From the Headlines: A Textual Analysis of Social Polarization and Discord in Times of Pandemic Across a Century in the United States

Alexa DeMarco

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Honors Thesis

FROM THE HEADLINES: A TEXTUAL ANALYSIS OF SOCIAL POLARIZATION AND DISCORD IN TIMES OF PANDEMIC ACROSS A CENTURY IN THE UNITED STATES

by
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Submitted to Brigham Young University in partial fulfillment of graduation requirements for University Honors

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ABSTRACT

FROM THE HEADLINES: A TEXTUAL ANALYSIS OF SOCIAL POLARIZATION AND DISCORD IN TIMES OF PANDEMIC ACROSS A CENTURY IN THE UNITED STATES

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Within the past century, three major pandemics have affected the United States – the Spanish Flu, AIDS, and Covid-19. Each of these pandemics has tested the capabilities of the public health sector and the social resilience of the population. Scientists have studied the viruses and implemented public health measures to limit viral transmission, but the social responses to these preventative measures proved to be difficult to predict and control. The dissonance and polarization between the public health initiatives and the response of the general public in the most recent pandemic was apparent. Was this a pattern in other pandemics? Was there a time where public policy and social responses were more closely aligned? Was social polarization, or the tendency of modern-day society to ground themselves in an extreme point of view on current public health issues, evident in other pandemics, or was this a new phenomenon? Through the novel lens of newspaper articles, this thesis will shed light on the tension between public policy and social responses in the last century in the United States.
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1. INTRODUCTION

1.A Summary of questions addressed in this study

Within the past century, three major pandemics have plagued the human population in the United States – the Spanish Flu, HIV/AIDS, and Covid-19. Each, in its own way, has tested American ingenuity, public health response capabilities, and social resilience. Scientists throughout the century have studied the viruses, attempted to create vaccines that will combat them, and implemented preventative measures to control viral spread. However, some measures cannot be mapped or quantified. By nature, pandemics are uniquely social events. Just as the propagation and transmission of a communicable disease requires contact between individuals, the growth or retreat of a pandemic relies on large-scale social agreements. As the social, population-focused aspects of pandemics are much more difficult to normalize, measures must be taken to organize the public health response. Pandemics inevitably call upon public resources to guide, direct, and moderate societal responses. The polarization of opinions and responses to public health initiatives during Covid-19 has led me to consider how others had responded to pandemics in the past. Was there a time where people would follow public health requirements with less dissonance? How has the alignment between public policy and social responses varied over time in relation to these three pandemics? Are certain trends or cultural attitudes evident in the reporting from those time periods? Was social polarization, or the tendency of modern-day society to ground themselves in an extreme point of view on current public health issues, evident in other pandemics, or was this a new phenomenon? This paper will examine the three main U.S. pandemics of the last century, attempting to shed light on the tension between public policy and social responses through the novel lens of newspaper articles.

1.B Analytical framework

To approach the questions outlined above, I first identified a prominent news source that existed and reported during the peaks of the pandemics of the last century – the New York Times – which would serve as a constant to make the analysis more objective. In my preparation of this news source, I considered the biases which would come from doing a comparative report of this nature. Any prominent news outlet would have its biases, but the news section, (not the second section) of the Times, has been considered a highly reputable news outlet since its establishment in September of 1851.

Having selected this source, I could begin my comparative analysis of the titles of news reports from the New York Times during the peaks of the pandemics. I selected over 100 news articles from the peak years of each pandemic, ensuring that these selections covered the reports for a minimum of two years per pandemic. I selected time periods that were relevant to both the 1918 pandemic and AIDS pandemic, including two years for each. The sheer number of reports during the COVID-19 pandemic required that I use a different
approach. As of August 1\textsuperscript{st}, 2022, the \textit{New York Times} had published over 26,000 articles under their specific COVID-19 tab. Given the huge sample size, I realized there would have to be other restrictions on those 26,000+ articles in order to obtain a manageable sample size. I filtered out the opinion articles, which were not pertinent to the samples for this case study, then selected only the COVID articles that were under the Health section of the Times. I selected only the first 10 articles per month of the pandemic, as there were still 1,344 results under the Health subsection of the COVID-19 tab for the time period between January 1\textsuperscript{st}, 2020, and December 31\textsuperscript{st}, 2021. These restrictions resulted in a reasonable sample size of 240 articles on which I could carry out the analysis.

Given the restrictions previously described in this section, the number of samples per pandemic, as well as the dates included in each sample, are listed below.

Table 1: Sample sizes in relation to pandemic timelines

<table>
<thead>
<tr>
<th>Pandemic</th>
<th>Date range of pandemic</th>
<th>Dates included in sample</th>
<th>Number of samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1918 Pandemic</td>
<td>01/1918 – 04/1920</td>
<td>01/1918 – 04/1920</td>
<td>111</td>
</tr>
</tbody>
</table>

These sources were analyzed as non-subjectively as possible under certain criteria, which will be outlined later in this paper.

1.C \textit{Terminology and a few words of clarification}

To make the results of the study as transparent as possible, I would like to define some dates and terms before diving into the body of research, as well as give a brief overview of each pandemic.

\textbf{Pandemic}: the outbreak of a disease affecting multiple countries or continents (a large geographical region).

\textbf{Epidemic}: a disease outbreak affecting a specific, smaller geographical area.

\textbf{Social response}: The term social response, as used in this thesis, refers to the response of individuals (or many members of society) to public health announcements and preventative measures of viral spread. It encompasses cultural trends, responses, and attitudes, and relates to the willingness of the public to embrace public health policy. Those responses, as well as individuals’ willingness to comply with public health policy, are related to demographic
parameters including but not limited to political affiliation, upbringing, ethnicity, income level, and geography.

Public Policy: The term public policy, as used in this paper, refers to the announcements, regulations and laws implemented within society by public health officials and others to promote overall social and physical wellness of the nation.

Social polarization: Social polarization, as used in this paper, refers to the polarization, or separation of individuals into highly differentiated opinions, caused by political ideology, opinions, or other media sources.

Technology: the means by which communications are transmitted electronically, including but not limited to the internet, online news sources, phones, email, text messaging, Facebook messaging, Instagram direct messages, and Twitter.

Social media: social media refers to the use of virtual communities (via Instagram, YouTube, Facebook, WhatsApp, TikTok, Snapchat, or Twitter), to share information or ideas, interact with others, and/or post original content and personal opinions.

1918 Pandemic: Otherwise known as the Spanish Flu, the 1918 Influenza Pandemic lasted from 1918-1920 in the United States and its effects can still be seen today.

H1N1 Influenza: The virus responsible for the 1918 Pandemic.

AIDS: Acquired Immunodeficiency Syndrome, the disease caused by HIV. The AIDS epidemic, which became a worldwide pandemic, was first discovered in 1981.

HIV: The virus responsible for AIDS, which interferes with an individual’s immune system and ability to fight infection.

COVID-19: COVID-19, otherwise known as the coronavirus pandemic, was the most recent global pandemic originating in Wuhan, China.


Mortality rate: the number of deaths in a population (due to a specific pathogen) in a certain time frame.

Transmission rate: the rate at which a virus spreads from one host to another.

Non-pharmaceutical interventions: Non-pharmaceutical interventions, or NPIs, are often the public health sector’s first line
of defense against unknown pathogens. As the name suggests, they are less invasive measures than vaccinations, as they provide non-pharmaceutical options for preventing viral spread. These measures include physical distancing, isolating (or quarantining) those who are ill, and temporarily closing public areas (such as restaurants, schools, churches, etc.) which could serve as areas for viral transmission of airborne viruses.
<table>
<thead>
<tr>
<th>Pandemic</th>
<th>Virus</th>
<th>Duration</th>
<th>Cases</th>
<th>Mechanism of Transmission</th>
<th>Symptoms</th>
<th>Total Deaths</th>
<th>Risk Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>1918 Pandemic</td>
<td>H1N1 Influenza</td>
<td>1918 - 1920</td>
<td>500 million</td>
<td>Airborne, droplet transmission</td>
<td>Pneumonia and respiratory failure, permanent damage to respiratory tree</td>
<td>50 million</td>
<td>Individuals under the age of 5, between 20-40 years old, and 65 years and older</td>
</tr>
<tr>
<td>AIDS</td>
<td>HIV</td>
<td>1981 – present</td>
<td>55.9 – 110 million</td>
<td>Sexual transmission, particularly through homosexual sex, blood transfusions, vaginal delivery, genital secretions, sharps, breast milk, intrauterine maternal blood</td>
<td>Early symptoms resemble those of a common cold, but after asymptomatic period result in inability to generate immune response</td>
<td>27.2 – 47.8 million</td>
<td>Gay or bisexual men to have sex with men, injection drug users, ethnic minorities, older adults, individuals in the criminal justice system, individuals who have unprotected sex, and youth, especially in developing countries</td>
</tr>
<tr>
<td>COVID-19</td>
<td>SARS-CoV-2</td>
<td>2019 – present</td>
<td>576 million</td>
<td>Droplets, fomites, indirect contact transmission. Airborne transmission is most common</td>
<td>Fever, dry cough, and bilateral pneumonia</td>
<td>6.4 million</td>
<td>Immunocompromised individuals, those with existing conditions. Risk groups changed over time with the new strains of the SARS-CoV-2 virus.</td>
</tr>
</tbody>
</table>
2. REVIEW OF TIMELINE AND IMPACTS OF THREE PANDEMICS

2.A The 1918 Pandemic

The Influenza pandemic of 1918 remains a reference to which many of the modern epidemics and endemics are compared (1, 2). Though tragic, it provided understanding for the basis of pandemic spread. Many details of the virus’ origins are unknown, but the implications of what has been discovered cannot be understated. Centuries prior to the 1918 pandemic, many illnesses stemming from unknown causes were given the name “Influenza” by the public. By the time the Spanish Flu had been identified, three main categories of Influenza had been identified – A, B, and C (2). Influenza A viruses became particularly relevant to modern society in the 20th century.

Shortly following the First World War, almost one third of the worldwide population exhibited symptoms of a new disease. The disease was more infectious and fatal than any Influenza of the past, simultaneously infecting both humans and swine. Its severity was evident in the fatalities from 1918-1919. Total deaths are unknown (3), but estimates range from 50-100 million worldwide, and approximately 675,000 in the U.S. alone – more than the World War (4). Due to its severe pathogenicity, individuals at the time doubted the virus responsible for the pandemic could be Influenza, but research done in the 1930s linked related Influenza viruses isolated from pigs and humans to the original virus of 1918 (3).

The Spanish Flu pandemic came in three main waves within a year, an unprecedented pattern at the time. The first, a mild wave in the spring of 1918, caused few deaths. More fatal waves followed shortly thereafter in the Fall and Winter months of 1918-1919, causing the majority of deaths (3).

The origins of the virus remain unknown. Other respiratory disease epidemics were spreading in 1915 but connecting those events to the 1918 pandemic proved to be a difficult task. Modern researchers are unable to identify them as “precursors” for the pandemic without more substantial evidence to support those claims. Researchers are also unable to define the geographical region from which the virus originated. Most viruses of the era originated in Asia, due to the high probability of gene rearrangement in areas where pigs, ducks, and humans are in close contact with each other, but each phylogenetic analysis done since the pandemic has proved unsuccessful at placing the virus in a specific locale (3).

The virus responsible for the 1918 Pandemic, H1N1, is still wreaking havoc on the world, and is considered the mother of all pandemics. Each Influenza A pandemic since its time has been identified as a descendant of the virus (3). In its own way, the H1N1 virus is still circulating today.
2.B The HIV Epidemic

Sixty years later, in the 1980s, a new virus disrupted modern understanding of disease, sparking a period of confusion surrounding the origins of a new virus – HIV, or Human Immunodeficiency Virus (5). This virus was unlike others seen before. In 1981, scientists at various universities and research centers around the United States started reporting curious cases of opportunistic pathogens causing disease in previously healthy individuals – mainly homosexual men (6, 7). As time went on, more cases of curious diseases were reported – all of which were caused by pathogens which normally did not cause disease in patients, with the exception of immunocompromised individuals. A jump in reported cases of Pneumocystis carinii and Kaposi’s sarcoma, a rare cancer, as well as other opportunistic pathogens, were particularly alarming to scientists at the time (7), but ultimately proved to be key factors in determining the mechanisms of this new virus (8).

Initial epidemiological studies revealed little connecting the backgrounds of the infected individuals besides a general trend of homosexual behavior and similar geographical locations (7). Early laboratory studies also revealed little about the virus’ nature, as the sequences of each isolated virus were vastly different. Over time, the infected population included more than just homosexual men. Partners of those individuals, recipients of blood transfusions, intravenous drug abusers, and Haitian immigrants were all included in the population (9). These infection routes suggested sexual transmission as the virus’ mode of action, as well as the virus’ characteristic delayed pathogenicity (6, 7). In time, scientists recognized that the common factor in each case was some kind of dysfunction in T-lymphocytes, and the condition was given a name – Acquired Immunodeficiency Syndrome, or AIDS (6).

The AIDS pandemic differs from the 1918 Flu pandemic and the Covid-19 pandemic in that it is an ongoing issue. Although initial cases date back to 1981, the pandemic peak, or point at which the number of new cases hit a maximum before declining, occurred in 1995 – 14 years after the start of the pandemic. That pandemic peak was seven times as long as both the Spanish Flu and COVID-19 pandemics. HIV, unlike Influenza and SARS-CoV-2, is not an airborne-transmitted virus (10). It exhibits long incubation periods with slow onset of symptoms, which are not resolved by the immune system of the infected individuals. Although research has been done to find a vaccine and a cure for those with AIDS, only treatments to alleviate disease severity are available at this point, and most of the measures taken to prevent viral spread involve educating the public about prevention (11-16). AIDS affects specific risks groups (as found in the table above) at rates much higher than those not found in risk groups (10-21). The stigma associated with the patterns of HIV viral spread and the continued prevalence of this stigma in society are also particularly damaging to these risk groups, generating much fear for individuals who test positive for HIV (22).
2.C COVID-19

One century after the Influenza pandemic of 1918 and almost 40 years after the discovery and identification of HIV, the Covid-19 coronavirus pandemic arose. This virus, though similar to other beta-coronaviruses of the past, resulted in complete global shutdown. During the past 20 years, the world has experienced three distinct outbreaks of coronaviruses. Their contrasting stories provide interesting content for consideration. The first of the outbreaks occurred in 2003 in China. The Chinese responded quickly to the 2003 SARS-CoV strain, practically shutting down the nation and limiting spread. By the time the pandemic had ended, 8098 individuals had been infected and 744 of those individuals had died, resulting in a mortality rate of 9.6%. The second epidemic was the 2012 MERS-CoV strain, which primarily affected Saudi Arabia. This strain was highly consolidated, but the deadliest, as 858 of the 2491 infected individuals died – resulting in a 34.4% mortality rate. Contrary to public portrayal, the agent responsible for the most recent pandemic, SARS-CoV2, was symptomatically milder than its predecessors. Although a startling 562,672,324 individuals have been infected worldwide, only 1.13% of those individuals died (23).

Although its origins have been disputed, the original SARS-CoV-2 outbreak occurred in the Huanan Seafood Wholesale Market in Wuhan, China in December of 2019 (24). The market was shut down shortly thereafter, but thousands of people in China were reportedly affected within January. As of the beginning of February, almost 30,000 cases and 565 deaths had been documented (24). The virus had spread to over 25 countries. As previously stated, similar coronaviruses have been seen over the years, but none so widespread as SARS-CoV-2, the virus responsible for the COVID-19 pandemic (24). Over time, new variants of this strain were identified with varying pathogenicity. As of July 20th, 2022, the World Health Organization had reported 562 million cases, with 6.3 million deaths worldwide, and 1.03 million deaths in the U.S. (23). The identification of the SARS-CoV-2 virus was much faster than the pandemics of the past but combating the disease has proved to be much more difficult than expected.

2.D Why compare these pandemics?

Looking at the raw data of the pandemics, it seems like there are few things which connect them, besides their pandemic nature. Just as the core attributes of these pandemics vary, one would expect public policy and social responses to differ as well. Due to the different natures of the pandemics, as well as the different times periods in which they affected the U.S. population, a side-by-side comparison is a difficult comparison to make, as well as an imperfect one. The pandemics lasted different lengths of time and affected different groups of people. Those risks groups have changed over time. Public health measures can assuage, but not completely remove viral threats. Public health interventions for the 1918 pandemic seemed to have worked well, but their implementation had varying results in the most
recent COVID-19 pandemic. Given all these differences, a comparative, side-by-side case study on these U.S. pandemics would be misleading if we were to neglect to state these differences. It is possible that these differences are responsible for the results of this study. However, if readers understand that these viral pandemics differ in many of their characteristics, and acknowledge those differences, a comparison of the journalistic reporting on these pandemics may provide critical insights into the social side of pandemics, and how those social responses are evolving through time. It is with this discretionary warning in mind that my discoveries can now be presented.

3. TEXTUAL ANALYSIS OF REPORTING ON THE THREE PANDEMICS IN THE NEW YORK TIMES

3.A Framework of Textual Analysis

Before reporting the findings of this case study, it is pertinent to lay forth the guidelines for this textual analysis. As previously stated, the sample size for the reports on each pandemic was determined by two factors – first, the duration of each pandemic, and second, the number of articles published during those time periods. Table 1 (found above on page 2) details those selections, as well as the number of articles in each sample. Having been selected, the articles were organized chronologically, and the headlines of each article within the sample were analyzed subjectively on three separate scales of 1-5, found below, along with their corresponding explanations.

<table>
<thead>
<tr>
<th>Research Focus</th>
<th>Neutral</th>
<th>Social Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unanimity</th>
<th>Neutral</th>
<th>Discord</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy Focus</th>
<th>Neutral</th>
<th>Person Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>


The headlines were first analyzed on the theme or overarching content of their headlines. Does the article seem to be research-focused (or focused on the science of public health policies), or based on societal matters? What was the “news” reporting on, primarily? Did the subjects of their articles lean to one side, or did the material tend to stay somewhere in between?

The second analysis tapped into the social polarization of the times. Did the title assume unanimity in the readers or that they were at discord with each other? Were the reporters of the time reporting to a polarized populous?

The third and final analysis aimed to determine whether the reports provided commentary on a politician/health official’s response to pandemic measures, or if the Times reported on the policy itself. One of the most obvious themes in the article headlines that was revealed upon initial visual analysis, was the politicization of content during the pandemics. Rather than report on the directions or policies of a public health official, the stories seemed to report more about the stance of the officials themselves, as individuals. This scale would provide more concrete insight into that theme.

3.B 1918 Flu Pandemic

3.B.1 Public Health Measures during the 1918 Flu Pandemic

Early on in the pandemic of 1918, non-pharmaceutical interventions, otherwise known as NPIs, became the nation’s first line of defense against the unknown pathogen. Early implementation of NPIs, such as physical distancing, isolating those who were ill, and closing workplaces and schools were directly correlated with decreased viral spread during the pandemic, and lowered overall death rates (25). The timing of these interventions
affected their success, especially in an era in which methods of communication were inconsistent to say the least. The implementation of NPIs differed by city, by region, and even by country, as early methods of mass communication limited the reach and speed at which news arrived. As individuals were unable to receive important health information at once, the individuals who lagged behind (due to technological disadvantages or personal agency) experienced greater death rates than those who didn’t experience those same delays (26).

Few public health statements from the era survived the effects of time, but letters and telegrams from military men convey the alarming nature of the issue for soldiers and citizens of the time. In a telegram dated October 11th, 1918, from one citizen, Cato Sells, to his leaders in Washington, D.C., he expressed,

“Spanish Influenza of Virulent type spreading over country with alarming rapidity, many [superintendents] report serious conditions[.] Indian pupils at our schools and Indians old and young on reservations must be given best care and protection possible[,] [Important] that inhabited school buildings be kept at uniform temperature... sixty eight to seventy degrees [with] good ventilation maintained and all forms of detrimental exposure of pupils very carefully avoided particularly during illness and convalescent period.... [Allow] no intermingling of pupils or employers under conditions of overcrowding and to the extent you find [it] desirable isolation [or] quarantine... cooperate with local health officials and service physician when conditions justify (27).”

Sells’ attitude, evident in this excerpt from his telegram to D.C., seemed to be a common one from the time. Although citizens often had limited information from the government or public health leaders, they trusted in the little information they received from their leaders and in modern medicine to fight against the pandemic.

In some cases, agency proved to be a challenge in preventing transmission. As Dr. Copeland, the Health Commissioner of New York stated in an interview with the Times, “At the end of the fourth week of the epidemic in Boston, the death rate was 101 for each thousand of the population; in the City of Washington, it was 109; in Baltimore, 149; in Philadelphia, 158; in New York City 50. That is a very fine record by comparison (28).”

When questioned about the difference between New York’s public health response and that of other places, he remarked, “this city has had an efficient Health Department for twenty years;... for those years, there has been a constant effort to popularize the conditions that made for health;... since the first anti-tuberculosis campaign there has been constant insistence on the necessity for ventilation; we have improved our tenement-house laws; bad as they are at times, our streets are clean in the main – and in and out-of-the-way parts of the city clean,
and reeking sellers and filth-breeding places have been wiped out. The fact that the death rate was kept down so low, and that the epidemic did not assume more alarming proportions, is a wonderful tribute to the city’s health control in years past (28).”

3.B.2 Textual Analysis of Newspaper Headlines from the 1918 Flu Pandemic

Upon analyzation, sources from The New York Times’ reports during the 1918 pandemic supported the events and pandemic patterns outlined above, both quantitatively and qualitatively. Overall, the headlines reflected a calm, rational public. They expressed concern, but were fairly neutral in tone, seeming ‘matter of fact’ about most issues, even alarming issues like the mortality rates. The following headline, which was the first to directly reference the ‘Spanish epidemic’ within the article body, is evidence of this pragmatic and rational tone.

In subsequent reporting, as soldiers and others began to experience Influenza themselves, this composed tone established in early articles from the pandemic continued to overshadow the unfortunate news. The following sample of headlines from the pandemic provide a reference to the pragmatic attitude and lack of polarization evident in the article titles.
As seen in the table below, quantitatively, the reports during these years of infection and disease within the United States were primarily research and policy-focused, emphasizing a united population. Although subjective to a degree, the data gathered from quantitative ratings about the focus of the headlines highlights these important details. The headlines exhibited a score of 2.19 in favor of a research focus, 1.63 for a unified populous, and a score of 1.55 for policy-focused, not person-focused reporting. Although there was a sense of urgency in some cases, it seemed that news sources were mirroring the attitude of many of the public health officials of the time, like Dr. Copeland, who stated, “My aim was to prevent panic, hysteria, mental disturbance, and thus to protect the public from the condition of mind that in itself predisposes to physical ills. I attempted to maintain the morale of New York City (28).”
3.C HIV/AIDS PANDEMIC

From the moment they identified the viral characteristics of HIV, it became clear the virus the Public Health Department was dealing with this time around was going to be different from the last. NPIs and other traditional public health methods for dealing with infectious viruses were not effective as researchers didn’t initially know the cause of what they were dealing with. The sporadic nature of the cases, the confounding, lifelong pattern of spread, and the specific risk groups identified early in the pandemic created a stigma that has attached itself to HIV ever since (22). That negative stigma increased the risk of discrimination for all those who were infected, further complicating the public health response, and resulting in an emotionally charged pandemic where individuals’ opinions played more of a role (30). Combined with the taboo nature of the transmission mechanisms of HIV, AIDS became a difficult topic for public health officials to explain in an open manner, and even more difficult to combat as their early efforts to prevent spread seemed to provoke existing societal issues even further (26).

In the early days of HIV, no one knew anything for certain, so people did what they thought would help. As more information about the virus was discovered, public health officials suggested additional changes. However, given the fact that public health officials were often unaware of infected individuals’ conditions until nine years after exposure, these changes often occurred too late for some individuals. Contact tracing, a traditional method
implemented by the public health sector, was limited in its effectiveness, and the virus’ ability to hide in a long asymptomatic period resulted in affected individuals continuing to give blood transfusions, unknowingly spreading the virus.

Over the course of the pandemic, San Francisco mayors shut down public baths. Public health officials cautioned dentists and doctors against seeing patients with AIDS. They banned individuals from bathhouses and shut down public gathering places. They made needles harder to access. Some health officials in certain states even reported lists of infected individuals, taking away the confidentiality of their medical information and calling privacy issues into questions. The resulting effects of these actions were often unpredictable and damaging to the mission of the nation’s public health leaders.

As public health officials and government agencies awarded money to individuals and groups researching HIV, the public health response gradually improved, but those changes took time. Increased education on HIV/AIDS diminished the stigma over time, and public health officials took a more preventative, educative approach rather than a treatment one, resulting in a more robust, trained public health response to the virus (25,31). Eventually, new laws were enacted, and the public was better educated on the virus (32). The search for a vaccine against HIV continues today, as the public health sector educates the public about prevention.

3.C.2 Textual Analysis of Newspaper Headlines from the HIV/AIDS Pandemic

The first three headlines in the sample from the AIDS Pandemic provide a glimpse into just how different this pandemic was from the 1918 Flu pandemic.

*Effort on AIDS Called Faulty* (60)

*It Takes More Than Money to Conquer Diseases Like AIDS* (59)

*Top Health Official Rebuts Bias Charge In Combating AIDS* (61)
These three headlines, though brief, demonstrate three important attributes of the characteristic reporting of the AIDS pandemic. First, the blatant discord within the population, evident in the language of the headlines. Diction like “it takes more than money” and “faulty” suggest a more argumentative, discontented population, which was reflected in the quantitative analysis, as well. In contrast with the pandemic of 1918, in which the sample headlines scored an average of 1.63 in favor of a unified population, the AIDS headline sample, which was almost double the size of the Spanish Flu sample, scored a 3.22 in favor of discord.

The second pattern evident in both the qualitative and quantitative analyses of the AIDS pandemic headlines was the switch from policy-focused writing to reporting about individuals from popular culture or politics.

Rock Hudson became one of the many faces of AIDS, but he wasn’t the only one. Reports about specific politicians and individuals from the public health sector, rather than their public health announcements, dominated the new age of reporting. The AIDS pandemic’s score of 3.20 juxtaposed the 1918 pandemic’s score of 1.55 – a significant change.

The third, perhaps most important and notable change that occurred in the reporting on this pandemic was the focus on stigma and fear, not science. In the 1918 pandemic, on average, most articles scored around a 2.19, favoring the research and science behind the health policies being enforced at the time. Although headlines like the one below existed during the ongoing AIDS pandemic, they were few and far between.

**GENETIC ANALYSIS OF AIDS-RELATED VIRUS ACHIEVED**

The large majority of article headlines, rather than express progress being made on the research-side of the pandemic, reflected a new phenomenon – frustration, and more importantly, fear, related to the many unknowns of the pandemic. The clear, significant switch to a social focus score of 3.39 was the highest of any of the pandemics, providing more concrete evidence of the difference in reporting and tone in the second half of the century. Titles, like those below, seemed to feed the fear of the public, and their inability to control the outcome of the pandemic without more concrete evidence.
Fear of AIDS Cancels Blood Drive on Coast

Screening AIDS Facts, and Fears

Don’t Bet On a Miracle

Search for an AIDS Drug Is Case History in Frustration
3.D COVID-19 PANDEMIC

The saying goes, “practice makes perfect,” and as far as the viral phenomenon goes, has proved to be true – at least partially. Three different strains of COVID have affected the world within the past 20 years. Their differing public health responses provide interesting contrast for consideration.

The Chinese responded quickly to the 2003 SARS-CoV strain, practically shutting down the nation and limiting spread. By the time the pandemic had ended, 8098 individuals had been infected and 744 of those individuals had died, resulting in a mortality rate of 9.6%.

The 2012 MERS-CoV strain affecting Saudi Arabia was highly consolidated, but the deadliest, as 858 of the 2491 infected individuals died – resulting in a 34.4% mortality rate.

In the most recent pandemic, SARS-CoV-2 was in fact symptomatically milder than the coronaviruses in those previous outbreaks. Although a startling 562,672,324 individuals have been infected worldwide, only 1.13% of those individuals died (23).

Due to the worldwide nature of SARS-CoV2, the juxtaposing public health recommendations of different entities resulted in a confused public. Some countries experienced less viral transmission and mortality than others. China was one of the countries that experienced less death due to the effectiveness of their public health response.

Following the 2003 coronavirus epidemic, the Chinese had done “pandemic planning” in order to apply the lessons they had learned from their previous experience (33), including
restricting wildlife marketing, emphasizing early detection, creating a rapid information network for SARS, and doing extra training for their healthcare workers (34). After the 2003 pandemic, they had started working on a vaccine and studying COVID in depth. This made their response to the most recent strain much faster (33).

Not all countries were quite as well-equipped to combat the pandemic as quickly as the Chinese – the United States being one of them. The lessons ‘learned’ from the Spanish Flu were put to the test – general NPIs like isolation, quarantine, masking up, physical distancing, shutting down public celebrations and events (22,25), etc. Public health theorized that a faster response would likely slow spread, leading to a faster return to “normal” life, but something got in the way of successful implementation, leading officials to question why their methods weren’t effective. Similar to the 1918 Flu, as documented in the Latrobe Bulletin in October of 1918, individuals were “hopeful that if ‘appropriate measures were followed, everyone [would] likely return back to work in a couple of weeks (35).’” While that would have been ideal, that couldn’t have been further from the truth.

Differing mask and physical distancing recommendations between the WHO and the CDC confused the American public, spurring concern over the truthfulness of their claims. Though concerning, this was not the first time that the WHO and CDC, both highly prevalent world public health organizations, had apparently contradicted one another. It happened recently with the Zika virus (36), and again with the COVID pandemic. Obviously, these different committees composed of many individuals (from the U.S. and other countries across the world) were doing their best to provide recommendations to the public, but their juxtaposing recommendations hindered their cause, rather than assisting them in creating a successful public health response to the virus. Distrust in the public health officials dictating public policy also inhibited successful implementation, as well as vaccination rates when a vaccine was finally created (37). The politicization of the pandemic, as well as the growing distrust in government officials, rendered their cause even more bleak. Although technological advances enabled information about the virus and subsequent vaccine to be proliferated faster than any previous pandemic, that same information was misconstrued and manipulated through the same means, resulting in increasing distrust and the creation of group echo chambers, where individuals became so entrenched in their own viewpoints that they only listened to those who agreed with them (37-44). Polarizing opinions and the unpredictable social response to these policies led to chaos.

3.D.2 Textual Analysis of Newspaper Headlines from the COVID-19 Pandemic

From Jan. 2020: China Identifies New Virus Causing Pneumonia-like Illness
Upon first glance, it’s difficult to see the patterns of reporting from the first headline published by the Times in January of 2020 – the article isn’t representative of the trends as a whole. Further examination revealed the trends that were not so easily extrapolated from a single glance.

The overall reporting trends resembled those of the AIDS epidemic – favoring social-focused, individual-focused articles that assumed a contentious, polarized populous. The COVID-19 sample scored a 3.20 on the first scale, demonstrating a slight favor towards social-focused, rather than public health focused articles. A similar trend was seen in the policy-focused versus person-focused category, as COVID-19 reports averaged a 3.14 on that scale. The differentiating feature of the COVID-19 pandemic reporting was in the amount of discord found in the article headlines. The sample scored, on average, a 3.76, much higher than either of the previous pandemics. Why was that?

One article headline gives a glimpse into a possible reason:

**W.H.O. Fights a Pandemic Besides Coronavirus: An ‘Infodemic’**

The most modern and visible of the pandemics of the last century, the COVID-19 pandemic was different from the others. While it’s difficult to determine if it was truly more controversial than the others, the data suggests that even if the virus itself wasn’t controversial, the social polarization of the public certainly was. Further from unanimity as ever, the reports from the height of the pandemic reflect the clear societal discord and disharmony, as seen below.
4. COMPARATIVE SELECTION OF NEWSPAPER ARTICLES FROM PANDEMICS

Figure 4: Comparative data from textual analysis of *New York Times* headlines

Insights from the quantitative and qualitative textual analysis of headlines from the pandemics revealed clear trends for the reporting of the last century. In order to normalize these trends and determine whether or not they were statistically significant, an ANOVA test was first performed on each set of data. The results from this test revealed that the differences were, in fact, significant. The P value for the values on the Research Focus v. Social Focus scale was 6.94E-26, for Unanimity v. Discord the value was 2.83E-58, and for Policy v. Person the P value was 5.74E-45. Following the ANOVA test, the standard deviations of each data set were found (as seen in the table above), and a T test was performed. T tests revealed that the difference in the results from each comparison were highly significant, with the exception of the HIV and COVID data in the Policy v. Person
analysis. The mean values for those two categories, 3.20 and 3.13, respectively, were too close together to be statistically significant, resulting in a T score of 0.222.

Rather than provide detailed commentary on the trends, I found it was more helpful and effective to let the reports speak for themselves. The following articles, representative of the tone of the reports, provide evidence of the reporting trends, while reflecting on the ‘lessons’ learned during each of the pandemics.

On Sunday, November 17th, 1918, in the midst of the ongoing pandemic, the New York Times printed the following article, titled, “Epidemic Lessons Against Next Time,” reminiscent of the lessons they had learned from their experience, and detailing elements of both the public and social health responses. Little did they know that the pandemic would continue on for another year and a half. Note the unity portrayed in both the public health response and the social response:

**EPIDEMIC LESSONS AGAINST NEXT TIME**

*Dr. Copeland Tells Why New York Got Off Easier Than Other Cities---Pays Tribute to Predecessors*

“THE epidemic of Spanish Influenza has been officially declared to be a thing of the past and the city can now take stock of its experience. That it was the worst experience of its kind that we have ever had every one knows. But how did the city meet it? Why were some things done and other things left undone? Did New York’s death rate compare well or ill with that of other large cities? And what good results, in the way of lessons for the future, has the visitation had?...

‘At the beginning of the Summer we learned that there was Spanish Influenza in Europe, and some of us, who had been through the epidemic of grip in 1880-90, knew what to expect,’ Dr. Copeland said. ‘That, as it happens, was my first year of medical practice. I was an interne in a hospital and I had sharp personal recollections to tell me what an epidemic would mean. The first thing that was done here was to work for the protection of the civil population against infection from cases of Influenza coming in on ships. Early conferences were held between the Health Officer of the port and myself to work this matter out...
‘By the middle of September we began to have a considerable number of cases, and on Sept. 18 the Board of Health made Influenza and pneumonia reportable diseases – that is, they were included among the infectious diseases that must be reported to the Board of Health. But, of course, it took a good while to get this information to all the physicians, and it was several days before satisfactory reports began to appear...

‘In meeting the situation when it got here we did a number of unconventional things, and we did not do several conventional things that were done elsewhere,’ Dr. Copeland said. ‘But let us see, first, about the organization of the city. It was a matter of thorough-going co-operation. Every function of the Health Department which did not contribute to the prevention of the disease or the care of its victims was for the time being suspended, or subordinated. And social and remedial agencies throughout the city worked with us. The whole city was districted and centres were opened everywhere – about 130, in round numbers – where nurses, nurses’ aids, and volunteer workers reported for emergency duty, where ambulances and supplies were ready for service, and where an elastic reserve of workers of all kinds could be got hold of and sent wherever needed. In this office four extra telephones were installed and a staff called in to receive calls; In this way we operated as a central clearing house that could send out nurses, ambulances, supplies, whatever was needed, to any part of the city, through these community centres...

‘The first thing that was done almost everywhere but New York was to close the schools,’ he said, ‘and the theatres and all places of public assemblage. In some communities they went so far as to prohibit small stores from admitting more than three persons at a time. All sorts of extreme and absurd methods were adopted in some places. I do not mean to criticize the closing of schools and theatres elsewhere,’ he added. ‘They may have been just the right things to do in those places; I don’t know their conditions. But I do know the conditions of New York, and I know that in our city one of the most important methods of disease control is the public school system.

‘...[The theatres] were made centres of public health education; and I want to say that from the beginning I had the cordial co-operation of the owners and managers, who carried out to the letter the instructions of the Health Department. In every theatre, before the
entertainment began, some one appeared before the curtain and explained the danger of infection from coughing and sneezing, and warned them that any one that did not obey the instructions in that matter would be ushered to the door. The audience was told how Influenza spreads and how to protect themselves and others. In the movie theatres these things were flashed on the screen. Furthermore, no place was permitted to admit more people than it had seats for; crowding was thus avoided in the theatres.

‘My purpose in doing it all in this way, without issuing general closing orders and making a public Flurry over the situation, was to keep down the danger of panic,’ Dr. Copeland went on to explain. ‘I felt that one of my prime duties was to keep this city from going mad on the subject of Influenza. My aim was to prevent panic, hysteria, mental disturbance, and thus to protect the public from the condition of mind that in itself predisposes to physical ills. I attempted to maintain the morale of New York City. I wanted people to be able to go about their business without constant fear and hysterical sense of calamity. Of course the necessary warnings were issued against crowds etc, and the necessary things were done.

‘All along, my greatest anxiety was over the matter of transportation. After all, there is not much danger from theatres and churches; people who are sick do not go much to the theatre or to church. But sick people do go to work.

‘I have no doubt that the most dangerous means of transmitting disease was the subway. Undoubtedly there were many cases of Influenza in the cars, and these infected others. Many a man who was sick must have felt that he had to go to work, and must have taken his disease into the subway and spread it to other people without realizing what he was doing. It isn’t necessary to point out the peculiar difficulties of transportation in New York, with its north-and-south throngs. You might as well try to cut off the main artery of the body as to close the subway, however. We had to deal with conditions as they were. So we put into operation the overlapping system that everyone knows about to distribute the subway crowds. I needn’t say anything more about that – as I said, everyone knows about it. But I do want to mention what I think was the most interesting thing about it – the cordial acquiescence of the people in what could not fail to mean actual inconvenience... ‘Of course, there was also a wide distribution of health information –
the Public Health Service’s bulletin on Influenza and similar pamphlets prepared here and much educational work was done...

With the passing of the epidemic itself the tasks that it laid upon the community are, of course, not over... ‘For the necessities of after-care, we are continuing the health districts and centres,’ Dr. Copeland said, ‘primarily in accordance with the plan of the community councils. There must be repeated examinations of Influenza victims to guard against tuberculosis and all other secondary diseases of the lungs, heart, and kidneys. Through the settlement workers, who have given such noble and efficient aid, we hope to reach every person who might be affected or need care..

‘Now as to how serious the epidemic may be said to have been here,’ Dr. Copeland added, ‘there are a few things that I want to point out. This was a very terrible experience – we need not be reminded of that. But here are some figures that offer a significant comparison about New York: At the end of the fourth week of the epidemic in Boston, the death rate was 101 for each thousand of the population; in the City of Washington, it was 109; in Baltimore, 149; in Philadelphia, 158; in New York City 50. That is a very fine record by comparison. And why did we have such a record as that? Because this city has had an efficient Health Department for twenty years; because for those years, there has been a constant effort to popularize the conditions that made for health; because during and since the first anti-tuberculosis campaign there has been constant insistence on the necessity for ventilation; we have improved our tenement-house laws; bad as they are at times, our streets are clean in the main – and in and out-of-the-way parts of the city clean, and reeking sellers and filth-breeding places have been wiped out. The fact that the death rate was kept down so low, and that the epidemic did not assume more alarming proportions, is a wonderful tribute to the city’s health control in years past.

‘I would hesitate to say this,’ the Health Commissioner added, ‘if it were not so obvious that what I am talking about is not my own work, but that of my predecessors. I have not been here long enough to make it possible for anyone to think that this was my work! It is work that has been going on for years and it is something for the city to be proud of’ (28).”
Representative of the trends seen in other passages from the early 20th century, this article demonstrates the unity that was so evident in the public health and social responses of the 1918 Influenza Pandemic. The sense that society was working towards a common goal, regardless of the political stance or opinions of individual citizens, was a hallmark characteristic of the times, and juxtaposes the style of writing from the AIDS and Covid-19 pandemics.

On November 15th, 1992, over a decade after the discovery of AIDS, Dr. William A. Haseltine, the chief of human retrovirology at Harvard University’s Dana-Farber Cancer Institute, prepared to give a speech to the French Academy of Sciences. A portion of his speech was adapted for the New York Times’ publication. From the title, his article conveys the sense of desperation, hopelessness, and frustration that was common at the time. Reporters attempted to humanize the disease (or those who had it), while uniting a divided public sector using language suggesting that the only way they would get through the pandemic was ‘together.’

“*AIDS research is at the cutting edge of discovery in many fields. The effort worldwide is characterized on the whole by close, collaborative relations.*

Why then does the future look so bleak? The answer is that given what we know today, it cannot be predicted when, or even if, an effective treatment will be developed and when, or even if, a vaccine will be developed.

The nature of the AIDS virus demands that medical intervention be designed to treat rather than cure the disease. Infection involves most of the major organs. Infection cannot be eliminated from these organs without destroying the infected cells.

Drugs that slow the virus’ progress have been developed. To date such drugs have had limited effect for two reasons. The virus
develops resistance to the drugs, and the drugs have unacceptable long-term toxicity.

The greatest hope for a solution to the AIDS epidemic is a vaccine, but obstacles stand in the way. Once infection is established, the virus is not naturally eliminated. It changes as it grows. The most common route of infection is exposure of sexual membranes to H.I.V. present in vaginal and seminal Fluids. It has been difficult to induce long-lasting immune protection at the surface of mucous membranes.

We do not know in which field of research a breakthrough may come. For this reason, I propose that each nation’s biomedical research budget be doubled by 1995 and quadrupled by the year 2000. We cannot rely on a medical miracle for salvation from AIDS. If such a miracle does occur, it may be too late for many millions. Until that day, it is the responsibility of individuals, acting singly and collectively, to save themselves.

There is very little evidence to suggest that sexual behavior in any part of the world has changed significantly in response to the epidemic. The lessons of the past, most recently the 19th century experience with syphilis, are not comforting.

Condoms have been shown to reduce the risk of infection by about 90 percent. It is our responsibility to make condoms available to everyone, worldwide, at an affordable cost.

The risk of infection can also be reduced by testing a potential partner for evidence of infection. Simple, reliable tests that only take 10 minutes to complete are now available. These tests require only a drop of blood or a spot of saliva. They can be done at home. It is our responsibility to provide simple AIDS tests at an affordable cost on demand.

The ever-expanding population of immune-suppressed people with AIDS serves as a launching pad for new, highly infectious diseases.

It is the responsibility of richer countries to provide resources to poorer nations for education, condom distribution and AIDS testing. We are united by the AIDS epidemic. The health of one nation is the health of all. The epidemic makes it clear that we are our brother’s keeper (45).”

It is likely that the most substantial, notable change in the writing published by the New York Times during the AIDS pandemic was the sense of fear and desperation in the articles.
The article above, “Don’t Bet on a Miracle,” conveys this sense of dread and of hopelessness that AIDS research alone would not be enough to save the public. Although the article references advances in AIDS research, it focuses primarily on the social aspect of the pandemic, begging members of society to unite in the cause of AIDS, in order to slow spread and limit viral transmission. These trends in reporting on the pandemics, largely established during the 1980s, would shape the way reporters presented the Covid-19 pandemic to the public.

An article written by Gina Kolata of the New York Times on October 14th, 2021, halfway through the COVID pandemic, demonstrates the trends established in the AIDS reporting of the 1980s and 1990s, reflecting the frustration and divisiveness of the public, as well as their desperation for life to return back to ‘normal.’

HEALTH
Past Pandemics Remind Us Covid Will Be an Era, Not a Crisis That Fades

“The skeletons move across a barren landscape toward the few helpless and terrified people still living. The scene, imagined in a mid-16th-century painting, ‘The Triumph of Death’ by Pieter Bruegel the Elder, illuminated the psychic impact of the bubonic plague. It was a terror that lingered even as the disease receded, historians say.

Covid-19’s waves of destruction have inflicted their own kind of despair on humanity in the 21st century, leaving many to wonder when the pandemic will end.

‘We tend to think of pandemics and epidemics as episodic,’ said Allan Brandt, a historian of science and medicine at Harvard University. ‘But we are living in the Covid-19 era, not the Covid-19 crisis. There will be a lot of changes that are substantial and persistent. We won’t look back and say, ‘That was a terrible time, but it’s over.’ We will be dealing with many of the ramifications of Covid-19 for decades, for decades.’

Especially in the months before the Delta variant became dominant, the pandemic seemed like it should be nearly over.

‘When the vaccines first came out, and we started getting shots in our own arms, so many of us felt physically and emotionally transformed,’ said Dr. Jeremy Greene, a historian of medicine at Johns Hopkins
University School of Medicine. ‘We had a willful desire to translate that as, ‘The pandemic has ended for me.’’

He added, ‘it was a willful delusion.’

And that is a lesson from history that is often forgotten, Frank Snowden, a historian of medicine at Yale University, said: how difficult it is to declare that a pandemic has ended.

It may not be over even when physical disease, measured in illness and mortality, has greatly subsided. It may continue as the economy recovers and life returns to a semblance of normality.

The lingering psychological shock of having lived in prolonged fear of severe illness, isolation and painful death takes long to fade.

Some diseases, like the 1918 Flu, receded. Others, like the bubonic plague, remained, smoldering. H.I.V. is still with us, but with drugs to prevent and treat it. In each case, the trauma for those affected persisted long after the imminent threat of infection and death had ebbed.

If nothing else, the Covid-19 virus has humbled experts who once confidently predicted its course, disregarding the lessons of history.

‘What we are living through now is a new cycle of collective dismay,’ Dr. Greene said — a dismay that has grown out of frustration with the inability to control the virus, fury of the vaccinated at those who refuse to get the shots and a disillusionment that astoundingly effective vaccines haven’t yet returned life to normal.

No matter when or how pandemics dwindle, they change people’s sense of time.

‘A pandemic like Covid-19 is a breach of the progressive narrative,’ that medicine is advancing and diseases are being conquered, Dr. Greene said.

As the pandemic drags on, days merge into each other as time seems to blur and slow down with no forward momentum.

In past pandemics, as today, strong anti-science movements hindered public health and the waning of disease.

As soon as Edward Jenner introduced the first smallpox vaccine in 1798, posters appeared in England showing humans who had been vaccinated ‘sprouting horns and hooves,’ Dr. Snowden said.
‘In 19th-century Britain, the largest single movement was the anti-vaccine movement,’ he added. And with vaccine resisters holding out, diseases that should have been tamed persisted.

But the difference between vaccine skeptics and pandemic misinformation then and now, historians said, is the rise of social media, which amplifies debates and falsehoods in a truly new way.

With H.I.V., Dr. Brandt said, ‘there were conspiracy theories and a lot of misinformation, but it never had a broadcast system like Covid-19.’

Other pandemics, like this one, were hobbled by what Dr. Snowden calls ‘overweening hubris,’ prideful certainties from experts that add to the frustrations of understanding how and when it will dwindle away.

With Covid, prominent experts declared at first that masks did not help prevent infection, only to reverse themselves later. Epidemiologists confidently published models of how the pandemic would progress and what it would take to reach herd immunity, only to be proved wrong. Investigators said the virus was transmitted on surfaces, then later said that, no, it was spread through tiny droplets in the air. They said the virus was unlikely to transform in a substantial way, then warned of the Delta variant’s greater transmissibility.

‘We paid a heavy price for that,’ Dr. Snowden said. Many people lost trust in officials amid ever-changing directives and strategies that weakened the effort to control the virus.

Jonathan Moreno, a historian of science and medicine at the University of Pennsylvania, said the end of Covid would be analogous to a cancer that has gone into remission — still there, but not as deadly.

‘You are never cured,’ he said. ‘It is always in the background’ (46).”

Pandemic reporting has changed over the past century. These articles, presented as representative samples of the reporting trends from each pandemic of the century, have demonstrated these changes.

It is with these ‘lessons’ in mind from the past pandemics that I will now conclude this case study with my own ‘lessons’ from the textual analysis of the pandemics. We have
heard the lessons from each individual pandemic. What do the lessons look like from all three, collectively?

5. LESSONS FROM THE PANDEMICS

5.A Personal experiences

Given what we’ve been through since March of 2020, it’s hard to imagine that any other pandemic has ever happened – at least not at this scale. The impact of a global shutdown couldn’t be quantified. It was more than just the restaurants, sporting events, and economic ripple effects. It was more than the loss of loved ones, or the way that those who hadn’t died became even more distanced from each other due to restrictions on gathering together.

The pandemic exacerbated issues that had been brewing for some time. The CDC became a topic you couldn’t talk about at Thanksgiving dinner, like religion or politics. Everything was politicized and polarized. Our perceptions of others and their worth were somehow tied to whether or not they were wearing masks, or how close they stood to us in the grocery store. We forgot to see people for who they really are – humans. Polarization of ideas and emotional and physical distancing increased exponentially as friends turned against friends, and family against family.

These were my own experiences – subjective as they are. As I began a detailed textual analysis into hundreds of newspaper articles from the past pandemics, I wasn’t sure of what I would find. Were individuals in other generations less biased and polarized? Was it just COVID-19, or were existing issues exacerbated in other pandemics, as well? Were previous generations more submissive, willing to obey public health ordinances and measures to prevent viral transmission? In the past, were reporters addressing concerns about policy or politicians? Imperfect as it was, a subjective analysis of these questions revealed some startling trends, suggesting that people, armed with technological advances, are the true danger of pandemics.

5.B Takeaways from the textual analysis of the New York Times

Reporting in the New York Times has changed over the past century in two important ways. The first, the invention and increased popularity of ‘opinion style’ articles, and the second, the subject matters and tone of the reporting in non-opinion articles.

On September 21st, 1970, the first op-ed section was featured in the New York Times’ morning paper. Prior to this important change, opinion-style articles in the Times were non-existent, meaning there were no opinion style articles reporting on the 1918 Flu pandemic. The opinion articles in the HIV/AIDS era were not easily distinguishable from the hard reporting, so these numbers required a detailed search through all the articles of the Times. Within 1983 and 1985, the time frame for the HIV headline samples, the number
of opinion articles about the pandemic had increased to 15. By the end of 1995, as the pandemic was reaching its peak, the number of opinion articles referencing AIDS had increased to 459. In just two years of the most recent pandemic, the number of opinion articles on the pandemic had increased exponentially. Out of the 26,000+ articles published about COVID-19 on the New York Times’ website, 3,387 of those were opinion articles, easily distinguished from the Health Articles published online.

Additional research into these opinion-style articles revealed that the subject matter of the opinion articles had changed, as well. Not a single opinion article from the HIV/AIDS era directly addressed the President of the United States at the time or an elected official. From January until April of 2020, there were 82 opinion articles under COVID that directly called out a U.S. politician of some sort – a curious, but substantial change.

The changes to reporting in the New York Times was not limited to the opinion section alone. As found in the textual analysis, the subject and sense of polarization and politicization of the articles published in the Times evolved over the past century. The shift from research-based, policy-based reporting to a unified audience during the 1918 Influenza Pandemic to a more social, person-based reporting style in the AIDS and COVID-19 pandemic was startling. The trends suggest that pandemic reporting is driven as much by people and social attitudes as it is by the viruses behind the pandemics. People behave according to policy and inputs from social connections, not one or the other. Over time, their connection to the social aspect of pandemics has been strengthened.

Social pressures impacted all pandemics, but the most recent was unprecedented in that way. Certain factors that played a role in worsening pandemics in the past, like fear and discord within the community, were exacerbated during COVID. I searched for a possible explanation for the trends I had found, or something to contradict them. What I found was alarming – the technological advances in communication over the past century seemed to mirror the trends of discord and polarization in the public.

Although social and political polarization of ideas may have been an issue in the 1918 pandemic, the articles in the New York Times do not provide sufficient evidence to back that claim. Quantitatively, the headlines consistently scored low on all scales, revealing the research-driven, policy-driven nature of the time. By the time the AIDS pandemic had been discovered, and technological advances had facilitated the exchange of information and opinions, the newspaper headlines mirrored that change, scoring consistently higher in all categories, evidence of a more social-focused, polarized society. The COVID-19 pandemic reflected the same trend, ranking even higher, evidence of increased discord within the community.
5.C Impact of technological advances

The technological advances of the past century, particularly the invention of social media platforms, seem to have facilitated the trends seen in this analysis, making it even easier for individuals to share their opinions and ‘information’ on all matters of social importance. Researchers were wary of these changes, even before the COVID-19 virus was on their radar. One year before the current COVID-19 pandemic started, public health officials warned the public of the dangers of misinformation and manipulated information on social media, calling it a “global public-health threat” (37). They predicted that the main reason for a modern major viral outbreak would not be “due to a lack of preventive technologies,” rather, “emotional contagion… [eroding] trust in vaccines so much as to render them moot” (37). Their theory proved correct, as the main stumbling block for the implementation of nonpharmaceutical interventions in the COVID pandemic was the public itself – particularly, the propagation of “information” and opinions on social media platforms.

We’re a society founded on technology. Most of us haven’t lived without it. Our lives are programmed – quite literally – in algorithms which attempt to match us with sources of information that are most pleasing to us. It’s arguable that the biggest risk of using social media is in the algorithms themselves, which are programmed to give us information that we will like, not necessarily information that is true. We don’t see other viewpoints, creating technological echo chambers that only confirm what we want to hear. The echo chambers of the most recent pandemic proved to be particularly dangerous to the public health response. Despite successful, proven vaccines, vaccination rates continued to drop as distrust in vaccine technology increased (42, 47). Social media has not helped the case for vaccines, or for unity within society. During the recent pandemic, Russian trolls and bots spread misinformation, merely in an effort to polarize society even more than it already is (48). Do you wear a mask or not? How much distance should you be leaving between yourself and others in the grocery store? Where did the virus come from? What are vaccines made of? Will they protect you? What does your neighbor think about the issues? Society divided as the media played an even more important role in the pandemic.

Computers and smartphones have given the American public completely unrestrained, unlimited access to all information, whether good or bad. Trends suggest that even with the abundance of published articles on news sites, like the New York Times and other reputable outlets, social media, public opinion, and extremely polarized news outlets and opinion sections became the major news sources of the most recent pandemic, leading to increased polarization and politicization.

Is there really a middle ground anymore?

In past generations, unencumbered by the influence of technology, it’s quite possible that there was a middle ground. However, modern society, influenced heavily by technology and social media, doesn’t seem to have as much of a middle ground as it did in previous times. Fewer individuals seem to be looking for diverse, balanced news sources. We know
the facts, and scientists have done countless studies into the data of the pandemics, but social responses are not so easily graphed or predicted. They require a qualitative assessment, not a quantitative one. It is likely that the most important lessons we have learned from the pandemics that have plagued the last century have little to do with the molecular structure, pathogenesis, or mortality rate of the viruses themselves. The biggest threat isn’t the virus – it’s people – or rather, it’s the risk of forgetting that it is in our nature to be tribal and partisan. Technologies of today play on and intensify this innate attribute, resulting in rather inhumane behavior during pandemics. Technology has essentially exacerbated issues that were bubbling just under the surface of the face of society for years. People, unchecked and isolated, turned on one another behind virtual screens. Misinformed citizens wielding opinions and false information like swords did more harm than good. Vaccine hesitancy and distrust in governments, family members, and friends rose.

While there is often a one-size-fits-all solution to combat viruses, that type of solution doesn’t exist to fix the damaged relationships, hurt feelings, and injurious contention that results from pandemics, nor is it likely to work in our modern society. People behave according to policy and inputs from social connections. Those social pressures impacted all pandemics in some way, but the most recent was unprecedented in that way. There isn’t an easy solution to convince individuals to trust in vaccines or in the scientists who spend years engineering them. People aren’t that simple. We don’t have all the answers, but hopefully we can recognize that our responses to pandemics aren’t quite as unique as we believe, and we can do better in the future.

**Future work**

Confirmation of the results found in this case study would require additional research. The first step would be a normalization of the data – and minimization of biases – found within the textual analysis through the careful rating of a panel of additional researchers. Next, it would be interesting and necessary to see if performing the same analysis on a different newspaper source revealed the same trends, or differing ones. This step would likely require working closely with other departments at Brigham Young University to engineer an automated AI program. This program would ideally generate these ratings for each article, in order to facilitate the process and enable larger sample sizes from multiple newspapers.
6. REFERENCES


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