decay. Fluoridated water contains fluoride at a level that is effective for preventing cavities; this can occur naturally or by adding fluoride. Wikipedia". Below the definition, it says "People also search for: Fluoride, Dental sealant, Tooth decay, MORE". A "Feedback" link is located at the bottom right of the panel.

Fig. 2: A search for “water fluoridation” conducted on Apr. 21, 2019 results in two anti-fluoridation results. Clearly opponents of fluoridation have a sizable online presence despite their lack of institutional support. How do opponents of fluoridation build ethos into their arguments online when they lack traditional markers of expertise? This building of nontraditional ethos in an online sphere is what this paper will examine, using the Fluoride Action Network as an exemplar.

### The Artifact Analysis

The Fluoride Action Network’s mission statement states that the organization “is dedicated to protecting public health by ending water fluoridation and other involuntary exposures to fluoride” (FAN).

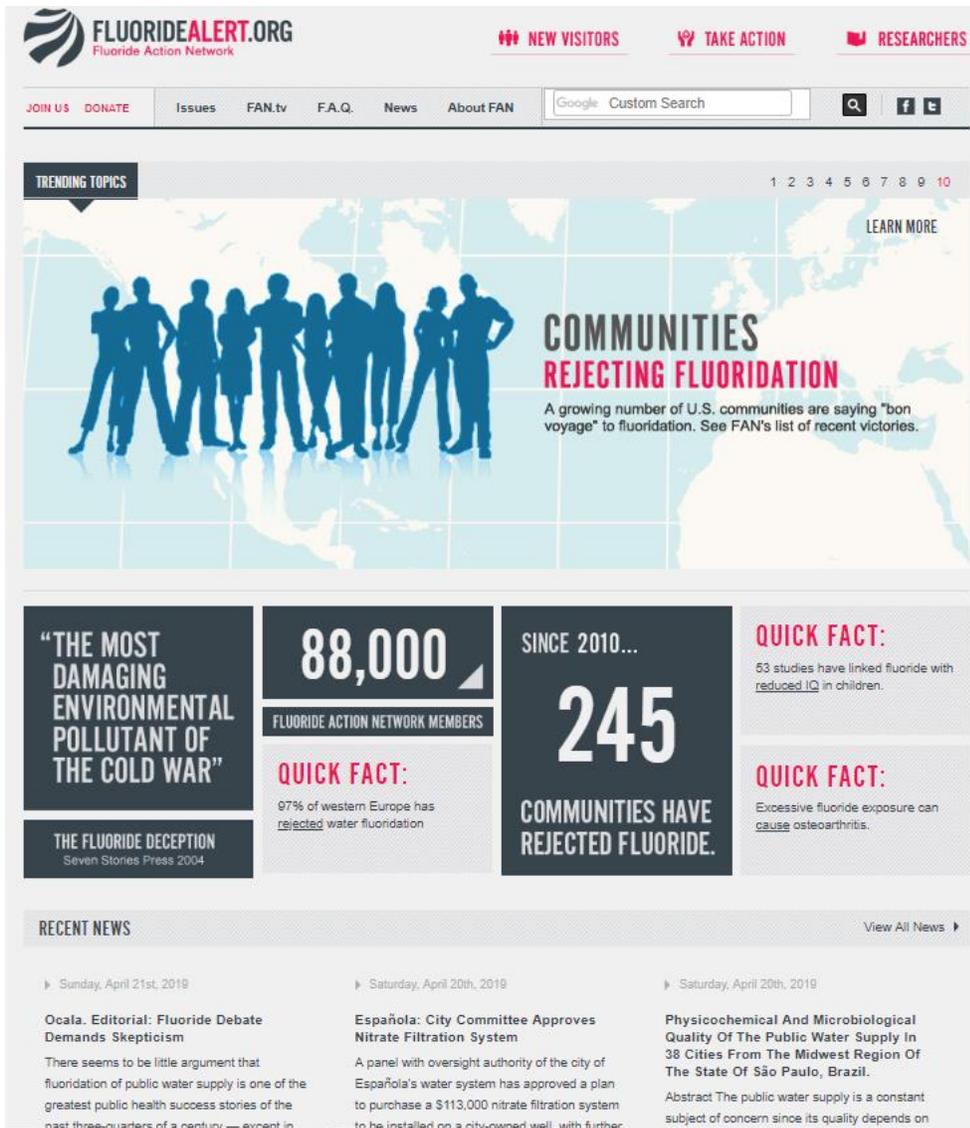


Fig. 3: Screenshot of the Fluoride Action Network

### Utilizing New Ethos: Website Design

One of the most striking aspects of the Fluoride Action Network is the site’s design and visual appeal. The site takes great care to incorporate visual imagery into the site experience. The title is accompanied by a simple symbolic logo, and three areas of the front page are also accompanied by representative symbols. Social media links are present in a manner that is available but succinct and non-distracting.

More obvious forms of attention-grabbing includes the incorporation of other images and photographs. The front page has a rotating carousel of header images that are high quality. These integrate striking imagery with authoritative fonts. Some also include other graphics or transparent layers to create an integrated and polished product. Underneath the section of rotating images is a section of informational boxes of differing colors and backgrounds that highlight simple but striking statistics. Large bolded numbers encourage users to click to learn more about their meaning and significance in a way that increases engagement.

Underneath of this section is a Recent News section that lists headlines and the first couple of sentences from different articles. This area appears to be regularly updated and includes additional information such as location. The site is also highly interactive. Highlighting over menu items and other clickable areas results in color changes that indicate link opportunities. Numerous calls to action and invitations to learn more are scattered throughout the site. PDFs and polished videos are available, indicating proficiency with a variety of multimedia.

Overall, the site is well organized. A simple color pattern of neutral colors with red and green highlights keep the site visually appealing. The usage of multimedia and polished design all are indicative of a sophisticated digital presence that signal credibility online.

### **Utilizing Traditional Ethos: Trappings of Expertise**

While the Fluoride Action Network may not have the traditional journalism credentials of other news outlets, they attempt to garner this credulity in a secondhand manner by referencing these other outlets. Their about page specifically states, “FAN’s work has been cited by national and international media outlets including the *New York Times*, *Wall Street Journal*, *TIME Magazine*, *National Public Radio*, *Scientific America*, and *Prevention Magazine* among others.”

In this case, simply being referred to by traditionally credible media sources is being used to bolster the credibility of the Fluoride Action Network.

In addition, numerous studies and statistics are also cited. While often taken out of context or from studies with less rigorous methodology, the utilization of journal articles indicates an attempt to establish scientific credibility. This usage of stats and numbers is an interesting means by which to establish surface level credibility. When complimented by the polished website design, this is a strong means by which to establish ethos.

Good will is also emphasized. The about page also highlights how “FAN became an official project of the American Environmental Health Studies project... a registered non-profit organization”. This association with a nonprofit helps undercut any accusations of bias or mal-intent before they can be made. In fact, this harkens back to the most classical sense of ethos as establishing one’s character.

### **Discussion**

Ultimately The Fluoride Action Network appears to optimize its persuasive power by utilizing elements of both traditional and modern ethos. The site certainly has crucial digital credibility markers as discussed by Burbules (2001). Its overall designs, striking imagery, and included content all appear professional. But perhaps most interestingly, this organization does not neglect the features of traditional ethos. While the substance and institutional backing typically associated with ethos are not present, referencing scientific studies, highlighting goodwill, and associating with credible news organizations are all attempts to claim traditional ethos. This supports the argument set forth by Wathen and Burkell (2002), who suggests that “traditional markers” are used in conjunction with “surface evaluations” (Wathen and Burkell, 2002). This combination of digital and traditional ethos is clearly a powerful tool of persuasion.

It provides a means by which to appeal to more casual visitors relying on heuristics, in addition to more thorough analyzers. Widening overall appeal may broaden this site's audience and ultimately contribute to the successful spread of this group's message.

While this research provides fascinating insights into the persuasive tools used by sites that lack traditional credibility, it is only one representative artifact. Future research could extend this analysis by examining other policy position artifacts that also rely upon nontraditional ethos, such as climate change denial sites or opponents of vaccination. Looking for areas of commonality and contrast may provide insight into rhetorical strategies that prove successful with these groups' audience. To this end, a content analysis in this area may provide a valuable contribution to the field of digital rhetoric.

### **Conclusion**

Analyzing the Fluoride Action Network illustrates how sites that lack traditional credibility can establish ethos through alternative means. This can be accomplished by taking advantage of the natural heuristics that digital consumers use to quickly evaluate a site's quality. Indeed, excellent site design greatly contributes to online credibility. In addition, traditional credibility via association can complement digital ethos. In this case, ethos was bolstered by citing other credible sources, scientific articles, and emphasizing an advocacy purpose. This mixture of digital and traditional ethos illustrates the powerful persuasive nature of the Fluoride Action Network and how nontraditional ethos may find rhetorical success on digital platforms.

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