Vaccination and the Health Belief Model: A Rhetorical Approach to Vaccine Controversy, Polio, and the 1976 National Influenza Immunization Program

The current, dominant medical and scientific perspective on vaccine skepticism maintains that parents simply need more scientific literacy to adopt vaccination as a preventative health practice. research in the social sciences, history, and other cultural studies have shown that the contexts for vaccine skepticism are unique to many historical moments and are socially and culturally embedded in other contemporary issues.

As the work of fellow panelists have shown, as have our papers today, many factors figure in to whether or not vaccines are likely to be resisted during any particular historical moment, unrelated to the scientific literacy of parents or the persuasiveness of vaccine safety. This rich body of work demonstrates that skepticism comes from a variety of cultural sources, such as larger values related to class; concerns about the environment, chemicals, and toxins; gender and power relations; or the changing mode of doctor-patient communication, all of these issues provide larger contexts for vaccine refusal which, although over 200 years old, has been motivated by many different cultural forces during different historical moments.

Today, I will talk about another component of vaccine controversy--the value, meaning, and persuasiveness of disease itself.

The health belief model, a dominant model used to analyze health behavior particularly regarding vaccination, focuses on understanding how ideas about severity and susceptibility factor in to likelihood to vaccinate. Consequently, it maintains that persuading the public to realize how serious a disease is or how susceptible they are to it are two important ways of understanding vaccine behavior.

Working out of these concepts of severity and susceptibility, I will approach disease from a rhetorical perspective. Rhetorical studies analyze the persuasiveness of language in context. Contrary to popular notions of rhetoric--as “puffed up” or “meaningless,” usually political, language--scholars in rhetoric define rhetoric as language that attempts to persuade or convince a group of people to think or act in a particular way. So, in this sense, rhetoric can be used in a “good” sense, to bring about positive change.

As an essentially contextual phenomenon, rhetoric can be studied in a variety of ways, such as by examining the influence of the credibility of the speaker on the audience, the use of appeals to emotion or logic, or the ways that the shared expectations of speaker and audience are met in any situation.

Using concepts from rhetorical studies--rhetorical situation and rhetorical ecology--today, I will examine the discourses circulated about disease during two mass vaccination programs--those in 1955 against polio and the 1976 swine flu vaccination program. I argue that contextual elements, both scientific and social, shaped the materiality of the popular discourses about disease, illuminating the different rates of vaccination receptiveness in these programs. These historical examples offer lessons on the ways that severity and susceptibility may be understood in cultural contexts in future mass vaccination efforts.

HBM and Rhetorical Ecologies

The Health Belief Model was originally developed in 1958 by Irwin Rosenstock as a model for explaining why people did not participate in health programs, specifically polio vaccination. Although the model has undergone significant study and modification since that time, six factors continue influence the amount of negative value a disease would have on an individual that would prompt him or her to take preventative action according to this model: perceived susceptibility, perceived seriousness, perceived benefits of taking action, perceived barriers, self-efficacy, and cues to action. Although this model remains popular for analyzing vaccination practices, researchers have also acknowledged that the analyses of actual health behaviors are also influenced by other exterior factors, such as socioeconomic and education levels. However, perceptions of severity and susceptibility remain important links to understanding vaccination decisions. And, persuading them to change their minds by, for example,

convincing them of the severity of an upcoming outbreak or their susceptibility to it. So, therefore, cultural and social constructions and knowledge of diseases is important to understanding why some people make certain decisions.

In this case, the theories of rhetorical situation and rhetorical ecologies are particularly useful to outlining additional exterior factors that influence persuasion by identifying the ways discourses are used within rhetorical situations.

Rhetorical situation and rhetorical ecologies examine the influence that external and contextual factors have on persuasiveness. Lloyd Bitzer, who first coined the term "rhetorical situation" in 1968, outlined a rhetorical situation as consisting of three elements—an audience, an exigence, or "thing waiting to be done", and constraints, which form the barriers and boundaries of what can and cannot be said or done.

Jenny Edbauer's notion of rhetorical ecologies emerges out of and expands this theory. Edbauer argues that persuasive discourses, whether they are slogans, stories, or pieces of information, move across groups and situations to become persuasive in a variety of settings and take on different valences or inferences that reflect the overarching ideas or sentiments that become persuasive.

Edbauer's example of this phenomenon is the "Keep Austin Weird" slogan that began in Austin, Texas in response to proposed construction of new "big box" stores. The affect, or sentiment, of this slogan is an expression of pride in the counter-culture that the city, or at least elements of it, and its values about its identity. However, as controversy spread throughout Austin about the stores, proponents of the new construction countered with the slogan "Make Austin Normal"--using the same structure of the original slogan to provide a counter-argument about the identity of the town.

A study of rhetorical ecology follows discourses and their persuasiveness as a way of analyzing the types of issues, beliefs, or values a rhetorical situation sparks among a public and that are embedded in a rhetorical situation. For the big box stores in Austin, the issue brought up one of identity--who are we, as a town, as citizens, as neighbors? This is not an issue that would necessarily be brought up in all places and at all times in response to a proposal for new construction. So, rhetorical ecologies identify the sources of persuasion *particular to a situation* and allow an examination of its relationship to these factors.

This interpretative paradigm demonstrates how a rhetorical ecologies approach illuminates the persuasive features that disease perception and resulting severity and susceptibility.

Diseases, when they come to a community, create a rhetorical situation, much like the big box stores that wanted to come to Austin. The way that persuasiveness operates in the rhetorical situation is reflected in the ecology of discourses that circulate in it. The concepts, ideas, words, or phrases that appear most often or that are absorbed and understood by groups and stakeholders in the community constitute the ecology of discourses attempting to persuade the public, or different facets of it, of a variety of different ideas and ideologies related to the disease.

This notion works *with* the health belief model insofar as the ecology may reflect a public's perception that a disease is serious or that many of its members are susceptible to it, but it also accounts for counter discourses that detract from or are outside of these concerns, such as those that maintain that disease isn't really a threat, that it shouldn't be avoided, or that vaccination is not an effective means for prevention, if that is even preferred. Rhetorical ecologies work to trace the "viral spread" of persuasiveness throughout a community, locating and characterizing the factors influencing, or seeking to influence, popular opinions about disease.

Polio, Flu, and Material Ecology of Disease

There are a few key differences between the rhetorical situations created by polio versus flu during these two vaccination campaigns, in terms of their audiences, which in a situation of disease we could think of as the anticipated affected population, exigencies, or response anticipated or desired, and constraints, or exterior factors shaping the desired or possible responses to the exigence.

First, in the case of polio, although both adults and children contracted and died from polio, children were the focus of campaigns and treatment efforts, and restricting the activities of children during the summer months were standard responses to polio epidemics. So, in the case of polio, the main focus of the popular understanding of disease was its effect on children. The exigence was highly weighted in favor of producing an effective preventative medication in the years leading up to the initial vaccine trials since there was no, and still isn't, a cure for polio. So, from the perspective of a health care provider, you almost always want the "thing waiting to be done" to be vaccination--preventing the disease. But, popularly, the exigence might be quite different. In the case of polio, the popular exigence and the health care exigence were the same. To prevent, via vaccination.

These conceptions of the disease were shaped by the constraints imposed by polio itself. It was relatively new in terms of widespread fear as a childhood disease. It is also largely unpredictable in terms of virility and contagion. So, polio could have a huge impact on a small community, suddenly making hundreds of children ill, including neighbors, classmates, and friends; or, it could never occur in your community at all. It could be very deadly, causing high numbers of fatalities, or an outbreak could occur that was relatively mild. In the case of the 1916 polio epidemic, for example, 27,000 cases of polio were diagnosed, with 6,000 deaths, a 22% death rate, which is very considering that polio is usually fatal about 1% of the time. For people just within New York City, the experience was even more immediately dangerous, with a total of 8,900 cases and 2,400 fatalities, a roughly 27% death rate. Essentially, in the case of polio you have an existing rhetorical situation made up of a recent history of severe disease--or the threat of it--in many communities.

The 1976 swine flu was very different. The vaccination program was initiated after one soldier at Fort DIx in New Jersey died of swine flu. In an effort to pre-empt a possible highly-infectious pandemic, President Gerald Ford initiated a National Influenza Immunization Program (or NIIP) to respond to the swine flu. The expected population to be affected, and consequently vaccinated, were all Americans; given the early through that the swine flu was a variant of the 1918 influenza (something that later turned out to be false), however, vaccination efforts were also aimed particularly toward healthy adults, since those were the groups with the highest fatality rates during the earlier pandemic.

The exigence of the situation was largely about producing a vaccine, not responding to disease, because there was no disease to respond to. As a result, the "thing waiting to be done" was to prevent a disease that only really existed hypothetically. In this sense, there was no popular exigence for prevention, absent disease, even though the official position of government agencies was to vaccinate. In this case, these exigencies did not match.

And the possibility of a major flu pandemic is a very real concern and would be very serious if it were to ever occur. The impact of flu during an epidemic or pandemic has historically been much more widespread, with higher incidents of both infection and fatality. For example, in the 1918-1919 pandemic, 20 million Americans contracted flu, with approximately 850,000 deaths, that was in the U.S. and in 1918 alone; death toll worldwide is now estimated somewhere near 40 million.

By comparison to polio, flu is much more "serious" in that it produces more deaths, and more people are susceptible to it. By the 1976 influenza campaign, however, it would appear that memories of the 1918-1919 flu had faded, and although a pandemic had occurred during the 1957-58 flu season, the flu was relatively mild and mortality rates were low. By 1976, health officials not only had to persuade the public that the vaccine would be effective, but it had to construct a sense of expediency regarding the disease itself, which had little cultural value as a "feared" disease.

Materiality and Rhetorical Ecology

So, what results in the ensuing discourses around these diseases at the time of their vaccination campaigns reflect two highly different rhetorical situations and differences in the language available to persuade the public to vaccinate. Looking at prominent public images associated with each of these diseases shows the role that the differing materiality of these two diseases played in establishing a sufficient exigence for vaccination.

In terms of polio, parents and health care providers alike were responding to current outbreaks of disease. The many restrictive measures placed on children, families, and communities to prevent or control outbreaks were real and immediate. Furthermore, those who survived paralytic polio often had permanent disabilities. Images of children afflicted with paralytic polio shaped health and wellness campaigns to encourage kids to stay indoors during the summer and also filled the promotional materials provided by the March of Dimes. These images of disease gave polio a visual materiality that influenza simply does not have, although influenza, too, can result in severe, permanent complications. Finally, public figures, like FDR and Jonas Salk, at least in the 1950's, gave prominent, likeable, and trusted faces to the fight against polio and vaccination campaign.

The case of the 1976 swine flu was, again, different. Although health officials initially believed that the swine flu was related to the 1918 influenza, this turned out later to not be true. The flu turned out to be neither widespread nor virulent, so the relative jeopardy of the disease was low. There was no disease to track--no maps of disease spread, no lines of people waiting to be hospitalized, no death tolls to report. Early questions about liability raised by vaccine manufacturers also dominated news about the vaccine. So, absent disease to report about, the vaccine became the focus.

Furthermore, the vaccine was largely advocated by government officials during a problematic political environment. With only a few years separating the public consciousness from Watergate, people were quick to claim that President Ford took on the vaccine program in an effort to show political strength rather than a true response for the public good.

So, we can see this phenomenon circulate through images from this time.

- In the case of polio we have quarantines; early form of shelter-in-place
- Images demonstrate limitations in polio treatment and lack of cure
- Presence of children, with lasting effects of paralytic polio
- Trusted public figures
- Public celebration of vaccination effort--well received

- By contrast, the 1976 flu vaccination campaign focused on vaccine rather than disease, because that is all there really was to focus on
- PSAs encouraged people to "roll up their sleeves" and to prevent a disease
- The PSAs that do show representations of actual disease show relatively mild symptoms. The idea of being in bed sick with flu for even a week is mild in comparison to lifelong paralysis threatened by polio.
- Images of the problematic political environment and the uneven reception of Ford's advocacy for the vaccine program.

Rhetoric, Vaccination, and Persuasion

This analysis of the rhetorical situations diseases create and the ecologies that evolve within them demonstrates two significant areas where a rhetorical approach could improve or enhance the understanding of vaccination persuasiveness, particularly as health and medical professionals prepare for vaccine programs in response to emerging threats, like pandemic flu, in the future.

First by providing more nuanced sources for where constructions of susceptibility and severity originate, we can understand the social and cultural components of disease that make the risk of contracting it either acceptable or unacceptable. As argued above, polio's connotation as a feared disease, helped by visual images of sick children and the local expediency of incidents of disease, gave it a materiality and tangibility that flu did not have. As a recent study by Bond and Nolan demonstrated, parents who had experienced a disease were less likely to view it as severe and were more likely to resist vaccinations for it; this indicates that materiality of disease and the way it shapes popular understanding of the need for prevention are significant factors in whether or not someone can be persuaded to vaccinate.

Second a rhetorical approach accounts for the issues that fall outside of the etiology of disease but that the presence of disease nevertheless engages, such as political concerns. By shaping persuasive discourses to be responsive to rhetorical ecologies, health messaging could understand and address public concerns in a more direct manner, making the persuasiveness of health messaging more relevant to the public's perception of disease.