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TECHNOLOGICAL CHANGE AND LANGUAGE

Charles Hill

Language has been regarded as the original and most fundamental human tool. At certain points in history when other aspects of technology have enhanced or damaged the use of language, major changes in world order have resulted. We are witnessing such a phenomenon now, with impacts on individual psychology, on socio-pathologies, on autocratic regime powers, and on democratic governance.

At present, a "language revolution" is under way, propelled by an eruption of electronic communications technologies that, while enhancing productivity, are also creating social and political chaos. This phenomenon cannot be successfully understood or managed without an awareness that the modern age itself, beginning some three hundred years ago, has been defined and shaped by the tension between *thought* and *things* in a contest for control over the languages of communication. This chapter aims to describe this struggle across history as a way to shed light on the present situation.

The e-revolution in communication is now challenging, even threatening, the conduct of responsible governance: marginal sociopaths are being empowered to organize and act collectively as never before; dictatorial regimes are perfecting powerful tools to surveil and suppress entire populations; and instantaneous popular judgments on political

issues are beginning to overwhelm representative government as designed by the Founders to avoid the chaos-producing "direct" democracy feared in premodern societies.

> *"It's just another language."*—An alumnus who majored in humanities when asked at his tenth class reunion how he could be so successful in computer science "coding," never having studied it.

> *"There can be no liberty for a country which lacks the ability to detect lies."*—Walter Lippmann

Aristotle declared that "man is the political animal"; Adam Smith countered with "the trading animal." Across the centuries, however, most thinkers have regarded man to be "the language animal."

The stereotypes of national languages have a certain truth to them. Latin is compact. German is convoluted. Italian is exuberant. French is precise. Japanese and Hebrew rely on a distinctive part of the brain. Chinese tones and ideograms are distinctively difficult to master.

A language can collapse. Thucydides's *Peloponnesian War* is an extended analysis of how misused language deteriorated until it led to the destruction of a great democratic empire. A language can also be driven out of control, as revealed by Tacitus's *Annals* of Nero's Rome or George Orwell's "Newspeak" in the novel *Nineteen Eighty-Four*. At turning points in history, language has required "rectification" (Confucius). Words have been deliberately reversed in their definition (Machiavelli) or used as weapons (Robespierre).

Language produces narratives that form the basis for cultures, which do not remain static across time but create and operate within paradigms that, at certain revolutionary periods, have dramatically shifted to bring fundamental change to the human condition.[1] Many of the greatest linguistic and technological revolutions have occurred in lockstep:

- *The Agricultural Revolution* revealed that the earth could be torn up—plowed and technologically induced—to produce crops,

yet also illustrating that the ground beneath was no longer sacred or "enchanted."
- *The Scientific Revolution* came when new instruments meant that the human body itself could be torn up—vivisection—to be studied through a new language of measurement based not on awe and wonder but on observable and knowable units.
- *The Industrial Revolution* ran on two engines: physical energy sources that could be newly discovered and harnessed and a language of production and mechanics that could serve large populations.

The other revolutionary category, joining those of science and technology, is humanistic—changes in human consciousness that, just as with the other revolutions, have required language as their chief vehicle. This was stated most influentially by the German philosopher Hegel. Premodern consciousness had been shaped by theology. For the modern world, *theology* would be replaced by *history* as the arena in which the most profound human problems would have to be faced. Hegel declared, "History is the history of humanity's increasing consciousness of freedom."

- *The Renaissance*, conventionally set around 1500, is understood to mark the shift from the proper study of mankind being the City of God to study of the City of Man.
- *The Reformation*, the 500th anniversary of which was in 2017, added individual decision-making in a vast new public and private arena opened by the ending of the church's temporal jurisdiction.[2]
- *The Enlightenment*, as declared by Kant in 1784, ended all Foundations, that is, all beliefs, traditions, texts, and hierarchies that peoples in the past depended upon for answers to life's questions. From that point forward, only Reason would be intellectually legitimate; external sources of authority would be disparaged.

> *Mark Zuckerberg's vision of a global community that will be created when we're all connected is incredibly similar to Martin Luther's notion that there could be a priesthood of all believers.*
>
> —Niall Ferguson

Making a "Modern" Age

The tensions and connections between these two revolutionary categories—technologies and humanities—would be negotiated by language and fought over for control of language.

Taken together, these two revolutionary chains made it clear that a new "modern" era would have to be invented. This would in the first instance be done by "the book," which, in its codex form, would become the technology best suited for presenting "an extended argument" for what would supersede the ancient and medieval conception of life.

The technologies of movable print initiated by Gutenberg would be massively disruptive by empowering the book as a mechanism for instruction. This is dramatized in Victor Hugo's seminal novel, *Notre-Dame de Paris*, known to English readers as *The Hunchback of Notre Dame*. The cathedral is the teacher of the masses, the illiterate peasantry. Quasimodo, the deaf and near-blind sacristan, knows every statue, shrine, gargoyle, and saintly bas-relief of the edifice as he scrambles all over it, not hearing but feeling the power of its mighty bells. To him, the cathedral is a living organism, a living language. But the book will bring an end to the Age of the Cathedral for, as Frollo says, holding a book and viewing the church, "*This* will take the place of *that*."

As the book brought with it the Enlightenment, the times being new, it was imperative to think anew.[3] This raised the question of what meaning, what new definition, we would give to what we see around us. This would require the closest observation of nature, drawing and adapting inferences from it. With what previously was thought to *be* natural now declared *not to be* natural, humanity seemed to require the invention of

a new entity: "the artificial." For example, "the divine right of kings," a premodern belief as a natural, God-given power, was no longer acceptable. Modern political theory thus had to create an "artificial person" to fulfill the role of sovereign power over the modern state. The great works of the Enlightenment, each set forth in the ever more important new technology of the book, reveal their authors' struggles with the tensions between "the natural" and "the artificial" as a problem of language.

Seven very big books of the Enlightenment—all in English for the sake of intertextual coherence—reveal a determination to remake the meaning of every field of study, both humanistic and scientific.

1. Thomas Hobbes's *Leviathan*, 1651, was written to provide a theory for the new basic fact of geopolitics, the state (declared by the Treaty of Westphalia in 1648 to be the successor to the empire). Hobbes starts by revising human nature itself. *Leviathan*'s very first sentence declares that man—putting aside Aristotle's claim that "man is the political animal"—can make an "artificial" animal: in other words, an artificial human being. To replace the divine-right king (Charles I had just been beheaded by the English Revolution), an artificial sovereign was "created" to do the job. Individual human kings may come and go, but the artificial sovereign would remain as the highest, perpetual, indivisible political power.

2. William Blackstone's *Commentaries on the Laws of England*, 1765–1769, replaced the organic, naturally exfoliating, centuries-old English common or case law with a fixed compendium of statute-like assertions. The old English Common Law had grown organically, as if it were divinely inspired, part of God's Plan. Blackstone's tome in four volumes was unequivocally man-made law. The concept of the "artificial" appears early on in Blackstone's work and would have far-reaching influence in the United States, ensuring that the Common Law would not take root here.

3. Adam Smith's *The Wealth of Nations*, 1776, preceded by his less famous but equally profound book *The Theory of Moral Sentiments*, 1759, relies almost entirely on two artificial and, indeed, imaginary

conceptions: "the invisible hand" would turn every individual's self-interested economic activity into wealth for the community as a whole and "the impartial spectator" would invisibly observe you so that your awareness of being scrutinized would incline you toward ethical behavior. Together, these concepts would turn traditional ideas of wealth creation (the "mercantilism" Smith was determined to overthrow) upside down. This would be called "asocial sociability,"[4] the claimed discovery that when every individual acts materially in his own particular interest, the benefits to the commonwealth as a collectivity will be enhanced. This would rightfully become economic orthodoxy for much of the modern world.

4. Samuel Johnson's *A Dictionary of the English Language*, 1759, a monumental endeavor requiring immense personal and intellectual labor, fixed the meaning of words and, beyond that, the language itself. The book also would serve as a form of encyclopedia by using words as anchors for cargo ships of knowledge. No longer would spellings and meanings be permitted to vary with each individual speaker or writer; a "standard" language was in the making, to be carefully watched over by designated specialists. When paired with Blackstone's *Laws*, Johnson's magnum opus would embody the Enlightenment mind, taking an immense realm of natural, organic evolution—language and law—and confining it in a supposedly rational form as an "artificial" foundation.

No mention of Samuel Johnson can avoid reference to James Boswell's massive 1794 *Life of Johnson*, the greatest biography in literary history and plausibly the work that gathers in one telling the most we can know about the life of any human being. It is as though Boswell, aware of the felt need to create "artificial" persons, had decided to make exhaustively clear what a truly natural person would be like—Samuel Johnson.

5. Edward Gibbon's *The Decline and Fall of the Roman Empire*, 1776, signaled the Enlightenment's replacement of theology by history as the arena in which humanity's greatest and most consequential questions would have to be addressed. Gibbon used his history to clear away the flaws, follies, and foundations of the past in order to provide the mod-

ern era then in the making with a clear field for new—artificial—departures. The zeal and institutions of Christianity, that great foundation, had weakened even as it aggrandized the Roman Empire. But Rome's artistic and humanistic influence lingered on and prompted the supreme importance of order over the chaos of a thousand years. As an exemplar of the Enlightenment, what was most important to Gibbon were books. A book was the work of a man, and Gibbon's respect and reverence were unbounded. *The Decline and Fall* is a bibliographical survey of European civilization from the second to the fifteenth century. All the great writers are commemorated, all the famous books are noticed, and on each occasion, Gibbon carefully tells his reader what his own reactions are to these creations of man.

The Life of the Mind is the hero of the *Decline and Fall*, the mind enshrined in a book, the exemplar of which is *the book*, *Decline and Fall* itself.[5]

At the same time, Gibbon closely observed the practices and skills of those who make the world work. As he famously said of himself, "The discipline and evolutions of a modern battalion gave me a clearer notion of the phalanx and the legion; and the Captain of the Hampshire Grenadiers (the reader may smile) has not been useless to the historian of the Roman empire."[6]

These books of the Enlightenment possess a striking intertextuality or cross-referencing of interests. Adam Smith regarded the great reconnaissance of the world in the early modern period as providing unparalleled significance for humanity:

> The discovery of America, and that of a passage to the East Indies by the Cape of Good Hope, are the two greatest and most important events recorded in the history of mankind.[7]

This was because, Smith said, the communication and commerce of the species as a whole enabled all mankind "to relieve one another's wants, to increase one another's enjoyments, and to encourage one another's industry."[8]

6. In this context, Captain James Cook's *Journals*, 1769–1979, is worthy of joining this pantheon of big books of the Enlightenment because it bears out Aristotle's attention to the "practical arts" as vital sources of knowledge; it is a matter, as John Dewey would much later conclude, of "learning by doing."

Aristotle declared that statecraft is a practical art much like navigation. Cook navigated, learned from it, and wrote incessantly and at length about it all. Dispatched by the British Admiralty to Tahiti to observe the transit of Venus, he eventually used the much-perfected new chronometer to fix the precise location of Tahiti, a matter of great importance to political and geostrategic comprehension, for it had been believed that islands had no constant location on the seas. In fixing Tahiti's position and mapping its coastline boundaries, Cook contributed to the modern concept of a state as a single territory with recognized borders.

Cook recorded in careful detail the physical world of lands and seas in his three voyages to the Pacific and Southern Oceans, surveying and charting New Zealand, claiming Australia, assaying the extent of Antarctica, and seeking a northwest passage across the Western Hemisphere. Cook's explorations created a breakthrough in instrumentation. He enabled the measuring of what could not be measured before and the raising of the consciousness of the world's peoples about the planet they inhabited.

7. Charles Darwin published *The Voyage of the Beagle* in 1839 and *On the Origin of Species by Means of Natural Selection* in 1859. As Cook minutely observed the geographic physical world, so Darwin, the ultimate "naturalist," would observe the doings of living creatures, however minute they might be, and brought the Enlightenment revolution in language to the realm of natural science. As Darwin wrote in his *Autobiography*:

> The Voyage of the Beagle has been by far the most important event in my life and has determined my whole career. . . . I have always felt that I owe to the voyage the first real training or education of

> my mind. I was led to attend closely to several branches of natural history and thus my powers of observation were improved, though they were already fairly developed.

No one had ever observed "nature" as completely and in such detail as Darwin. In doing so, he added a dimension to human consciousness.

Such voluminous factual observations of nature called for an explanatory theory, an "artificial" conclusion that could be tested against further scientific studies. Darwin would argue that species evolve, or change. This would be published twenty years after the *Beagle*'s voyage as *The Origin of Species*. Here, science would predominate over theology and swiftly provide an entirely new framework, that of reason, about the creation of the world. The "natural" could only be understood through the description of an "artificial" encompassing concept. This could only be done by *words*, by language.

In New England, Emerson and Thoreau would see this differently. Emerson's greatest work, "Nature," would not be the product of a "naturalist," as was Darwin, but of a Transcendentalist. Was the result artificial? Or was it a natural result of the mind conducting itself naturally? Thoreau would, unknowingly, provide an alternative to Cook's and Darwin's measurements. Thoreau would measure Walden Pond just as carefully as they would have done, yet in a way that would lead to the conclusion that you cannot "know" the pond by measuring its depth nor "know" a woodchuck by cooking and eating it.

Emerson and Thoreau were doing what Wittgenstein much later would do: demonstrate the importance of "elimination work"—that is, to show the limits of what scientific observations and subsequent reasoning can do in producing the knowledge most worth knowing.

It is interesting to contemplate the different ways that, as contemporaries, two "naturalists," Darwin and Emerson, observed nature. Darwin saw "species" as nature's classifications and recognized that species change. Emerson saw nature as providing the soul with a ladder up which to ascend, from nature as a *commodity*, to serve our lowest needs, to *beauty*, which is an object of the *intellect*, which uses *language* to

conduct a *discipline* striving for *idealism*; the final synthesis is *spirit*.[9] Significantly, Emerson's "specular mount" up which the soul ascends is centrally dependent on language—number four of the seven steps—as the technological tool required in the process.[10]

Emerson saw a kindred soul in Goethe, as "the writer" extolled in Emerson's essays on *Representative Men* summed up in one sentence: "Goethe would have no word that does not cover a thing."

Goethe's great work *Faust* would expound upon this foundational problem of the human condition: how language succeeds or fails to derive or infuse meaning from or for the things and acts of this world. Early in *Faust* I, Doktor Faust, surrounded by books in his study, rejects them and all learning, declaring, "In the beginning was *not* the Word!" and concluding that instead it was "The Act!" (*die Tat!*). Here was a call for revolution in action. As Marx would say, "The point is not to understand the world but to change it."

At the end of *Faust* II, however, Goethe wrote four mysterious yet profound lines that have baffled translators' efforts to convey the imperative to interrelate words and things for the production of meaning:

Das unbeschreibliche
Hier ist's getan;
Das ewig-weibliche
Zieht uns hinan.

Not a literal translation, but meaning, as Emerson would sense:

Here deeds understand
Words they are shadowed by.[11]

So, in reviewing the modern project, are actions rightly represented by their labels? Do words accurately describe the deeds they cover? If the technologies and the humanities are linked by language, are they also engaged in a rivalry over the command of that vocabulary?

Should we be stopping scientific experiments? Should we have stopped Galileo? Should we have stopped Copernicus?
—Lucy Shapiro

Testing the Modern Artificial

Somehow—it will forever remain a mystery—the many conceptions and considerations of the time were sensed and made into a novel by an eighteen-year-old girl named Mary Wollstonecraft Godwin, soon to take the name of her husband, the Romantic poet, and be known as Mary Shelley. Done as a story-writing game to while away the time when lodging on the shores of Lake Geneva on chilly summer evenings, it would become world famous as *Frankenstein*, published in London in 1818.

Strangely, to preface this uniquely odd contribution to literary and cultural history, the book was given a short preface by Percy Bysshe Shelley that began by noting that "Dr. Darwin" (Charles Darwin's grandfather and precursor in evolutionary theory) believed that the tale of Frankenstein's monster was "not of impossible occurrence."[12]

The novel would become a never-ignored myth referred to across the years in other novels—the "Frankenstein" concept shimmers through Dickens's *Great Expectations*—and plays, films, cartoons, advertisements, and virtually every form of visual and written expression; it would become ensconced as a standard text in the canon of literature and intellectual history.[13]

In fact, Mary Shelley's *Frankenstein* is the key text for understanding the Modern Age. In it, "the artificial" is created as the product of technology and humanity and then displays the inherent tension between the two. Contrary to the accepted interpretations, this conveys far more than the tale of a scientist who concocts a monster that cannot be controlled and destructively roams the earth. Yes, there is something at that level, but the novel's intricacies are far more complex than that, as it, in

Lawrence Lipking's words, "furnishes a testing ground for every conceivable mode of interpretation."[14]

The most consequential interpretation can be stated: the Monster, once in being, possesses the vocabulary and the emotion of a human search for understanding and affection, yet is demonized and rejected by humans themselves. The artificial proves more human than the human.

Language is at the center of the encounter between the human and the scientific. Frankenstein the scientist used human body parts to create an ugly being who nevertheless feels and seeks human love. As observed by Peter Brooks, the Monster grasps the nature of language as a system, "as both the tool he needs to enter into relation with others, and a model of relation itself . . . that from which he feels himself excluded." The Monster tells Frankenstein:

> Although I eagerly longed to discover myself to the cottagers, I ought not to make the attempt until I had first become master of their language which knowledge might enable me to make them overlook the deformity of my Figure.[15]

But his innate capacity to love is thwarted at every turn by his creator, who made him ugly, and by the culture of scientific modernity.

I think in our heart we must allow people to accept more risk on developing new technologies—and, if they fail, to get back on the horse and keep trying. I do believe that we can do this, and I do believe we once embraced that capability, but we have let it slip away. —James O. Ellis, Jr.

Books and Their Arguments Undermined, Transformed

A second look at the Big Books of the Age of Enlightenment reveals what might be called "the struggle of—and for—the modern age." A

twenty-first-century assessment of these works indicates that the project of the modern is troubled or is being transcended.

Law

The legal system is now statutory, with an increasing proliferation of regulations and major legislation voluminously set forth to far exceed Blackstone's *Commentaries*, which summed up centuries of common law.

The US Constitution, as an "artificial foundation" produced in the American Enlightenment, has become an interpretive battlefield on which two different "languages" vie for Supreme Court power. One holds words as written to be determinative, whereas the other holds words to mean what we want them to mean at the present moment (as Humpty Dumpty said, "When I use a word, it means just what I choose it to mean—neither more nor less").

Economy

The major phenomenon of the late twentieth and early twenty-first century has been globalization, which may be seen as Adam Smith's division of labor carried to a planetary scale. Smith's reasoning was production-based, whereas current signs suggest massive shifts to consumption-based societies. Smith's primary, and revolutionary, insight that self-interested economic activity by individuals would benefit the economy as a whole has largely been swept away by central state regulation. Economic language has shifted from that of a supply of goods creating a demand to that of demand dictating the goods supplied. People care more about consuming than producing, encouraged by central-state policy. The Big Books on economy in this century have raised alarms about the end of growth or the inevitability of inequality even as they seem less persuasive than appeared at first reading. And what of Smith's perception about work as an indispensable contribution to morality? Can this logic hold up if a national economy's consumption is stimulated even as productive endeavor continues to decline?

Human Nature

Hobbes's Artificial Person was created to replace the divinely authorized hierarchical sovereign that the modern age would expel. Boswell's *Life of Samuel Johnson* displayed a "real" person in a full career of immense achievement despite great physical and social adversity. Hannah Arendt in the twentieth century and an array of social philosophers in the twenty-first century have, respectively, condemned or promoted the idea—traceable to Jean-Jacques Rousseau and later Marx—that human nature must be "perfected," that is, altered, if humanity is to establish an ideal polity. Modern history has revealed the imperative of "perfectibility" to be the motivating force behind totalitarianism. At present, pressures such as "political correctness" reveal that the goal of perfectibility remains significant in the minds of many. Computer science languages are enabling unprecedentedly multipliable attempts to cover all possible contingencies of life, raising the hope of "perfecting" social policies. Aristotle warned against this when considering attempts in ancient times to enact laws that would cover all future possibilities—an impossibility, Aristotle said. The computer-driven pursuit of this chimera can easily be transposed into forms of benevolent tyranny designed to make citizens conform to preordained contingent outcomes, or simply to rule out the permissibility of unforeseen contingencies.

Maybe the surprise in the AI domain is not that computers are good at making decisions and doing things—that's been true for a long time—but rather that this capability is being brought to bear on problems that I think many people thought were a long way in the future. —Raymond Jeanloz

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History

Gibbon's *Decline and Fall of the Roman Empire* epitomized the Enlightenment's perception that theology would, from that point forward, be

relegated to the sidelines and that history would become the arena in which the greatest issues would be faced. Gibbon's volumes then interpreted the Roman Empire's final centuries during which the baleful influence of religion determined the empire's fate.

Today, however, it can be recognized that religion never went away but accompanied, permeated, influenced, and, in crucial instances, opposed the projects and purposes of the modern age. At the same time, the inclination of the secular authorities of the international state system to believe that religion had faded away or been neutered did much to delude or even incapacitate participants in governance from dealing effectively with a significant dimension of world affairs.[16] The modern inclination to disregard the claims of religion has been interpreted as depriving modern life of any legitimate meaning other than the amelioration of discomforts.

Beyond this, the modern concept of history itself has become contested as a Western-imperial concoction, denounced as a politically driven attempt to impose a "universal" or "world-historical" doctrine on the diversity of the planet's peoples.[17]

> *I agree with you secular is winning, but you just cannot write off religion, because on the walls of caves, people will always make some sort of divine picture.* —Bishop William Swing

The Practical Arts

Aristotle recognized that human beings are in a process of development driven by the necessity of their existence within the difficult and harsh demands of nature. These are the fundamental needs for protecting, acquiring, educating, increasing, and governing ourselves as people and peoples. To accomplish these tasks, people must engage in "the practical arts" such as medicine, navigation and seamanship, and agriculture and animal husbandry, as well as physical fitness through such regimens as gymnastics.

The centrality, indeed, the importance of "the artificial" is not a uniquely modern matter. Aristotle takes it up in his *Politics*, as when an individual person can become a "citizen," the latter being an artificial concept; one could be a bad person but a good citizen, and vice versa.

Underlying all this is Aristotle's contention that everything in life is in motion, ideally moving where nature intends it to go. This often was illustrated by the example of shoes—a topic of philosophical interest in ancient Athens. Bare feet obviously are natural. Does this mean that wearing shoes is unnatural? Aristotle suggests not; it is a matter of moving from lower-case natural to capital "N" Natural; in other words, an *artificial* but nonetheless legitimate *Natural*. The same was considered to hold true in the movement from subsistence farmstead to the *polis*, or city.

The test is whether the "artificial" dimension produced by the modern world is understood as the successor and substitute for the religio-philosophical "foundations" of the premodern era and whether they are positive or negative in their movement over time. But much of humanity has been out of touch with the practical arts because of technological advances that obviate the need for individuals to practice, learn from, and develop themselves this way. An example came when the creation of the global positioning system led the US Naval Academy to abandon its requirement for midshipmen to learn how to use a sextant but, after reconsideration, to reinstate that skill.

The purpose behind following Captain Cook's *Journals*, above, with Charles Darwin's *Voyage of the Beagle* was to link detailed observation of the world with hypothesis-forming to create a scientifically testable theory. Darwin's minute observations of flora and fauna, notably on the coasts and islands around South America, would eventually emerge as *The Origin of Species*, a big book swiftly recognized as "one of the major books of Western civilization," as noted by George Levine in his introduction to it. As much as anyone in the modern era, he changed human thought, his influence felt in virtually all aspects of life.[18]

Darwin's theory so thoroughly and relentlessly undermined religious convictions of millennia that his work would be vilified for generations

even as it became scientifically accepted as undeniable. In this new twenty-first-century context, however, highly reputable thinkers have raised challenging objections to the neo-Darwinian account of the origin and evolution of life. According to this revolutionist approach, the process of natural selection cannot account for the actual history without an adequate supply of viable mutations, and it is doubtful whether this could have been provided in geological time merely as a result of chemical accident without the operation of some other factor determining and restricting the forms of genetic variation. As argued by the philosopher Thomas Nagel, the coming into existence of the genetic code—an arbitrary mapping of the nucleotide sequences into amino acids—with mechanisms that can read the code and carry out its instructions is improbable given physical laws alone.[19]

World Order

The modern international (Westphalian) state system can be understood as an artificial concept created out of necessity. All premodern systems purporting to establish "world order" had been substantive, imposing the rule of a particular imperial power over its region. The modern state system, however, in order to be truly accessible on a universal basis, would have to be procedural—that is, any state that agreed to adhere to a few simple procedures would be considered a legitimate international citizen and able to follow whatever substantive form of governance it chose. To make this system universal, another artificial doctrine was agreed on: the doctrine of equality of states. Obviously, no two states are ever actually equal, but the concept of juridical—that is, *artificial*—equality would be an imperative. This "artificial" can be traced to yet another Big Book, *On the Law of War and Peace* (*De Jure Belli ac Pacis*) by the Dutch jurist and diplomat Hugo de Groot, called "Grotius." Later known as "The Father of International Law," Grotius provided a structure that, emerging from the 1648 Treaty of Westphalia, would become the procedurally based international state system adopted on every continent and that is still operative, but is now in a severely deteriorated condition.

The current condition of the Westphalian international state system, the structure on which the modern world order has been maintained, has deteriorated to the point of perilousness. The question is whether it, and the modern age, can survive.

A list of artificial concepts created to replace assumptions that a disregard of theology had ruled out would include:

- Artificial language (Hobbes)[20]
- Artificial laws (from Blackstone to Oliver Wendell Holmes, Jr.)[21]
- Artificial values (as Hume concluded)
- Artificial political structure (the Constitution)
- Artificial religions (e.g., Marxist ideology)
- Artificial human nature (from Rousseau)
- Artificial intelligence (the twenty-first century's AI)

The early modern era's need to find replacements for the foundations of the medieval world through the creation of the artificial may usefully be contemplated in the context of Scholasticism's debates about "realism" and "nominalism." To these medieval scholars, the abstract ideas above and beyond this world were *real*. No, said their opponents: those abstractions were just names; hence, nominalism. To face the language challenge, we as moderns have to consider that the Enlightenment's inventions of "artificials" were intended to shape the *real* world of *this* world. Yet they were not to be considered "real" in the Scholastic sense.

The modern era, in the early twentieth century, was elaborated upon by "modernism" in the arts, a movement into fragmentation (as in Duchamp's "Nude Descending a Staircase") that accelerated the general pressures toward fragmentation that even international law could not escape. The "international"—as an artificial concept or procedural structure that successfully could incorporate all the world's peoples in a way that bridged commonality to diversity—was fractured by the language of "modernism":

First, the *critique of representation*. In art, for example, no more landscape painting would be acceptable; the more abstract the better. In

governance, this would increase pressures for direct democracy of the sort that destroyed ancient Athens.

Second, a *turn toward "primitive" sources* of cultural energy as in tribal or folk art. In governance this propelled the rise of ethnicity as providing political legitimacy.

Third, *experimentation with standards* once considered required for coherence and stability. For music, the "prepared" piano. In governance, the disregard for borders and the principles of sovereignty.

Fourth, the *juxtaposition of elements* once considered irreconcilable, such as collage or multimedia performances. In governance, providing legislative powers to administrative bureaucracies; the rise of the public-sector union, an oxymoron.[22]

Thus language in the modern age has been in a continuing process of redefinition, fragmentation, and rearrangement that has been moving toward breakdown and disputation rather than adherence to clarity and credible communication. And this phenomenon, appropriate to modernity's parallel globalization, has brought a world-spanning transformation in the commonalities of language use, largely through the ubiquity of English.

Our whole societal intercourse is fundamentally driven by communications, both society generally, and in the military chain of command. . . . Our whole set of communications now, because of these technological changes, is very much open to disruption and deception. —William J. Perry

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The e-Revolution and the Arab World

In this context has come what appears to be the next great Revolution in human history, the e-revolution in language through which, by unprecedented technological means, any person anywhere in the world can instantly and constantly communicate with every other person.

The familiar periodization across time—Agricultural Revolution, Scientific Revolution, Industrial Revolution—was restated in its modern form by Lewis Mumford in his 1934 *Technics and Civilization*, a Big Book that attempted to make human history appear to be technology-centered. Mumford located modern technology's origins in the late Middle Ages, which he called the Eotechnic period, exemplified by the clock. Dante evokes this at the end of his *Paradiso* with the first appearance of a clock in literature, put there to say that the world would never be the same. Mumford termed the next phase Paleotechnic, which from about 1700 to 1900 would be propelled by steam. The third was Neotechnic, running on electricity. Following this taxonomy, Mumford, who died in 1990, would probably be in the vanguard of those hailing the twenty-first century as e-Technic.

While the modernist language and technology revolution is having an impact everywhere, it will produce different problems and different results in different cultures. A distinctively affected area may be the Middle East's Arab-Islamic world.

Tension between the spoken and the written word is one of the great themes of history. At least one major theory describes a fluctuation, or alternation, between two contending forms: a time of Orators (the spoken word for persuasion) and a time of Philosophers (the written word for reasoning) and then to Orators again, pendulum-like.[23] Islam is uniquely clear about this dichotomy. The Koran was spoken—dictated—by the Angel Jibril as the word of Allah to his messenger, the Prophet Mohammed, who memorized it to repeat it to his companions as scribes wrote it down. Thus the assertion that not one word of its 114 chapters, the Suras, has ever been changed.[24]

The authority of the Koran in its origin and in the incomparability of its eloquence and diction meant that spread of the faith fundamentally would be linguistic. Non-Arabic speakers must begin by learning Koranic formulas by repeating them in Arabic without understanding.[25] Thus, strictly speaking, the Koran cannot be translated. A corollary is that style and sound prevail over substance.

In the Arabic the verses are divided according to the rhythm of the language. When a certain sound that marks the rhythm recurs, there is

a strong pause and the verse ends naturally, although the sentence may go on to the next verse or to several subsequent verses.[26]

Without reference to any of these characteristics of the Koran, the Arab Human Development Report, drafted by Arab intellectuals and submitted to the United Nations in 2002 under the title "Building a Knowledge Society," concluded through this perspective that Islam's spoken-word dominance affected its relationship to products of written language. Among the major "development deficits" described in the report were shortfalls in the acquisition of, and the freedom to exchange, knowledge. Put in other terms, the report was understood as saying that the Muslim fixation on the spoken Koran inclined the culture to be indifferent to the written word in non-Arabic languages. A commonly cited statistic was that Spain translated more books from non-Spanish languages in one year than the Arabic-speaking world had ever translated into Arabic in all history. The oral was authentic; the written was assumed to be tendentious or insignificant.[27]

The volcanic eruption of e-communication in the last few years has brought an exceptional array of challenges to governance in the Arab-Islamic realm. The emergence of a certain type of modern state, at once ideological and dictatorial, together with the vast extension of the technology of communication, has given propaganda wider scope and intensity. Autocratic regimes see these communicative breakthroughs as new ways to increase their powers over their peoples.

At the same time, the deeply rooted instrument of communication, the *Khutbah*, the Friday mosque sermon, once a virtual monopoly of the regime in communicating from ruler to people, and the accepted way for the latter to submit to the sovereignty of the former, has dispersed and, in extreme cases, been used by imams to rail against state authority on the grounds that simply being a "state" is to be un-Islamic.[28] The sermons of Abu Bakr al-Baghdadi, the "caliph" of the Islamic State, have been e-transmitted across the world to mobilize support and arouse passions against established order.[29] Other languages, too, have made their presence felt: terse and inflammatory messages of social media such as Twitter are "e-words" that arrive in the form of, and with the impact of, oratorical demagoguery.

Underlying this revolutionary communicative upheaval remains the fact of the Arab world's need for economic development in order to "catch up" to others, as called for in the Arab Human Development Report. After managing for centuries "to evade the revolutionary inroads of print culture," there has come the unavoidable recognition that knowledge crucial to development must be communicated through documents written in Arabic.[30]

Thus, the Arab-Islamic world, which for centuries has shaped, with excruciating care, a culture based on a clear and divinely legitimated hierarchy of the spoken over the written word, finds itself in turbulence as speeches and writings not only get in each other's way but are weapons in layers of psychological, political, and actual warfare, triggering struggles for power that societies both utilize and fear. This war of words may yet be in its early stages. It is unlikely that the Arab-Islamic culture and polity can avoid some form of world-historical transformation as a result.

It seems to me trust is an indispensable attribute of a democracy. And to the extent that trust is eroded in both institutions and in our fellow citizens, we're in trouble. —David M. Kennedy

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Anarchy from Below, Manipulation from Above: Disruption in Democracy

This chapter has been a review of the Enlightenment's initiation and later elaboration of a new language and a depiction of how that language has transmogrified into segments and fragments, each one of which has altered a dimension of modern discourse. The humanities and the technologies, inextricably linked by language, are locked in a struggle for control of that language. At present, technology has taken command of

language to both serve technology and distort linguistic standards; one need only look at the average self-published book, blog post, or tweet for evidence. This process disrupts and corrodes the foundations of the modern era and shows no sign of being able to positively reconstruct from what it is tearing down.[31]

Modern political philosophy, with recognition of the wisdom in classical texts, attempted to devise ways in governing structures and systems to curb politically deleterious tendencies in human nature. In three significant cases, the modern approach is now being undermined by the disruptive powers of twenty-first-century language technology.

Empowering Sociopaths

Freud's *Civilization and Its Discontents* revealed that the benefits of civilized order and progress require the relegation of powerfully disruptive behaviors and desires to "the unconscious" mind. While many assume that societies primarily shape individuals, Louis Menand writes, "Freud thought that it was the other way around, that society is just a macro form of the individual, and takes its imprint from individual psychology."[32] Most today would agree that human and societal development is a two-way street, dependent on one another.

Today's social media distorts this relationship. Instant communication by way of systems such as Twitter makes it possible for individuals to immediately express the slightest emotionally disruptive and damaging reaction to events or ideas to a world-spanning audience. Opinions and private outbursts once perceived as self-harmful blunders, resolved by improving one's repressive subconscious mechanisms, are now instantly exposed to multitudes in permanent form. Civilization depends upon the time and ability to contain such eruptions; the "discontents" created by acts of self-control are the price of civil society. Were every discontent expressed, the public sphere would collapse as "all communication, all the time," instantly, produces a surrounding effect. As the astute columnist Peggy Noonan wrote, we are agitating and exciting "the unstable"

sector of the population, a sector that increasingly grows larger, a Pandora's box of once subconscious partisan venom breaking open as no one becomes able to suppress the slightest discontent.

Enlarging Dictatorial Powers

As the individual is "liberated" by the ability to promulgate unconstrained feelings in every direction, the governing regimes of the world are gaining new powers of surveillance, intrusion, and control over their populations. The 2011 Arab Spring uprisings were considered at first to be made possible by the new language-spreading technologies in every young person's hand. It was widely agreed, at the time, that such tools of expression would be beyond the abilities of dictators to control. Such an assumption was foolhardy; the Arab Spring was crushed in a few short months as the old powers—colonels, hereditary monarchs, strong-armed clans with puppet "parliaments"—regained control even as they were assaulted by even more ideologically autocratic radicals claiming religious dominion.

The major one-party authoritarian regimes, too, notably Russia and the People's Republic of China, are perfecting their own domination of the new languages of disruption: techniques of interception, cooperation, blockage, elimination, falsification, and more. This reality sharply reverses earlier assumptions that major multinational corporations would be replacing states as the most potent international entities. Recent steps by the People's Republic of China to assert "cybersovereignty" bear this out. When Apple had no choice but to accept the PRC's ban on "apps" that could bypass the regime's Great Firewall of China, the power of the autocratic state over the private corporate entity was made clear to all.

This trend has begun to give authoritarian regimes unprecedented powers to suppress freedom of speech and to indoctrinate entire populations in twenty-first-century versions of Orwellian "Newspeak," such as China's propaganda that communism and capitalism are one and the same.

Disdaining the American Design: From Moderate Republic to Direct Democracy

Another recent phenomenon is the deterioration of respect traditionally given to "the deliberative process." This process, once deemed essential to the civil discourse of a polity, values balance and consensus over strident factionalism. Individuals and associations engaged in the political process were allowed the space, time, and confidentiality to examine and debate a range of options, unexposed to outside criticism, before reaching their decision and putting it before the public and the opposing party. The new language technologies, combined with crowbar-like legal methods, have made the deliberative process nearly extinct. With every individual, insider or outsider, now in effect in possession of a recording, filming, broadcasting, and publicizing piece of handheld equipment, any and all varieties of deliberative expression are so vulnerable to premature exposure that periods for careful deliberation prior to acts of decision have become rare. Equally troubling, even when such occasions are held, open discourse on policy is increasingly subject to political or legal risk.

Democracy itself, in the unique form designed by the Founders and described in Tocqueville's *Democracy in America*, is being disrupted by the new techniques of instantaneous language. To the ancient world, democracy was a tempting ideal, but understood to be dangerous, a producer of chaos that called forth a tyrant to restore order. Thucydides's Athens provided the classic case in point: swift, direct (thumbs up or down), with no patience for deliberation, and unable to prevent the deterioration of its language until "words lost their meaning." The result, as Alexander Hamilton wrote in *Federalist Papers* no. 6, was "that famous and fatal war, distinguished in the Grecian annals by the name of the Peloponnesian war; which, after various vicissitudes, intermissions, and renewals, terminated in the ruin of the Athenian commonwealth."

The result was the Founders' design for a republic that would be utterly unique: buffered against the dangers of mass decisions swiftly taken; checked and balanced, with separated powers and layered sovereignty; all within a concept of genius, *Federalist* no. 10, that would enable

democracy to function effectively on a continental scale, the world's first, and still only, such example. The United States was, and still is, as Professor Samuel Huntington recognized, a "pre-modern" polity in a modern world.[33] If the modern era is ending, the United States should be better suited to manage such change than any other nation.

But not if the safeguards that make America an exceptional democracy are forfeited, lost without awareness of how or why. Yet the e-revolution can do this. The array of techniques that turn language into instantaneous power of opinion, all in the touch of a screen or a handful of words, threatens to override all the protections perfected when the republic was born.

The electronic revolution is a *language* revolution. Each of the revolutions of the modern age—French, Russian, Chinese—has brought ruination.

The world is now afflicted by an Islamist revolution, begun after the collapse of the Ottoman Empire and caliphate in the years after World War I. It produced the Islamic Republic of Iran in 1979, has been carried on by al-Qaeda and the "Islamic State and Caliphate," and is violently opposed to every element of the established modern international state system. Like all modern revolutions, it promulgates a concocted language as a weapon of power.

Only the American Revolution understood that language, like any tool or technology, must be used with care. The Founders understood that decisions made *now*, by those with power *now*, thinking only about *now*, guarantee disaster.

Understanding the inextricable centrality of language to democracy begins with the way democracy in America was designed to overcome the flaws of ancient democracy. Athens in the Periclean Age was archetypically democratic: recognized as potentially the best form of governance, but also as dangerously prone to collapse. As portrayed in Thucydides's *Peloponnesian War*, Pericles spoke proudly of Athenian democracy as swift to act by the *direct* decisions of the *demos*, the people, and unencumbered by institutions that would delay such actions. But language broke down under political, military, and societal pres-

sures; the undeliberated decision to send a naval expedition to Sicily failed because the values of patience and foresight, the proper allocation of resources, and mature deliberation lost meaning.

The Founders of the United States knew well the story of Athens in the Peloponnesian War. They were determined that America would become a free republic, not a direct democracy. It would be a government by representatives, with dispersed sovereignty, three equal branches of government, and a variety of checks and balances.

Other political thinkers would add vitally important concepts to democracy in the modern world to overcome the problems faced in antiquity.

Kant, staying rigorously within the Enlightenment's requirement to employ "reason" alone without dependence upon outside foundational authorities, such as religion, argued his way step-by-step to demonstrate that the core of political success was *transparency* because the purpose of a state was justice, and that could only be had when the people were sovereign and could demand that their government's actions be open to examination and approval. Transparency could only truly exist in a republic, and a republic's added advantage would be that a free people would be disinclined to go to war or would hasten to end a war if war could not be avoided.

Hegel, as noted earlier, added the centrality of history, specifically "the history of the *consciousness* of freedom." In other words, history had a direction, a progression, propelled by freedom.

Tocqueville supplemented this view, seeing democracy as a force of history observable across the past several hundred years. But he knew that only if "democracy in America" is conducted wisely can democracy continue its modern trajectory.

This is a very trite way to explain it, but I'm not sure our problem is that we don't have responsive government. I think it may be that we're so responsive that we can't lead. —Sam Nunn

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Two concerns were paramount. First, democracy's powerful pressure is for ever-greater equality. Equality is essential, but liberty must be maintained as well so that equality does not eradicate freedom in the drive to make all outcomes equal. Second, there is, Tocqueville observed, a distinctively American democratic logic chain: religion informs mores, which inform laws, which ensure liberty, and liberty protects religion.[34] America is unique, Tocqueville said (we could also say "exceptional"), in that only in America are religion and liberty compatible; elsewhere, religion tends to suppress liberty, and liberty tends to resent and resist the demands of religion. But in America, religion sees liberty as the protector of its observances, and liberty sees religion as the cradle of its birth (as when the New England Puritan congregation was easily transposed into the town meeting). The e-revolution in communication is doing damage to this Tocquevillian narrative of American exceptionalism by making every issue "presentist" as a matter of struggles for power in current politics. If "history" appears in this battle for supremacy in current events, it is ignorantly distorted in the service of scoring power points here and now.

We May Add the United Nations

As originally chartered, the United Nations regarded democracy as only one of many forms of governance over a state; UN officials could see no reason to differentiate democracy from the other forms such as communism, fascism, and socialism. But after the end of the Cold War, the demands of many member states of the United Nations were such that the world organization recognized democracy as primarily procedural, not substantive, and therefore uniquely qualified to fit within the procedural (Westphalian) international state system itself.

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There are five—there may be more—foundation stones of democracy in our time, with the United States its flagship. The changed situations in

this twenty-first century almost all involve the transmogrifications of language through the e-revolution.

First, the Founders' design is being corroded by the return of direct democracy as advocated by leaders and accepted by voters unaware of democracy's history across the centuries. The attractiveness of the idea that "the more democracy the better" can doom democracy itself. The e-revolution in communication could demolish representative government. The proliferation of referenda that, when they produce unwanted results, are simply repeated—in what has been called the "never-endum"—destabilizes politics.

Kant's conclusion that transparency is the pragmatic requirement for the governmental form—a republic—that can promote peace and justice is being threatened from opposite directions simultaneously. Electronic technology has created ways—"bots"—to provide an individual with security through encryption and evasion of discovery through timed self-eradication, thus evading legal requirements for record keeping and the transparency that democratic governance is designed to ensure. At the same time, there are places and phases in political decision-making when "the deliberative process," as noted above, must be allowed to take place without public scrutiny. In recent decades, this has been violated by subpoenas, leaks, and retroactive "revelations" of who proposed what option before the deliberative process had run its course and a decision reached, ready to stand or fall in open politics. A common case would be a media headline, "Leaked Memo Reveals Smith Was Warned"; that is, a memo, one of many and various options papers, in a predecision process during which almost any argument other than the chosen decision outcome could be found to score points long after the fact. When the proprieties of deliberation are done away with, transparency paradoxically is curtailed because notes are not taken, conversations are muffled, and the historical record may be lost forever.

Second, Hegel's perception of the freedom-focused consciousness of liberty has been displaced by scientific claims (in each case disputed or problematic). "The Conscious Controversy" has done much toward

dismissing the formerly assumed reality of consciousness itself as the brain/mind dichotomy has scientifically evolved into "there is no 'mind'; all is 'brain' and therefore 'consciousness' is physiological, not intellectual."[35]

The prominence of social sciences, each of which propels versions of the scientific method into realms formerly considered to be inevitably uncertain (that is, above and beyond the reach of scientific, replicable fact), is further evidence that the intellectual temper of the times is derogating the centuries-old assumption that human beings possess free will. If there is no free will, there can be no consciousness.

Third, Tocqueville's main message—if democracy as a force of history is not managed knowledgeably and wisely in America, it will lose momentum elsewhere—has now come to a turning point. Tocqueville's perceived unique compatibility between religion and liberty in America is now becoming an arena for tensions between divergent cultures. And the law's place in Tocqueville's logic chain has become tenuous with the rise of "positive" law and the endless dispute between those who regard the Constitution as a foundation upon which to base decisions and those who take it as a platform for progressively compelled social changes.

And, fourth, at the United Nations, the acceptance of democracy as a procedural part of the established international state system has declined considerably since the post–Cold War years, giving way in many places to the "model" of one-party regimes pursuing ways to benefit from economic globalization while at the same time curtailing political freedom within their borders. "The China Model" is immensely attractive to autocratic strongmen on every continent as it combines the best of all dictatorial desires: a globalized economy to skim off financial gains; political power protected by a praetorian guard; and lifelong possession of the nation's highest office. While the United Nations can still incline toward democracy promotion, it has no ability or mandate to try to reverse this trend.

Finally, underlying all this, and indeed all intellectual history, is the way a society relates language to acts. Thucydides declared that his book

was "the greatest speech" about "the greatest action," the Peloponnesian War of 431–404 BC. That book narrated the ways in which Athens failed to wisely relate language to acts. The essence of the challenge is for the society through its speakers—statesmen and authors—to avoid imposing meaning on actions but rather to locate meaning in them. In a well-governed state, acts and opinions of the people will convey meanings to an alert and responsive political leader, but if leaders preemptively interpret the will of the people, good government will soon be gone.

The crisis of our time is that technics, to adopt Mumford's term, have commandeered the speakers of words. To Emerson, this is when "Things are in the saddle and ride Mankind."

My reaction is that we have documented the fact that the world ahead of us is not going to be anything like the world behind us. Change is taking place that's profound, and it's driven not by the humanities, but by technology. But we have to react to it in a humanities way—we have to think it through in human terms.

—George P. Shultz
