Rhetoric, Ebola, and Vaccination

A conversation among scholars

Jennifer L. Scott
Shawnee State University

Kristin E. Kondrlik
Case Western Reserve University

Heidi Y. Lawrence
George Mason University

Susan L. Popham
University of Memphis

Candice A. Welhausen
University of Delaware

Poroi 11,2 (December 2015)

Keywords: Rhetoric, communication, health, medicine, Ebola, vaccine, risk, genre

Scholars who study the rhetoric of health and medicine are deeply invested in questions of risk and representation. As researchers working in this area, we investigate the ways in which health and illness are constructed, and we question how these constructions shape the practices of healthcare workers and the lived experiences of patients. In the summer of 2015 a number of rhetoricians of health and medicine gathered at the Rhetoric Society of America's (RSA) Summer Institute to discuss the direction of the discipline and to reflect on current and future projects. As part of that workshop, many of us held an extended discussion about Ebola and the outbreak that had begun a year earlier in West Africa. Several of us who participated in the workshop—Jennifer Scott, Kristin Kondrlik, Heidi Lawrence, and Susan Popham—research vaccine rhetoric, so our conversation centered on the many calls to invest energy and resources into a vaccine for Ebola and to fast-track its development, testing, and deployment. Our interest in these questions lingered after the workshop ended, and we decided to collaborate—along with Candice Welhausen, who studies data

visualizations of epidemics—to compose a piece that would capture our many voices in a discussion of rhetoric, Ebola, and vaccination.

In the sections that follow, each author brings her specialized expertise to bear upon questions about the Ebola virus and the development of a vaccine. Our work is united by our interest in how vaccines and vaccination function rhetorically in discussions of outbreak response and disease prevention. More specifically, we are concerned with how vaccines respond literally and metaphorically to outbreaks; with what epistemologies, values, cultural practices, and material realities are revealed or concealed in calls to develop a new vaccine; and with how the development of a vaccine rhetorically reframes the disease it works to prevent. Our purpose in this work is not necessarily to make a unified argument about Ebola or an Ebola vaccine, but to capture multiple perspectives and generate ideas for scholars within and beyond our discipline to explore, discuss, and research further. In addition to a compilation of analyses on rhetoric and disease, this article functions, we hope, as an example of the kind of generative work the RSA Summer Institute workshops and seminars can produce.

Candice Welhausen begins our conversation with her piece "Risk Perception and Data Visualizations in the Ebola Outbreak." In it, she provides valuable background information and context for the piece by illustrating how visual and verbal representations of the outbreak evolved over time. She argues that although verbal messages shifted toward an emphasis on containment, visual messages continued to perpetuate an emphasis on contagion. Candice Welhausen concludes with a brief overview of the World Health Organization's (WHO) decision to give its blessing to fast-tracked vaccine trials. This discussion then leads into Heidi Lawrence: "Ebola, Foucault, and the Will-to-Vaccinate."

Citing Foucault's work on inoculation in 18th and 19th-century France, Heidi Lawrence argues that calls to develop a vaccine rhetorically shift risk and blame away from economic, political, and social conditions that exacerbate the spread of disease, and toward individuals. Susan Popham focuses on the ethical implications of expediting clinical trials for the Ebola vaccine, using genre theory as a way of understanding vaccine research. She argues that the expedited process, while justified in the effort to prevent the spread of disease and save lives, may have ignored important stages in vaccine development—particularly the rhetorical processes involved in conducting and communicating this research.

Jennifer Scott follows suit by focusing on implicit and explicit calls to develop a vaccine, examining how these calls took up

certain material conditions that exacerbated the outbreak while ignoring others. While a vaccine might be an effective way to stop Ebola outbreaks, she argues, it is unlikely to resolve most of the underlying socioeconomic conditions that exacerbated the outbreak—some of which are not unique to West Africa.

Finally, Kristin Kondrlik explores the individuation of risk in the Ebola outbreak, as exemplified by the discourse about nurses Kaci Hickox, who was exposed to the disease in Sierra Leone, and Amber Vinson, who was infected while caring for the first patient diagnosed with Ebola in the United States.

Candice A. Welhausen: Risk Perception and Data Visualizations in the Ebola Outbreak

The Ebola outbreak that began in 2014 was first reported in late March of that year with 86 suspected cases in Guinea, 59 of which resulted in death (Centers for Disease Control and Prevention [CDC], 2015b). By early April, eight suspected cases had been reported in Liberia with additional cases in Sierra Leone in May, in Nigeria in July, and Senegal in August (CDC, 2015b; WHO, 2015). As cases began to be diagnosed outside of West Africa—one in Spain, four in the United States, one in the United Kingdom, and one in Italy—concern that the outbreak would develop into a global pandemic began to grow (CDC, 2015a).

By the late summer and early fall of 2014, following extensive media coverage, the public response to the outbreak had intensified significantly, particularly in the United States and Europe (Higgins, 2014). Travel advisories were issued for affected areas, infected healthcare workers were transported to their home countries for treatment, and several nurses became infected while treating patients in developed countries, prompting what Strong has described as "an epidemic of fear" (Strong, 1990, 251). This "epidemic psychology" describes the widespread anxiety that can emerge during an outbreak, and which was, in all likelihood, driven to a large extent by a news reporting strategy that attempted to move "from alarming to reassuring," an approach, Ungar suggests, that often describes media coverage during "hot crises" (situations such as the 1995 Ebola outbreak in Zaire) (Ungar, 1998, 36). In other words, the media initially attempts to incite alarm in order to draw attention to a potential public health risk. After all, as Sandman puts it: "The possibility that X is dangerous…makes the story worth covering" (Sandman, 1994, 254). However, when risk perception is already high, as is often the case in crisis and emergency risk situations because the consequences of the threat

are potentially severe or catastrophic, this strategy can quickly create a heightened state of panic. Indeed, Kristin Kondrlik's discussion of the treatment of Kaci Hickox, an American nurse who, having returned to the U.S. after working in Sierra Leone, tested negative for Ebola but was quarantined nonetheless, illustrates the real world consequences of the shift from alerting the public to causing a panic.

Media coverage of the 2014 outbreak initially worked to spark public concern using a combined visual/verbal (language-based) communication strategy. For instance, during the summer of 2014, news reports describing the poor healthcare infrastructure in the affected countries and inadequate access to protective gear often included data visualizations—line graphs, maps, and bar charts—showing rapidly increasing infection rates (an example: the coverage of the epidemic in the *New York Times* [*NYT*]). Yet while the language-based strategy shifted toward a message of containment—the "controlling metaphor of modern-day epidemiology"—as public reaction began to escalate, the visual message communicated through data visualizations continued to reinforce contagion (Welhausen, 2015, 274). For instance, the textual information in an article like "How many patients have been treated outside of Africa" created and published by the *NYT* (using data from WHO, CDC, Médecins Sans Frontières/Doctors Without Borders [MSF], and other organizations) uses an arguably straightforward question and answer format, which aligns in many ways with best practices in risk communication (Ashkenas *et al.*, 2015; see CDC, 2012). The report provides accurate, timely, and comprehensive details about the epidemic, outlining improvements in treatment in West Africa, actions being taken in U.S. hospitals to prevent the disease from spreading, and the status of new treatments being developed—to give a few examples. The section that discusses treatments also includes a link to another *NYT* article detailing "government plans to fast-track…a vaccine," further reinforcing an overall verbal message of containment as well as advancing the promise of 'real world' action. However, as I have argued elsewhere, the visual message employed in several of the infographics in this article communicates the inverse of this verbal message, which served to increase risk perception among non-expert viewers (that is, public audiences) in Western countries (Welhausen, in press).

In early 2015 an *NYT* article entitled "Getting to zero Ebola cases" reported the decline of the epidemic while continuing to use many of the same visualizations strategies that I have previously identified (Lai, 2015). For instance, the graphics in this article use

the warm color red, which viewers in Western cultures often associate with danger or warning. This graphic also shows the spread of the epidemic from a collectivistic perspective—that is, from a point of view that visually places greater value on how the outbreak affects groups rather than individuals. By design, data visualizations construct temporal and/or spatial relationships among aggregate, quantitative information. Thus statistical graphics that show the progression of an epidemic exclusively focus on how the outbreak is affecting a group rather than individuals within a particular group. This population-based emphasis is foundational to a public health perspective. However, because non-experts often assess risk from an individualistic perspective—that is, in terms of how a particular hazard might personally impact them—data visualizations may increase risk perception. Like "How Many Patients Have Been Treated…" the textual message in "Getting to Zero Ebola Cases" (which is also reinforced by the title) communicates containment, whereas the visual message communicated by the data visualizations contradicts the verbal message (Ashkenas *et al.,* 2015; Lai, 2015).

As of this writing in mid-October, 2015, Guinea (3,797 cases and 2,532 deaths), Sierra Leone (13,811 cases and 3,955 deaths), and Liberia (10,672 cases and 4,808 deaths) are the hardest hit countries. Only 36 cases have been reported outside of West Africa (CDC, 2015a). Although media coverage has substantially decreased since late 2014 and early 2015, perhaps because of the apparent success of containment, widespread transmission continues in Guinea and Sierra Leone (CDC, 2015a).

The unprecedented scale of this outbreak—the most severe since the disease was discovered in 1976—combined with intensive media coverage created a sense of urgency in the global health community, prompting the WHO to convene "a consultation to consider and assess the ethical implications for clinical decision-making of use of unregistered interventions that have shown promising results in the laboratory and in animal models but that have not yet been evaluated for safety and efficacy in humans" (WHO, 2014, 1). The panel's task was to weigh the relative risks of allowing the outbreak to continue without new interventions, or to go ahead with interventions whose probability of success was uncertain. According to WHO's report on the panel's proceedings, "The panel agreed unanimously that, in the exceptional situation of the current Ebola outbreak, there is an ethical imperative to offer the available experimental interventions that have shown promising results in the laboratory and in relevant animal models to patients and people at high risk of developing the disease." The report goes on to outline

a number of ethical criteria for deployment of these treatments, including insistence on transparency, informed consent, and sound data collection (WHO, 2014, 5). While the panel acknowledged that their recommendation was "a departure from the well-established, historically evolved system of regulation and governance of therapies and interventions," they felt that the need to curb the outbreak merited such a departure (WHO, 2014, 1). This recommendation led to accelerated human trials of two vaccines, and leads us to Heidi Lawrence's contribution: a discussion of the will-to-vaccinate.

Heidi Y. Lawrence: Ebola, Foucault, and the Will-to-Vaccinate

The will-to-vaccinate came up early in our discussions at RSA's 2015 Summer Institute as we discussed the case of Ebola in relation to our central research interests in vaccination. We noted that, as we had watched the epidemic unfold through the media coverage, we had been surprised by how often the issue of vaccination came up—when we would have a vaccine? Why we didn't have one already? What is the status of vaccine trials? How might an Ebola-fearing public respond to a vaccine if one were available in the United States? We observed that, in discussions about contagious, communicable disease outbreaks generally, vaccination is often a source of discussion during media reports. Simple or serious, widespread or localized, novel or familiar, the questions are always the same: Is a vaccine available? If so, where can I get it? Why are enough people not getting it? And, if it is not available, why isn't it developed or ready?

This struck us as both expected and odd at the same time. Though vaccines are touted as undeniably safe, effective, and reliable by the medical and public health communities, with the majority of other scholars who study vaccine refusal in some form, we also know that vaccines are often resisted by vocal components of the public. Why is it, then, that, when faced with reports about an outbreak, we are so eager to talk about vaccines as a solution to the problems caused by disease when vaccines can often be a site of scrutiny, skepticism, and discord? Why is the will-to-vaccinate so engaging and so powerful?

In my discussion, I will attempt to address these questions by turning to Michel Foucault's discussion of disease and inoculation and by examining the inter-related roles that vaccination plays in mediating risk and responsibility, and thus security, in populations. I will then connect Foucault's observations back to Ebola.

Foucault discusses inoculation and its relationship to population in the essay "Politics of Health in the Eighteenth Century" (in his book *Power/Knowledge*) and in *Security, Territory, Population: Lectures at the College de France, 1977-1978*. According to these analyses, two historical conditions rise in 18th and 19th century France that consequently construct vaccinations as important governmental objectives.

First, is a growing connection between disease risk and security, whereby security becomes partially defined as the narrowing of risks of the consequences of disease. Foucault defines security as circulation—of goods, persons, materials, and even air within a population that is "safe" and that ensures the free exchange of commerce. He states:

> More precisely and particularly, freedom is nothing else but the correlative of the deployment of apparatuses of security. An apparatus of security…cannot operate well except on condition that it is given freedom, in the modern sense the word acquires in the eighteenth century: no longer the exemptions and privileges attached to a person, but the probably of movement, change of place, and processes of circulation of both people and things (Foucault, 2007, 48-49).

Foucault argues that the most important historical event leading to understanding why inoculation practices were adopted and recommended in the late 18th and early 19th century is the rise in tabulation of population-level statistics and risk and their connections to apparatus of security. Foucault maintains that the development of population-wide data via public health and hospital systems allowed governments to track those who contracted small pox, died of it, or survived it. With this data, risk factors could be determined for who within a population caught and subsequently succumbed to small pox (Foucault, 2007, 60). From these numbers, Foucault argues that "normal" distributions were determined by connecting death rates to demographic characteristics (age, sex, etc.). Risk factors emerged in cases where the number of deaths resulting from small pox in any category exceeded the norm (Foucault, 2007, 62). The first major risk factor that emerged in small pox epidemiological data was "being under the age of 3." Consequently, reducing death rates from small pox for children under the age of 3 was the first target for inoculation programs (and thus regulating the risk across age groups). Foucault argues in "The Politics of Health in the Eighteenth Century," locating disease risks among children meant situating responsibility for achieving security within families, which is the second condition contributing

to the rise in vaccination as a health imperative. In "Politics," Foucault posits that, as apparatuses of security grow in the 18th century to control populations, the family becomes medicalized as the control of disease and pursuit of health objectives becomes its objective. He writes:

> The family is assigned a linking role between general objectives regarding the good health of the social body and individuals' desire or need for care. This enables a "private" ethic of good health as the reciprocal duty of parents and children to be articulated on to a collective system of hygiene and scientific technique of cure made available to individual and family demand by a professional corps of doctors qualified and, as it were, recommended by the state (Foucault, 1980, 174).

It is in this historical moment that larger objectives to prevent disease, and so ensure the security of the state from the restriction of circulation that epidemics may cause, become the responsibility of the family. Families, from this point forward, are not responsible for ensuring health just to maintain their own properties, blood lines, or happiness. Instead, they take on a new set of responsibilities to be hygienic, healthy, and disease-free for the sake of state objectives.

Immunization is one of the key specific forms of responsibility that families take on at this time. Foucault points out that inoculation, and in particular the inoculation of children, becomes a family responsibility at just this time. Small pox variolation - a form of immunity production where pox scabs were scraped from one patient and rubbed into a wound in another, producing a mild form of disease and immunity to small pox - becomes popular and, in some cases, is mandated in the face of epidemics. Foucault writes, "The long campaign of inoculation and vaccination has its place in this movement to organize around the child a system of medical care for which the family is to bear the moral responsibility and at least part of the economic cost" (Foucault, 1980, 174). In this sense, vaccination becomes the mechanism through which state objectives to create security through disease control are enacted. In so doing, families are made to feel individually responsible for their "health," which is just an individualized form of state security objectives. Vaccination shifts the nature and site of the disease risk from the state to individuals, making disease control a family responsibility. Within this view, the state's responsibilities for epidemic control are enacted through the individual task—and risk—of vaccination.

In this sense, one of the contemporary effects of the will-to-vaccinate in the Ebola epidemic does exactly what Foucault observes of inoculation practices in 18th century France. It takes on multi-national, global health objectives and situates the responsibility for them with individuals.

This shift is significant in understanding how vaccination works as a rhetorical trope in the contemporary case of Ebola. Although the precise reason for this particular Ebola epidemic is unknown and a source of controversy, some maintain that its development was in part created or complicated by a number of economic and geopolitical factors. Deforestation and activities such as mining have led to increased contact between humans and bats, bringing Ebola to communities previously unaffected by the disease (McCoy, 2014). Since Ebola is not common in the countries first affected by the 2014 outbreak and can be mistaken for other illnesses, early cases went undiagnosed. Existing health infrastructures in Guinea, Liberia, and Sierra Leone could not support the level and extent of care required for Ebola infection, further restricting care and creating higher rates of morbidity and mortality. The occurrence, size, and scope of the epidemic was enormously complicated, if not entirely created, by these structural factors.

Given this analysis, calls for a vaccine and demands that it be produced quickly do exactly what Foucault observed with small pox epidemics in the 18th century. Were an Ebola vaccine available, it would become an individual responsibility to get the vaccine and prevent epidemics. Each person at risk must travel to wherever it is being administered, obtain any required boosters or follow-ups, and contend with the side effects or rare adverse events that might occur. Though preventing the epidemic through something as reliable as a vaccine is of course an undeniably good thing, focusing on it obscures the larger factors that created the problem to begin with. A global economic and infrastructural issue becomes an individual responsibility.

A vaccine, in this sense, is not just a desirable solution because it can prevent disease. Nor is my point aimed at diminishing the power and importance of preventing outbreaks. But by applying Foucault's observations to this situation we also see how vaccinations fundamentally change the nature of responsibility for disease. Economic and political factors that contribute to disease epidemiology can be elided by a new, personal, individual responsibility to get a vaccine. Any outbreaks that do happen are not the fault of larger conditions that create disease and prevent adequate health care, but instead are the fault of individuals who

cannot pay for a vaccination, are too negligent to get it, or are persuaded by perceived illogical concerns about vaccine safety.

The lesson is that calls to create a vaccine are not normatively neutral. They can function structurally and rhetorically as ways of avoiding addressing the systemic problems that cause outbreaks. Moreover, although a vaccine might be a good thing in the end, and it certainly is a good thing if it prevents an epidemic from happening, it only works on one virus at a time. As Jennifer Scott explicates further in "Materiality and the Reframing of Ebola," the structure needs to be addressed to keep the next virus from spreading, the next disease from tipping into epidemic, the next set of casualties from filling the news.

Susan Popham: Genre Systems and Metaphoric Immunization

Like thousands of other Americans, when I heard that the Ebola outbreak in western Africa had reached epidemic proportions, at least as reported by our local news agencies, I thought the outbreak could be managed simply by providing vaccination. I even thought that perhaps the vaccine had proven ineffective against this particular strain of the disease. At the very worst, I assumed that perhaps political machinations had kept the vaccine from reaching the citizens who most needed it, as often happens when politics impacts the distribution of important resources and medications. Imagine, then, my surprise in finding out that there was no Ebola vaccine ready to deploy. When I reflected on these assumptions and thoughts later as I listened and read more about the Ebola outbreak, I realized how much I, like thousands of other Americans, had come to rely and believe in the promise of modern, Westernized medicine—how much we assume that there is an instant and easy treatment for every disease, how often we turn to vaccines to prevent the spread of horrific diseases, and how firmly rooted is our belief that medicines are omnipresent—perfected and readily available even before we realize that we need them: what Heidi Lawrence has analyzed as the will-to-vaccinate.

In reality, our system of modern medicine manufactures very few vaccines compared to the number of viruses and bacteria that sicken people every year. Further, when we divide the number of specific viruses into the number of possible future strains, we can readily perceive how the number of possible vaccines increases exponentially. What most Americans, even physicians and other health care-givers, often fail to realize is the time-consuming and resource-consuming process of the research, development, and

manufacturing needed to produce an effective vaccine. Literally, thousands of staff-hours, thousands of days, millions of dollars, thousands of pages of written documents, dozens of trials, dozens of layers of supervision and approval, and hundreds of ill patients are consumed in each case. Without all of these elements and resources, no vaccine is developed, let alone manufactured and distributed. Moreover, all of these elements must be in place *before* one can determine the efficacy and effectiveness of the vaccine. In other words, the vaccine must be researched and developed before we can start to study the effectiveness of its ability to prevent or treat a virus.

According to the National Institutes of Health, the process of researching, developing, testing, and distributing a reliable vaccine involves five distinct phases. Phase zero, or preliminary trials conducted in laboratories, involve almost no interaction with people. In phase one, a new and untried vaccine is tested on humans in order to determine negative side-effects. In phase two, the effectiveness of specific levels of the vaccine are measured. In phase three, the vaccine is tested in different populations and in different contexts, for example in conjunction with other medications or illnesses; if the studies have been positive and the vaccine is not rejected or sent back for further laboratory testing, it will be sent to the FDA for approval. In the final phase, four, the vaccine continues to be tested for long-term side-effects, effectiveness in specific populations, and optimal use. Each of these phases involves thousands of hours of effort and likely millions of dollars. And, each phase involves thousands of pages of data, reports, forms, data entries, proposals, instructions, documentation, and scholarship. A fast-track process, like that approved by the WHO (described above by Candice Welhausen), seeks to acquire quick approval of its transition from phase one or two to a subsequent step by asking to have its approval moved to the top of the stack, past the approvals of developing drugs and vaccines with less immediacy. Such a process may also skip either phase two or more usually phase three, or combine both phases in a single trial. The lengthy and expensive phase process by which vaccinations are developed and proven serves the public as both a protective barrier, like a metaphoric immunization, through the coordination of the scientific genres of vaccination development.

The genres by which these trials and studies are conducted form what Charles Bazerman, Carolyn Miller, Amy Devitt and other genre theorists have called a genre system: a body of many different genres that draw upon, build on, and manage the work of an organization. Members of an organization or community use these

genres in the aggregate, even the many different iterations of a single genre and the many different genres, to achieve their community's or organization's objectives. The genres of phase trials work together as a system, with discursive techniques such as intertextuality, incremental integration, abbreviation, and citation practices. This coordinated system of genres reports on the efficacy and effectiveness of the developing vaccine, while also seeking FDA approval for sales and distribution. In regard to vaccination development and testing, the genres perform much like Bruno Latour described in the scientific process of inscription: the scientific process, indeed the whole of scientific behavior, is based on inscribing—writing, drawing, charting, chronicling, enumerating, calculating, detailing, diagraming—the details of scientific observation and experimentation. Without the process of inscription, scientific work would cease (Latour, 1987). The process of inscription creates genres by which more scientific work can occur; one genre begets another.

The genre system of vaccine development is evidence for what Dorothy Smith and Catherine Schryer term a documentary society (Smith and Schryer, 2013). They define such a society as that which both uses documents to create a community formed around these genres. The scientific community of immunologists, virologists, clinicians, care-givers, etc. all rely in some way on the inscription and genres of the work of vaccine development; through that use of genres and inscriptions in common to them and thus a growing familiarity with those genres, they form a common bond and loose community. Smith and Schryer also argue that a documentary society uses documents (i.e., genres) for governance and control. Communities within a documentary society create and use genres to laboriously document, report, standardize and archive the work of their members. In regard to vaccine development, the genres related to the laboratory work, the vaccination testing, and the FDA approval process govern and regulate the work of the scientists who are developing the vaccine. In short, within a documentary society, genres exist in a cycle of creation and use by and for people; documents are tools for completing work, specifically that of governing and regulating people, and these same documents mediate and create a community of the people who use them (Smith and Schryer, 2013).

Perceiving vaccine development genres as an element of a documentary society allows us to analyze the regulatory function of the genre system. While it ostensibly works to progress the process of vaccine development and approval, for the FDA and for society as a whole these genres function as a sort of check-and-balance

against pseudoscience and poorly performed science. This genre system provides a type of protection against overly hasty drug development and fraudulent marketing. By writing in the genre system—documenting, reporting, filing, and archiving the results—and by publishing the studies, researchers keep the focus of vaccine development on slow, laborious, steady scientific process rather than on the quick and much easier sale of a drug that might be no more effective than snake oil or as dangerous as snake venom. One might argue that the FDA is in itself a protective barrier between the public and science. Part of the role of the FDA, and in some respects those of the NIH, NSF, CDC, and WHO, is to serve a regulatory and protective function. It is the genres themselves, however, as read, reviewed, and sorted by the members of approval organizations, that allow researchers to make protective decisions for the American and world's citizens. In this regard, the genre system is used by society and regulatory bodies such as the FDA, the NIH, the CDC, and the WHO to approve, reject, and govern the development and distribution of vaccines. These are "the documentary forms of governance" that Smith and Schryer posit as one element of a documentary society (Smith and Schryer, 2013).

Yet there are many more genres produced in the development of a vaccine that are never read or sent to the FDA, but that also form an essential part of the genre system. These documents are used within laboratories and among researchers, distributors, caregivers who conduct the vaccinations and patients who are the subjects who receive the immunizations. These documents, the laboratory inscriptions that might never be a part of the approval documents sent to the FDA also work to protect laboratories, scientists, and researchers from reliance on too-human memories, overwhelming amounts of data, and sloppy methods. In this regard, the genre system reifies and helps to constitute the community of immunological science, a community of scientists oriented to similar texts and to the writing, reading, and interpretation of these texts. The process of writing during vaccine development helps to ensure scientists' caution and objectivity, and helps to protect society from unscrupulous and error-ridden drug development. By filling the dual role of governance and community-reification noted in a documentary society, the genre system of vaccine development functions to protect society from falling prey to false claims of cures and prevention, in effect like a metaphorical vaccination protecting us from the dangers of pseudoscience.

Against this background we can see clearly that by demanding fast-tracking of a vaccine, researchers and scientists are arguing that a portion of this protective layer be removed, that the benefits

hoped for in a fast-track approval and vaccine distribution outweigh suspected risks and that some of this protective process is in any case unnecessary. In effect, they argue that the end—a hoped-for effective vaccine against a dangerous contagious disease—justifies the means of by-passing some heretofore necessary scientific processes. The unspoken assumption is that some steps in the process are unnecessary and hinder the process of truly beneficial science. As a citizen and as rhetorician, I do not oppose the fast-tracking of a safe and effective vaccine to help protect those who live in Ebola-prone areas. I do recognize, however, the harm possible of removing or side-stepping part of our protective process of Phase trials, and I remain cautious and critical about the long-term benefits for all of humanity that can arise from an endeavor that seeks to dismantle some of the scientific process.

I am even more critical of calls that propose fast-tracking or expediting drug deployment in order to benefit science rather than people, as Heymann, Rodier, and Ryan argued in an op/ed piece in the prestigious medical journal *The Lancet* early in 2015. "Time is of the essence because efficacy trials can only be completed while the Ebola virus continues to circulate." And later, "There is urgency to complete these efforts [for implementing the efficacy trials] because Ebola incidence is decreasing as countries place more emphasis on surveillance and contact tracing and as communities build a better understanding of how to prevent transmission" (Heymann, Rodier, and Ryan, 2015, 1913). I hope that these scientists are urging quick testing of the available trial vaccines in order to ease the current suffering of Ebola patients. However, their words suggest that the benefit would come from the knowledge gained in the study, rather than benefitting patients. Surely, a decrease in Ebola cases is undoubtedly a good thing, as is preventing the transmission of the disease through better education. These researchers, however, argue that we should intensify the process of developing a vaccine through its trial phases because such a disease decrease is occurring, and fewer people are contracting Ebola. I understand that, as Jennifer Scott discusses below, the scientific trials need the disease *in situ* in order to study the effectiveness of the vaccine. However, I oppose expediting a vaccine and its phase trials in order to benefit the scientific system, especially when such science ignores or elides the decrease in human suffering offered by existing means of improved education and surveillance. If vaccinations, by virtue of simplicity, ease, and isolation, have become the intervention of choice by contemporary society, fast-tracking and skipping over parts of the genre

system/scientific inscription process should not also become the default process of developing those vaccines. Ease and efficiency are not always better. If the disease can be managed through existing means, perhaps we do not need vaccination as desperately as we first assumed, and perhaps not desperately enough, in any case, to skip over parts of the cautious and protective of phase trials and their attendant genre systems. Attention to the material conditions of disease transmission is just as important as, if not more important than, attention to vaccines as the default intervention.

Jennifer Scott: Materiality and the Rhetorical Framing of Ebola

As Susan Popham has mentioned at the end of the previous section, in our dialogue, it is important for us to bear in mind that a virus alone does not make an outbreak, even a virus as devastating as Ebola. Ebola virus is transmitted when an uninfected human or animal comes into contact with the bodily fluids of an infected human or animal. It is important, therefore, that we consider how material conditions and social constructions put humans in contact with one another and how conditions such as gender and racial inequities combine with limited access to healthcare to enable the spread of disease. Because of this interplay between rhetoric, culture, and material realities of people's lives, I am interested in how the material conditions of the 2014 outbreak have and have not been made "present," to use Chaïm Perelman's term, in discourses about Ebola and calls to expedite vaccine development (Perelman, 1969, 118). In this section, I'll address which of these material conditions are foregrounded and which are subsumed in arguments for fast-tracking Ebola vaccine development.

The material conditions of outbreaks play an important role in discourses about the Ebola vaccine. Although calls for an Ebola vaccine have been more frequent and persistent in this outbreak than in previous ones, these vaccines have been in development for some time. For example, a 2007 article in the journal *Vaccine* discusses at length the efforts and challenges of developing vaccines for Ebola and Marburg (Reed and Mohamadzadeh, 2007). Some writers argue that the material conditions of previous Ebola outbreaks have hindered the development of vaccines. Helen Branswell of *Scientific American*, for example, notes that prior to the 2014 epidemic, "Outbreaks were too small (typically fewer than 100 people) and too short-lived (less than five months) to give researchers the chance to test potential therapies. By the time they could have put a clinical trial in place, the threat would have

passed" (Branswell, 2015). Furthermore, the small scale and brevity of epidemics created little financial incentive for pharmaceutical companies to develop a vaccine; after all, until 2014, Ebola "had taken 40 years to dispatch its first 1,600 victims"—hardly a profit generator (Branswell, 2015). In essence, the material conditions of disease outbreaks and transmission have hindered past efforts to develop a vaccine.

Citing these limitations of past outbreaks, some authors present the 2014 outbreak as a kind of kairotic moment for vaccine researchers—a disturbing notion, albeit a pragmatic one. Because Ebola outbreaks are relatively rare and relatively small, many authors cite the scale and longevity of this particular outbreak as a rationale for deploying experimental treatments, including vaccines (Branswell, 2015; Galvani *et al.*, 2014). For example, Branswell writes this of the 2014 outbreak: "For the first time ever, scientists had an Ebola outbreak large enough and long enough to allow intensive clinical trials aimed at finding better treatments, one that might be impossible to stop without developing vaccines and new drugs" (Branswell, 2015). The latter portion of this statement—that the outbreak may be "impossible to stop" without experimental treatments—constructs the disease as relentless, appealing to readers' fears. An editorial in the *Annals of Internal Medicine* also noted the kairotic opportunity presented by the outbreak, stating that "the emergency deployment of an Ebola vaccine may also serve as a source of data that could be used to further demonstrate efficacy and waning properties that are fundamental to informing preparedness strategies to prevent future outbreaks" (Galvani *et al.*, 2014, 749). Galvani *et al.* also point to the risk to healthcare workers as a rationale to expedite vaccine development, explaining that, "The safety risks of vaccines, particularly those found to be safe in phase 1 clinical trials, are probably negligible compared with the risks faced by health care workers in communities where the highly virulent Ebola virus is currently circulating" (Galvani *et al.*, 2014, 749). See Kristin Kondrlik's expanding on of this point in a later section.

As a rhetorician, I share Susan Popham's concern that while an Ebola vaccine might stop Ebola, it may not effectively prevent the next epidemic in the region. By focusing on this particular virus as the most important factor in the outbreak, calls for a vaccine "flatten" Ebola into a singular problem with a singular cause. While it is true that we would not have an Ebola outbreak without Ebola virus, it bears repeating that a virus alone does not make an outbreak. A virus infects and sickens individuals, but social and

cultural norms create material conditions that transform a single infection into an epidemic.

Mainstream news media have sometimes drawn attention to the role of culture and social norms in shaping the trajectory of the disease, but their attention usually seems focused on practices and social conditions that differ from norms in the United States and Western Europe. Often mentioned is the common West African practice of washing a deceased person's corpse prior to burial, which, of course, can expose family members to bodily fluids and spread infection (Branswell, 2015; Nielsen *et al.*, 2015). Much less frequently discussed is the fact that African women are more likely to be exposed to and infected by Ebola virus. Ndana Bofu-Tawamba calls this phenomenon "the feminization of epidemics," pointing to the disproportionate effects of diseases such as Ebola and HIV/AIDS upon women (Bofu-Tawamba, 2014). She notes, for example, "Women account for 55 to 60 percent of the deceased in the current epidemic, according to UNICEF. The percentage of female victims in Liberia stands at 75 percent" (Bofu-Tawamba, 2014). This imbalance in infection rates is largely due to cultural expectations: In West Africa, as in other patriarchal cultures, women are expected to be caregivers, tending to the sick, dying, and dead far more frequently than men. They are therefore exposed to the virus more frequently. Even within the healthcare community, cultural expectations shape these practices. Speaking of research conducted by her organization, Urgent Action Fund-Africa, Bofu-Tawamba explains, "our assessment found that male doctors often left the most infectious tasks to female nurses to handle, such as cleaning patients' vomit, blood, and urine" (Bofu-Tawamba, 2014). Ebola has no inherent preference for female victims, yet cultural norms shape the material realities of women's lives in such a way that it is virtually guaranteed they will suffer disproportionately from infectious disease.

This gender disparity in caregiving and therefore in infection rates does not seem to garner much attention from mainstream news media in the United States. While practices such as washing the dead are, in Perelman's terms, made *present* in the discourse, practices common across our cultures are subsumed (Perelman, 1969, 118). Were we to draw attention to gender disparities in caregiving and infection rates, we might be required to examine how our own patriarchal culture dictates norms that could harm women: after all, the U.S. Census Bureau reports that "In 2011, 9 percent of all nurses were men while 91 percent were women" (U.S. Census Bureau, 2013, 2). As far as cultural practices go, corpse washing is a far more culturally specific problem for disease control

than patriarchy, so perhaps it seems easier to address—or, perhaps, we are reluctant to critique a cultural norm that Americans share with West Africans, preferring to focus on differences that make our culture seem less vulnerable to the risk of disease.

When attention is drawn to the material conditions of healthcare in West Africa, often the focus is not on conditions that exacerbated the outbreak, but on conditions resulting from it. Branswell notes that Ebola's massive toll on the healthcare systems of West African nations could open the door to outbreaks of other contagious diseases (Branswell, 2015). Reporting for the *NYT*, Gladstone writes, "The births of more than 70,000 children in Liberia during the Ebola crisis were never recorded, leaving them vulnerable to marginalization as noncitizens, denial of government services, trafficking and illegal adoption…Quoting Ministry of Health data, UNICEF said the births of only 700 children had been registered between January and May of this year, when many health facilities were overwhelmed or closed" (Gladstone, 2015). Grady explains that many survivors of Ebola infection endure long-term physical and psychological effects, ranging from blindness and joint pain to post-traumatic stress disorder (Grady, 2015). Such arguments frame these issues as mere aftermath of the epidemic, but many of the long-term problems that West Africans face in the wake of the Ebola outbreak existed long before it began. Take the example of access to healthcare: According to the Central Intelligence Agency's *World Factbook*, in 2008 Liberia had only 0.01 doctors available per 1000 people—or 1 doctor per 100,000 people. In comparison, in 2011 the United States had 2.45 doctors per 1000 people, or 245 doctors per 100,000 people (Central Intelligence Agency, n.d.).

An Ebola vaccine may indeed prevent the next outbreak of that particular disease, but in citing a vaccine as the best or only solution to a current outbreak, we may preclude other solutions that have good social consequences and would assist in the control and prevention of other outbreaks as well. As Galvani *et al.* write in their *Annals of Internal Medicine* editorial, "Vaccination alone is no panacea. Cultural and socioeconomic factors and suspicion of Western medical approaches complicate all medical interventions" (Galvani *et al*, 2014, 749–750). Examining the discourse about and around outbreaks from a rhetorical standpoint helps to question what and who is present in or absent from it. It helps to un-flatten that discourse and reveal the numerous complicating factors that contribute to outbreaks.

Kristin E. Kondrlik: Ebola and the Individualization of Risk

As Candice Welhausen and Jennifer Scott have discussed above, the deadly results of the 2014 Ebola outbreak led government officials and public health advocates to call for increased speed in testing and distributing a vaccine (Fleck and Lesher, 2015; Chowell and Viboud, 2015). Despite their advocacy, some in the medical community have expressed concern about framing vaccines as a panacea for Ebola's devastating effects. Editorials in the *British Medical Journal* and *Nature* have argued that the focus on experimental treatments and vaccines during the 2014 epidemic distracted from effective and ethical implementation of already-proven prevention methods (Gericke, 2015; "Ebola: Time to Act," 2014). Other writers have reiterated the pressures placed on medical professionals to participate in untested prevention procedures. As Susan Popham notes, rhetors have noted the necessity of attending to the health risks to healthcare workers posed by expedited clinical trials of vaccines. In addition to physical risks, the epidemic nature of Ebola imposes pressure on medical professionals' rhetorical agency. It challenges their ability to speak out when faced with the implementation of new and untested prevention procedures. We have already seen evidence of such pressure in the containment of the 2014 outbreak. But Kaci Hickox and Amber Vinson's experiences are especially illustrative of the challenges to medical professionals' bodily and rhetorical agency when government and public health officials are confronted with the risk of epidemic disease.

The compromised bodily and rhetorical agency of medical professionals during an epidemic results in part from their increased association with what Talcott Parsons has termed a "sick role." Typically, Parsons argues, a person who has been labeled "sick" has both rights, which include their exemption from normal social roles and from responsibility for their condition, and obligations, which include an imperative to get well and to seek care from a competent professional (Parsons, 1951). More recently, Pearce and Pickard have connected diagnosis to a shift in an individual's agency—a transition from a "responsible agent" into a "passive victim of disease" (Pearce and Pickard, 2010, 831). I would add that this compromised agency in the "sick role" also results from an individual's assumed obligations to their community. Both Hickox and Vinson were placed into "sick roles" as a result of their proximity to Ebola, and afterwards experienced compromised agency due to public pressures.

After arriving in the United States from Sierra Leone, Hickox, a nurse, presented with a slightly elevated temperature. It later would be attributed to stress at lengthy intake procedures (Miles, 2015, 17). After this test, officials declared Hickox to have symptoms of Ebola and moved her into quarantine (Miles, 2015). Hickox's potentially infected body became subject to increased containment procedures, despite the fact that she quickly tested negative for Ebola and showed no other symptoms (Robbins, Barbaro and Santora, 2014). Hickox was dubbed "the Ebola nurse" in the press in the days and weeks following her initial quarantine (Moyer, 2014; Lerner, 2015; Bukaty, 2014). Public officials declared her "obviously sick" (Robbins, Barbaro and Santora, 2014). In addition to her physical restriction through quarantine, Hickox's rhetorical agency was also limited. She could not effectively advocate against her participation in containment procedures or her classification as "sick." In an article for the *Guardian* a few weeks after her quarantine, Hickox begged, "I never had Ebola, so please stop calling me 'the Ebola Nurse'—now!" (Hickox, 2014b). Protest as she might, Hickox's classification as "sick" by the public and government officials demanded that she behave as though she were a risk to others and that she conform to quarantine, even after she had been declared medically healthy (Nemitz, 2014). Her quarantine was later overturned in a district court decision, but under public and legal pressure Hickox agreed to voluntary monitoring for twenty-one days, the incubation period for Ebola (Nemitz, 2014). Rather than feeling that she had the opportunity to advocate on behalf of her own health decisions, Hickox maintained throughout the ordeal that she felt like a criminal or a prisoner, experiencing blame for perpetuating a risk to others, although she never contracted Ebola (Hickox, 2014a).

Conforming to one's sick role once an illness has been diagnosed, however, does not mean that medical professionals escape blame for deviating from the obligations of the sick role *before* its diagnosis. Nurse Amber Vinson, who treated the first person diagnosed with Ebola in the United States, did not behave as though she was "sick" after her exposure to the disease. Rather, she travelled to Ohio to plan her wedding. She had cleared her plans with the CDC both before and after her flight. When she travelled, no travel bans had yet been imposed by public health officials (Timm, 2014). After she began to exhibit symptoms of Ebola, however, Vinson flew home to Dallas and was lambasted by critics for her decision to travel. Many termed her actions "reckless" (Blinder, 2014; Timm, 2014). Although Vinson had behaved according to existing containment standards, her critics suggested

that, after her exposure to the disease, behaving as though she was not "sick" was "reckless" and irresponsible.

As we have seen in the case of both Hickox and Vinson, the Ebola epidemic has increased pressure on medical professionals to adopt the obligations of a "sick role"—including reduced bodily and rhetorical agency—after exposure, even if they never develop symptoms of the disease. Although containment and prevention occur at different phases in the life of an epidemic, both make demands on medical professionals that may compromise their rhetorical agency in conversations about epidemic illness. Where containment procedures during an epidemic ask medical professionals to adopt the obligations associated with a sick role, vaccination asks medical professionals to actively inject a pathogen into their bodies—to make an alteration to their body in order to prevent the spread of illness.

The discovery of an Ebola vaccine will do essential work in its prevention. Such a discovery, however, will only further complicate the relationship between prevention, medical professionals' agency, and their identities. The pressure for medical professionals to be vaccinated under expedited vaccine development would further challenge medical professionals' rhetorical agency, already compromised by public assumptions about their health identities and the obligations imposed by those health identities. Not only do public health advocates and government officials, therefore, need to attend to the dangers of these vaccines for medical professionals' bodies. They also need to weigh the pressures imposed by epidemic disease on the voices of medical professionals in the conversations about prevention measures.

Conclusion: An Invitation to Further Inquiry

As rhetoricians interested in medicine generally and vaccination specifically, we recognize that calls to expedite the development of an Ebola vaccine reflect the many complexities of communicating about health and healthcare. In this essay, we have raised questions about those complexities and have suggested ways in which the study of rhetoric might assist in developing effective outbreak prevention and response. The analyses presented here suggest that the rhetorical construction of disease and related response is a precarious enterprise in which blame is often shifted away from the powerful and privileged toward the vulnerable and disadvantaged. Although an Ebola vaccine may prevent or lessen the impact of future outbreaks, we should be careful not to see it as a catch-all solution. We should continue to inquire into the rhetorical processes through which health and illness are constructed with the

end of creating more humane, responsive, and ethical medical and communicative interventions.

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