How to Lie with Coronavirus Statistics: Campbell's Law and Measuring the Effects of COVID-19

Joel Best

University of Delaware, joelbest@udel.edu

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Abstract

Campbell's Law warns that when measurements become consequential those whose performance is being measured may try to skew the results. This case study examines the Trump administration's efforts to present COVID-19 statistics that would discourage restricting economic activities and encourage reopening the economy.

Keywords

Cambell's Law, coronavirus, COVID-19, social construction, statistics

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Cover Page Footnote

Joel Best is a professor of sociology and criminal justice at the University of Delaware. His books include *Damn Lies and Statistics* (University of California Press, 2001), *More Damned Lies and Statistics* (University of California Press, 2004), *Flavor of the Month: Why Smart People Fall for Fads* (University of California Press, 2006), *Stat-Spotting: A Field Guide to Identifying Dubious Data* (University of California Press, 2008), *The Stupidity Epidemic: Worrying about Students, Schools and America's Future* (Routledge, 2011), and *American Nightmares: Social Problems in an Anxious World* (University of California Press, 2018). His papers in Numeracy include a perspective ("Birds—Dead and Deadly: Why Numeracy Needs to Address Social Construction") in the journal's first issue (Jan. 2008).

Introduction

In an earlier article (Best 2020a), I discussed the complexities of the social construction of COVID-19 statistics. That article was written in April and May, 2020, when there was a good deal of uncertainty about what the future might hold, when several state governors were beginning to take steps to reopen their states' economies, and many people imagined that schools and workplaces might reopen that fall (Best 2020b).[1] The summer and early fall of 2020 saw most of those bright hopes dashed, and there was a growing expectation that, even if an effective vaccine was approved, it might be a year or more before the economy and other institutions could return to more-or-less normal operations.

These disappointments created a fraught situation, not just because COVID-19 would sicken millions and kill hundreds of thousands of Americans, even as social-distancing policies had done severe damage to the economy, but also because 2020 was an election year. American politics was in a period of extreme partisanship, and while President Trump had a base of enthusiastic supporters, polls showed that a majority of Americans disapproved of his performance. He had envisioned being able to point to a strong economy as the centerpiece of his re-election campaign, and he was reluctant to close and eager to reopen the economy. In this environment, COVID-19 statistics took on even greater importance.

Public Health, Epidemics, and Statistics

Statistical measures are central to public health efforts to control epidemics. These measures let officials know whether a disease is spreading or receding, whether they need to tighten preventive measures, or whether those measures can be relaxed.

A host of methods has evolved to try to ensure the accuracy of these statistics. People who manage public health agencies receive graduate training in the field, training that emphasizes the importance of careful, systematic data collection and honesty in reporting results. Devising effective disease control measures and assessing how well they are working depend on collecting accurate statistics.

There are practical obstacles to producing good statistics. There are uncertainties, particularly in the early stages of an outbreak, when only the most severe cases that lead to hospitalization are identified, making it difficult to estimate the true rate of infection. Ideally, the implementation of widespread, systematic testing should lead to more accurate figures. There are also challenges to collecting comparable data from different sources: hospitals, for instance, are used to competing with one another, and they may be reluctant to share their data; and some

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[1] I wrote this paper in October and revised it in December 2020.

states originally failed to count COVID-19 cases that occurred in nursing homes, rather than hospitals. In the United States, state laws vary, and so causes of death may be assigned in somewhat different ways in different jurisdictions. Reporting practices shape the resulting numbers: in the case of COVID-19, graphs of the numbers of tests, cases, and deaths display a saw-toothed pattern—five-day peaks, interspersed with two-day lows—that reflect challenges of getting accurate reporting during weekends (COVID Tracking Project 2020). Mistakes and inaccuracies are inevitable, such as a hospital's cases being counted twice in a day's statistics. Even with the best will in the world, statistics about epidemics are likely to be flawed; it may be hard to make accurate comparisons from time to time or place to place. No one should imagine that these statistics are perfectly accurate. Still, there are reasons they can get much worse.

Campbell's Law Revisited

Understanding the debates over COVID-19 statistics should begin with Campbell's Law. The social psychologist, Donald T. Campbell (1979, 85) offered what he called two "pessimistic laws": "[1] The more any quantitative social indicator is used for social decision-making, the more subject it will be to corruption pressures and [2] the more apt it will be to distort and corrupt the social processes it is intended to monitor." That is, attempts to quantitatively measure performance encourage those whose performance is being measured to play "numbers games"—to find ways to foster measurements that will make them look good.[2]

There are countless examples of Campbell's Law in action. When the US military began relying on body counts and estimates of declining enemy strength to demonstrate that things were going well in Vietnam, body counts became inflated and unfavorable strength estimates were squelched (Adams 2020). There is a long history of police departments under-reporting crimes to the FBI, so as to minimize their jurisdictions' crime rates (Eterno and Silverman 2012). When the No Child Left Behind Act made standardized test scores a consequential metric for evaluating individual teachers, school principals, and whole school districts, there were scandals exposing falsified tests and other practices intended to raise test scores (Robinson and Simonton 2019). What Muller (2018) calls the "tyranny of metrics" inspires individuals in all manner of institutions to game the system.

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[2] Campbell was by no means the only person to recognize this pattern. Economists, for instance, speak of Goodhart's Law, while the underlying idea has long been familiar to sociologists (e.g., Kitsuse and Cicourel 1963). Rodamar (2018) weighs the competing claims and concludes that Campbell deserves the credit.

Campbell's Law and COVID-19

When the COVID-19 epidemic began to be noticed in the United States, there was a good deal of uncertainty. In the beginning, the numbers of reported cases and deaths were very low. There were claims that the threat was being exaggerated, that COVID-19 was nothing more than the common cold, that the final death toll might be no more than a few hundred, that these numbers were far lower than those for such taken-for-granted causes of death as seasonal flu and traffic fatalities, or that the danger seemed confined to large coastal cities. Public service campaigns urged people to take simple precautions, such as frequent hand-washing, avoiding touching one's face, and coughing into one's elbow. Importantly, President Trump repeatedly downplayed the threat and insisted that it might disappear, and many governors and other officials followed the president's lead.

We know now that this uncertainty led to ineffective reactions to the impending epidemic (Shear et al. 2020). In the first weeks, officials delayed addressing shortages of personal protective equipment and other needed resources. Effective tests for infections were slow to appear, and their distribution was hampered. There were initial difficulties in establishing systems for collecting COVID-19 data. Skepticism and political partisanship made it more difficult to establish policies for both prevention and reaction, and the policies that did emerge varied wildly among states and municipalities.

By mid-March, things seemed very different. Schools and businesses were closing or shifting to online operations. There were widespread calls for people to wear masks, stand six feet apart, and otherwise practice social distancing. In the week ending March 21, there were 3.3 million new unemployment claims and the weekly death toll vaulted from 53 to 571. Coronavirus-related reporting—about the impacts of the disease and the social policies intended to address it—began to dominate the news media.

The public health model for handling epidemics is at bottom fairly simple. It requires frequent testing to track the disease's spread. Initially COVID-19 cases were counted among hospital patients; these numbers inevitably undercounted infections (since some infected persons were asymptomatic albeit contagious, and many of those who did become sick were never admitted to a hospital). An effective testing program needs to establish the rate of infection in the population, which requires a broad sample, and relatively frequent testing. Once such a program is in place, policymakers have potentially useful information: if, on the one hand, testing shows that cases are rare, it may be reasonable to relax social-distancing restrictions; on the other hand, if testing reveals that cases are common, it may be wise to tighten those restrictions.

In other words, the public health model views testing as essential, as necessary for determining the size of the problem and therefore the most appropriate policies.

However, in the case of COVID-19 there emerged an alternative, political model that placed a premium on easing restrictions so as to promote economic activity. In this view, testing results or any other data that suggest high rates of infection were viewed as obstacles to easing restrictions. It is here, of course, that Campbell's Law comes into play: political actors who want to ease social-distancing restrictions may try to affect the statistics that stand in their way.[3]

Methods of Enacting Campbell's Law

Because members of the Trump administration placed a premium on reopening the economy, they sought to play various "numbers games" that downplayed public health statistics that might discourage economic reopening. In some cases, they sought to present their own statistics that might justify loosening public health restrictions. I will examine these efforts in roughly the order they emerged.

Choosing Advantageous Numbers and Methods of Presentation

In an April 6 press briefing, members of the White House Coronavirus Task Force displayed a bar graph showing the cumulative number of tests—nearly 1.8 million—completed between March 5 and April 5. Each day had its own bar on the graph, and each day's bar was higher than the one for the previous day, so that the graph conveyed the sense of a dramatic increase—evidence of a rapidly growing response to the disease.

Of course, by definition, a bar chart tracking cumulative cases will show increases in successive bars (except in cases when a day has no tests recorded). In this case, as MacPherson-Krutsky (2020) points out, tracking cumulative cases conveyed a distorted impression that testing was rising rapidly; her graph (reproduced in Fig. 1) overlays the numbers of new tests performed each day on the cumulative bars, and reveals that the numbers of tests had not increased dramatically.

This example illustrates Campbell's Law in two ways. The first involves choosing which evidence to report. It would, of course, have been possible for the Task Force to display graphs for the cumulative numbers of cases or deaths, but

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[3] Over the past 20 years, I have had many opportunities to talk about dubious statistics with all manner of people. Often, when I speak to political conservatives, they assure me that bad statistics come from liberals; similarly, when I talk with liberals, they say it is conservatives who are behind bad statistics. My own view is that no one is immune, that bad statistics come from people of all sorts. While the examples that I examine in this case involve dubious claims by President Trump and his allies, I do not intend for this to be a political critique, but rather a case study of COVID-19 statistics as an instance of Campbell's Law. In this case, because the Trump Administration found its performance being measured and judged, they were the ones subject to Campbell's Law.

there would be no political advantage in choosing that evidence, which would have highlighted the epidemic's frightening spread. Graphing the increase in testing offered a more reassuring message: COVID-19 was being addressed.

COVID-19 testing in the US

A cumulative total adds each day's tests to all that came before. The number of new tests performed daily gives a clearer picture of what is happening day to day. The number of tests administered daily (blue bars) wasn't rising anywhere near as much as you might suppose if you only saw the overall total (red bars).
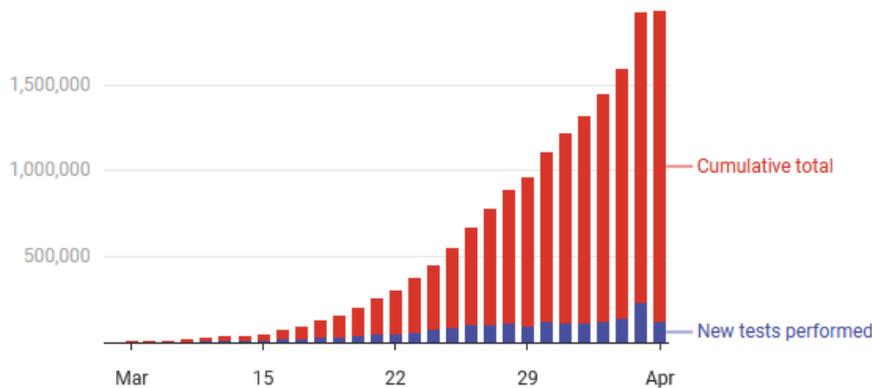
Chart: The Conversation, CC-BY-ND · Source: Our World in Data · Get the data

Figure 1. Comparison of cumulative and new tests per day. Graph reprinted from MacPherson-Krutsky (2020) with permission from *The Conversation*.

The second issue involves the choice of graphing *cumulative* tests. This may make sense in some cases. Suppose that a COVID-19 vaccine becomes available. We might very well want to keep track of the cumulative number of people being vaccinated, on the assumption that once someone has been vaccinated, they may be (let us hope) permanently immune. But that is not the nature of testing; many people will need to be tested more than once, so a cumulative graph of tests tells us very little. This is the difference between my deciding to do a cumulative bar chart of the number of books in my personal library (which might make sense, since books can be added to a growing collection, and I might be interested in my total number of books) and my choosing to produce a cumulative bar chart of the number of times I washed my hands in a year (which does not seem very useful, since handwashing will need to be repeated for all sorts of reasons).[4]

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[4] The books about graphing practices that I consulted did not even mention the practice of graphing cumulative data on bar charts (Robbins 2005; Cairo 2019). Most often, bar or line charts are used to track the changing number of cases per unit of time, so as to see whether there might be a pattern of increasing or decreasing frequency. It is not that it is impossible to use a bar chart to track cumulative numbers, but rather that that information does not seem particularly useful.

Obviously, these issues—selectively choosing which data to present and presenting that data in the most favorable fashion—are not limited to bar graphs showing cumulative growth. For instance, in early April, one COVID-19 model briefly lowered its projection of total deaths from six figures to 60,000. Conservative commentators who supported the Trump administration highlighted the new estimate and ridiculed the model for having previously exaggerated the threat (Stelter and Darcy 2020). Or consider how President Trump began his response to the first question in the final 2020 presidential debate ("How would you lead the country during the next stage of the coronavirus crisis?"): "So as you know, 2.2 million people modeled out, were expected to die." These examples illustrate two efforts to highlight predictions from models: commentators seized on the 60,000 estimate as evidence that models which had been, and would soon again be, predicting more fatalities were inaccurate and probably too pessimistic, while the president chose a figure from an early worst-case scenario (warning what might happen if no steps were taken to address the disease) to suggest his administration had outperformed expectations. We can presume that most people choose which statistics they will present so as to support whatever claims they seek to make.

Discouraging Testing as a Way of Minimizing the Problem

In his June 20, 2020 campaign rally in Tulsa, President Trump addressed coronavirus testing:

> We've tested now 25 million people. . . . Here's the bad part. When you do testing to that extent, you're going to find more people. You're going to find more cases. So I said to my people, "Slow the testing down, please!" (Samuels 2020).

The logic, of course, is straightforward: if testing shows there to be lots of infected people, the public health model advises maintaining tight restrictions which will interfere with efforts to reopen the economy, therefore the solution to discourage testing. He repeated this claim several times, e.g., tweeting on June 23, "With smaller testing we would show fewer cases!" The argument was picked up by his allies. Nearly three months later, on *Meet the Press* on September 13, Republican National Committee chair Ronna McDaniel, when asked why the United States accounted for a quarter of pandemic deaths, responded, "Well we have, we do have more testing."

This critique cannot be dismissed out of hand. Imagine a city or state that conducts randomized testing where the prevalence of COVID-19 cases remained unchanged, but the number of tests doubled. Under those circumstances, the number of positive tests would double, simply as a result of increased testing. To accurately determine changes in prevalence (that is the proportion of the population infected with the disease), it is necessary to track the proportion of tests that are positive (e.g., the number of positive tests per 1,000 tests administered). An analysis

in mid-July showed that in 26 states "the case count rose because there was actually more disease" (Begley 2020; see also Nuzzo 2020):

> For example, in Florida on May 13, [the number of cases found per 1,000 tests] was 32. On June 13 it was 75. On July 13 it was 193. On May 13, Florida tested 15,159 people; on July 13, it tested 65,567. So indeed, the number of tests has increased. But the number of cases per thousand, which is independent of the number of tests, has skyrocketed. On May 13, Florida recorded 479 cases; on July 13, it found 12,624. If the prevalence of COVID-19 were the same in July as in May, Florida would have found only 2,098 cases. In other words, 10,526 of the July 13 cases are not due to increased testing, but, instead, to the increased prevalence of disease (Begley 2020).

In sum, the rise in COVID-19 cases was not simply an artifact of increased testing.

Arguing That COVID-19 Deaths Are Overcounted

The prospective COVID-19 death toll was a political issue from the beginning. Some early critics insisted that the threat was wildly exaggerated:

> [Richard A.] Epstein, a professor at New York University School of Law, published the article on the Web site of the Hoover Institution, on March 16th. In it, he questioned the World Health Organization's decision to declare the coronavirus outbreak a pandemic, said that 'public officials have gone overboard,' and suggested that about five hundred people would die from COVID-19 in the U.S. Epstein later updated his estimate to five thousand, saying that the previous number had been an error (Chotiner 2020).

In retrospect, of course, the crystal balls of such seers seem to have been cloudy. The US death toll passed 100,000 in late May, and doubled to 200,000 in late September, with bleak projections that it might redouble early in the coming winter.

These death statistics led to rebuttals from the Trump administration and its defenders arguing that the COVID-19 death toll was inflated. For example, while campaigning for re-election in Iowa:

> [Republican Senator Joni] Ernst said she, too, is "so skeptical" of the official numbers. "These health care providers and others are reimbursed at a higher rate if COVID is tied to it, so what do you think they're doing?" . . . Asked later what she meant, Ernst said she was repeating what she's heard. "I heard the same thing on the news. . . . They're thinking there may be 10,000 or less deaths that were actually singularly COVID-19" (Kellman 2020).

Of course, we know that the risks of severe illness or death from a COVID-19 infection are not evenly distributed.[5] Certain medical conditions, including cancer,

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[5] It is important to appreciate that the categories used on death certificates adopt a particular perspective, a set of conventions for attributing causes of death. It has been argued that an alternative approach would be to identify the "actual causes of death," such as tobacco use, poor diet, and physical inactivity. One analysis concludes that "about half of all deaths that occurred in the United States in 2000 could be attributed to a limited number of largely preventable behaviors and exposures" (Mokdad et al. 2004, 1242). In practice, of course, aside from violent deaths from suicide, homicide, and accidents, the vast majority of deaths are ascribed to what are labeled natural causes.

kidney disease, pulmonary disease, heart disease, Type 2 diabetes, and obesity, increase one's risks when infected by COVID-19 (Centers for Disease Control 2020). Large numbers of nursing home residents, often dealing with multiple risky conditions, have died. Were their deaths caused by COVID-19, or did they merely die "with" COVID-19?

Inevitably, there will be some uncertainty in some cases, and assembling accurate statistics is a process; therefore, preliminary figures are often corrected as more information becomes available and death certificates are reviewed (Koerth 2020; Pappas 2020). In several states, statistics were challenged or corrections were announced (Baker and Levin 2020):

- California: the Director of the California Department of Public Health resigned after "state officials confirmed that as many as 300,000 records had not been processed by the computer clearinghouse system relied upon to provide to local officials the COVID-19 test results reported by labs on a daily basis" (Myers 2020).
- Florida: the state saw claims from medical professionals that there was political pressure to undercount COVID-19 cases and deaths (Iati 2020)
- New Jersey: "health officials released figures for probable COVID-19 deaths for the first time, raising the state's total fatality count from the illness caused by the new coronavirus to nearly 14,900, a 14% increase over previous estimates" (De Avila 2020).
- New York: "New York's coronavirus death toll in nursing homes, already among the highest in the nation, could actually be a significant undercount. Unlike every other state with major outbreaks, New York only counts residents who died on nursing home property and not those who were transported to hospitals and died there. . . . so far the administration of Democratic Gov. Andrew Cuomo has refused to divulge the number, leading to speculation the state is manipulating the figures to make it appear it is doing better than other states and to make a tragic situation less dire" (Condon et al. 2020)
- Texas: the state's death toll rose 8% "after state health officials changed their method of reporting. . . . The Texas Department of State Health Services is now counting deaths marked on death certificates as caused by COVID-19. Previously, the state relied on local and regional public health departments to verify and report deaths" (Walters 2020; see also Ramsey 2020).

In most of these cases, these adjustments may have reflected nothing more than growing pains, as people recognized limitations in how COVID-19 deaths were being tallied. In general, these adjustments led to higher death totals because, most authorities agree, COVID-19 deaths are much more likely to be undercounted than overcounted (Koerth 2020; Pappas 2020).

Beyond disputes over precisely how COVID-19 deaths are identified, there is additional, fairly compelling evidence that these deaths are being undercounted. This involves calculating what are called *excess deaths*, i.e., the number of deaths that exceed expectations derived from seasonally adjusted death records. Even in the absence of death certificates designating COVID-19 as a cause of death, the very fact that deaths are significantly and persistently above expected levels is evidence that *something* must be causing the increase. The CDC reports that "excess deaths have occurred every week in the United States since March 2020"

(Rossen et al. 2020). On August 12, the *New York Times* reported that "The True Coronavirus Toll in the U.S. Has Already Surpassed 200,000" (the official death toll would not reach that total until late September) (Li 2020). CDC analysts calculated that "from late January to early October 2020, the U.S. had 299,000 more deaths than the typical number during the same period in previous years" and that "at least 2 out of 3 of these excess deaths were from COVID-19" (Rossen et al. 2020). Other analysts identified two principal causes of excess deaths:

> Many probably were the result of COVID-19, although they were not recorded that way on death certificates. Others are probably the result of deaths at home or in nursing homes from heart attacks, diabetes, strokes and Alzheimer's disease, among people afraid to seek care in hospitals or unable to get it (Bernstein 2020).

In other words, while the Trump Administration might argue that pandemic deaths were being overcounted, there is a large body of evidence that undercounting was the real problem plaguing COVID-19 statistics.

Redirecting Case Reports to a Non-CDC Database

In July, the Trump Administration "announced that hospitals should bypass the Centers for Disease Control and Prevention (CDC) to instead report data to the Department of Health and Human Services (HHS)" (Chaudhuri 2020). Officials insisted that this would make it possible to gather more accurate information more quickly. Although there was widespread agreement that the CDC's information gathering system was antiquated and imperfect, critics questioned whether it made sense to change systems in the midst of a pandemic, and there were suspicions that the change might be politically motivated (McKenna 2020). Certainly, the switch did not initially resolve all problems: on August 11, the COVID Tracking Project warned that "federal data continue to be unreliable" (Glassman and Ladyzhets 2020). At the same time, the COVID Tracking Project and other independent efforts were maintaining their own datasets, which may have discouraged attempts to manage the HHS numbers.

Challenging or Interfering with CDC Reporting and FDA Recommendations

More clear-cut were various efforts by Trump Administration officials to question or interfere with information coming from the CDC and the Food and Drug Administration (FDA). These efforts sought to squelch agency reports that directly or by implication challenged the wisdom of reopening the economy. Consider these headlines from September and October:

- "Trump Officials Interfered with CDC Reports on COVID-19" [*Politico*, September 12]: Complaining "that the agency's reports would undermine President Donald Trump's optimistic messages about the outbreak," politically appointed communications aides

called for—and sometimes got—reworded reports, as in the CDC's *Morbidity and Mortality Weekly Reports* (*MMWR*) (Diamond 2020a).

- "Behind the White House Effort to Pressure the C.D.C. on School Openings" [*New York Times*, September 28]: The debate over reopening schools was particularly contentious, and the administration tried to muster scientific support for its agenda: ". . . the White House spent weeks trying to press public health professionals to fall in line with President Trump's election-year agenda of pushing to reopen schools and the economy as quickly as possible" (Mazzetti et al. 2020).
- "Trump Official Pressured CDC to Change Report on COVID and Kids" [*Politico*, October 5]: Officials called for prepublication changes in an *MMWR* piece about COVID-19 risks to children, adolescents, and young adults. In response, the CDC "altered the title of a scientific report on the coronavirus and removed words like 'pediatric' from its text" (Diamond 2020b).
- "In 'Power Grab,' Health Secretary Azar Asserts Authority Over F.D.A." [*New York Times*, September 19]: After Alex M. Azar II, the Secretary of Health and Human Services, forbid the nation's health agencies, including the Food and Drug Administration, from signing any new rules concerning products, including vaccines, critics "worried that it could contribute to a public perception of political meddling in science-based regulatory decisions" (Kaplan 2020).
- "White House Blocks New Coronavirus Vaccine Guidelines" [*New York Times*, October 5]: When the FDA proposed "strict new federal guidelines for the emergency release of a coronavirus vaccine," the White House objected to "a provision that would almost certainly guarantee that no vaccine could be authorized before the election". The move raised concerns that fewer people would be willing to be vaccinated if they doubted that an approved vaccine had undergone rigorous safety screening (LaFraniere and Weiland 2020).
- "White House Puts 'Politicals' at CDC to Try to Control Info" [APNews.com, October 16]: "The Trump White House has installed two political operatives at the nation's top public health agency to try to control the information it releases about the coronavirus pandemic as the administration seeks to paint a positive outlook, sometimes at odds with the scientific evidence" (Dearen et al. 2020).
- "Emails Detail Effort to Silence C.D.C. and Question Its Science" [*New York Times*, September 18]: On several occasions, two officials "tried to browbeat career officials at the C.D.C. at the height of the pandemic, challenging the science behind their public statements and trying to silence agency staff." After their activities became public, one official went on medical leave and the second was dismissed (Weiland 2020).
- "Why Can't We See All of the Government's Virus Data?" [*New York Times*, October 23]: An op-ed by the director of an academic health research institute argued "the government, inexplicably, is not sharing all of its data. Researchers have asked federal officials many times for the missing information but have been told it won't be shared outside the government," and speculated that "Perhaps it is driven by a concern that more data will lead to greater scrutiny and criticism over the handling of the pandemic" (Murray 2020).

Taken together, these reports reveal a pattern of the Trump Administration seeking to control evidence and advice concerning public health, in efforts to make sure that the CDC and FDA would be perceived as endorsing its political goal of reopening the economy.

Inserting Political Claims on CDC's Website

In addition to pressuring the CDC to produce the desired messages, there were also occasions when political operatives wrote their own messages and inserted them on the CDC's website. Examples include a document on "the importance of reopening America's schools" (posted in July), and guidelines stating that "it was not necessary to test people without symptoms of COVID-19 even if they had been exposed to the virus" (Hellmann 2020; Mandavilli 2020). These were eventually withdrawn. In addition, the CDC also modified its own recommendations to account for better data about virus transmission (Elfrink et al. 2020).

There were periodic reports about CDC officials avoiding confrontations with the Trump Administration, e.g., "administration health officials . . . delicately sidestepped President Trump's ambitious declaration last week that a coronavirus vaccine would be available for every American by April" (Gorman 2020). However, there were also reports that political interference had sapped the agency's morale (Wilson 2020).

Discussion and Conclusion

What can we learn from the Trump administration's efforts to manage the interpretation of COVID-19 statistics? On the one hand, it might seem that this is just one more instance of Campbell's Law, of members of an organization playing numbers games, trying to manipulate the statistical measures by which they are being judged. On the other hand, this strikes me as a particularly fruitful example, one that can help us think productively about the limits of Campbell's Law.

First, let us recognize that the Trump administration's efforts were particularly visible. By the middle of March, COVID-19 was receiving extensive attention in the news media, and even people who might be largely oblivious to news coverage had to confront the epidemic's direct effects on their lives (e.g., closures of schools and many business establishments).

At the same time, the issue was also contentious: there were open disagreements about how to address COVID-19. In part, this was because President Trump had been an unusually divisive leader who continually attacked his opponents and critics in his tweets and rallies. These factors, coupled with a divided news media that included both FOX News and other entities that presented supportive partisan coverage of the president, and other more traditional news outlets that had been systematically denigrated by the White House for presenting "fake news" (i.e., reports critical of Trump), made it very easy to turn public health policy into a political issue. Divided coverage in turn meant that COVID-19 became the focus for a culture war, in which the president's supporters bridled at restraints on their freedoms. The fact that 2020 would feature a presidential election only raised the stakes.

Moreover, opposition to the Trump administration's policies was particularly influential. The usual authorities in cases of epidemic disease are public health officials, who were not surprisingly wedded to the public health model of using testing to measure risks, and then restrict or reopen social activities accordingly. The problem, of course, was that the Trump administration favored a political model that was most concerned with minimizing restrictions in order to promote a prosperous economy. Precisely because the administration's figures were distrusted, there were significant independent efforts to collect and publicize COVID-19 data. In addition, of course, the president's political opponents were happy to offer an opposing view. During the weeks following the election, the various efforts to manage statistical information about the pandemic seemed to dwindle, which of course suggests that those efforts had been mounted precisely as a form of electoral politics.

All of these reasons why the Trump administration's efforts were particularly visible may seem familiar, but we should realize how unusual it is to implement Campbell's Law under conditions of extreme visibility. More often, numbers games are secretive—the whole point is to juke your city's crime rate or your school's test scores behind closed doors, so that you can claim that the presumably accurate results reflect your accomplishments. Or imagine the military trying to present reassuring body counts when there are independent agencies collecting and publishing rival datasets. Instead, the press relentlessly documented the administration's efforts to promote dubious data.

There is a related issue: it proved hard to make the coronavirus behave as the political model wished. While authorities initially spoke optimistically about "flattening the curve," the data clearly showed that there were waves of outbreaks—first in the spring, then in the summer, and yet a third starting in the fall (when this paper was written). There were also data from other countries; in most comparable nations (e.g., Western Europe, Japan, Australia, Canada), more systematic responses had been more effective, and rates of infection and death were lower. Sociologists sometimes mock rival theorists for trying to ignore "obdurate reality," and efforts to invoke Campbell's Law—to use statistical hocus-pocus to make things seem better—face challenges when a policy's shortcomings are apparent.

In short, the Trump administration offers a multifaceted example of how people can try to manage statistics for their own purposes. The very fact that I was able to assemble a lengthy bibliography for this paper suggests that these efforts were not especially successful because they were so transparent.

Acknowledgements

References

Adams, Sam. 2020. *War of Numbers: An Intelligence Memoir of the Vietnam War's Uncounted Enemy*. Lebanon, NH: Truth to Power.

Baker, David R., and Jonathan Levin. 2020. "COVID Cases Go Undercounted With Muddy Data From U.S. States." *Bloomberg.com*, August 7. https://www.bloomberg.com/news/articles/2020-08-07/muddy-virus-data-causes-some-u-s-states-to-undercount-cases

Begley, Sharon. 2020. "Trump Said More COVID-19 Testing 'Creates More Cases.' We Did the Math." *Statnews.com*, July 20. https://www.statnews.com/2020/07/20/trump-said-more-covid19-testing-creates-more-cases-we-did-the-math/

Bernstein, Lenny. 2020. "The Coronavirus Pandemic Has Caused Nearly 300,000 More Deaths than Expected in a Typical Year." *Washington Post*, October 20. https://www.washingtonpost.com/health/coronavirus-excess-deaths/2020/10/20/1e1d77c6-12e1-11eb-ba42-ec6a580836ed_story.html

Best, Joel. 2020a. "COVID-19 and Numeracy: How about Them Numbers." *Numeracy* 13(2): article 4. https://doi.org/10.5038/1936-4660.13.2.1361

_____. 2020b. "Middle-Range Future Claims: Constructing the Near-Future Consequences of COVID-19." *Symbolic Interaction* 43(3): 541–56. https://doi.org/10.1002/symb.499

Cairo, Alberto. 2019. *How Charts Lie: Getting Smarter about Visual Information*. New York: Norton.

Campbell, Donald T. 1979. "Assessing the Impact of Planned Social Change." *Evaluation and Program Planning* 2(1):67–90. https://doi.org/10.1016/0149-7189(79)90048-X

Centers for Disease Control. 2020. "Coronavirus Disease 2019 (COVID-19): People with Certain Medical Conditions," October 16. https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fneed-extra-precautions%2Fgroups-at-higher-risk.html

Chaudhuri, Suporna. 2020. "COVID-19 Data Reporting Redirected from CDC to HHS." Center for Primary Care, Harvard Medical School, August 5. http://info.primarycare.hms.harvard.edu/blog/covid-data-redirected

Chotiner, Isaac. 2020. "The Contrarian Coronavirus Theory That Informed the Trump Administration." *New Yorker.com*, March 30. https://www.newyorker.com/news/q-and-a/the-contrarian-coronavirus-theory-that-informed-the-trump-administration

Condon, Bernard, Matt Sedensky, and Meghan Hoyer. 2020. "New York's True Nursing Home Death Toll Cloaked in Secrecy. *APNews.com*, August 11. https://apnews.com/article/ap-top-news-understanding-the-outbreak-new-york-andrew-cuomo-health-212ccd87924b6906053703a00514647f

COVID Tracking Project. 2020. https://covidtracking.com/

De Avila, Joseph. 2020. "New Jersey's COVID-19 Death Toll Rises 14% When Probable Fatalities Added." *Wall Street Journal*, June 25. https://www.wsj.com/articles/new-jerseys-covid-19-death-toll-rises-14-when-probable-fatalities-added-11593109913

Dearen, Jason, Mike Stobbe, and Richard Lardner. 2020. "White House Puts 'Politicals' at CDC to Try to Control Info." *Apnews.com*, October 16. https://apnews.com/article/election-2020-virus-outbreak-pandemics-public-health-new-york-e321f4c9098b4db4dd6b1eda76a5179e

Diamond, Dan. 2020a. "Trump Officials Interfered with CDC Reports on COVID-19." *Politico*, September 12. https://www.politico.com/news/2020/09/11/exclusive-trump-officials-interfered-with-cdc-reports-on-covid-19-412809

_____. 2020b. "Trump Official Pressured CDC to Change Report on COVID and Kids." *Politico*, October 5. https://www.politico.com/news/2020/10/05/trump-cdc-coronavirus-report-change-425538

Elfrink, Tim, Ben Guarino, and Chris Mooney. 2020. "CDC Reverses Itself and Says Guidelines it Posted on Coronavirus Airborne Transmission Were Wrong." *Washington Post*, September 21. https://www.washingtonpost.com/nation/2020/09/21/cdc-covid-aerosols-airborne-guidelines/

Eterno, John A., and Eli B. Silverman. 2012. *The Crime Numbers Game: Management by Manipulation*. Boca Raton, FL: CRC.

Glassman, Rebecca, and Betsy Ladyzhets. 2020. "Hospitalization Data Reported by the HHS vs. the States: Jumps, Drops, and Other Unexplained Phenomena." COVID Tracking Project, August 11. https://covidtracking.com/blog/hospitalization-data-reported-by-the-hhs-vs-the-states-jumps-drops-and-other

Gorman, James. 2020. "Top U.S. Health Officials Tiptoe Around Trump's Vaccine Timeline." *New York Times,* Sept. 20. https://www.nytimes.com/2020/09/20/health/covid-vaccine-trump.html

Hellmann, Jessie. 2020. "CDC Reverses Guidance on COVID-19 Testing for Asymptomatic People." *The Hill.com*, September 18. https://thehill.com/policy/healthcare/517091-cdc-reverses-guidance-on-covid-19-testing-for-asymptomatic-people

Iati, Marisa. 2020. "Florida Fired Its Coronavirus Data Scientist. Now She's Publishing the Statistics on Her Own." *Washington Post*, June 16. https://www.washingtonpost.com/nation/2020/06/12/rebekah-jones-florida-coronavirus/

Kaplan, Sheila. 2020. "In 'Power Grab,' Health Secretary Azar Asserts Authority Over F.D.A." *New York Times*, September 19. https://www.nytimes.com/2020/09/19/health/azar-hhs-fda.html

Kellman, Laurie. 2020. "'Skeptical': Ernst Suggests COVID Numbers Are Inflated." *APNews.com*, September 2. https://apnews.com/article/virus-outbreak-election-2020-ia-state-wire-health-politics-17357ff0946ce2f977b93372e0fb245b

Kitsuse, John I., and Aaron V. Cicourel. 1963. "A Note on the Uses of Official Statistics." *Social Problems* 11(2): 131–39. https://doi.org/10.2307/799220

Koerth, Maggie. 2020. "The Uncounted Dead." *FiveThirtyEight.com*, May 20. https://fivethirtyeight.com/features/coronavirus-deaths/

LaFraniere, Sharon, and Noah Weiland. 2020. "White House Blocks New Coronavirus Vaccine Guidelines." *New York Times*, October 5. https://www.nytimes.com/2020/10/05/us/politics/coronavirus-vaccine-guidelines.html

Li, Denise. 2020. "The True Coronavirus Toll in the U.S. Has Already Surpassed 200,000." *New York Times*, August 12. https://www.nytimes.com/interactive/2020/08/12/us/covid-deaths-us.html?searchResultPosition=1

MacPherson-Krutsky, Carson. 2020. "3 Questions to Ask Yourself Next Time You See a Graph, Chart or Map." *The Conversation*, July 24. https://theconversation.com/3-questions-to-ask-yourself-next-time-you-see-a-graph-chart-or-map-14134

Mandavilli, Apoorva. 2020. "C.D.C. Testing Guidance Was Published Against Scientists' Objections." *New York Times*, September 17. https://www.nytimes.com/2020/09/17/health/coronavirus-testing-cdc.html

Mazzetti, Mark, Noah Weiland, and Sharon LaFraniere. 2020. "Behind the White House Effort to Pressure the C.D.C. on School Openings." *New York Times*, September 28. https://www.nytimes.com/2020/09/28/us/politics/white-house-cdc-coronavirus-schools.html

McKenna, Maryn. 2020. "COVID-19 Data in the US Is an 'Information Catastrophe'." *Wired.com*, July 30. https://www.wired.com/story/covid-19-data-in-the-us-is-an-information-catastrophe/

Mokdad, Ali H., James S. Marks, Donna F, Stroup, and Julie L. Gerberding. 2004. "Actual Causes of Death in the United States, 2000." *Journal of the American Medical Association* 291(10): 1238–45. https://doi.org/10.1001/jama.291.10.1238

Muller, Jerry Z. 2018. *The Tyranny of Metrics*. Princeton, NJ: Princeton University Press.

Murray, Christopher J. L. 2020. "Why Can't We See All of the Government's Virus Data?" *New York Times*, October 23. https://www.nytimes.com/2020/10/23/opinion/coronavirus-data-secrecy.html?action=click&module=Opinion&pgtype=Homepage

Myers, John. 2020. "California's Public Health Director Resigns in Wake of Coronavirus Data Errors." *Los Angeles Times*, August 9. https://www.latimes.com/california/story/2020-08-09/california-public-health-director-resigns-in-wake-of-questions-about-coronavirus-test-data

Nuzzo, Jennifer B. 2020. "No, More Testing Doesn't Explain the Rise of COVID-19 Cases in the U.S." *Washington Post*, June 22. https://www.washingtonpost.com/outlook/2020/06/22/no-more-testing-doesnt-explain-rise-covid-19-cases-us/

Pappas, Stephanie. 2020. "How COVID-19 Deaths Are Counted." *Scientific American.com*, May 19. https://www.scientificamerican.com/article/how-covid-19-deaths-are-counted1/?print=true

Ramsey, Ross. 2020. "Analysis: It's Hard to Make Good Pandemic Policy If the Texas Data Is Fuzzy." *Texas Tribune.org*, September 16. https://www.texastribune.org/2020/09/16/texas-coronavirus-data/

Robbins, Naomi B. 2005. *Creating More Effective Graphs*. Hoboken, NJ: Wiley. https://doi.org/10.1002/9780471698180

Robinson, Shani, and Anna Simonton. 2019. *None of the Above: The Untold Story of the Atlanta Public Schools Cheating Scandal, Corporate Greed , and the Criminalization of Educators*. Boston: Beacon.

Rodamar, Jeffrey. 2018. "There Ought to Be a Law! Campbell versus Goodhart." *Significance*, November 28. https://doi.org/10.1111/j.1740-9713.2018.01205.x

Rossen, Lauren M., Amy M. Branum, Farida B. Ahmad, Paul Sutton, and Robert N. Anderson. 2020. "Excess Deaths Associated with COVID-19, by Age and Race and Ethnicity—United States, January 26–October 3, 2020." *Morbidity and Mortality Weekly Report*, October 20 (early release). https://doi.org/10.15585/mmwr.mm6942e2

Samuels, Brett. 2020. "Trump Quips That He Told Aides to 'Slow the Testing Down' for Coronavirus." *The Hill*, June 20. https://thehill.com/homenews/campaign/503758-trump-quips-that-he-told-aides-to-slow-the-testing-down-for-coronavirus

Shear, Michael D., Noah Weiland, Eric Lipton, Maggie Haberman and David E. Sanger. 2020. "Inside Trump's Failure: The Rush to Abandon Leadership Role on the Virus." *New York Times*, July 19.

https://www.nytimes.com/2020/07/18/us/politics/trump-coronavirus-response-failure-leadership.html

Stelter, Brian, and Oliver Darcy. 2020. "Disinfecting an Old Narrative." *Reliable Sources, CNN.com*, September 23. https://view.newsletters.cnn.com/messages/16008271229127c6b44daadc8/raw?utm

Walters, Edgar. 2020. "Texas' Count of Coronavirus Deaths Jumps 8% after Officials Change the Way They Tally COVID-19 Fatalities." *Texas Tribune.org*, July 27. https://www.texastribune.org/2020/07/27/texas-coronavirus-deaths/

Weiland, Noah. 2020. "Emails Detail Effort to Silence C.D.C. and Question Its Science." *New York Times*, September 18. https://www.nytimes.com/2020/09/18/us/politics/trump-cdc-coronavirus.html

Wilson, Reid. 2020. "Despair at CDC after Trump Influence: 'I Have Never Seen Morale This Low'." *The Hill.com*, September 23. ttps://thehill.com/policy/healthcare/517708-despair-at-cdc-after-trump-influence-i-have-never-seen-morale-this-low