

**Regarding Early 20th Century Vaccination Rhetoric: Inoculation Strategy in the
Metropolitan Life Insurance Company's (1926) *Health Heroes***

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Abstract

The Metropolitan Life Insurance Company's *Health Heroes* series was a marketing effort comprised of published narratives in booklet form. One such publication, *Health Heroes: Edward Jenner*, told the story of Jenner's introduction of immunization to protect against viral threats. The narrative is an interesting example of health communication, science communication, illustrated narrative, applied communication theory, and, as this analysis will argue, inoculation theory rhetoric. Studying historical examples of inoculation theory rhetoric—even examples that predate the formulation of the theory in the early 1960s—helps provide both precedence and potential guidance for applied contemporary health promotion efforts.

Keywords: vaccines; vaccination rhetoric; public health; health and children; narrative; inoculation theory

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Inoculation theory is the classic theory of resistance to influence (Compton, 2013; McGuire, 1964). The theory explains how a position can be made more resistant to future influence in much the same way a body can be made resistant to future infection: through preexposure to weakened versions of the offending agent. A virus can be attenuated to motivate a protective response from the immune system; a persuasive argument can also be attenuated to motivate a protective response. The most common way an argument can be attenuated in a persuasive inoculation is by pairing counterarguments with refutations (i.e., a two-sided message format; see Compton, 2013; McGuire, 1964).

Inoculation theory has guided messaging strategies across issues and domains, including politics (see Compton & Ivanov, 2013, for a review), health (see Compton et al., 2016, for a review), science (see Compton et al., 2021, for a review), public relations (see Compton et al., 2021b, for a review), and others (see Ivanov et al., 2020, for a broad review of applied inoculation). A specific health issue that has seen the dynamic growth of inoculation theory application in recent years is vaccination promotion (e.g., van der Linden et al., 2020; Wong, 2016; Wong & Harrison, 2014).

Most of these analyses and applications of vaccination messaging have focused on contemporary vaccination issues, including HPV (Human Papillomavirus) vaccination (Wong, 2016; Wong & Harrison, 2014) and COVID-19 vaccination (van der Linden et al., 2020). But some work has looked at historical vaccination rhetoric from an inoculation theory perspective. For example, Compton and Kaylor (2013) analyzed Reverend William Cooper's pro-vaccination rhetoric in an early 18th-century religious pamphlet, finding that Cooper's persuasive strategy

reflected core tenets of inoculation theory messaging. Another rhetorical analysis examines inoculation rhetoric at work in advancing Jenner's—and the process of vaccination's—credibility (Compton, 2022).

This study takes a similar approach, using inoculation theory to guide a rhetorical analysis of a historic inoculation artifact: *Health Heroes: Edward Jenner* (Hallock & Turner, 1926), a health-themed booklet created by the School Health Bureau of the Metropolitan Life Insurance Company and made available to schools for free (see Ryan, 1960). Corporate sponsorships can enhance image perceptions, especially when suspicions are not raised about the motives of the sponsorship (Pappu & Cornwell, 2014). The relationship between the insurance industry and health promotion is straightforward and, as Pearson (1981) explained, historic:

The insurance industry has had a major interest in health promotion for many generations. Beginning around the turn of the century, for example, when many State health departments were struggling to get established, insurance companies frequently provided assistance and supportive information materials. (p. 56)

The Metropolitan Life Insurance Company was a leader in these early efforts (see Karson, 1982; Pearson, 1981; Toon, 1998; White et al., 1995), forming a Health and Welfare Division in 1909 and a school-based program in the 1920s (Pearson, 1981) called the School Health Bureau (SHB; Toon, 1998).

Toon (1998) contends that the Metropolitan Life Insurance Company's public health campaigns were among the most essential functions of the company's Welfare Division, publishing more than three billion pamphlets in the early 20th century. Additionally,

[b]ecause the Metropolitan's health education programs were among the most substantial, extensive, and highly regarded of the interwar period, they illustrate what a large

proportion of Americans encountered in the way of health education, as well as the standards other educators tried to equal. (Toon, 1998, p. 202)

In addition to benefits to public health, their efforts helped the Metropolitan Life Insurance Company's corporate image and, by extending the lives of their policyholders, helped their profits (see Toon, 1998).

The Metropolitan Life Insurance Company's *Health Heroes* series was part of a series of booklets geared toward elementary students. As Edwards (1977) describes them:

Tales of great exploits by leaders of science and health, including Madame Curie, Louis Pasteur, Florence Nightingale, and Walter Reed, set an example for a generation of youth for concern for human wellbeing and a search for truth . . . (p. 39)

Ryans (1960) notes that, “[i]n addition to encouraging the formulation of worthwhile values for personal life and public service, these biographies can be useful in vocational guidance with students interested in scientific and medical careers” (p. 67; and see Hansen, 2004). Later versions of the publications were released in the form of film strips (“Credit Lines,” 1955; and see Sanders, 1953). Toon (1998) deems the SHB's *Health Heroes* pamphlet series “the best known and most successful” (p. 256) of their projects.

Edwards (1977) contends that these booklets “cannot be minimized or ignored” (p. 39). And yet, despite Edwards' contention, these booklets have gone ignored in analyses of health and science communication efforts (c.f., Toon, 1998, consistent with how popular culture medical history in general has been understudied (Hansen, 2004; and see Tatalovic, 2009, for an argument about comics, and Green & Myers, 2010, for an argument about graphic stories). For example, in Hansen's (2004) review of comic book portrayals of medical history, the Metropolitan Life Insurance Company's *Health Heroes* effort is relegated to a footnote (p. 154).

To better understand these important artifacts of health communication in general and vaccination rhetoric in particular, the present analysis focuses on a specific issue of *Health Heroes*: a booklet introducing Edward Jenner. To better understand the rhetorical moves at work in this booklet, the analysis turns to inoculation theory as a guide.

Inoculation Theory

Inoculation theory is built on an analogic: just as a body can be made resistant to viral threats through preexposure to weakened forms of the threat, a mind can be made resistant to persuasion and other forms of influence through preexposure to weakened forms (Compton, 2013; McGuire, 1964). Research shows that when counterarguments (analogous to viruses) are paired with refutations (analogous to how viruses can be attenuated for use in medical vaccines), this exposure can motivate a process of resistance to future similar challenges (Compton, 2013; McGuire, 1964). Decades of research have shown that preexposure to a few weakened counterarguments can protect against a wide range of similar counterarguments, including those not explicitly raised and refuted (Banas & Rains, 2010). Much of this motivation seems to stem from inoculation messaging's elicitation of threat, or the recognition that a position is vulnerable to potential change (see Compton, 2021; McGuire, 1964).

Most inoculation research is experimental. Inoculated participants are compared to a control condition after exposure to an "attack" message—a message(s) that challenges preexisting attitudes, values, or beliefs (Compton, 2013). In recent years, however, inoculation theory has also been used as a framework for theoretical and conceptual analyses, used in public relations case studies (e.g., Veil & Kent, 2008) and rhetorical analyses of historical campaigns (e.g., Compton & Kaylor, 2013) and more contemporary efforts (Compton, 2019). In many of

these analyses, scholars have found parallels to contemporary inoculation messaging (e.g., threat, forewarnings, counterarguments and refutations) and historic inoculation rhetoric.

Analysis of Health Heroes: Edward Jenner

Next, we turn to *Health Heroes: Edward Jenner*, using inoculation theory as a guide to analyze the health messaging of this historic pamphlet—a pamphlet that was one of the first in the Health Heroes series published by the Metropolitan Life Insurance Company, joining the likes of Louis Pasteur, Edward Livingston Trudeau, Walter Reed, and Florence Nightingale in the 1920s (Toon, 1998). Millions of copies of these booklets were distributed (Toon, 1998). The Metropolitan Life Insurance Company’s *Health Heroes: Edward Jenner* was written by Clair Turner and Grace T. Hallock (see Toon, 1998) and tells a conventional and unconventional story. It is conventional because it is a chronological narrative of Edward Jenner’s life. The story begins with Jenner’s childhood:

When JENNER was a little boy, smallpox was a very common disease. It was so dangerous that many people used to have a doctor give them a mild form of the disease as a protection against a severe attack. This practice was called “inoculation against the smallpox.” (Hallock & Turner, 1926, p. 3)

The story begins, then, directly and simply: Setting the chronology (“When JENNER was a little boy”) and then establishing the stakes (“so dangerous”). We also get the first explanation of how medical inoculation works: “a doctor [would] give them a mild form of the disease as a protection against a severe attack” (Hallock & Turner, 1926, p. 3). A few notable components are emphasized here: that the treatment is “mild” and that the threat is “a severe attack.” Similar terminology would be used nearly 40 years later when McGuire (1964) introduced inoculation theory, e.g., “This mild dose stimulates his defenses so that he will be better able to overcome

any massive viral attack to which he is later exposed, but is not so strong that this pre-exposure will itself cause the disease” (McGuire, 1964, p. 200).

Next, *Health Heroes: Edward Jenner* offers more specificity as to *how* medical inoculation works:

The usual method of inoculation was to take matter from the sores or pocks of a patient with a mild case of smallpox and place it in three or four scratches on the body of the person to be inoculated. This ordinarily gave a mild form of smallpox to the person treated. Before inoculation the patient usually had to go through a preparatory process.

(Hallock & Turner, 1926, p. 3)

This process took weeks. Hallock and Turner (1926) explained that Jenner’s preparatory process happened when he was 8. Jenner was inoculated against (and with) smallpox when he was a boy. He contracted a weak version of smallpox, as was the intention, but according to some reports, he also experienced side effects. Hallock and Turner (1926) wrote that “it is often said that he could never sleep as well afterward and he sometimes imagined that he heard strange noises” (p. 4).

There are key features of inoculation highlighted in this description of how inoculation functioned, including (1) a strenuous “preparatory process” and (2) potentially serious side effects (e.g., insomnia and auditory hallucinations). Of note: Although in contemporary parlance, inoculation is often used interchangeably with vaccination, in *Health Heroes: Edward Jenner*, the two processes are contrasted, with vaccination offered as a better, safer alternative to inoculation. As Hallock and Turner (1926) put it in *Health Heroes: Edward Jenner*:

This experience of little EDWARD JENNER is especially interesting, because it was he who was to put an end to the practice of inoculation by the development of the simple and harmless procedure of vaccination. (p. 4).

Here, the differences between vaccination and inoculation are highlighted, particularly the contrast of vaccination being characterized as “simple and harmless.”

Hallock and Turner (1926) continued: “Smallpox is very contagious, and a severe attack means either death or disfigurement. A person who has had it usually cannot take it again. Is it any wonder that many people preferred to have a doctor deliberately give them a mild form of the disease as a protection against a severe attack?” (p. 5). In this extension of the description, Hallock and Turner make clear that despite the risks of inoculation, the alternative— “death or disfigurement”—was worse.

Next, *Health Heroes: Edward Jenner* offers an extended description of the etymology of some key inoculation phrases. Citing a letter written by Patrick Russell, a physician in Aleppo, to his brother, the booklet quotes:

This method of procuring the disease is termed the buying of smallpox on the following account. The child to be inoculated carries a few raisins, dates, sugar-plums or suchlike, and showing them to the child from whom the matter is to be taken, asks how many pocks he will give in exchange. The bargain being made, they proceed to the operation. When the parties are too young to speak for themselves the bargain is made by the mothers. (p. 6)

The characterization of inoculation—citing the letter from Russell—highlights the transactional nature of inoculation, that of the inoculative material itself (in this case, “the matter,” or to

pocks) and the treats (e.g., “a few raisins, dates, sugar-plums or suchlike”). We also have a characterization of demographics. The process of inoculation is ideally a practice for youth.

Another section of the pamphlet shifts from more contemporary history to earlier history. Hallock and Turner (1926) note that Lady Mary Wortley Montagu introduced inoculation to England. They cite a letter she wrote to a friend in 1717, beginning with a positive, celebratory framing: “I am going to tell you a thing that I imagine will make you wish yourself here” (p. 6). After describing the dire stakes of smallpox, she continues her description of the inoculation (or, in this letter, engrafting) process:

There is a set of old women who make it their business to perform the operation every autumn in the month of September, when the great heat has abated. People send to one another to know if any of their families has a mind to have the smallpox. They make parties for this purpose, and when they are met (commonly 15 or 16 together), the old woman comes with a nutshell full of the matter of the best sort of smallpox, and asks what veins you please to have opened. (p. 6)

There are a few things already of note: that the population of those inoculated are done so in a celebratory fashion (“parties for this purpose”), and that the practice is social and communal. It is also of note that the inoculator is commonly an “old woman,” and further, one who gives agency to the person being inoculated (i.e., it is a voluntary process, and they are even asked “what veins you please to have opened” (p. 6).

The narrative becomes more dramatic (if not violent) in the subsequent sentences, when after a vein is volunteered, “[s]he immediately rips open that which you offer to her with a large needle (which gives you no more pain than a common scratch), and puts into the vein as much venom as can lie upon the end of her needle, and after binds up the little wound with a hollow bit

of shell; and in this manner opens four or five veins” (p. 6). There is a contrast here: of a vein being “rip[ped] open, on the one hand, but at the same time, an act “which gives you no more pain than a common scratch.” The procedure is quantified: “and in this manner opens four or five veins.” Although this forceful rhetoric might seem an artifact of time, others have noted that the language of vaccination is often aggressive. For example, Biss (2014) has noted: “The British call [vaccination] a ‘jab,’ and Americans, favoring guns, call it a ‘shot.’ Either way, vaccination is a violence” (pp. 12-13).

The narrative then shifts back to the earlier social scene—a celebratory social endeavor. Hallock and Turner (1926) write:

The children or young patients play together all the rest of the day and are in perfect health until the eighth day, very seldom three. They have rarely about 20 or 30 (pocks) on their faces, which never mark, and in eight days’ time they are as well as before their illness. (p. 6)

Although the specifics could be more transparent, the inoculation process is indiscernible in terms of untoward effects. It usually lasts a week or so (but sometimes a few days) until mild symptoms of smallpox emerge, only to be healed in another eight days. We could characterize this process as a few days up to more than two weeks. Of note, a two-week timeframe is often described as a conventional process of persuasion inoculation (e.g., Pfau et al., 2004).

The booklet then emphasizes (still quoting the letter) that this practice is widespread and safe:

Everywhere thousands undergo this operation, and the French Ambassador says pleasantly that they take the smallpox here by way of a diversion, as they take the waters in other countries. There is no example of anyone that had died in it, and you may well

believe I am satisfied of the safety of the experiment, since I intend to try it upon my dear little son. I am patriot enough to take pains to bring this useful invention into fashion in England. (pp. 6-7)

The promotion of inoculation follows several conventional persuasive arguments: that many people are doing it, that it is as safe as other well-accepted practices, that the side effects are not severe, and that Montagu personally vouched for it not only in word but in action (“I intend to try it upon my dear little son”).

The following line in this section warrants specific attention: “I am patriot enough to take pains to bring this useful invention into fashion in England” (Hallock & Turner, 1926, p. 7). Inoculation is portrayed as patriotic. Nevertheless, despite the positive description of inoculation, the booklet notes that people remained skeptical “until they had seen its results” (Hallock & Turner, 1926, p. 7).

Next, Hallock and Turner (1926) introduce two new names: Dr. Boylston and Cotton Mather. They note that these two men “both became very unpopular because of their championship of inoculation. Against Dr. BOYLSTON people were so enraged that his family was hardly safe in his house and he often met with insults in the streets” (Hallock & Turner, 1926, pp. 8-9). Hallock and Turner (1926) also note that “[m]any people were struck with horror and thought that if any of [Boylston’s] patients should die, he ought to be treated as a murderer” (Hallock & Turner, 1926, p. 9). Hallock and Turner (1926) also cite Cotton Mather, offering an extended quotation:

The Destroyer, being enraged at the proposal of anything that may rescue the lives of our poor people from him, has taken a strange possession of the people on this occasion.

They rave, they blaspheme, they talk not only like idiots but also like *Franticks*, and not

only the physician who began the experiment but I also am an object of their Fury; their furious Obloquies and Invectives. (Hallock & Turner, 1926, p. 9)

Hallock and Turner (1926) do, however, note that there were, indeed, risks of inoculation, especially in terms of contagion: “Although the inoculated smallpox was much milder than the natural smallpox it was just as contagious and was often the cause of spreading the disease widely around” (p. 10). Nevertheless, they contend that there was a comparative preferability to inoculation; “But when they saw that the inoculated smallpox was fatal to one only in 150, they lost their horror of the disease and no longer tried to stop the spread of the infection” (Hallock & Turner, 1926, p. 10).

Hallock and Turner (1926) continued their description of the side effects of inoculation, noting the introduction of more health threats and additional physical side effects:

Another objection to the inoculated smallpox was that it often caused other diseases to break out after the attack, just as natural smallpox did. Moreover, it frequently left scars or pits on the face of the inoculated person. (pp. 10-11).

It was an interesting balance—an ebb and flow of inoculation's benefits, but never completely tipping the balance toward benefits. Indeed, characteristic of this (im)balance is this statement: “It is fortunate that at just this time, when inoculation was beginning to prove an actual menace to the public health, vaccination, a new protection against smallpox, was discovered” (Hallock & Turner, 1926, p. 11).

The booklet shifts here from inoculation to vaccination. Again, this distinction is rarely emphasized in contemporary discussions of inoculation and vaccination; in this booklet, however, the distinction is a crucial turning point in the story of this “health hero.” They continue:

What is vaccination? If you have studied Latin you know that it comes from the Latin word *vacca*, meaning *cow*. People who worked in dairies milking cows, sometimes caught a disease from the cows. This disease was called cowpox, because the sick cows had sores which were like the pocks that broke out on people with smallpox. It had been known for a long time in farming communities that the people who had had cowpox did not take smallpox when they were exposed to it. (p. 11)

Here, the basis for vaccination is laid out: a milder disease protects against a more severe disease. This contrasts with the conventional process of inoculation, which is a milder version of the severe disease.

The booklet introduces more characters: Benjamin Jesty, a farmer, and Edward Jenner.

Hallock and Turner (1926) write:

In 1774 [Jesty] took his wife and children to a dairy farm, and there introduced some of the matter from a cowpox sore into their arms with a darning needle. JESTY never made his experiment generally known. To EDWARD JENNER we must give the credit for introducing and applying the practice of vaccination as a protection against smallpox. (p. 11)

They continue: “It is said that JENNER often discussed the subject of smallpox with HUNTER and that one time when telling him of his hopes of substituting vaccination for inoculation, HUNTER replied: “Don’t think, JENNER, but try” (Hallock & Turner, 1926, p. 14). Jenner then tried the method “...by means of two scratches, each about half an inch long” (Hallock & Turner, 1926, p. 15). They continued:

If you can remember what happened when you were vaccinated, JENNER’s description of the first vaccination will probably remind you of your own experience. On the seventh

day JAMES PHIPPS complained of soreness in his armpits. On the ninth day he became a little chilly, lost his appetite, and had a slight headache. He felt sick all day and was restless that night, but on the next day he was perfectly well. The sores on his arms gradually healed without causing the least trouble. (Hallock & Turner, 1926, p. 15)

This description parallels the earlier description of inoculation—a period of no symptoms, then mild effects, then more robust health.

In a section titled “The Spread of the Practice of Vaccination,” Hallock and Turner (1926) describe “contemporary” methods of vaccination. They explain:

Today vaccine is never taken from the arm of another person. It is taken from a calf which has been vaccinated along a clean, shaved surface of its body. Great care is exercised to be sure that the calf is healthy. The quality and purity of the vaccine is assured. (Hallock & Turner, 1926, p. 15)

Vaccination safety is emphasized here—and a contrast is made between antiquated and contemporary methods.

The booklet then recounts how Jenner published his pamphlet, *An Inquiry into the Cause and Effects of the Variolae Vaccine or Cowpox*, in 1798. They note that “[t]his pamphlet caused a great deal of discussion and most people treated JENNER’s discovery with scorn. However, some physicians gave it a trial...” (Hallock & Turner, 1926, p. 16). They quote one supporter: “I think the substitution of cowpox poison for smallpox promises to be one of the greatest improvements that has ever been made in medicine. The more I think on this subject the more I am impressed with its importance” (Hallock & Turner, 1926, p. 16). The booklet then describes how the practice of vaccination was introduced to America:

Vaccination was first made known in America by DR. WATERHOUSE, of Cambridge, Mass. At a meeting of the American Academy of Arts and Sciences presided over by JOHN ADAMS, President of the United States, the subject was considered and no time was lost in procuring a supply of vaccine matter. (Hallock & Turner, 1926, p. 16)

Waterhouse says, “One fact in such cases is worth a thousand arguments” (cited in Hallock & Turner, 1926, p. 16).

Hallock and Turner (1926) describe how the popularity of vaccination spread, including the Empress of Russia. They explain:

She urged her subjects to be vaccinated and ordered that the first child who submitted to the operation should receive the name of VACCINOFF, and be educated at the public expense. The young VACCINOFF, after vaccination, was conveyed to St. Petersburg in one of her Majesty’s imperial coaches and, after being educated at the public expense in the Foundling Hospital, received a pension for life. The Empress in commemoration afterward presented JENNER with a diamond ring. (Hallock & Turner, 1926, p. 16)

Similarly, Hallock and Turner (1926) describe how vaccination as a practice spread in Spain:

The government of Spain dispatched an expedition in 1803 for the purpose of introducing vaccination throughout Spanish possessions in the old and new world. The vessel in which the expedition sailed carried 22 unvaccinated children who were to be vaccinated on the voyage in order to preserve the vaccine by passing it from arm to arm. (Hallock & Turner, 1926, p. 19)

They continued: “In Sicily and Naples, where smallpox was raging, vaccination was received with great enthusiasm. Religious processions were formed for receiving the ‘blessed vaccine’” (Hallock & Turner, 1926, p. 19).

Despite its widespread use, vaccination—much like inoculation—was not immune from criticism and opposition. Hallock and Turner (1926) explain:

Notwithstanding the success and support that vaccination was now receiving in all parts of the world, there were many who still opposed the practice, and pamphlets were constantly published by the antivaccinationists. Some people went so far as to assert that vaccination would cause a person to grow horns like a cow. (Hallock & Turner, 1926, p. 20)

The theme of side effects—prevalent throughout the booklet—continues, from the mild symptoms of the disease described in the practice of inoculation to the mild side effects described in the practice of vaccination to the exaggerated, comical effects warned by the “antivaccinationists.”

Yet, Hallock and Turner (1926) note that vaccination became increasingly popular “[i]n spite of this unreasonable opposition” (p. 19).

JENNER had many warm friends, and they rallied to his support with unanswerable arguments in favor of the practice. It was shown “that vaccination is not infectious and, in the opinion of the most experienced practitioners, has never proved fatal, that it causes no other disease, and that it leaves behind it one of the greatest blessings ever bestowed on man, that of a perfect protection against smallpox.” (Hallock & Turner, 1926, p. 19)

The booklet describes how, in Berlin, people held a Jennerian feast to celebrate vaccination.

Hallock and Turner (1926) also quote from a letter from indigenous peoples of North America:

Brother! Our Father has delivered to us the book you sent to instruct us how to use the discovery which the Great Spirit made to you whereby the smallpox, the fatal enemy of our tribe, may be driven from the earth. We have deposited your book in the hands of a

man of skill whom our Great Father employs to attend us when sick or wounded. We shall not fail to teach our children to speak the name of JENNER and to thank the Great Spirit for bestowing upon him so much wisdom and so much benevolence. We send with this a belt and string of wampum in token of our acceptance of your previous gift, and we beseech the Great Spirit to take care of you in this world, and in the land of spirits.”

(Hallock & Turner, 1926, pp. 20-21)

This excerpt features themes such as religious appeals (“which the Great Spirit made to you”) and collaborative transactions.

The end of Jenner’s story is a conventional end to a life story retold: gravestone verses.

Hallock and Turner (1926) recount the epitaph on Jenner’s tomb:

Within this tomb hath found a resting place
The great Physician of the human race,
Immortal JENNER! Whose gigantic mind
Brought life and health to more than half mankind.
Let rescued infancy his worth proclaim,
And lisp out blessings on his honored name;
And radiant Beauty drop one grateful tear,

For Beauty’s truest friend lies buried here. (Hallock & Turner, 1926, p. 22)

Then, after telling Jenner’s story—which included the historical precedence of those who came before Jenner—Hallock and Turner (1926) offered a general description of how vaccination works, or at least how smallpox vaccination could work. They wrote:

Smallpox germs do not find such favorable living conditions in the cow as they do in human beings. Their struggle for existence in the cow weakens them, just as a man might

become weakened by having to work very hard for his living, and yet not make enough to buy the necessary food to keep his body well and strong. By overcoming the weakened germs that are drawn from a cow sick with cowpox, the body is enabled to protect itself against virulent smallpox germs. (Hallock & Turner, 1926, p. 22)

Here, Hallock and Turner describe vaccination with an analogy. However, they do not stop with one analogic. Next, they introduce another analogy to describe vaccination:

Suppose a country is attacked by one tribe of a great race. This tribe is not strong enough to overthrow the country, but in fighting it the country develops its defenses. Then, when the main forces of the enemy enter the country, they find it prepared and they are unable to conquer it. In much the same way the body prepares itself, by fighting the weakened smallpox germs, to repel an invasion of the deadly germs of the same disease. (Hallock & Turner, 1926, p. 19)

The analogies are layered—the individual to a community, broader level—to describe the process(es) of vaccination.

The booklet ends with a warning—describing the case of Montreal and how many unvaccinated people contributed to the disease threat (Hallock & Turner, 1926). They warned that too “many people disregard the danger of catching smallpox and ignore or belittle vaccination as a protection against it” (Hallock & Turner, 1926, pp. 23-24).

The final description brings the name Jenner back into the conversation and, at the same time, re-advances the argument that vaccination is recommended. Hallock and Turner (1926) conclude their booklet with:

Vaccination is such a simple, harmless means of protection that an outbreak of smallpox is a disgrace to any civilized nation. How many boys and girls in your school wear the

little white mark that means personal protection against one of the oldest enemies of the human race? May we not fail to use the life-saving knowledge which JENNER gave us! (Hallock & Turner, 1926, p. 24).

The call to vaccinate is clear and forceful, alluding to its effectiveness, importance, popularity, and, most poignantly, responsibility to inoculate.

Conclusions

The Metropolitan Life Insurance Company's Health Heroes booklets were great successes, enhancing corporate image and engaging student interest in health and science (Toon, 1998). But were the booklets successful inoculation theory-based messages? We will consider some main takeaways next.

1. Early efforts to describe immunization made clear delineations between vaccination and inoculation. Inoculation was portrayed as particularly risky and with more severe side effects, although it, too, was usually characterized as preferable to a full-force case of the disease itself. In contemporary inoculation theory descriptions, such distinctions are rarely made. Might this contribute to murkiness in terms of the analogic and its parallels? If the analogy is critical—as Compton (2013) has argued—we should define the analogic connections carefully.

2. Even with the clear delineation between vaccination and inoculation, potential challenges and side effects of both were often addressed. Consider, for example, that the description of inoculation included both the strenuous “preparatory process” and warned of side effects (e.g., insomnia and auditory hallucinations). Side effects of vaccination were vividly described, too, including chills, a loss of appetite, headache, and restlessness (Hallock & Turner, 1926). At times, this created a disconnect between vaccinations described as “harmless” only to be followed by descriptions of side effects. We can see some parallels here in analyses of

potential “side effects” of inoculation (e.g., Compton & Pfau, 2004), which have also been termed iatrogenic effects (Compton, 2013).

3. Positive immunization framing emphasizes benefits to children. Furthermore, children are often portrayed as active participants in the process. Consider, for example, how the booklet describes the transactive collaboration of vaccination: an exchange of sweets (“a few raisins, dates, sugar-plums or suchlike”) for pocks to be used to immunize. When the children were too young to have active agency, parents (or, more specifically, mothers) made the “bargain.”

Perhaps this parallels how inoculation theory has been advanced as a particularly effective health messaging strategy with young children, especially against such pressures as cigarette smoking (e.g., Pfau & van Bockern, 1994; Pfau et al., 1992). It might also parallel with analyses that argue that using media that children find exciting and engaging, like children’s television programming (Compton & Mason, 2021), are particularly effective ways to help develop healthy, resistant positions of children. On a related note, Jenner’s childhood featured prominently in the booklet. Toon (1998) argues that recounting “childhood exploits . . . tended to help make the heroes sound normal [and] to create a sense of character” (pp. 261-262).

4. Immunizations were portrayed as joyous—at least, joy springing from the protection they afforded. Consider, for example, the excerpted letter from Lady Mary Wortley Montagu: “I am going to tell you a thing that I imagine will make you wish yourself here” (p. 6). Inoculation is portrayed as celebratory.

5. The immunization narrative in *Health Heroes* jumps from timeline to timeline, moving back and forth from Jenner’s story to historical precedence. A good deal of attention is also devoted to the diseases themselves. The decision to focus so much on the diseases themselves,

Toon (1998) argues, is to have the effect of “contextualizing their efforts as part of a larger accomplishment” (p. 261).

In addition to being chronologically disjointed, the narrative has some embedded contradictions. One of the most notable is in the excerpt from Montagu’s letter, which characterizes the practice of immunization as both “harmless” and as a practice of “rip[ping] open that which you offer to her with a large needle” and, in an immediate parenthetical elaboration, “which gives you no more pain than a common scratch.”

6. Immunization is characterized as patriotic. Again, citing Montagu's letter, “I am patriot enough to take pains to bring this useful invention into fashion in England” (Hallock & Turner, 1926, p. 7). Similarly, the concluding paragraph notes: “Vaccination is such a simple, harmless means of protection that an outbreak of smallpox is a disgrace to any civilized nation” (p. 24).

We could connect this theme to contemporary rhetoric around COVID-19, patriotism, and civic responsibilities. Pearson put it this way in the early 1980s:

Long ago the insurance industry recognized that if attitudes and behaviors are to be changed, people must be educated individually and collectively—that is, they must be educated not only to care for themselves, but also to think in terms of the community in a form of ‘health citizenship.’ (p. 55)

Similarly, Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases, said in a commencement address at the College of the Holy Cross: “Now is the time, if ever there was one, for us to care selflessly about one another” (cited in Dwyer, 2020, para 8).

7. Immunization was met with skepticism, and the early champions of immunization with derision. At times, instead of skepticism, outright opposition was described, including “pamphlets . . . constantly published by the antivaccinationists” (p. 20). “Some people went so

far as to assert that vaccination would cause a person to grow horns like a cow” (Hallock & Turner, 1926, p. 20), and note that “many people disregard the danger of catching smallpox and ignore or belittle vaccination as a protection against it” (Hallock & Turner, 1926, pp. 23-24).

In some ways, the way Jenner’s story was told in *Health Heroes* differs from other booklets in the series. As Turner (1998) has pointed out, “Turner and Hallock present the objections posed by others as reasonable ones, understandable in light of the necessities of scientific proof” (p. 266). However, in the Jenner booklet, “the authors chide the hysterical townfolk of colonial Boston for their fears of vaccination” (Toon, 1998, p. 266).

8. Immunization (and vaccination) is described as not only effective but also safe: “The quality and purity of the vaccine is assured” (Hallock & Turner, 1926, p. 15). As Toon (1998) has noted, the decision to devote a *Health Heroes* booklet to Jenner was

no doubt a result of the Division’s interest in immunization, against first small pox and then diphtheria. In the 1920s, the company waxed eloquent in ads, movies, and pamphlets about the virtues of immunization. Frankel’s Welfare Division and Field Force fought anti-vaccinationist referendums . . . (p. 260)

Immunization was portrayed as a hero, too, and we find parallels here to contemporary inoculation rhetoric and specific messaging. Consider, for example, the work of Wong (2016) and Wong and Harrison (2014), which emphasized—as the title of Wong’s (2016) article states—that “vaccinations are safe and effective” (p. 127).

9. Delineations are made between arguments and facts. Waterhouse says, “One fact in such cases is worth a thousand arguments” (cited in Hallock & Turner, 1926, p. 16).

10. Mentions of religion in *Health Heroes* are limited to supportive statements. Referencing some communities in Italy, they write: “Religious processions were formed for

receiving the ‘blessed vaccine’” (Hallock & Turner, 1926, p. 19). An excerpt from an indigenous tribe in America notes that they “thank the Great Spirit for bestowing upon [Jenner] so much wisdom and so much benevolence” (p. 21). In other analyses of inoculation rhetoric in general and inoculation theory emerging in medical inoculation rhetoric in particular, scholars have argued that religion has played a pivotal role (Compton & Kaylor, 2013).

11. Analogies are used to explain how vaccination works, which is especially apt considering this rhetoric from an inoculation theory perspective built on an analogy (Compton, 2013; McGuire, 1964). In one passage, they write of

Their [smallpox germs] struggle for existence in the cow weakens them, just as a man might become weakened by having to work very hard for his living, and yet not make enough to buy the necessary food to keep his body well and strong. (Hallock & Turner, 1926, p. 22)

In another, they describe the vaccination process as analogous to warfare—building up defenses against a weaker attack to strengthen defenses against stronger attacks later.

We can speculate on the effects of using multiple analogies to describe inoculation. Research finds that metaphors can enhance persuasion (Sopory & Dillard, 2002), and “when a metaphor is nonextended, single, placed early in a suatory message, novel, and with a familiar target, its impact can be substantial ($r = .42$)” (Sopory & Dillard, 2002, p. 407). Whether these conditions were met with the historical audience is an empirical question, but we can observe that, instead of a single metaphor, *Health Heroes: Edward Jenner* featured more than one.

12. The genre of *Health Heroes* itself is important to acknowledge. Hansen (2004) noted that medical stories in illustrated works are “engaging, upbeat, and instructive” (p. 150). He also observed: “Through countless renditions of medical history circulating in popular culture, not

only those with college educations but also so-called general readers, their children, and their less-educated fellow citizens acquired a familiarity with medical figures of the past” (Hansen, 2004, p. 149). Continued research should explore whether this holds for inoculation theory-based messages.

13. The message's source is also of note: a life insurance company. As previously noted, the Metropolitan Life Insurance Company had many motivations for developing the *Health Heroes* series (see Toon, 1998). Toon (1998) contended that the Metropolitan Life Insurance Company’s efforts “were lauded by health workers because they were neither overtly promotional nor scientifically suspect, and yet a definite business asset. Examining the company's ability to balance selling and educating thus sheds light on the delicate interwar relationship between commercial persuasion and health education” (p. 203).

The Metropolitan Life Insurance Company’s *Health Heroes* series was a marketing effort comprised of published narratives in booklet form. One such publication, *Health Heroes: Edward Jenner*, told the story of Jenner’s introduction of immunization to protect against viral threats. The narrative is an interesting example of health communication, science communication, illustrated narrative, and, as this analysis has argued, inoculation theory rhetoric. Studying historical examples of inoculation theory rhetoric—even examples that predate the formulation of the theory in the early 1960s—helps provide both precedence and potential guidance for contemporary health promotion efforts.

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