

## Time's Arrow:

## Grandfather Clocks and the COVID-19 Pandemic Time Warp

“Time's arrow neither stays still nor reverses. It merely marches forward.”

— *Bojack Horseman*

In March of 2020, I had my last normal morning. At 6:30 A.M., I rose from my bed, dressed in my clothes for school, and lounged in the living room, eating breakfast and waiting for the hour to strike. The hour seemed to never come—the tune of the tall grandfather clock never echoed across our home. I looked at my phone, and left to go to school in suburban Baltimore.

Within my first period class, I heard my classmates whispering about rumors from New York City, where the country's largest school district had just indefinitely closed for safety reasons with mounting concerns about the COVID-19 pandemic (Shapiro, “New York City Public Schools to Close to Slow Spread of Coronavirus”). Among my classmates in my second period trigonometry class, my teacher announced to the room that we were to be quarantining in the face of a rapidly escalating “pandemic,” with the Maryland state superintendent announcing the closure of schools within a state with several of the largest school districts in the country (Montcalmo, “Governor Hogan: All Maryland Public Schools Closed March 16-27; Large Public Gatherings Prohibited”). At the time, I, nor did any of my peers, expected to be quarantined a year later, still unable to attend school or engage in social activities.

A year later, the “normal” morning has changed dramatically. I now set my alarm for seven in the morning, but, when that time comes, I am no longer as prompt as March of 2020. I doze my alarm to eight, sometimes even nine. By the time I am ready for my day, I leave my

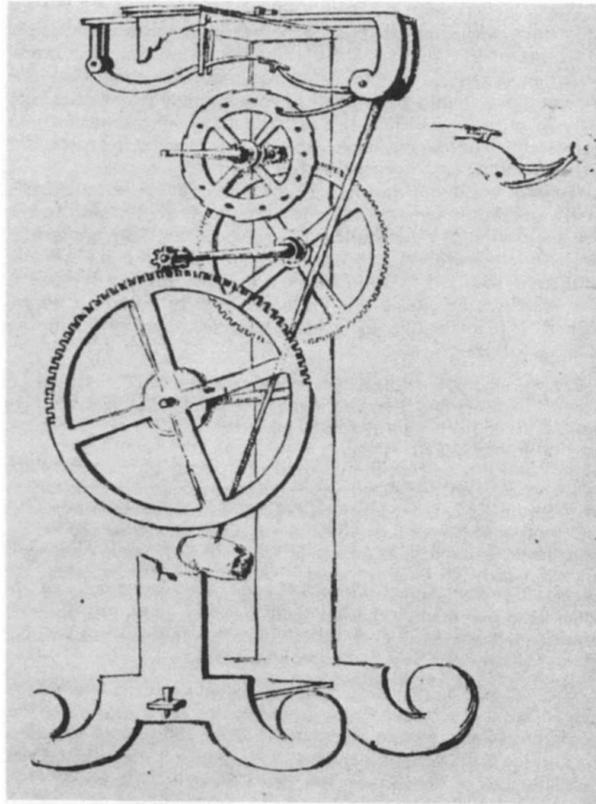
room to greet my mother, who is my fellow quarantine partner. Usually, we will sit on our living room couch and discuss our to-do list of the day, a rather effective way to avoid beginning our work.

In a recent rendition of this monotonous morning routine, I sat with my mother, and I turned my eyes to our tall, statuesque grandfather clock in the corner of the room. The hour hand rested on one. I looked outside and took note of the morning fog, ensuring that it was, in fact, not one in the morning or one in the afternoon. The image of my morning routine on the day before quarantine flashed before my eyes, and, in a state of disorientation, I realized: Our grandfather clock has stood —broken — for a year.

Though disillusioning, the experience of time misperception has become a common experience during the COVID-19 pandemic — an experience so common, in fact, researchers have begun to investigate the phenomena, hoping to understand the misperception's effect on time comprehension. There are many proposed reasons as to why human perception of time has changed dramatically, but most experts have agreed that misperception of time can be attributed to the experience of a “time warp.” In the most common definition, a time warp is described as “an anomaly, discontinuity, or suspension held to occur in the progress of time” (*Time Warp*). Separately, neuroscientist Dean Buonomano articulates that time is a fundamental aspect to the human survival instinct, dictating when to eat, hunt, and more. Importantly, though, Buonomano states that the most critical aspect of the human brain in its circadian rhythm is to “predict the future” (Stirone, “2020 Was a Time Warp”). In a world confined to our living spaces with no visible future in sight, the important function of time has lost its meaning in the human condition, which greatly distorts the species' ability to tell or experience time accurately.

The need to tell time accurately can be connected to the beginning of human time-telling capabilities. In early human civilizations with the growth of settled human populations, farm culture became vital, as it was the most reliable form of food production to support a growing populace. To better increase the means of production, humans relied on the rise and fall of the sun, creating sundials and water clocks to better their time management and schedules. Ancient Egyptian civilizations divided sunrise and sunset into twelve intervals, while Ancient Romans were able to specialize sundials to be able to tell time throughout the night and in foggy weather (Stevenson, “A Brief History of Telling Time”). These methods of telling time were of great importance in the lives of ancient civilizations, but as time continued, they proved to be highly dysfunctional, high maintenance, and simply unreliable. Importantly, however, they marked a beginning in human perception of the function of time, with the experience of time being tied solely to labor and production.

With the continuation of human history, the definition of time became to change, as development in areas of technology called for more efficient means to perceive and manage the human experience. Because of such developments, 17th century scientific inquiry began to substantively investigate what is modernly titled a “clock.” Galileo de Vincenzo Bonaiuti de’ Galilei introduced the idea when he realized in his early studies that pendulums will swing at a constant rate, which, at the end of his career, allowed him hypothesize that the fixed rate of a swinging pendulum could result in a more accurate perception of time if the pendulum were to control a mechanical clock (Johnstone, *Galileo and the Pendulum Clock*). Upon this recognition, Galileo began to sketch plans of his first pendulum clock, but died before it could be completed (Van Helden, “The Galileo Project: Science: Pendulum Clock”).



Source: Johnstone, Adrian. *Galileo and the Pendulum Clock*, 8 July 2009, [www.cs.rhul.ac.uk/~adrian/timekeeping/galileo/](http://www.cs.rhul.ac.uk/~adrian/timekeeping/galileo/).

A decade after Galileo's death, Dutch scientist Christiaan Huygens was inspired by the work of the deceased mathematician and astronomer, and began crafting his own model of the pendulum clock in 1656. By 1657, Huygens was able to officially develop and patent the clock model, but faced a great many difficulties in the production of the tall structure, as the pendulum's wide range of swinging was a great difficulty to construct on the behalf of clockmakers ("Huygens Invents the Pendulum Clock, Increasing Accuracy Sixty Fold"). Despite these difficulties, it is said that Christiaan Huygens "reduced the loss of time by clocks from about 15 minutes to about 15 seconds per day," showing a great evolution in the accuracy of time telling that greatly impacted the livelihoods of humans ("Huygens Invents the Pendulum Clock, Increasing Accuracy Sixty Fold")

The impact of more accurate time-telling capabilities, beginning with the “long case clock,” demonstrated a growing emphasis on production and productivity within society, which, in turn, resulted in a strong class divide in time-telling abilities. Firstly, the clock, initially titled a “long case clock” for its tall structure, became a symbol for the upper classes of society (BookishGirls, “The History and Significance of the Grandfather Clock”). The structure required intricate and large parts, with the pendulum averaging over ten inches and the case of the clock being approximately six feet tall. Similarly, the clock typically rings a chime on every hour. The expenses of the clock alongside the great amount of space it required resulted in it only being owned and utilized by royals, nobles, and affluent families from 1630 to 1730 (“A Brief History Of The Grandfather Clock”). With further innovations in the clock-making process, access to the long case clock became more easily available, allowing the clock to finally make its first appearance in the United States.

Upon the long case clock’s entry into the United States, it became widely popular thanks to the lyricism of Henry Clay Work. In the 1820s, Work visited the George Hotel in North Yorkshire, England, where a broken long case clock caught his attention (Hoffman, “Why the Long Case? Quick History of Grandfather Clocks”). After asking an employee of the hotel about the origin of the broken clock, Work received a legend. According to the employee, the two initial owners of the hotel owned the clock, and it was renowned for its ability to accurately tell time. With the death of one of the brothers, the clock began to become inaccurate, and, with the death of the second brother, the clock stopped working. The legend inspired Work to write a song titled “My Grandfather’s Clock,” which not only sold one million sheets in the United States and

popularized the clock, but also introduced the more recognizable name to the long case clock (Hoffman, “Why the Long Case? Quick History of Grandfather Clocks”).

The incorporation of the long case clock into society had many implications for the state of human civilization. The symbol of the long case clock was especially powerful in the United States and Europe, where its prevalence among privileged society illuminated grave inequalities. As a clock with a scheduled chime, the long case clock was a way in which to control the aspects of an individual’s life, as it controlled when to eat, sleep, work, and more. The clock was especially popular among the elite for its chime, because it meant that the elite had no need to interact with their servants, since the chime signalled when to begin and end work. The function of such a time-telling capability within society established “the power divide and imbalance between owners and servants” (BookishGirls, “The History and Significance of the Grandfather Clock”).

Since the long case clock’s creation, there have been a number of innovations that have allowed the clock to become more widely available to people of different economic backgrounds. Turning to cheaper materials and less intricate craftsmanship, middle and lower classes were able to purchase versions of the long case clock, but these did not maintain the perceived prestige of that of the upper class owners. For example, people of less privileged economic backgrounds would purchase the inner pieces of the clocks, and then seek the services of local craftsmen to construct a case. People of these backgrounds would also remove pieces of a completed long case clock in order to have it fit within their small living spaces (BookishGirls, “The History and Significance of the Grandfather Clock”). Maintenance of the clocks for working class populations proved to be an issue, and, with visible differences in craftsmanship between the clocks, the ability to tell time was still a symbol of class prestige and divide.

This is the case for my family, which comes from a range of working class backgrounds in Maine and Pennsylvania. In the case of my family's grandfather clock, it was given to my mother and I after the death of my great grandmother. Neither my mother or I can cite the origin of the structure, but we know of it to be an important relic of our family history. It has been at all family gatherings since I was a child, and I can remember the clock's tune echoing throughout my grandparents' home, signalling the start of our meals, our time to arrive or leave, and every other function of importance.

In an age of quarantine, we have lost the need for such accuracy. There is no longer a need to be punctual in meeting with friends and family, as it is physically impossible. There is no need to beat the rush hour traffic and arrive at work at exactly eight o'clock. Production and human interaction has changed so drastically that time has had an accelerated redefinition, where, for the first time in centuries, an individual no longer has to define their minutes by the amount they produce or the authority controlling their productivity. Following in suit with the humans of the past, it is necessary to continue in innovation and evolution in the face of time-telling changes. Though we may feel trapped between the minute and the hour hand with no tangible future ahead, the sun still rises and sets and time still passes. To ensure that time does not speed past me, I recalibrated the gears on my grandfather clock, and listened to its song.

## References

- BookishGirls. "The History and Significance of the Grandfather Clock." *Medium*, Medium, 19 Nov. 2018, [medium.com/@bookish\\_girls/the-history-and-significance-of-the-grandfather-clock-854b3f59dce5](https://medium.com/@bookish_girls/the-history-and-significance-of-the-grandfather-clock-854b3f59dce5).
- "A Brief History Of The Grandfather Clock." *The Well Made Clock*, 21 Jan. 2014, [www.thewellmadeclock.com/brief-history-grandfather-clock/](http://www.thewellmadeclock.com/brief-history-grandfather-clock/).
- "Circadian Rhythms and Circadian Clock." *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, 1 Apr. 2020, [www.cdc.gov/niosh/emres/longhourstraining/clock.html](http://www.cdc.gov/niosh/emres/longhourstraining/clock.html).
- Hoffman, Anna. *Why the Long Case? Quick History of Grandfather Clocks*. 13 May 2019, [www.apartmenttherapy.com/quick-history-grandfather-cloc-127754](http://www.apartmenttherapy.com/quick-history-grandfather-cloc-127754).
- "Huygens Invents the Pendulum Clock, Increasing Accuracy Sixty Fold." *Huygens Invents the Pendulum Clock, Increasing Accuracy Sixty Fold : History of Information*, [www.historyofinformation.com/detail.php?entryid=3506#:~:text=Huygens%20Invents%20the%20Pendulum%20Clock%2C%20Increasing%20Accuracy%20Sixty%20Fold,-1656&text=This%20technology%20reduced%20the%20loss,who%20actually%20built%20the%20clock](http://www.historyofinformation.com/detail.php?entryid=3506#:~:text=Huygens%20Invents%20the%20Pendulum%20Clock%2C%20Increasing%20Accuracy%20Sixty%20Fold,-1656&text=This%20technology%20reduced%20the%20loss,who%20actually%20built%20the%20clock).
- Johnstone, Adrian. *Galileo and the Pendulum Clock*, 8 July 2009, [www.cs.rhul.ac.uk/~adrian/timekeeping/galileo/](http://www.cs.rhul.ac.uk/~adrian/timekeeping/galileo/).

Montcalmo, Chris. "Governor Hogan: All Maryland Public Schools Closed March 16-27; Large Public Gatherings Prohibited." *Nottingham MD*, 12 Mar. 2020, [www.nottinghammd.com/2020/03/12/governor-hogan-all-maryland-public-schools-closed-march-16-27-large-public-gatherings-prohibited/](http://www.nottinghammd.com/2020/03/12/governor-hogan-all-maryland-public-schools-closed-march-16-27-large-public-gatherings-prohibited/).

Nemo, Leslie. "How the Coronavirus Pandemic Is Warping Our Sense of Time." *Discover Magazine*, Discover Magazine, 1 May 2020, [www.discovermagazine.com/mind/how-the-coronavirus-pandemic-is-warping-our-sense-of-time](http://www.discovermagazine.com/mind/how-the-coronavirus-pandemic-is-warping-our-sense-of-time).

Purdy, Kate. "Time's Arrow." *Bojack Horseman*, season 4, episode 11, Netflix, 8 Sept. 2017.

Shapiro, Eliza. "New York City Public Schools to Close to Slow Spread of Coronavirus." *The New York Times*, The New York Times, 15 Mar. 2020, [www.nytimes.com/2020/03/15/nyregion/nyc-schools-closed.html](http://www.nytimes.com/2020/03/15/nyregion/nyc-schools-closed.html).

Stevenson, John. "A Brief History of Telling Time." *City, University of London*, City, University of London, 18 May 2016, [www.city.ac.uk/news/2016/may/a-brief-history-of-telling-time](http://www.city.ac.uk/news/2016/may/a-brief-history-of-telling-time).

Stirone, Shannon. "2020 Was a Time Warp." *Vox*, Vox, 22 Dec. 2020, [www.vox.com/the-highlight/22150990/2020-time-covid-warp-year-end](http://www.vox.com/the-highlight/22150990/2020-time-covid-warp-year-end).

"Time Warp." *Merriam-Webster*, Merriam-Webster, [www.merriam-webster.com/dictionary/time%20warp#learn-more](http://www.merriam-webster.com/dictionary/time%20warp#learn-more).

Van Helden, Albert. "The Galileo Project: Science: Pendulum Clock." *The Galileo Project | Science | Pendulum Clock*, 1995, [galileo.rice.edu/sci/instruments/pendulum.html](http://galileo.rice.edu/sci/instruments/pendulum.html).