The Dangers of Overconfidence and Absolute Certainty in the Age of Post-Truth, Junk Science, and Arrogance

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Abstract

A major threat to the success of a society or organization is the feeling of certainty. It is clear that people overestimate how much they actually know. This paper will examine the dangers of certainty. People who have too much confidence in their opinions may actually have a mental flaw that can be dangerous. Moreover, much of the research in areas such as medicine and management cannot be replicated and turns out to be untrue. In fact, doctors only make about 15% of decisions using scientifically valid studies.
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Introduction

The amount of information is increasing exponentially, mainly because of the internet and globalization. It took 1,800 years, from 100 BCE to 1700 CE, for the amount of knowledge in the world to double; currently, knowledge is doubling every 12 months (Lewis, 2016). Online information doubles every six months; technical knowledge doubles every 18 months (Lewis, 2016). One would think that with such a rapid growth in knowledge people would recognize the dangers of absolute certainty. Unfortunately, this has not been the case. We are observing arrogant people ranging from academics to doctors to politicians, who are arrogantly certain of their facts. Unfortunately, not all the information available to the public is reliable. There is a great deal of bad science, junk science, fake news, and erroneous research available to the public. Researchers speak of evidence-based medicine, evidence-based management, evidence-based practice; we shall see that the "evidence" is often unreliable.

The Chronicle of Higher Education identified 10 key trends in higher education. One of them was "a growing movement to teach students to separate fact from fiction." This is now known at many schools as "information literacy" (Najmabadi, 2017). With so much nonsense on the internet, it has become of utmost importance for students to be taught to know the difference between fiction and fact. Many scholars believe that the presidential election won by Donald Trump was influenced by false "news" (Najmabadi, 2007). The term "post-truth" became the Oxford Dictionaries word of the year in 2016 (Wang, 2016).

Carl T. Bergstrom and Jevin West at the University of Washington have proposed a course with the provocative title of "Calling Bullshit in the Age of Big Data." Their definition of

bullshit is: "language, statistical figures, graphics, and other forms of presentation intended to persuade by impressing and overwhelming a reader or listener with a blatant disregard for truth and logical coherence" (Kolowich, 2017). The University of Michigan plans to start offering a one-credit course with the title, "Fake News, Lies, and Propaganda: How to Sort Fact from Fiction" starting with the Fall 2017 semester (Hutchinson, 2017).

This paper will examine the dangers of absolute certainty combined with overconfidence.

The Danger of Certainty Combined with Overconfidence

Kolbert (2017) highlights the fact that "People believe that they know way more than they actually do." This overestimation of the knowledge we possess is known as the overconfidence effect. Sloman & Fernbach (2017) also speak of the "knowledge illusion"; we simply do not understand how little we actually know. With certain kinds of questions, answers that people feel that their response is "99% certain to be correct" turn out to be incorrect 40% of the time (Kasanoff, 2017). Robert A. Burton, a neurologist, examined the neuroscience behind being certain and came to the following conclusion:

> Despite how certainty feels, it is neither a conscious choice nor even a thought process. Certainty and similar states of "knowing what we know" arise out of involuntary brain mechanisms that, like love or anger, function independently of reason (Burton, 2008a: xi).

Burton believes that human beings cannot avoid certainty bias but can moderate its effect by an awareness that feelings of certainty are not based on logic and reasoning. These feelings are the result of "involuntary brain mechanisms" that have little to do with the correctness of a belief. This is why intuitions, hunches, premonitions, and gut feelings need to be empirically tested. Burton sees certainty bias as a "potentially dangerous mental flaw." Burton (2008b)

explicitly makes the point that people should not believe in politicians that "sound too sure of themselves."

Bertrand Russell once said: "The whole problem with the world is that fools and fanatics are always so certain of themselves, but wiser people so full of doubts" (Chastain, 2017). Critchley (2014) relates the concept of uncertainty to tolerance of others. He states that "The relationship between humans and nature and humans and other humans can take place only within a certain play of tolerance." He attributes the existence of Auschwitz to the certainty bias.

> The play of tolerance opposes the principle of monstrous certainty that is endemic to fascism and, sadly, not just fascism but all the various faces of fundamentalism. When we think we have certainty, when we aspire to the knowledge of the gods, then Auschwitz can happen and repeat itself. Arguably, it has repeated itself in the genocidal certainties of past decades (Critchley, 2014).

Lloyd (2017) also feels that moral certainty is dangerous. He posits "History overflows with misery inflicted by well-intentioned people who were convinced that they had seen the only true moral values, and who sought to convert or destroy those who would not agree." His examples include the Inquisition which was based on the moral certainty of the Roman Church which was certain that only its interpretation of Christian scriptures was correct. Similarly, Stalin's Russia, Mao's China, and Hitler's Germany were totalitarian societies built on the belief that they knew the truth and anyone who disagreed had to be exterminated.

Mao's "Cultural Revolution" resulted in the death of millions – one estimate is 30 million -- and was really a Chinese holocaust (Lewis, 2014: xviii). Communism is one social experiment that has failed miserably. White (2012: 453-457) lists 17 countries that became Communist; the total number of people that died in these countries from "execution, labor camps, famine, ethnic cleansing, and desperate flight in leaky boats." is about 70 million. White (2012: 453) underscores the fact that "when death and destruction have followed every single Communist

regime ever established, there would seem to be a flaw in the system." It should be impossible for anyone to believe that this is an economic system that works. On the other hand, White (2012: 309-315) describes the effects of Adam Smith's opinion that "Famine has never arisen from any other cause but the violence of government attempting, by improper means, to remedy the inconvenience of death." This notion, that governments should not interfere with famine, resulted in the deaths of 26.6 million people in British-ruled India. Amartya Sen challenged this view and noted that famines do not take place in democracies; the action of government can prevent deaths from famines in poor as well as rich countries (White, 2012: 309).

Leaders – even of democratic countries – who are certain of their beliefs, will resort to lying if that is what it takes to accomplish what they want. The war in Vietnam which cost more than 58,000 American lives resulted from fabrications made by President Johnson (Lewis, 2014: 8-12). According to Lewis (2014: xiii), the war in Iraq came about because of 935 lies made by President George W. Bush and top officials of his administration regarding the Iraqi threat. President Obama told untruths about the Affordable Care Act when he repeatedly assured Americans that "If you like your health plan, you can keep it" (Lewis, 2014: xviii).

Overconfidence and Expert Predictions

Numerous websites discuss expert predictions which turned out to be wrong. Some of the worst predictions about technology include: "There is no reason anyone would want a computer in their home" — Ken Olson, founder of Digital Equipment Corp.; "Remote shopping, while entirely feasible, will flop." — Time Magazine; "There's no chance that the iPhone is going to get any significant market share." — Steve Ballmer, Microsoft CEO; "Fooling around with alternating current (AC) is just a waste of time. Nobody will use it, ever." — Thomas Edison,

"The idea of a personal communicator in every pocket is a pipe dream driven by greed."—Andy Grove, then CEO of Intel; "No one will need more than 637KB of memory for a personal computer. 640KB ought to be enough for anybody."—Bill Gates (Dhiraj, 2017).

Kahneman (2011: 261-265) believes that one has to be very careful with people who are overconfident and assertive. They certainly believe that they have the expertise but they may not perform better than chance. He concludes that "an unbiased appreciation of uncertainty is the cornerstone of rationality — but it is not what people and organizations want…Acting on pretended knowledge is often the preferred solution" (Kahneman, 2011: 263).

Several books have been written about expert predictions which usually turn out to be wrong. According to Dobelli (2013):

> Experts suffer even more from the overconfidence effect than laypeople do. If asked to forecast oil prices in five years' time, an economics professor will be as wide of the mark as a zookeeper will. However, the professor will offer his forecast with certitude (Dobelli, 2013).

Kahneman (2011: 218-219) cites research conducted by Tetlock (2005) that demonstrates how poorly experts who make a living "commenting or offering advice on political and economic trends" actually perform. They do not do better than monkeys throwing darts on a board displaying the various possible outcomes (Kahneman 2011: 219). Virtually all economic models failed to predict the Great Recession of 2008 (Krugman, 2012; Smith 2015). The best economic models are not judged on predicting something new but on "how well the model fits the data on the phenomenon the model was created to describe." This, of course is almost worthless since you might end up with hundreds of contradictory models to describe hundreds of different phenomena (Smith, 2015).

Smith (2015) further states:

> Economists didn't just fail to see that monster recession; they routinely fail to see economic events coming. The best models we have -- the ones central banks use, which take graduate-level training in order to handle -- have about as much forecasting power as simple, naïve mathematical techniques that any undergraduate statistics major could whip up in a few minutes (Smith, 2015).

Kahneman (2011: 241) has this to say about expert intuition: "Claims for correct intuitions in an unpredictable situation are self-delusional at best, sometimes worse ... intuition cannot be trusted in the absence of stable regularities in the environment."

If an environment is very stable and regular an expert does have the ability to understand the regularities by observing the right cues. In areas where there are no regularities and consistencies (e.g., stock market or political environment), people will not be able to develop any real expertise.

Predictions made by academics are especially suspect. Kahneman (2011: 219), citing Tetlock (2005), has the following to say about these kind of predictions:

> In the age of academic hypersegmentation, there is no reason for supposing that contributors to top journals — distinguished political scientists, area study specialists, economists, and so on — are any better than journalists or attentive readers of *The New York Times* in 'reading' emergency situations.

Kahneman (2011: 222-233) believes that algorithms often do a better job at predictions than experts. He describes several situations in which one should rely on a simple checklist consisting of, say, six relevant characteristics rather than relying on an expert. In fact, Kahneman discusses a simple algorithm developed by Dr. Virginia Apgar in 1953 to determine whether a newborn infant was in distress. Her method is superior to the expert judgment of obstetricians since it focuses on several cues. Kahneman does point out the hostility towards using algorithms. Incidentally, Apgar's algorithm still in use has saved thousands of lives.

Kahneman (2011: 226) cites the work of Dawes (1979) and claims that a simple formula that uses predictors (i.e., independent variables) with equal weights are often superior to multiple regression models that use complex statistics to assign different weights to each of the predictor variables. The reason for this is that multiple regression models are often affected by "accidents of sampling." Of course, some common sense is needed to select the independent variables that are most likely to accurately predict the dependent variable. Dawes (1979) claims that the simple metric of "frequency of lovemaking minus frequency of quarrels" does an excellent job of predicting marital stability (Kahneman, 2011: 226). Bottom line is that we should not be overly impressed with the judgment of experts.

This is what can be said about expert predictions:

> When they're wrong, they're rarely held accountable, and they rarely admit it, either. They insist that they were just off on timing, or blindsided by an improbable event, or almost right, or wrong for the right reasons. They have the same repertoire of self-justifications that everyone has, and are no more inclined than anyone else to revise their beliefs about the way the world works, or ought to work, just because they made a mistake.
>
> Extensive research in a wide range of fields shows that many people not only fail to become outstandingly good at what they do, no matter how many years they spend doing it, they frequently don't even get any better than they were when they started. In field after field, when it came to centrally important skills—stockbrokers recommending stocks, parole officers predicting recidivism, college admissions officials judging applicants—people with lots of experience were no better at their jobs than those with very little experience (Eveleth, 2012).

Does it pay to be overconfident? There is evidence that individuals who are overconfident and certain of their abilities are overrated by others; individuals who are underconfident, are underrated by others as being worse than they actually happen to be (Lamba & Nityananda, 2014). Thus, it definitely pays to be overconfident. This may explain why politicians have no problem with being so sure of themselves and overpromising (Hutson, 2014).

The importance of overconfidence is being used to explain why there is a gender gap in the corporate world. Men are more egotistical than women so this makes them appear more capable (Hutson, 2014).

Difficulty of Changing People's Minds with Facts: Confirmation Bias

Psychologists speak about confirmation bias as a major cognitive bias (Lockton, 2012). A cognitive bias is defined as:

> a systematic error in thinking that affects the decisions and judgments that people make. Sometimes these biases are related to memory. The way you remember an event may be biased for a number of reasons and that in turn can lead to biased thinking and decision-making. In other instance, cognitive biases might be related to problems with attention. Since attention is a limited resource, people have to be selective about what they pay attention to in the world around them (Chery, 2016).

This systematic bias is often due to the use of heuristics or rules of thumb by people to simplify decision making. These shortcuts can often lead to poor decision making (Lockton, 2012). A thorough list of biases may be found in RationalWiki (List of Cognitive Biases, 2016).

Once people form an opinion they "embrace information that confirms that view while ignoring, or rejecting, information that casts doubt on it … Thus, we may become prisoners of our assumptions" (Heshmat, 2015). People tend to only listen to information that supports their preconceptions. This may strengthen the beliefs of individuals and make them even more certain of their assertions.

There is a great deal of evidence that not only do facts not correct misinformation, but they make it more persistent and potent (Gorman & Gorman, 2017; Kolbert, 2017; Mercier & Sperber, 2017; Wadley, 2012). People get a rush from finding information that confirms that they are right; they would rather win an argument than discover the truth. People may have the

ability to see flaws in their opponent's arguments. However, when it comes to their own opinions, that is when they are blind.

Certainty and misinformation are extremely powerful and it is difficult for facts to change people's minds. Colleen Seifert, a researcher at the University of Michigan has the following to say about misinformation.

> Misinformation stays in memory and continues to influence our thinking, even if we correctly recall that it is mistaken. Managing misinformation requires extra cognitive effort from the individual… If the topic is not very important to you, or you have other things on your mind, you are more likely to make use of misinformation. Most importantly, if the information fits with your prior beliefs, and makes a coherent story, you are more likely to use it even though you are aware that it's incorrect (Wadley, 2012).

It is very difficult to use truth to enlighten people, but it can be done. One trick is to keep repeating the truth without repeating the misinformation. The reason for this is because the more often people hear untruths, the higher the likelihood they will believe it (Hennigan, 2015):

> our preexisting beliefs, far more than any new facts, can skew our thoughts and even colour what we consider our most dispassionate and logical conclusions. This tendency toward so-called 'motivated reasoning' helps explain why we find groups so polarized over matters where the evidence is so unequivocal (Hennigan, 2015).

There is no question that it is considerably more difficult to change the opinions of people who are misinformed rather than simply uninformed. This is why it is so important to teach people to be critical thinkers. With critical thinking, the goal is to solve a problem in an honest way and not be unreceptive to new approaches and different opinions. Knowing how to resolve conflicts has become a valuable skill and it often requires the ability to help people know the truth. The following are some rules for changing opinions:

> Provide people with a narrative that replaces the gap left by false information; Focus on the facts you want to highlight, rather than the myths; Make sure that the information you want people to take away is simple and brief; Consider your audience and the beliefs they are likely to hold; and Strengthen your message through repetition (Wadley, 2012).

Kahneman puts forth "adversarial collaboration" as an effective way to avoid confirmation bias which arises when a researcher consciously or unconsciously designs an experiment in such a way to provide support for a particular position (Matzke *et al*., 2013). Bringing together two researchers who disagree and having them conduct an experiment jointly often results in better research (Matzke *et al*., 2013). The goal of adversarial collaboration is to discover truth, not to win arguments (Kahneman, 2012).

Kahneman talks about "willful ignorance" which is a problem that results "when we know that there are other ideas out there, but we refuse to consider them." Willful ignorance produces individuals who become so hardened in their positions that they even demonize people with differing opinions. No amount of evidence will get people suffering from "willful ignorance" to change their mind. Eventually, this refusal to listen to other points of view becomes denialism (McIntrye, 2016). For example, this seems to have happened to a large number of intelligent people who maintain that the MMR vaccine causes autism. This is why critical thinking is a vital skill (McIntrye, 2016). The hope is that individuals with critical thinking abilities will not fall into the trap of willful ignorance and will possess the capability of listening to other points of view.

Evidence-Based …

Researchers speak of evidence-based medicine, evidence-based management, evidence-based practice. How reliable is the evidence researchers use to prove their points? Munafo & Flint (2010) indicate that a "substantial proportion of scientific research may in fact be false."

They attribute this to several factors including publication bias, low statistical power, "trend for effect sizes to decrease with year of publication," overestimate of true effect size, and source of funding. They conclude:

> In the meantime, readers of scientific journals should perhaps only believe large studies which report on findings in a mature literature (as opposed to early findings in a new field), place less emphasis on nominal statistical significance and focus instead on effect sizes and confidence intervals, and are published in journals with a low impact factor (Munafo & Flint, 2010).

According to Tractenberg, chair of the Committee on Professional Ethics of the American Statistical Association:

> A survey of more than 1,500 investigators, published in a 2016 issue of Nature, showed that more than 70 percent of researchers have tried and failed to reproduce other scientists' experiments, and more than half have failed to reproduce their own experiments (Tractenberg, 2017).

Gutting (2013) cites Ioannidis (2005) and asserts:

> John Ioannidis, in a series of highly regarded analyses, has shown that, in published medical research, 80 percent of non-randomized studies (by far the most common) are later found to be wrong. Even 25 percent of randomized studies and 15 percent of large randomized studies — the best of the best — turn out to be inadequate.

This is due to the fact that it is difficult and costly to conduct randomized controlled experiments. Therefore, most research is based on correlational data. Furthermore, "it is impossible to decipher how much data dredging by the reporting authors or other research teams has preceded a reported research finding" (Ioannidis, 2005). With data mining packages, it becomes very easy to perform hundreds of statistical tests and scour the data and come up with several statistically significant results.

Pfeffer & Sutton (2006) noted that both medicine and management are not evidence-based. Evidence-based medicine is defined as: "the conscientious, explicit and judicious use of

current best evidence in making decisions about the care of individual patients" (Pfeffer & Sutton, 2006). Doctors only make about 15% of decisions using scientifically valid studies.

> Recent studies show that only about 15% of their decisions are evidence based. For the most part, here's what doctors rely on instead: obsolete knowledge gained in school, long-standing but never proven traditions, patterns gleaned from experience, the methods they believe in and are most skilled in applying, and information from hordes of vendors with products and services to sell (Pfeffer & Sutton, 2006).

The same is true when it comes to management decisions. Many management beliefs are not based on hard evidence but opinions. Some examples of management myths cited by Pfeffer & Sutton (2006) include the following: (1) That the use of stock options to compensate corporate leaders will result in better financial performance for the organization; (2) Forced performance ranking of employees (this often means that the bottom 10% to 20% will be terminated) will ensure higher productivity and profits; and (3) the belief that the first company to enter an industry will have a huge advantage over competitors.

We may believe that medicine is evidence-based, but it is quite common for patients to receive treatments that are ineffective or even dangerous.

> Sometimes doctors simply haven't kept up with the science. Other times doctors know the state of play perfectly well but continue to deliver these treatments because it's profitable—or even because they're popular and patients demand them. Some procedures are implemented based on studies that did not prove whether they really worked in the first place. Others were initially supported by evidence but then were contradicted by better evidence, and yet these procedures have remained the standards of care for years, or decades (Epstein, 2017).

RightCare Alliance is an organization that consists of a partnership between community groups and health-care professionals, that is committed to "bringing medicine back into balance, where everybody gets the treatment they need, and nobody gets the treatment they don't need."

Unfortunately, the current trend is “increasing medical costs without increasing patient benefits” (Epstein, 2017). Epstein (2017) cites a study published in *Mayo Clinic Proceedings* that examined 363 articles published in *The New England Journal of Medicine* that found that

> 146 studies that proved or strongly suggested that a current standard practice either had no benefit at all or was inferior to the practice it replaced; 138 articles supported the efficacy of an existing practice, and the remaining 79 were deemed inconclusive (Epstein, 2017).

Epstein (2017) cites other studies that have come to the same conclusion that many current procedures and drugs are ineffective or even dangerous. Some of the unnecessary and potentially harmful treatments described in the paper include placing stents in stable patients, using beta blockers for those with high blood pressure, and surgery for a torn meniscus. One study found that the cognitive bias known as the “availability heuristic” was a reason some cardiologists would recommend a stent despite the fact that it is quite well-known that they do not help stable patients. The availability bias is the tendency of people to overestimate the importance of information that is easily recalled – even if relatively rare -- and thus readily available to them. Thus, this bias makes us believe that the probability of being killed in a terrorist attack or airplane crash is much higher than, say, from car accident. Cardiologists remembered well-known cases of people who died suddenly – one example is Jim Fixx, the jogging expert – from a heart attack. This caused them to be afraid that they would look bad if a patient did not receive a stent and then died suddenly.

Karl Popper made scientists realize how science is supposed to work. He said: "No number of sightings of white swans can prove the theory that all swans are white. The sighting of just one black one may disprove it" (James, 2002; Popper, 1963). The way science works is that

scientists are supposed to look for black swans to disprove the existing theory, not try to confirm their beliefs by looking for additional support (white swans).

One would think that with so many research issues, scholars would see the hazards of certainty. Unfortunately, this has not been the case. We are observing arrogant people ranging from academics to doctors to politicians who are certain of their facts. Unfortunately, not all the information available to the public is reliable. There is a great deal of bad science, junk science, fake news, and erroneous research available to the public.

Leadership and Certainty

There is evidence that the best leaders have the ability to listen to others. Spears (2004) found ten characteristics in the servant leader. One of them was "listening" which he defined as "Listening intently and receptively to what others say." Van Dierendonck (2011) affirms that "Leaders who show humility by acknowledging that they do not have all the answers, by being true to themselves, and by their interpersonal accepting attitude create a working environment where followers feel safe and trusted." Nielsen, Marrone & Slay (2010) also found that "people with humility are actively engaged in utilizing information gathered in interactions with others, not only to make sense of, but also, when necessary, to modify the self. That is, their self-views are focused on their interdependence with others rather than their independence from others."

Lynch (2017) highlights the fact that the "defining trait of the age seems to be arrogance…the arrogance of thinking that you know it all and that you don't need to improve because you are just so great already." Lynch (2017) avows that we all need intellectual humility. This means that we have to accept that we do not really know as much as we think to do given our various biases and limitations and also appreciate the importance of learning from

the experience of others. This, of course, means that we have to be receptive to what others have to say, even those who have very different opinions from our own. Contrary to what many executives believe, "the humble leader is precisely the person who is best qualified to transform his firm into a profitable, successful, and respected organization." (Argandoña, 2015).

Kahneman (2011: 205) states that the correlation between the quality of the CEO and the success of his or her firm is probably about .30. Several studies demonstrate that chance plays a much more important role in the performance of companies than CEOs (Fitza, 2013). Kahneman (2011: 206-208) asserts that the halo effect together with outcome bias helps explain the popularity of various books dealing with leadership. These books focus on successful firms and then attribute it to leadership style. Actually, it most cases it is simply luck. Chance quite often explains the success of certain firms and the failures of others, not the competence of leadership. Indeed, with the passage of time, the situation often reverses itself and the successful firms become unsuccessful and vice versa. Kahneman claims that the message of *Built to Last*, a leadership book by Collins & Porras (1994), is that "good managerial practices can be identified and that good practices will be rewarded by good results." Kahneman (2011: 207) disagrees and states: "In the presence of randomness, regular patterns can only be mirages." It is interesting to note that about 8 of the 18 companies extolled in *Built to Last* have stumbled (Reingold & Underwood, 2004).

Peters & Waterman (1982), authors of *In Search of Excellence*, studied 43 of America's best run companies in order to determine what made them successful and came up with eight basic principles of management. How did these firms end up doing in the longer term? Eckel (2013) says that "two thirds of them underperformed the S&P 500 over a decade. Some faltered

badly, and some even went out of business." The stock performance of these companies did not stand the test of time (Baum & Smith, 2015).

Conclusion

Donald Trump has been described as "a president who speaks loudly and confidently about things he simply doesn't understand" (Blake, 2017). He actually declared that "I know more about ISIS than the generals do, believe me." The biggest threat to the success of a society or organization is not appreciating uncertainty. People who have too much confidence in their opinions may actually have a mental flaw that can be dangerous. Lloyd (2017) avows:

> Two of the greatest achievements of Western Civilization are science and democracy. They have in common the admission of each person's own fallibility, which is psychologically a hard thing to do. In science, we must admit that our preconceived ideas about the external world might be mistaken, and that we must carry out scientific experiments to determine the truth. In democracy, we must admit that our cherished values and political convictions might be wrong, and that society should be governed by the majority, albeit with safeguards for the rights of minorities (Lloyd, 2017).

If Sandel (2010) is correct in his assertion that Americans are so sure of themselves that they have lost the ability to have a "democratic argument," then we are in huge trouble. Indeed, a key reason for gridlock in Congress is the rise of hyperpartisanship and absolute certainty. Members of Congress have lost the ability to work with colleagues from another political party because they are so sure that they are right; you cannot have bipartisanship in an atmosphere of absolutely certainty. Jouet (2017) believes that America is having a "meltdown" and has become extremely polarized. It is virtually impossible to compromise when one side is not only suffering from overconfidence and arrogance, but is also basing its arguments on myths and nonsense. All the more so, if both sides suffer from these issues.

> … One of the main obstacles to bridging polarization is not only that there's a major divide among Americans about their values, but also there's a major factual divide about a lot of these issues. For example, if people believe that climate change is a hoax or a myth, it's not possible to genuinely discuss solutions to the problem.
> If people widely believe that undocumented immigrants are massively flowing into the country, that they are responsible for illegal voting in the millions — which is completely false — there can't be a more rational discussion about issues like immigration. Unless there is more of a common nucleus of facts over which to debate, it is going to be very difficult to bridge the divide. We see that's also a big factor in the current debate over health care reform, given the magnitude of falsehoods about the oppression of Obamacare and shaping ideas about the need for eviscerating the legislation entirely (Jouet, 2017).

The best cure for the dangers of absolute certainty and overconfidence is humility and appreciating the value of doubt, constructive debate, and compromise. In fact, we should never forget that without compromise, there would not have been a United States (Leskes, 2013). Heinrich Heine wrote in his 1820-1821 play, *Almansor*, "Where they burn books, they will ultimately also burn people." He turned out to be uncannily correct; university students burnt thousands of "un-German" books on May 10,1933. It was not only Jewish authors whose works were burnt (Heine's works were also burnt): books by Hellen Keller, Jack London, Ernest Hemingway, Erich Maria Remarque, various critics of the Nazi ideology, and many others were torched (United States Holocaust Memorial Museum, 2017).

What is the connection between book burning and murdering people? Both require an absolute certainty that one's own ideology is correct and that another individual's opinions are so wrong that these ideas must be totally eradicated. To totally eliminate an idea (if that is even possible) may then require not only burning books, but also the very authors of those books.

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