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*Interdisciplinary:  
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## **Mortality Moves Masses: Social Movements as Evolved Responses to Pandemics**

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### **Abstract**

The theory of social change, cultural evolution, and human development predicts that massive mortality events produce population-level responses in which humans shift toward the psychological characteristic of early human history: practical intelligence is prioritized over abstract intelligence and social intelligence is oriented toward furthering the community aims rather than individual aims. Social movements appear to manifest heightened practical intelligence and collectively oriented social intelligence, so the theory predicts that massive mortality events will result in large social movements. Prior research shows that the COVID-19 pandemic, the largest mortality event in US history, amplified several important social movements. This essay tests the generality of this principle by investigating whether significant social movements were associated with the second and third-largest pandemics in US history: the HIV/AIDS pandemic and the 1918 Spanish flu pandemic. The research demonstrates the generality of this principle by showing that each of these massive mortality events coincided in time with the magnification of pre-existing social movements. The HIV/AIDS pandemic was accompanied by expansions of both the gay rights movement (reflecting the initial threat to homosexuals) and the anti-nuclear movement (reflecting the broader threat of AIDS that later emerged). The 1918 Spanish flu pandemic, a threat to the entire population, was accompanied by a national explosion of race riots and augmentation of the women's suffrage movement.

## Introduction

As the endpoint of life, death defines our biological existence. To some, death is a new beginning, to others, death is the end of all ends. To all, death matters. This basic fact has remained consistent across time and culture, even extending throughout the animal kingdom. Not only does mortality have a major personal impact on people, but the goal of this essay is to show that major mortality events have profound effects on society. This goal is accomplished by analyzing the largest pandemics in US history through the lens of the theory of social change, cultural evolution, and human development.<sup>1</sup> The theory predicts that mortality events that make the environment feel more dangerous cause human psychology to shift in a way that optimizes the creation of large social movements.<sup>2,3</sup> Earlier research confirmed this hypothesis in the case of COVID. Three social movements expanded to unprecedented size and strength during the pandemic: the Black Lives Matter movement, the voter turnout for the 2020 presidential election, and the January 6th insurrection. The purpose here is to generalize the model connecting social movements to mortality events and test the prediction that all major pandemics augment the size and intensity of social movements. This essay, therefore, analyzes the next two most fatal pandemics in American history – the 1918 Spanish flu pandemic and the HIV/AIDS pandemic – to test the hypothesis that, like the COVID-19 pandemic, these major mortality events amplified pre-existing social movements.

### *Theory of Social Change, Cultural Evolution, and Human Development*

The theory of social change, cultural evolution, and human development models how cultures shift in reaction to changes in

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<sup>1</sup> Patricia M. Greenfield, “Linking Social Change and Developmental Change: Shifting Pathways of Human Development,” *Developmental Psychology* 45, no. 2 (2009): pp. 401-418, <https://doi.org/10.1037/a0014726>.

<sup>2</sup> Noah F. G. Evers and Patricia M. Greenfield, “A Model of How Shifting Intelligence Drives Social Movements,” *Journal of Intelligence* 9, no. 4 (2021): p. 62, <https://doi.org/10.3390/jintelligence9040062>.

<sup>3</sup> Noah F.G. Evers, Patricia M. Greenfield, and Gabriel W. Evers, “Covid-19 Shifts Mortality Salience, Activities, and Values in the United States: Big Data Analysis of Online Adaptation,” *Human Behavior and Emerging Technologies* 3, no. 1 (2021): pp. 107-126, <https://doi.org/10.1002/hbe2.251>.

sociodemographic variables.<sup>4,5,6</sup> It states that cultures exist on a spectrum from the subsistence ecologies in which humans evolved, to the commercial ecologies that most people inhabit today. Subsistence ecologies are characterized by small isolated villages, short life expectancy (including high infant mortality rate), low material resources, and basic survival activities – people produce their own food, shelter, and clothing. These survival activities engage practical rather than abstract intelligence. In commercial ecologies, people have substantially longer life expectancies, access greater material resources, and purchase rather than produce food, shelter, and clothing. Subsistence ecologies are associated with a collectivistic value system, whereas commercial ecologies are associated with an individualistic value system.

Subsistence ecologies were the environments of human evolution and were prevalent during humanity's early history but have almost entirely been replaced today by commercial ecologies. That said, some indigenous communities around the world do resemble the subsistence ecologies of early human history, and this theory was initially developed through studying one of these communities for several decades. Among many important sociodemographic and cultural factors, subsistence ecologies have very high mortality and mortality salience (cultural expressions of death), engagement in subsistence activities (producing and preparing food, constructing shelter, and making one's clothing), and collectivism (contributing to one's community instead of oneself).

Over decades of theory building and experimentation, starting with modeling how the first indigenous village of interest changed over time and then testing and refining that model through analyzing a wide range of cultures around the world and at different points in history, Greenfield and collaborators showed that when sociodemographic variables shift in either direction, toward resembling those found in subsistence ecologies or toward those found in commercial ecologies, psychological and behavioral features also shift. Many sociodemographic variables cause shifts, such as formal education, urbanization, communication technologies, resource availability, and community size, but mortality rates and mortality salience are likely the most important.

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<sup>4</sup> Greenfield, "Linking Social Change and Developmental Change: Shifting Pathways of Human Development," 401-418.

<sup>5</sup> Patricia M Greenfield, "Social Change, Cultural Evolution, and Human Development," *Current Opinion in Psychology* 8 (2016): 84–92, <https://doi.org/10.1016/j.copsyc.2015.10.012>.

<sup>6</sup> Patricia M. Greenfield, "Studying Social Change, Culture, and Human Development: A Theoretical Framework and Methodological Guidelines," *Developmental Review* 50 (2018): 16–30, <https://doi.org/10.1016/j.dr.2018.05.003>.

Mortality salience in this context refers to the general psychological importance of death.

The theory of social change, cultural evolution, and human development and its predictions have been supported by a large body of empirical research around the world, some spanning hundreds of years.<sup>7,8,9,10,11</sup> As countries such as China or villages such as a Maya community in Chiapas, Mexico, urbanized and became more technologically sophisticated, life expectancy increased and the death rate fell.<sup>12,13</sup> The cultural salience of death declined at the same time.<sup>14</sup> In Mexico, urbanization, technological development, and increased formal education were accompanied by a rise in the use of abstract representation, a component of abstract intelligence; a decline in the subsistence skill of weaving clothing, a manifestation of practical intelligence; and a decline in cooperative activity, a manifestation of collectivistic values.<sup>15,16</sup> Illustrating the effects of the reverse direction of

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<sup>7</sup> Patricia M. Greenfield, "The Changing Psychology of Culture from 1800 through 2000," *Psychological Science* 24, no. 9 (July 2013): pp. 1722-1731, <https://doi.org/10.1177/0956797613479387>.

<sup>8</sup> Amalia Ionescu et al., "The Effects of Sociocultural Changes on Epistemic Thinking across Three Generations in Romania," PLOS ONE (Public Library of Science, March 8, 2023), <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0281785>.

<sup>9</sup> Ashley E. Maynard, Patricia M. Greenfield, and Carla P. Childs, "Developmental Effects of Economic and Educational Change: Cognitive Representation in Three Generations across 43 Years in a Maya Community," *International Journal of Psychology* 50, no. 1 (2015): pp. 12-19, <https://doi.org/10.1002/ijop.12129>.

<sup>10</sup> Michael Weinstock et al., "Societal Change and Values in Arab Communities in Israel," *Journal of Cross-Cultural Psychology* 46, no. 1 (2014): pp. 19-38, <https://doi.org/10.1177/0022022114551792>.

<sup>11</sup> Rong Zeng and Patricia M. Greenfield, "Cultural Evolution over the Last 40 Years in China: Using the Google Ngram Viewer to Study Implications of Social and Political Change for Cultural Values," *International Journal of Psychology* 50, no. 1 (2015): pp. 47-55, <https://doi.org/10.1002/ijop.12125>.

<sup>12</sup> Ashley E. Maynard et al., "Social Change, Cultural Evolution, Weaving Apprenticeship, and Development: Informal Education across Three Generations and 42 Years in a Maya Community," *Applied Developmental Science* (2023): pp. 1-24, <https://doi.org/10.1080/10888691.2022.2151445>.

<sup>13</sup> "Life Expectancy at Birth, Total (Years) - China," World Bank Open Data (The World Bank, 2022), <https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=CN>.

<sup>14</sup> Evers, Greenfield, and Evers, "Covid-19 Shifts Mortality Salience, Activities, and Values in the United States," 107-126.

<sup>15</sup> Maynard et al., "Developmental Effects of Economic and Educational Change: Cognitive Representation in Three Generations across 43 Years in a Maya Community," 12-19.

<sup>16</sup> Camilo García, Natanael Rivera, and Patricia M. Greenfield, "The Decline of Cooperation, the Rise of Competition: Developmental Effects of Long-term Social

social change, when material wealth declined during the Great Recession, young people in the United States became more communitarian in their values.<sup>17</sup>

### *The COVID-19 Pandemic*

COVID-19 provided a natural (albeit tragic) experiment to test the theory's predictions concerning the effects of higher mortality rates and increased household isolation produced by stay-at-home orders. When the pandemic struck, Patricia Greenfield, the creator of the theory, and colleagues carried out three large-scale studies, a survey study, and two studies of online activity. The survey study, replicated in two US states, showed that mortality salience, the psychological correlate of increased mortality, rose during COVID-19 and drove increases in subsistence activities, a manifestation of practical intelligence, and interdependence, a manifestation of collectivistic values.<sup>18</sup>

The second COVID-19 study explores the same issues using a different method: the analysis of naturally occurring internet behavior. Researchers monitored and examined the behavior of conceptually relevant linguistic terms across blogs, forums, Twitter, and Google searches during the 70 days before and the 70 days after Donald Trump declared COVID-19 as a national emergency. Confirming the first study, terms referring to mortality (e.g., “death,” “cemetery”), subsistence activities (e.g., “growing vegetables,” “baking bread”), and collectivistic values (e.g., “share,” “help”), the hallmark characteristics of subsistence ecologies, all increased on social media and Google searches during the first 70 days of COVID-19.<sup>19</sup> In the third study, the researchers find that the augmentation of mortality terms, that is, an increase in the psychological salience of mortality mirrors relative excess COVID-19 mortality rates across four countries.<sup>20</sup>

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Change in Mexico,” *International Journal of Psychology* 50, no. 1 (January 14, 2015): 6–11, <https://doi.org/10.1002/ijop.12120>.

<sup>17</sup> Heejung Park, Jean M. Twenge, and Patricia M. Greenfield, “The Great Recession,” *Social Psychological and Personality Science* 5, no. 3 (July 11, 2013): 310–18, <https://doi.org/10.1177/1948550613495419>.

<sup>18</sup> Patricia M. Greenfield, Genavee Brown, and Han Du, “Shifts in Ecology, Behavior, Values, and Relationships during the Coronavirus Pandemic: Survival Threat, Subsistence Activities, Conservation of Resources, and Interdependent Families,” *Current Research in Ecological and Social Psychology* 2 (2021), <https://doi.org/10.1016/j.cresp.2021.100017>.

<sup>19</sup> Evers, Greenfield, and Evers, “Covid-19 Shifts Mortality Salience, Activities, and Values in the United States,” 107-126.

<sup>20</sup> Noah F. G. Evers, Gabriel W. Evers, Patricia M. Greenfield, Qinyi Yuan, Felicity Gutierrez, and Gabrielle Halim, “COVID-19 increased mortality salience,

*A Model of How Shifting Intelligence Drives Social Movements*

This background research shows that concrete, practical intelligence (in the form of subsistence activities) took on increasing value in the United States under the conditions of heightened mortality produced by COVID-19.<sup>21</sup> As a result, Greenfield hypothesized that, when mortality becomes more salient, groups prioritize solutions that involve the actual doing of something (practical intelligence) to benefit their community (collectively oriented social intelligence).<sup>22</sup> Groups of people enacting practical solutions that benefit their community are the broad strokes definition of a social movement. This situation contrasts with the status quo of American society, where abstract intelligence, the employing of solutions that concern theory and ideas, reigns supreme, along with the prioritization of social intelligence in the service of individual goals.

This model identifies a mechanism by which these shifts toward communitarian values and practical intelligence on the population level should increase social movements. Therefore, this model led to the prediction that, as the largest mortality event in US history (over a million deaths),<sup>23</sup> COVID-19 would amplify the size and intensity of social movements. The model was tested and confirmed with COVID-19.<sup>24</sup>

Specifically, during COVID-19, three social movements expanded to unprecedented size and strength: the Black Lives Matter movement, the voter turnout for the 2020 presidential election, and the January 6th insurrection. The mechanism of action for each of these movements was in line with the theoretical predictions. They were protest movements, which is one of the most concrete and practical forms of social movement. Pre-pandemic, these movements were more theoretical and ideological, existing primarily on the internet, the quintessential abstract medium. However, during COVID-19 they became practical boots-on-the-ground movements. These were also

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collectivism, and subsistence activities: A theory-driven analysis of online adaptation in the US, Indonesia, Mexico, and Japan,” *Journal of Cross-Cultural Psychology* (2024).

<sup>21</sup> Greenfield, Brown, and Du, “Shifts in Ecology, Behavior, Values, and Relationships during the Coronavirus Pandemic.”

<sup>22</sup> Evers and Greenfield, “A Model of How Shifting Intelligence Drives Social Movements,” 62.

<sup>23</sup> Dave Roos, “The Deadliest Events in US History,” History.com (A&E Television Networks, May 18, 2022), <https://www.history.com/news/deadliest-events-united-states>.

<sup>24</sup> Evers and Greenfield, “A Model of How Shifting Intelligence Drives Social Movements,” 62.

collectivistic movements, associated with furthering a community's aims rather than the aims of any particular individual.<sup>25</sup>

### *Selection of Pandemics and Social Movements*

In terms of mortality, the COVID-19 pandemic was followed in size by the HIV/AIDS pandemic, and then the 1918 Spanish flu pandemic.<sup>26</sup> To take a conservative, systematic, and unbiased approach, this essay explores whether, like COVID-19, these two pandemics coincided in time with the expansion of existing social movements – social movements that were (1) carried out by the population for whom mortality was salient and (2) were not connected to or were generalized beyond the mortality event itself and its medical cause.

In the case of the Spanish flu, like COVID-19, the entire US population felt at risk; hence the two social movements discussed, a national epidemic of race riots and the women's suffrage movement, were not restricted to a particular group within the country. In the case of HIV/AIDS, initially, mortality was salient for only the homosexual population, and one of the associated social movements discussed – the gay rights movement – reflects the concentration of mortality salience in this population. However, later in the pandemic, everyone realized they were at risk; hence, the other social movement discussed, the anti-nuclear movement, was not concentrated among gay people, but had a broader base.

Pandemics have been selected, as opposed to all-cause mortality events, which would have included wars, because pandemics represent a purer case study as there are elevated death rates and socialization is discouraged (ostensibly discouraging social movements). However, note that World War I, which overlapped in time with the Spanish flu, does come into the analysis of the women's suffrage movement.

### **HIV/AIDS Epidemic**

The HIV and AIDS epidemic is the second deadliest pandemic in US history and took the lives of more than 700,000 Americans.<sup>27</sup> In the United States, the HIV/AIDS pandemic began in 1981, and mortality

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<sup>25</sup> Evers and Greenfield, "A Model of How Shifting Intelligence Drives Social Movements," 62.

<sup>26</sup> Roos, "The Deadliest Events in US History."

<sup>27</sup> Roos, "The Deadliest Events in US History."

from the disease continued to increase in the United States into the mid-1990s.<sup>28</sup>

The first cases of what is now known to be AIDS were reported on June 5, 1981, in a report published by the CDC in the *Morbidity and Mortality Weekly Report* or MMWR.<sup>29</sup> This report identified five gay men in Los Angeles who had been diagnosed with a rare immune infection called *Pneumocystis carinii* pneumonia (PCP). That very same day, the CDC was informed that multiple gay men in New York had been diagnosed with Kaposi's Sarcoma (KS), which is a cancer that, like PCP, weakens the immune system.<sup>30</sup> Scientists were confused by this spike in cases of KS and PCP among gay men, as these diseases were traditionally very rare. After more similar cases popped up across the country, scientists hypothesized that this pattern of infection is caused by the transmission of an "infectious agent."<sup>31</sup> Soon the pattern gained national recognition, and headlines like "Rare Cancer Seen in 41 Homosexuals," spread hysteria across the US homosexual population and the country as a whole.<sup>32</sup> Nicknamed the "gay cancer," AIDS became a national issue in a matter of months because of its deadly nature.<sup>33</sup> At that time, there was very little information available to the hundreds of previously healthy Americans who rapidly became deathly ill by the end of 1981.

In the early years of the HIV/AIDS epidemic, information about the spread of the disease was not known. At first, people thought it was spread only through gay sex. However, once heterosexual persons began contracting the disease, the danger of AIDS expanded to the US population in general. Many false theories surrounding the spread of AIDS, such as the possibility of infection through saliva, made the STD appear to be an even larger threat, as people were unsure whether they were at risk.<sup>34</sup>

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<sup>28</sup> Max Roser and Hannah Ritchie, "HIV / AIDS," Our World in Data, November 2014, <https://ourworldindata.org/hiv-aids>.

<sup>29</sup> "Pneumocystis Pneumonia - Los Angeles," *Morbidity and Mortality Weekly Report* (Centers for Disease Control and Prevention, June 5, 1981), [https://www.cdc.gov/mmwr/preview/mmwrhtml/june\\_5.htm](https://www.cdc.gov/mmwr/preview/mmwrhtml/june_5.htm).

<sup>30</sup> "Timeline of the HIV and AIDS Epidemic," HIV.gov, accessed April 17, 2023, <https://www.hiv.gov/hiv-basics/overview/history/hiv-and-aids-timeline/#year-1981>.

<sup>31</sup> "The AIDS Epidemic in the United States, 1981-Early 1990s," David J. Sencer CDC Museum: In Association with the Smithsonian Institution (Centers for Disease Control and Prevention, March 26, 2021), <https://www.cdc.gov/museum/online/story-of-cdc/aids/index.html>.

<sup>32</sup> "Timeline of the HIV and AIDS Epidemic."

<sup>33</sup> Ibid.

<sup>34</sup> Ibid.



The HIV/AIDS epidemic created a dangerous societal landscape, and people experienced widespread increased mortality salience in the 1980s.<sup>35</sup> As was observed during the COVID-19 pandemic, a significant increase in mortality salience appears to have primed the affected populations for social movements.

### ***Expansion of the Anti-Nuclear Movement in the Time of HIV/AIDS***

#### *The Anti-Nuclear Movement Before the HIV/AIDS Pandemic*

The anti-nuclear movement was a social movement that sought to control the threat of nuclear weapons.<sup>36</sup> One of the largest anti-nuclear groups in the period leading up to the HIV/AIDS pandemic was SANE, the National Committee for a Sane Nuclear Policy. On May 19, 1960, SANE organized an anti-nuclear rally at Madison Square Garden with 17,000 attendees.<sup>37</sup> Additionally, anti-nuclear protests were also organized by Women Strike for Peace. On November 1, 1961, 50,000 women in 60 US cities carried out a daylong strike to protest the use of nuclear weapons.<sup>38</sup>

#### *The Anti-Nuclear Movement During the HIV/AIDS Pandemic*

The anti-nuclear movement greatly expanded in the 1980s during the time of the HIV/AIDS epidemic. The movement became massively popular during the pandemic and culminated on June 12th, 1982, in New York City when around 1,000,000 supporters of nuclear disarmament took to the streets to create a change.<sup>39</sup> In an article titled, “Throngs Fill Manhattan to Protest Nuclear Weapons,” published on the front page of

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<sup>35</sup> Peter Ebbesen, Mads Melbye, and Jørn Beckmann, “Fear of AIDS: A Communication from Biologists to Psychologists/Sociologists,” *Scandinavian Journal of Social Medicine* 14, no. 3 (1986): pp. 113-118, <https://doi.org/10.1177/140349488601400301>, 115.

<sup>36</sup> Victoria L. Daubert and Sue E. Moran, “Origins, Goals, and Tactics of the US Anti-Nuclear Movement” (RAND Corporation, March 1985), <https://www.rand.org/content/dam/rand/pubs/notes/2005/N2192.pdf>.

<sup>37</sup> Catherine Falzone, “Emergence of Protest,” International Disarmament Institute News, 2012, <https://disarmament.blogs.pace.edu/nyc-nuclear-archive/antinuclear-movement-1950s-1960s/protest/>.

<sup>38</sup> Kathy Crandall Robinson, “The Power of Women Strike for Peace,” Arms control Today, November 2021, <https://www.armscontrol.org/act/2021-11/features/power-women-strike-peace>.

<sup>39</sup> Vincent Intondi, “The Fight Continues: Reflections on the June 12, 1982 Rally for Nuclear Disarmament,” Arms Control Now (Arms Control Association, June 10, 2018), <https://www.armscontrol.org/blog/2018-06-10/fight-continues-reflections-june-12-1982-rally-nuclear-disarmament>.

*The New York Times* on June 13th, 1982, the day after the protest for nuclear disarmament, reporter Paul L. Montgomery describes the events of the previous day. Montgomery details the endless stream of peaceful demonstrators that “overwhelmed Central Park and midtown Manhattan.”<sup>40</sup>

Compared to the anti-nuclear protests of the prior decades this description and the massive surge in participation exemplify the novel size and intensity of both this protest and the anti-nuclear movement as a whole. In a 1984 article titled “The Anti-Nuclear Weapons Movements,” Michael Mandelbaum of the Lehrman Institute comments on the explosion of the movement, stating, “The fear about the nuclear future that created some of these groups and turned the attention of others to nuclear issues seemed to arise suddenly, like an abrupt, unexpected change in the weather.”<sup>41</sup> Additionally, according to historian Vincent Intondi, many participants in the protests also believed nuclear weapons to be connected to other social issues. For example, Intondi claims that “for many black participants, there was a direct link between the money President Reagan was spending on nuclear weapons and poverty in their communities.”<sup>42</sup>

*Analysis of the Relationship Between the HIV/AIDS Pandemic and the Anti-Nuclear Movement*

According to the theory of social change, cultural evolution, and human development, involvement in social movements should be amplified when society is perceived to be in danger. The anti-nuclear movement conforms to this theoretical model because the movement reached the greatest participation and support when society was at its highest perceived danger.<sup>43</sup> This movement also shows direct manifestations of practical intelligence and collectivism as predicted by the theory of social change, cultural evolution, and human development. The practical intelligence came in the form of the massive protests, most notably the New York protest in June of 1982. Protests are manifestations of practical intelligence because they entail participants attempting to alter their circumstances through physical participation. Additionally, the manifestation of collectivism or collectively oriented

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<sup>40</sup> Paul L. Montgomery, “Throngs Fill Manhattan to Protest Nuclear Weapons,” *The New York Times*, June 13, 1982, <https://www.nytimes.com/1982/06/13/world/throngs-fill-manhattan-to-protest-nuclear-weapons.html>, 1.

<sup>41</sup> Michael Mandelbaum, “The Anti-Nuclear Weapons Movements,” *PS* 17, no. 1 (1984): pp. 24-32, <https://doi.org/10.2307/419117>, 25.

<sup>42</sup> Intondi, “Reflections on the June 12, 1982 Rally for Nuclear Disarmament.”

<sup>43</sup> *Ibid.*

social intelligence in the anti-nuclear movement was that many participants in the movement justified their opposition to nuclear weapons by the idea that they were combatting problems facing their communities. The timeline of the movement, along with the manifestations of practical intelligence and collectively oriented social intelligence, point to the fact that the unprecedented size and strength of the anti-nuclear movement was a product of increased mortality salience caused by the HIV/AIDS epidemic.

### ***Expansion of the Gay Rights Movement in the Time of HIV/AIDS***

#### *The Gay Rights Movement Before the HIV/AIDS Pandemic*

The Stonewall riots in 1969 where patrons of the Stonewall Inn, a Manhattan gay bar, fought back against a discriminatory police raid is widely considered to be the primary catalyst for the modern gay rights movement which continued to grow over the next decade.<sup>44</sup> The largest gay rights protest seen in the 1970s was the National March on Washington for Lesbian and Gay Rights where around 75,000 people protested in Washington DC to “demand equal civil rights and urge for the passage of protective civil rights legislature.”<sup>45</sup> This march was two years before the first AIDS cases were reported; the beginning of the pandemic dates from 1981. At this point, mortality salience began to skyrocket in the homosexual community, and as is shown in the next section, the gay rights movement grew exponentially in size.

#### *The Gay Rights Movement During the HIV/AIDS Pandemic*

The HIV/AIDS pandemic was associated in time with a massive surge in the gay rights movement, as homosexuals were disproportionately affected by the disease. Counterintuitively, but as predicted by the theory of social change, cultural evolution, and human development, this increased danger for homosexuals increased “organizational activities” and activism.<sup>46</sup>

For the sake of this paper, increased social action is quantified by examining protest movements during the HIV/AIDS epidemic, more

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<sup>44</sup> Savannah Cox, “How the Stonewall Riots Changed the Course of the Gay Rights Movement,” All That’s Interesting, November 7, 2021, <https://allthatsinteresting.com/stonewall-riots>.

<sup>45</sup> “Milestones in the American Gay Rights Movement,” PBS, accessed January 23, 2024, <https://www.pbs.org/wgbh/americanexperience/features/stonewall-milestones-american-gay-rights-movement/>.

<sup>46</sup> Ebbesen, Melbye, and Beckmann, “Fear of AIDS,” 113-114.

specifically the two largest protests: the 1987 March on Washington for Lesbian and Gay Rights and the 1993 March on Washington for Lesbian, Gay and Bi Equal Rights and Liberation; both were direct offspring of the 1979 March on Washington for Lesbian and Gay Rights mentioned earlier.

The second National March on Washington for Lesbian and Gay Rights on October 11th, 1987, which comprised approximately 200,000 protestors, represents a significant escalation in the size and strength of the gay rights movement from the first National March on Washington for Lesbian and Gay Rights.<sup>47</sup> By the importance of mortality salience in the theory of social change, cultural evolution, and human development, this protest occurred in a year with 15,100 deaths from AIDS. As a result, compared with its predecessor march on Washington eight years earlier, which had taken place before the first AIDS cases, this march garnered more than double the participation.<sup>48</sup> In line with the postulate that the psychological salience of mortality reflects actual mortality, this expansive trend continued: on April 25th, 1993, in a year with over 40,000 deaths from AIDS and a year before the all-time peak in the US. AIDS mortality,<sup>49</sup> an estimated 800,000 to 1,000,000+ protestors filled the National Mall in Washington DC to protest for LGBT rights.<sup>50</sup>

*Analysis of the Relationship Between the HIV/AIDS Pandemic and the Gay Rights Movement*

An important aspect of these protests, and an essential component of this paper's theoretical framework, is that, despite occurring during a pandemic and being led by a group disproportionately affected by mortality caused by the pandemic, the main goals of these protests were not medical. Instead, the main goals were gay rights as a

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<sup>47</sup> Lena Williams, "200,000 March in Capital to Seek Gay Rights and Money for AIDS," *The New York Times*, October 12, 1987, sec. A, <https://www.nytimes.com/1987/10/12/us/200000-march-in-capital-to-seek-gay-rights-and-money-for-aids.html>.

<sup>48</sup> "HIV Prevalence Estimates and AIDS Case Projections for the United States," Morbidity and Mortality Weekly Report (Centers for Disease Control and Prevention, November 30, 1990), <https://www.cdc.gov/mmwr/preview/mmwrhtml/00001896.htm>.

<sup>49</sup> Roser and Ritchie, "HIV / AIDS."

<sup>50</sup> Nadine Smith, "The 20th Anniversary of the LGBT March on Washington: How Far Have We Come?," HuffPost, April 25, 2013, [https://www.huffpost.com/entry/the-20th-anniversary-of-the-lgbt-march-on-washington\\_b\\_3149185](https://www.huffpost.com/entry/the-20th-anniversary-of-the-lgbt-march-on-washington_b_3149185).

whole and an end to discrimination against members of the LGBT community.<sup>51,52</sup>

### **The 1918 Spanish Flu Pandemic**

The 1918 Spanish flu pandemic is the third deadliest pandemic in US history.<sup>53</sup> This influenza pandemic began in February 1918; its end was declared in April 1920.<sup>54</sup> The “Spanish flu” itself was a novel strain of influenza that, due to lack of a vaccine or antibiotics, resulted in the deaths of over 675,000 Americans.<sup>55</sup> According to the Centers for Disease Control, the Spanish flu was an “H1N1 virus with genes of avian origin,” meaning that it is believed to have originated amongst birds and eventually was contracted by humans.

The Spanish flu is not dissimilar from most other flu pandemics like the “Asian flu” pandemic in 1957, the “Hong Kong flu” pandemic in 1968, and the “swine flu” pandemic in 2009 because most influenza strains that caused pandemics originally started in animals and eventually mutated to infect humans.<sup>56</sup> Despite having a similar origin to the flu pandemics in 1957, 1968, and 2009, the Spanish flu pandemic was unique in its mortality rate. While the pandemics in 1957, 1968, and 2009 all had mortality rates of less than 1.0 percent, the Spanish flu pandemic is estimated to have killed around 675,000 in the United States, at a mortality rate of 2.5 percent.<sup>57</sup> The Spanish flu pandemic was so deadly because of a lack of modern medicine and a lack of understanding of influenza pathogens. As a result, the Spanish flu pandemic was not addressed through research for a vaccine or some other pharmaceutical solution, but instead, during the 1918 pandemic, as during COVID-19, non-pharmaceutical measures were taken such as “isolation, quarantine, good personal hygiene, use of disinfectants, and limitations of public gatherings.”<sup>58</sup> These measures led to the creation of a very similar

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<sup>51</sup> Ibid.

<sup>52</sup> Williams, “200,000 March in Capital to Seek Gay Rights and Money for AIDS.”

<sup>53</sup> Roos, “The Deadliest Events in US History.”

<sup>54</sup> Wan Yang, Elisaveta Petkova, and Jeffrey Shaman, “The 1918 Influenza Pandemic in New York City: Age-Specific Timing, Mortality, and Transmission Dynamics,” *Influenza and Other Respiratory Viruses* 8, no. 2 (March 2014): 177–88, <https://doi.org/10.1111/irv.12217>.

<sup>55</sup> David Robson, “Why the Flu of 1918 Was so Deadly,” BBC Future (BBC, October 30, 2018), <https://www.bbc.com/future/article/20181029-why-the-flu-of-1918-was-so-deadly>.

<sup>56</sup> Robson, “Why the Flu of 1918 Was so Deadly.”

<sup>57</sup> Ibid.

<sup>58</sup> “History of 1918 Flu Pandemic,” Centers for Disease Control and Prevention, March 21, 2018,

societal dynamic to that present during the COVID-19 pandemic. Dissimilar to COVID-19, however, no vaccine or cure for the Spanish flu was ever developed; eventually, the US population developed herd immunity because infected persons either died or gained immunity.<sup>59</sup>

The Spanish flu pandemic affected the whole country and made people's environments extremely dangerous. In fact, despite having significantly fewer deaths, the proportion of sick people who died from the Spanish flu in the United States was more than twice as high as from COVID-19.<sup>60</sup> The theory of social change, cultural evolution, and human development therefore postdicts that this high mortality risk would have augmented the psychological salience of mortality and that, in turn, heightened mortality salience would produce social movements of dramatically increased size and strength during the Spanish flu pandemic. The Red Summer of 1919 and the women's suffrage movement both provide evidence for this thesis.

### ***Expansion of Race Riots in the Time of the Spanish Flu***

#### *Race Riots Before the Spanish Flu Pandemic*

In an article titled, "Racial Violence in the United States Since 1526," the organization BlackPast lists a total of eight violent race riots occurring in different cities from 1900-1917.<sup>61</sup> These riots took place in five different years and most years in this period did not experience a race riot in any city. Issues that incited these riots varied from riot to riot; they included police harassment, voting rights, incidents of black-on-white violence, black migration to white neighborhoods, and the replacement of white workers by black workers.<sup>62</sup>

Chicago provides a case in point. There, racial tension had been growing significantly due to the large number of World War I soldiers

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<https://archive.cdc.gov/#/details?url=https://www.cdc.gov/flu/pandemic-resources/1918-commemoration/1918-pandemic-history.htm>.

<sup>59</sup> Jennifer D. Roberts and Shadi O. Tehrani, "Environments, Behaviors, and Inequalities: Reflecting on the Impacts of the Influenza and Coronavirus Pandemics in the United States," *International Journal of Environmental Research and Public Health* 17, no. 12 (June 22, 2020): p. 4484, <https://doi.org/10.3390/ijerph17124484>.

<sup>60</sup> Elizabeth Gamillo, "Covid-19 Surpasses 1918 Flu to Become Deadliest Pandemic in American History," *Smart News (Smithsonian Magazine)*, September 24, 2021, <https://www.smithsonianmag.com/smart-news/the-covid-19-pandemic-is-considered-the-deadliest-in-american-history-as-death-toll-surpasses-1918-estimates-180978748/>.

<sup>61</sup> "Racial Violence in the United States since 1526," BlackPast, accessed January 21, 2024, <https://www.blackpast.org/special-features/racial-violence-united-states-1660/>.

<sup>62</sup> Ibid.

returning home in late 1918 to find that many of their jobs were being worked by African Americans who had come up North from the South.<sup>63</sup> The theory of social change, cultural evolution, and human development posits that tribalism and ingroup bias increase with the level of environmental danger. This dynamic seems to have played out in the form of increased racial tension between white and black groups in Chicago, later amplified by the increased danger brought on by the Spanish flu.

### *Race Riots During the Spanish Flu Pandemic*

Although the racial issues remained the same, there was a massive increase in the number of race riots during the period of the Spanish flu, that is from February 1918 to April 1920: BlackPast lists seven in these two years alone.<sup>64</sup> The website of the National World War 1 Museum states that outbreaks of racial violence affected at least 26 cities during the infamous “Red Summer” of 1919.<sup>65</sup> This timeline coincides with the peak of Spanish flu mortality between the winter of 1918 and the summer of 1919.<sup>66</sup>

There was also an increase in intensity. The Chicago race riot provides a perfect example of this. *Chicago Magazine* described the Chicago race riot of 1919 as “the worst spasm of racial violence in the city’s history.” It occurred during a one-week period that started on July 27th, 1919, following the drowning of a black teenager in Lake Michigan who was killed for not following the “unofficial segregation of Chicago’s beaches,” and ended on August 3rd, 1919.<sup>67</sup> The riots were violent and destructive and resulted in the deaths of 38 black and white Chicagoans as well as the destruction of around 1,000 black families’ homes.<sup>68</sup>

Indeed, the summer of 1919 came to be known as the Red Summer because so much blood was shed around the country. Darhian Mills writes, “The so-called ‘Red Summer’ of 1919 was a series of violent

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<sup>63</sup> History.com Editors, “The Chicago Race Riot of 1919,” History.com (A&E Television Networks, August 6, 2020), <https://www.history.com/topics/black-history/chicago-race-riot-of-1919>.

<sup>64</sup> Ibid.

<sup>65</sup> “Red Summer: The Race Riots of 1919,” National WWI Museum and Memorial, accessed January 21, 2024, <https://www.theworldwar.org/learn/about-wwi/red-summer>.

<sup>66</sup> Thomas Ewing, “Measuring Mortality in the Pandemics of 1918–19 and 2020–21,” Health Affairs Forefront (Health Affairs, April 1, 2021), <https://www.healthaffairs.org/doi/10.1377/forefront.20210329.51293/>.

<sup>67</sup> Ibid.

<sup>68</sup> Ibid.

riots, predominantly whites against blacks, which lasted from May until October of that year and resulted in an estimated six hundred deaths across the nation.”<sup>69</sup> Indeed, this number of deaths represents a massive increase in the intensity of race riots during the period of the Spanish flu. In the period from 1900 to 1917, the maximum number of fatalities during race riots in any one year had been about 35.<sup>70</sup>

*Analysis of the Relationship Between the Spanish Flu Pandemic and Race Riots*

While this racial conflict was extremely damaging in nature, this conflict follows the same pattern seen in the other social movements highlighted in this essay: increased societal danger leads to practical intelligence being valued over abstract intelligence leading to amplified social movements. In the case of the Chicago race riot, the segregationists did not seek to fix their “problem” of African Americans invading their communities through legislation or compromise, which would be expressions of abstract intelligence. Instead, the white Chicagoans demonstrated practical intelligence by taking to the streets and attempting to physically remove black people from their communities by means of burning their homes and physical harm.<sup>71</sup>

Further, the Chicago race riot was a collectivistic movement in both the white and black communities. The whites believed they were “protecting” their communities from African Americans, and the blacks were defending their communities against threats of white violence and aggression. For example, the neighborhoods of Hyde Park and Kenwood Property Owners Association stated in March of 1919, “Their presence [the African Americans] here is intolerable. Every colored man who moves into Hyde Park knows that he is damaging his white neighbor’s property.”<sup>72</sup> This quote exemplifies the outgroup threat experienced by white Chicagoans, for it shows how they truly believed African Americans to be a threat to their property and livelihoods. The Chicago race riot of 1919 is a perfect example of how the 1918 Spanish flu pandemic created a more dangerous society, a situation that led to a social movement of increased size and strength in which people exhibited both practical intelligence and collectivistic thinking.

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<sup>69</sup> Darhian Mills, “Knoxville Race Riot (1919),” BlackPast, March 20, 2016, <https://www.blackpast.org/african-american-history/knoxville-race-riot-1919/>.

<sup>70</sup> “Racial Violence in the United States since 1526”

<sup>71</sup> Ewing, “Measuring Mortality in the Pandemics of 1918–19 and 2020–21.”

<sup>72</sup> Robert Loerzel, “In Their Own Words: The 1919 Race Riot,” Chicago Magazine, July 23, 2019, <https://www.chicagomag.com/chicago-magazine/august-2019/1919-race-riot/>.



## ***Success of the Women's Suffrage Movement During the Time of the Spanish Flu***

### *The Women's Suffrage Movement Before the Spanish Flu*

Although the word suffrage, according to Oxford Languages, is defined as “the right to vote in political elections,” the women’s suffrage movement fought for women’s rights as a whole.<sup>73</sup> The suffrage movement lasted for 72 years and spanned the nineteenth and twentieth centuries.<sup>74</sup> The first women’s rights convention was held at Seneca Falls in 1848. One hundred attendees signed a Declaration of Sentiments and Grievances. The Declaration included resolutions supporting women’s rights, including the right to vote. It was modeled after the Declaration of Independence – a clear product of abstract intelligence. A series of national conventions, women’s periodicals, and the establishment of women’s organizations followed.<sup>75,76</sup> These could all be characterized as resulting from the application of abstract rather than practical intelligence in that they did not involve physical action.

However, World War I, a major mortality event that started in 1914, a few years before the Spanish flu, began to move actions for women’s rights from more theoretical and abstract to physical action on the ground. In January 1917, the Silent Sentinels, a branch of the National Woman’s Party, began to picket the White House, the first time this had ever been done. Women carried banners demanding the vote. They were violently attacked by a group of drunken men, but police ended up arresting over 200 picketers for blocking the sidewalk. They continued their protests for two and a half years.<sup>77</sup>

But it was not only the use of direct action that increased during World War I. The scale of collective action also increased. In 1915, participants in a transcontinental tour gathered over a half-million

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<sup>73</sup> Susan Ware, “Leaving All to Younger Hands: Why the History of the Women’s Suffragist Movement Matters,” Brookings (The Brookings Institution, May 2020), <https://www.brookings.edu/essay/leaving-all-to-younger-hands-why-the-history-of-the-womens-suffrage-movement-matters/>.

<sup>74</sup> Patricia F. Dolton and Aimee Graham, “Women’s Suffrage Movement,” *Reference & User Services Quarterly* 54, no. 2 (2014): pp. 31-36, <https://doi.org/10.5860/rusq.54n2.31>.

<sup>75</sup> Elizabeth Hilfrank, “Womens Suffrage Movement,” History, March 8, 2023, <https://kids.nationalgeographic.com/history/article/womens-suffrage-movement>.

<sup>76</sup> “Women’s Suffrage in the United States,” Wikipedia, accessed February 13, 2024, [https://en.wikipedia.org/wiki/Women%27s\\_suffrage\\_in\\_the\\_United\\_States](https://en.wikipedia.org/wiki/Women%27s_suffrage_in_the_United_States).

<sup>77</sup> Ibid.

signatures on petitions to Congress for women's suffrage.<sup>78</sup> The entry of the US into World War I in April 1917 gave a significant boost to women's rights as women replaced men who entered the military by moving into formerly all-male occupations, such as steel mills and oil refineries.<sup>79</sup> This was an example of the use of practical rather than abstract intelligence because women were altering their circumstances through participation in physically demanding industries. In September 1918, President Wilson spoke to the Senate in favor of the suffrage amendment as a war measure.<sup>80</sup>

By the time, World War I ended in November 1918, there were 116,708 American military deaths.<sup>81</sup> Hence, World War I overlapped in time with the Spanish flu which began in February 1918 and extended to April 1920. While its mortality was overshadowed by the 675,000 Americans who died from the Spanish flu, its cost to human life was still very significant.

#### *The Women's Suffrage Movement During the Spanish Flu*

The women's suffrage movement had a long history made up of hundreds of small victories. But the most important victory was elusive until the time of the Spanish flu. Indeed, the victory that outweighed them all was being awarded the constitutional right to vote. For 72 years, women and their male allies had fought for women's right to vote, and, in 1919, their hard work paid off when Congress approved the Nineteenth Amendment.<sup>82</sup> Why was 1919 the year that Congress finally sympathized with the suffrage movement?

In 1918 and 1919, primed for social movement by the Spanish flu pandemic, protests for women's rights spiked.<sup>83</sup> The Silent Sentinels, who had been protesting for women's suffrage outside the White House since 1917, ramped up their efforts in 1918 and 1919, even burning a model of President Wilson. Over this period, 2000 women used silence

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<sup>78</sup> "Women's Suffrage Timeline," The American Bar Association, accessed February 13, 2024, [https://www.americanbar.org/groups/public\\_education/programs/19th-amendment-centennial/toolkit/suffrage-timeline/](https://www.americanbar.org/groups/public_education/programs/19th-amendment-centennial/toolkit/suffrage-timeline/).

<sup>79</sup> "Women's Suffrage in the United States."

<sup>80</sup> Ibid.

<sup>81</sup> Nadège Mougel, "World War I Casualties" (European Network for Education and Training, 2011).

<sup>82</sup> "Today in History - June 4," The Library of Congress, accessed April 4, 2023, <https://www.loc.gov/item/today-in-history/june-04/#>.

<sup>83</sup> Hilary Parkinson, "19th Amendment at 100: Women Are First to Protest White House," Pieces of History (National Archives and Records Administration, January 8, 2020), <https://prologue.blogs.archives.gov/2020/01/08/19th-amendment-at-100-women-first-to-protest-white-house/>.

as a protest tactic. These protests continued until the 19th Amendment was ratified.<sup>84</sup> By June 4, 1919, the day the amendment was approved, 550,000 Americans had already died from the Spanish flu.<sup>85</sup>

### *Analysis of the Relationship Between the Spanish Flu Pandemic and the Women's Suffrage Movement*

The women's rights movement was small and the actions – such as writing resolutions – were primarily abstract until the time of World War I. As a significant mortality event, World War I began the transition of the women's suffrage movement from the use of abstract intelligence to practical action. As a collective movement, it also expanded, witnessing the half-million signatures gathered during the transcontinental tour in 1915.

It is reasonable to think of World War I's mortality as providing a transition to the much greater mortality that occurred during the Spanish flu pandemic and coincided with the real-world success of the suffrage movement – the constitutional right for women to vote. Increased collectivism under the threat of death likely contributed to public support for the women's rights movement reaching an all-time high during the Spanish flu pandemic. The movement for women's rights in the US was intrinsically collectivistic as participants were fighting for the rights of all women. As was observed during the COVID-19 pandemic and the HIV/AIDS pandemic, the Spanish flu's mortality amplified an already existing social movement, catalyzing its growth to previously unseen size and strength.

## **Conclusion**

Political and social movements are defined as practical, collective responses to important problems challenging a community. In the face of imminent threats, the most practical solutions are also the fastest responses. In the ancient era, if people around them were dying at higher rates than normal, they needed to adapt fast and create change to counteract their mortality. The proposal is that oftentimes these ancient ancestors found that safety, not by separating themselves from the larger

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<sup>84</sup> "Silent Sentinels Picket the White House," State Archives (Oregon Secretary of State), accessed April 12, 2023,

<https://sos.oregon.gov/archives/exhibits/suffrage/Pages/events/sentinels.aspx>.

<sup>85</sup> "History of Flu (Influenza): Outbreaks and Vaccine Timeline," Mayo Foundation for Medical Education and Research (Mayo Clinic, 2022),

<https://www.mayoclinic.org/coronavirus-covid-19/history-disease-outbreaks-vaccine-timeline/flu>.

group, but instead by finding safety in numbers and adapting as a collective, a simple manifestation of a social movement.

The aim of this essay was to test the generality of the theory of social change, cultural evolution, and human development by investigating whether significant social movements were associated with the HIV/AIDS pandemic and the 1918 Spanish flu pandemic. During the HIV/AIDS epidemic when Americans were confronted with a novel sexually transmitted infection that took the country by storm, the gay rights movement and the anti-nuclear movement massively increased in size at an unprecedented level. During the 1918 Spanish flu pandemic, the women's suffrage movement, created in response to the threat of sexism, reached its climax with the ratification of the Nineteenth Amendment, and the Red Summer of 1919 was one of the most significant racial conflicts in the United States since the Civil War. The existence, scale, and augmentation of these pre-existing social movements confirm the thesis of this paper that massive mortality events amplify social movements.

This historical review of the connection between major mortality events and social movements in the United States, as modeled by the theory of social change, cultural evolution, and human development, provides insight into the way that humans interpret death. When society becomes more dangerous as a result of pandemics like COVID-19, HIV/AIDS, and the 1918 Spanish flu, the salience of mortality, interest in subsistence activities, and collectivism significantly increase.<sup>86</sup> Based on that evolutionary reaction, the increase in collectivism and subsistence activities creates a shift in valued intelligence from individually oriented social intelligence to collectively oriented social intelligence and from abstract to practical intelligence.<sup>87</sup> This shift in valued intelligence drives social movements because social movements are manifestations of practical intelligence and collectively oriented social intelligence. This evolutionarily conserved reaction to death in a society provides insight into the psychology behind social movements. While there are a variety of different factors that contribute to social movements, by analyzing the largest pandemics in American history and their associated social movements, it appears that, as heightened mortality augments mortality salience, society's disposition toward social movements also increases, magnifying the size and intensity of pre-existing movements. Based on the findings of this paper, it could be

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<sup>86</sup> Evers, Greenfield, and Evers, "Covid-19 Shifts Mortality Salience, Activities, and Values in the United States," 107-126.

<sup>87</sup> Evers and Greenfield, "A Model of How Shifting Intelligence Drives Social Movements," 62.

argued that much of the history of social change in the United States can be told as a history of massive mortality events and correspondingly massive social movements.

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