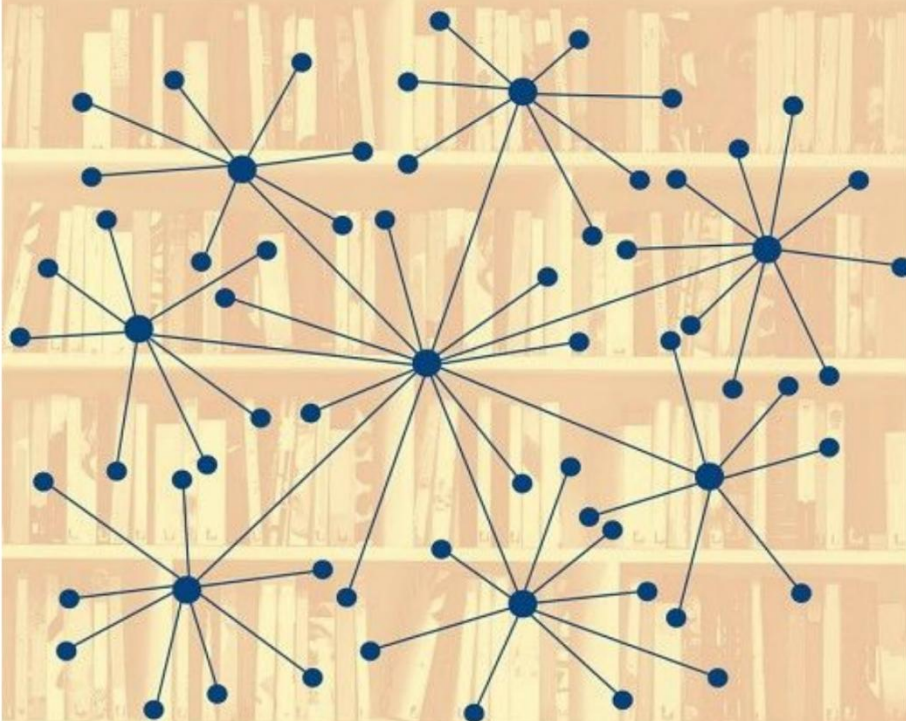"A powerful argument for the right of all of us to know. . . .
This is a book that will spearhead debate in the twenty-first century."
—ALICE KESSLER-HARRIS,
R. Gordon Hoxie Professor of History, Emerita, Columbia University

THE NEW ENLIGHTENMENT
and the fight to free knowledge
PETER B. KAUFMAN

The New Enlightenment

Contents

Preface

This book is one I began more than ten years ago.

It's now one I'm finishing in the middle of a plague.

It began as a vision of our knowledge institutions—our universities, libraries, museums, archives, public broadcasters, and others—recognizing the immense power that they have, especially with the Internet in each of their arsenals.

It began, also, as a call to action for them all to come together and with the power they have—we all have—as publishers to purvey verifiable truths. To have our knowledge institutions put knowledge online. To have us publish facts into a world gone mad.

It's being completed as a health and information pandemic rages around the world. As three hundred thousand newly dead from the pandemic here are buried and cremated.

It's being completed as criminal men try to tighten their grip. As the number of unemployed rises to and passes Depression-era levels. As universities, libraries, museums, archives, and schools worldwide are shuttered and staying closed.

And as fewer and fewer people can even discern truth from fiction anymore.

But this is also a book of hope. How can one possibly write a book of hope now? Jean-Jacques Rousseau, the author of *The Social Contract*, wrote in his memoirs, during the original Enlightenment: "If I want to describe the spring it must be in winter; if I want to describe a fine landscape I must be within doors; and as I have said a hundred times, if ever I were confined in the Bastille, there I would draw the picture of liberty."[1]

The competition for our attention on our screens and our speakers, and the allure of false and malign information, has begun to intensify in ways that were almost unimaginable even a few years ago. The pandemic has provided us with incentives to change the form and frequency of our knowledge conveyance. We are also in a new time, a video age, where the opportunities for

free-thinkers can only grow.

How knowledge institutions will handle the challenge of working with video—and with their new responsibility generally—remains to be seen.

<div align="right">
Peter B. Kaufman
Lakeville, Connecticut
December 11, 2020
</div>

Jean-Jacques Rousseau, *The Confessions*, trans. J. M. Cohen (London: Penguin Books, 1953), 166–167.

Part I: The Monsterverse

1. *The Monsterverse*

William Tyndale, born in 1494, killed in 1536, believed that the structure of communication during his time was broken and unfair, and with a core, unwavering focus, he sought to make it so that the main body of knowledge in his day could be accessed and then shared again by every man alive. He engaged in an unparalleled act of coding (not for nothing do we speak of computer programming "languages"), working through the Latin, Greek, Hebrew, and Aramaic of the Bible's Old, then New, Testaments to bring all of its good books—from Genesis 1 to Revelation 22—into English for everyday readers. He is reported to have said, in response to a question from a priest who had challenged his work—a priest who read the Bible only in Latin: "I will cause a boy that driveth the plough shall know more of the Scripture than thou dost." And he worked with the distribution technologies of his time—the YouTubes, websites, and Twitters back then—by connecting personally with book designers, paper suppliers, printers, boat captains, and horsemen across sixteenth-century Europe to bring the knowledge and the book that contained it into the hands of the people.[2]

It wasn't easy. In Tyndale's time, popes and kings—Roman pope Clement VII and English king Henry VIII, in particular—had decreed, out of concern for keeping their power, that the Bible could exist and be read and distributed "only in the assembly of Latin translations" that had been completed by the monk Saint Jerome in approximately 400 CE. The penalties for challenging the law were among the most severe imaginable, for such violations represented a panoply of civil transgressions and an entire complexity of heresies. In taking on the church and the king—in his effort simply and solely to translate and then distribute the Bible in English—Tyndale confronted "the greatest power[s] in the Western world." As he "was translating and printing his New Testament in Worms," his leading biographer reminds us, "a

young man in Norwich was burned alive for the crime of owning a piece of paper on which was written the Lord's Prayer in English."[3] Moreover, the text he was translating alone was not the work of one creator. The Bible, as one of its modern translators has said, is "a work assembled by many hands, reflecting several different viewpoints, and representing literary activity that spanned several centuries," and the text assembly involved in its original production "a process akin to collage." "There are other instances of works of art that evolved over the centuries, like the cathedrals of medieval Europe," this modern translator reminds us, but bringing the Bible into English involves "an elaborate process of editing" akin to the work behind "some of the greatest Hollywood films."[4]

Tyndale knew seven languages—Greek, Latin, Hebrew, and Aramaic among them—and with them all he sought to accomplish mainly this one thing: to translate the non-English Bible into English. He was a devout Christian. "Such was the power of his doctrine, and the sincerity of his life," one biographer tells us, "that during the time of his imprisonment"—some twenty months, before he received the capital punishment for his crimes—"he converted, it is said, his [prison] keeper, the keeper's daughter, and others of [the keeper's] household."[5] But hopeful or not, devout or not, Tyndale met his violent end: "executed by strangling," as his Wikipedia biography reads, "and then, burnt at the stake."[6] This was his lot after he was pursued across Europe by a king and church determined for decades to capture and destroy him; after he was caught following an act of gross and itself almost biblical betrayal; and then after close to two years of privation in a cold and wet cell outside of Antwerp, Belgium, where he was held, often in solitary confinement. This poor scholar and polymath to whom, it is now known, we owe as much as we owe William Shakespeare for our language, this lone man sought and slain by church and king and holy Roman emperor—his initial, official strangling did not go well, so that when he was subsequently lit on fire, and the flames first lapped at his feet and up his legs, lashed tight to the stake, he came to, and, while burning alive in front of

the crowd of religious leaders and so-called justices (some seventeen trial commissioners) who had so summarily sent Tyndale to his death and gathered to watch it, live, he cried out, less to the crowd, it would seem, than to Another: "Lord! *Lord!* Open the King of England's eyes!"[7]

Grim, the fate of the people who spread knowledge.

This was not an uncommon thing during Henry VIII's time—or Pope Leo X's or Clement VII's time—in and around the 1500s. Tyndale's most rapacious pursuer, Sir Thomas More, himself met a similar end. Henry VIII lost patience with More and initially wished for him to be hanged until he was half-dead, then castrated, then disemboweled and forced to watch his own intestines being burnt in front of him, and *then* (and only then) beheaded and burnt up whole. But, on the advice of counsel, he relented in favor of a much simpler decapitation:

> About Nine [More] was brought out of the Tower; his Beard was long, his face pale and thin, and carrying a Red Cross in his Hand, he often lift up his Eyes to Heaven [. . .]. When he came to the Scaffold, it seemed ready to fall, whereupon he said merrily to the Lieutenant, Pray, Sir, see me safe up; and as to my coming down, let me shift for myself. Being about to speak to the People, he was interrupted by the Sheriff, and thereupon he only desired the People to pray for him, and bear Witness he died in the Faith of the Catholic Church, a faithful Servant both to God and the King. Then kneeling, he repeated the Miserere Psalm with much Devotion; and, rising up the Executioner asked him Forgiveness. He kissed him, and said, Pick up thy Spirits, Man, and be not afraid to do thine Office; my Neck is very short, take heed therefore thou strike not awry for having thine Honesty. Laying his Head upon the Block, he bid the Executioner stay till he had put his Beard aside, for that had committed no Treason. Thus he suffered with much Cheerfulness; his Head was taken off at one Blow, and was placed upon London-Bridge [after being boiled—and to a black mass], where, having continued for

some Months, and being about to be thrown into the Thames to make room for others, his Daughter Margaret bought it, inclosed it in a Leaden Box, and kept it for a Relique.[8]

Imagine, then, the head of a television news network today—any TV network, really, but take for example Rupert Murdoch, Bill Shine, or Jack Abernethy at Fox News—garroted, disemboweled, drawn and quartered, and auto-da-fé'd in this way. Would *they* manage to endure, as Tyndale did back then? What is (or, when history judges them, was) their personal commitment—above and beyond the here and now—to making the world a better place through the media: through the power, the instruments, the weapons that they wield? Or, let us address even Johannes Gutenberg and the early printers—would they have had themselves strapped to a stake for the sake of knowledge?[9] Guglielmo Marconi and all the radio pioneers? Philo Farnsworth and the other inventors of television? Tim Berners-Lee?

Today there is a new movement—nothing short of it—galvanizing around freeing knowledge. Its success is neither universal nor assured—various countries block its progress, still, wholesale; various forces and personalities seek to stifle and sometimes even to strangle it. But it has billions of catalyzing engines powering it now, and those engines are people, screens, speakers, pages of paper, and all the networks that together comprise the modern Internet. And while there have been purposeful, focused, grandiose efforts before now—around the Bible, in Tyndale's time; around the first encyclopedia of knowledge, during the original Enlightenment; amid the Soviet revolutionary experiment, when there was even a government Commissar of Enlightenment; and at the foundation of public-media experiments much closer to home—to make knowledge grow and take root everywhere, there may be a true chance now to realize the hope that has lain at the heart of these grand visions, and to make all these advances over the centuries somehow more significant and permanent.

This then is a book of hope—and fire. It is set in the modern-day

version of Tyndale's Monsterverse. Every age has had its evil—and history shows us that tuning into that evil is central to succeeding in acting against it. Tyndale's Monsterverse had Thomas More. More is best known today for his 1516 work *Utopia* and his flattering portrait as a principled and courageous Catholic in the play and film *A Man for All Seasons*. But More was heinous—a savage—and, as King Henry's chief ideologue, the man who really singularly led the effort to capture Tyndale. He wrote close to a million words—two thousand "heavy pages," as Tyndale's biographer puts it—bubbling with bile and venom, and also fulminating with scat.[10] Typical was More's accusation that Martin Luther—another contemporary heretic, in his view—had claimed the right to "bespatter and besmirch the royal crown with shit."[11] "You kissed the ass of Luther, the shit-devil," More wrote to our man Tyndale on one not atypical occasion. "Look, my fingers are smeared with shit when I try to clean your filthy mouth."[12] Such were the defenders of their own orthodoxy and own worlds in the 1500s (not unlike those you would find today in comments on the Internet).

And Tyndale worked in an environment that spawned other februations, as another scholar has put it, more "penitential public theater": the ceremonial execution of *texts* as well as of the purported heretics and transgressors who wrote or trafficked in the worst of them. Burning books, ripping out their pages (itself a kind of disembowelment), imprisoning them—all that was common in the sixteenth-century Monsterverse. One author of the time was sentenced to have his ears cut off and have his books

consumed before his eyes in a fire tended by the public executioner. The sentence was carried out . . . with Prynne in the pillory and his books in flames before him. According to one observer, the smoke from the burning almost suffocated the author, which was hardly surprising since each volume had more than a thousand pages.[13]

Hardly surprising, indeed.

QQQ

With the Aaron Swartzes of the world as suicides, the Julian
Assanges pursued into prison, the Edward Snowdens chased into
exile, our time in many ways is no different. There will come a
moment again soon to consider how to limit all of the damage we
are doing to our world through our media and communications
policies and norms, and that we are doing—and allowing to be
done—to our world by allowing our political leadership such free
rein. The damage is altogether too stark and blinding to see at
once—like black lightning, if there were such a thing. Today the
most powerful offices in the world are once again involved in a
relentless effort to crush freedom of thought, independent
thinking, expertise—and to stanch progress toward open, civil
society. The cabinet of daemons installed in Donald Trump's White
House has been extraordinary, in historical perspective, for its
share of felons, accused felons, and just general mountebanks
nominally in charge of stewarding a sector of society—education,
labor, the "interior," health and human services—but each more
keen than the next on deregulating and commercializing his fief,
all to keep in lockstep with the moneyed interests that, perhaps
more subtly, have been steadily and systematically steering our
society toward this point for decades.

QQQ

In 1536, Tyndale had been in his basement cell for 450 days, the
first weeks of which "would have been punctuated by long visits
from the procurer-general and a notary"—both of whom
facilitated the preparation and documentation of the full
accusation against him—and the last weeks of which involved an
examination-cum-trial replete with apostolic inquisitors and
theologians, university rectors and faculty, lawyers and privy
councillors: "heresy-hunters," as his biographer calls them. When,
at the end, he was condemned, he suffered what they would
choreograph as a formal degradation, led in public and in his

priestly raiment to a high platform outdoors where oils of anointment were scraped symbolically from his hands, the bread and wine of the Eucharist situated next to him and then just as quickly removed, and then his vestments "ceremonially stripped away," so that he would find himself, and all would see him as, no longer a priest.[14] Death came next. Actually there remains some question whether he shouted out to the king before he was strangled or after (and thus whether the whole botched-strangling account is true or not), but his words—of warning, of prescience, of (what matters here) selflessness—as so recorded were his last.

When we speak of the thirst for access to knowledge, *our* knowledge, we needn't look as far back as William Tyndale for an exemplar. We can connect to the life of a real martyr from the modern age, one whose story is tied to almost all of the issues we address in this volume, one who is perhaps the closest modern figure to Tyndale we have, hounded down in our own day just as Tyndale was in his: pursued, captured, arrested, locked in.

Hounded quite literally to death.

Aaron Swartz was a progressive computer programmer, hacker, and activist—an entrepreneur, a genius, a young man of hope— who downloaded scholarly publications illegally. Massachusetts Institute of Technology (MIT) Police arrested Swartz in an MIT closet where he had deployed his laptop and connected it to the MIT system, and in 2013, at twenty-six years old, he took his own life—hanged himself by the neck—during the investigation and prosecution that ensued.[15] His suicide, under pressure from the academy and the government, prompted worldwide examination and reflection. His death and the official government pursuit that led to it contributed, as part of his legacy, to a push by scholars and activists to craft an even more aggressive agenda of publishing reform—a reform, indeed, of the research and action agenda itself, such that MIT's visionary director of libraries, Chris Bourg, could ask of us all, five years later, "How can we create a world where Aaron Swartz's act of disobedience was just . . . research?"[16]

Swartz downloaded copies of academic articles—4 million or 4.8 million; millions, at any rate—with the objective of publishing

them freely online, so that anyone could read them anywhere, at any time. His target and source was JSTOR—a "digital library," as the company describes itself, "for scholars, researchers, and students"—and one that holds, as of this writing, some 12 million digital articles, books, and primary documents across 75 disciplines or fields of study.

The hounding Swartz endured as a result was unbelievable. Some 14,500 pages of the US Secret Service's files on him are available online.[17] The original indictment against him—the charge—featured this language:

> Between September 24, 2010, and January 6, 2011, Swartz contrived to:
> a. break into a computer wiring closet at MIT;
> b. access MIT's network without authorization from a switch within that closet;
> c. connect to JSTOR's archive of digitized journal articles through MIT's computer network;
> d. use this access to download a major portion of JSTOR's archive onto his computers and computer hard drives;
> e. avoid MIT's and JSTOR's efforts to prevent this massive copying, measures which were directed at users generally and at Swartz's illicit conduct specifically; and
> f. elude detection and identification
>
> all with the purpose of distributing a significant proportion of JSTOR's archive through one or more file-sharing sites.[18]

Among the laws he was charged with breaking were 18 U.S. Code § 1343 (committing wire fraud); 18 U.S. Code § 1030 (a)(4), (b) (computer fraud); 18 U.S. Code § 1030 (a)(2), (b), (c)(2)(B)(iii) (unlawfully obtaining information from a protected computer); 18 U.S. Code § 1030 (a)(5)(B), (c)(4)(A)(i)(I), (VI) (recklessly damaging a protected computer); 18 U.S. Code § 2 (aiding and abetting); and 18

U.S. Code § 981(a)(1)(C), 28 18 U.S. Code § 2461 (c), 18 U.S. Code § 982 (a)(2)(B), and 18 U.S. Code § 1030 (i) (criminal forfeiture).[19]

Swartz believed that knowledge should be set free when and where it could be—and he so proselytized. "Information is power," he liked to say. He wrote a tract and treatise—the 'Guerilla Open Access Manifesto'—in July 2008, where he reminded his readers:

> But like all power, there are those who want to keep it for themselves. . . . Those with access to these resources—students, librarians, scientists—you have been given a privilege. You get to feed at this banquet of knowledge while the rest of the world is locked out. But you need not—indeed, morally, you cannot—keep this privilege for yourselves. You have a duty to share it with the world.[20]

In its own review of the matter after Swartz's death, MIT's Review Panel stated that "the Review Panel views the question of what [Swartz] intended to do with the information that he was downloading from JSTOR as remaining open." The Review Panel also stated that "Federal law enforcement apparently took the first sentence [of one paragraph of the 'Guerilla Open Access Manifesto'], 'We need to take information, wherever it is stored, make our copies and share them with the world,' as the motive and purpose behind his extensive downloading—some 4.8 million articles, or 80% of JSTOR's database of journals."[21]

Apparently so.

In many ways William Tyndale and Aaron Swartz were just trying to accelerate events, the realization of eternal truths they knew, but knew in the wrong time.

In many ways they were just trying to accelerate freedoms that will be as obvious to us in the future as the Thirteenth, Fourteenth, and Fifteenth Amendments to our Constitution are today.

But Swartz—the Monsterverse took his life away, too.

John Foxe, *Actes and Monuments of These Latter and Perillous Dayes, Touching Matters of the Church* (more generally known as *Foxe's Book of Martyrs*) (London: John Day, 1563), http://www.ccel.org/f/foxe/martyrs/home.html.
"Christians almost from the beginning knew their book only in translation, and even then, for over half the life of the Faith, had their book taken away from them. . . . It remained inaccessible in Latin

for a thousand years, and . . . . [t]o translate it for the people became heresy, punishable by a solitary lingering death as a heretic; or, as had happened to the Cathars in southern France, or the Hussites in Bohemia and Lollards in England, official and bloody attempts to exterminate the species." David Daniell, *The Bible in English: Its History and Influence* (New Haven, CT: Yale University Press, 2003), 11, 136, 157.

Robert Alter, *The Hebrew Bible: A Translation with Commentary, vol. 1, The Five Books of Moses Torah* (New York: W. W. Norton, 2018), xlix, 9.

Foxe, *Actes and Monuments*; David Daniell, *William Tyndale: A Biography* (New Haven, CT: Yale University Press, 1994).

"William Tyndale," Wikimedia Foundation, last modified June 19, 2020, 6:27, https://en.wikipedia.org/wiki/William_Tyndale.

Foxe, *Actes and Monuments*, emphasis added. See also Melvyn Bragg, "Melvyn Bragg on William Tyndale," *Daily Telegraph* (London), June 6, 2013, https://www.telegraph.co.uk/culture/tvandradio/10096770/Melvyn-Bragg-on-William-Tyndale-his-genius-matched-that-of-Shakespeare.html. Bragg's BBC film, *The Most Dangerous Man in Tudor England*, directed by Anna Cox, was originally broadcast on BBC Two on June 6, 2013, and can be viewed online, https://vimeo.com/139898687. See also "Jacobus Latomus," Wikimedia Foundation, last modified April 24, 2020, 17:20, https://en.wikipedia.org/wiki/Jacobus_Latomus; and Jacob Latomus, *Confutations Against William Tyndale*, trans. James A. Willis (Leuven, 1542), https://web.archive.org/web/20080517104730/http://www.tyndale.org/Reformation/1/latomus1.html.

Edward Hall, *The Union of the Two Noble and Illustre Famelies of Lancastre and Yorke* (commonly called Hall's *Chronicle*) (London: John Grafton, 1548), vol. 2, S. 2, quoted in Claire Ridgway, "The Execution of Sir Thomas More," *The Anne Boleyn Files* (blog), July 6, 2010, https://www.theanneboleynfiles.com/the-execution-of-sir-thomas-more/.

They used to beat each other over the head back then, trying to eliminate partners and competitors throughout the sixteenth century. It was a rough profession; they developed quite a thirst for blood. See "The history of media & social change - Anthony Grafton in INT's ENLIGHTENMENT MINUTES," Intelligent Channel, September 8, 2013, YouTube video, 6:38, https://youtu.be/VosaOdqbVf4.

And "gallons of ink." Daniell, *William Tyndale*, 275, 375.

Constance M. Furey, "Invective and Discernment in Martin Luther, D. Erasmus, and Thomas More," *Harvard Theological Review* 98, no. 4 (October 2005): 486, https://doi.org/10.1017/S0017816005001069.

Bragg, *The Most Dangerous Man*, 43:15. More, in his rantings, also called Tyndale "a hellhound in the kennel of the devil" (Daniell, *William Tyndale*, 277).

David Cressy, "Book Burning in Tudor and Stuart England," *The Sixteenth Century Journal* 36, no. 2 (Summer 2005): 359–374, https://doi.org/10.2307/20477359.

Daniell, *William Tyndale*, 374–384.

Harold Abelson, Peter A. Diamond, Andrew Grosso, and Douglas W. Pfeiffer, "Report to the President: MIT and the Prosecution of Aaron Swartz," July 26, 2013 (Cambridge: MIT), http://swartz-report.mit.edu/. It wasn't MIT's finest hour. See also Cory Doctorow, "MIT Blocking Release of Aaron Swartz's Secret Service Files," *Boing Boing*, July 18, 2013, https://boingboing.net/2013/07/18/mit-blocking-release-of-aaron.html; Michael Morisy, "After Pledging 'Spirit of Openness,' MIT Delays Release of Aaron Swartz's Secret Service Files, Pending Review," Boston.com, July 18, 2013, https://www.boston.com/news/innovation/2013/07/18/after-pledging-spirit-of-openness-mit-delays-release-of-aaron-swartzs-secret-service-files-pending-review.

Chris Bourg, "Open as in Dangerous," (talk, Creative Commons Global Summit, Toronto, ON, April 14, 2018), https://www.youtube.com/watch?v=6JN3EGpraAY.

These Secret Service documents can be viewed at https://swartzfiles.com/. See also Kevin Poulsen, "First 100 Pages of Aaron Swartz's Secret Service File Released," *Wired*, August 12, 2013, https://www.wired.com/2013/08/swartz-foia-release/.

See *United States v. Swartz*, United States District Court, District of Massachusetts, Criminal No. 11-10260-NMG, Document 2, July 14, 2011, viewable at https://www.wired.com/images_blogs/threatlevel/2011/07/swartz_indictment.pdf. A second indictment added nine more felony counts; see *United States v. Swartz*, United States District Court, District of Massachusetts, Criminal No. 11-10260-NMG, Document 53, September 12, 2012, viewable at https://www.wired.com/images_blogs/threatlevel/2012/09/swartzsuperseding.pdf.

See "18 U.S. Code § 1343. Fraud by wire, radio, or television," Cornell Law School Legal Information Institute, accessed October 13, 2020, https://www.law.cornell.edu/uscode/text/18/1343.

Aaron Swartz, "Guerilla Open Access Manifesto," July 2008, Internet Archive, https://archive.org/stream/GuerillaOpenAccessManifesto/Goamjul. See also *The Internet's Own Boy*, a film of Swartz's life, directed by Brian Knappenberger (Beverly Hills, CA: Participant Media, 2014), described at "*The Internet's Own Boy*," Wikimedia Foundation, last modified May 27, 2020, 11:47, https://en.wikipedia.org/wiki/The_Internet%27s_Own_Boy (how a free version of this film is not available legally is a mind-blower); John Naughton, "Aaron Swartz Stood Up for Freedom and Fairness—and Was Hounded to His Death," *Guardian*, London, February 7, 2015, https://www.theguardian.com/commentisfree/2015/feb/07/aaron-swartz-suicide-internets-own-boy; Larissa MacFarquhar, "Requiem for a Dream," *New Yorker*, March 4, 2013, https://www.newyorker.com/magazine/2013/03/11/requiem-for-a-dream.

Abelson, Diamond, Grosso, and Pfeiffer, "Report to the President." See, for contrast, Carl Malamud, "On Crime and Access to Knowledge," Internet Archive, March 30, 2013, https://archive.org/details/org.resource.public.crime/mode/2up (a published version of Malamud's memorial speech for Swartz at the Internet Archive, San Francisco, CA, January 24, 2013).

Part II: The Republic of Images

2. *The* Encyclopédie

When the ideas that matter most to us—liberals, democrats, progressives, republicans, all in the original sense of the words— were first put forward in society in order to . . . *change* society, they were advanced first and foremost in print. New rules, new definitions, new codicils of human and civil rights that undergird many of the things that we value today, that undergird the rights we know we have—rights, now that we have won them, that in turn protect us in the fight for more—had as their heart text and its delivery mechanism, the printing press, beating in every struggle of the original Enlightenment. The ubiquity of text today —words and writing are everywhere in our everyday lives—has helped to render the magical centrality of printing, of the mechanical duplication of word and image, for the networks of ideas that matter most to us as more of an "unacknowledged revolution" than a violent one: an "elusive transformation."[22]

Some thirty years after Johannes Gutenberg built the first printing workshop in Germany, that country had print shops in only forty towns. By 1500, a thousand printing presses were in operation in Western Europe, and they had produced roughly 8 million books. But by the end of the century, William Tyndale's century, between 150 and 200 million books were circulating.[23] The French Revolution—an ultimate moment of the Enlightenment— featured the liberation of the Bastille prison in central Paris, an act whose significance has often been lambasted as overblown because, as one historian encapsulates the matter, that fortress "contained only seven residents: four men accused of forgery, two 'mental cases' and the Marquis de Sade." But the 1789 liberation involved more than people: it involved ideas; it involved ghosts; it involved freeing some texts. "Over eight hundred authors, printers, booksellers, and print dealers had been incarcerated [in the Bastille] between 1600 and 1756," the historians tell us, as well as "thousands of copies of the *Encyclopédie*, the masterpiece of

the Enlightenment, between 1770 and 1776."[24] And that *Encyclopédie*, the fetish of this book, was enormous. It comprised 28 folio volumes, 71,818 articles, 2,885 illustration plates, and more than 20 million words—and, of course, beneath its "bulk," as its physical presence has been described (callous!), an "epistemological shift that transformed the topography of everything known to man."[25]

The publishers of the original brochure—or "prospectus," as it was then called—for one of the greatest media enterprises of all time, one of the original truth engines, was built upon a fib, a bit of fraud, even a "whopping lie."[26] Seeking subscribers for the *Encyclopédie* project—a complete catalog of the world's knowledge, as it was defined back in the eighteenth century—the publishers wanted you to shell out 60 French livres, or "pounds" (named for pounds of silver, though the backing had disappeared) by the first deadline of May 1751, then 36 pounds more that June, and then you'd be in: you'd receive Volume 1. Twenty-four pounds more in December, please, for Volume 2. An additional 36 by June again, and Volume 3. Thirty-six more in December, Volume 4; and so on. Ten volumes in all by December 1755, and all for a total of 280 pounds—this at a time when your work would bring you 2 (for unskilled labor) to 6 (skilled labor) pounds a day.[27]

Le Breton publishers printed eight thousand elegant brochures to sell it. The *Encyclopédie* would be printed on the same paper (in the 1700s, this was a thing; watch a family comparison shop today for a television at Best Buy, weighing screen sizes and resolutions, and imagine . . .) as the brochure you were holding, they promised, and in the same classic folio design. Each volume would contain some 240 pages. The notes and indices would come last.

Moreover, they said:

L'OUVRAGE que nous annonçons, n'est plus un Ouvrage à faire. Le Manuscrit & les Desseins en sont complets. Nous pouvons assurer qu'il n'aura pas moins de huit Volumes, & de six cens Planches, & que les Volumes se

succéderont sans interruption.[28]

But in fact the manuscript wasn't in. The designs hadn't been commissioned. What became, through the force of will of hundreds of Enlightenment personalities, some money, and some luck, a project (initially) of 22 million words, 74,000 articles, 18,000 pages of text, and 28 volumes in all (17 of them text, 11 of them engraved illustrations)—what became right up there, after William Tyndale's and then others' work with the books of the Bible, the greatest project of knowledge assembly, compilation, and distribution then yet exercised—was still on the drawing board, its writers and editors, its business plan, its creative team, and, not least, its finances still far from established. Denis Diderot, one of its masterminds (and fresh out of jail, to boot), was huckstering with his sales language during that November of 1750, hoping against hope—"*Le Manuscrit & les Desseins en sont complets*," indeed! —that capital might accumulate in a form sufficient to launch the project.

The original, less ambitious plan that Le Breton had conceived— and announced—was to publish a translation of a more basic English encyclopedia—a dictionary, really—compiled by Ephraim Chambers and published in England in 1728. But the plan, for a shorter five-volume set, changed—and grew.[29]

Funny, that a project we shall describe as such a sterling contribution to knowledge and fact should have been conceived in language so false and untrue. And ironic, that the sales brochure would carry on it a legend that it had been published by a printer licensed by the king, under the required royal permission—the permission, in other words, of the power that its merchandise was, ultimately, to destroy.

Q Q Q

The prospectus was not that radical a document. It set forth to "inform the public" about the work that the Enlightenment team— the *Encyclopédistes*, as they would come to be known—was

"presenting." Diderot hailed the contribution of the modest dictionary, as a form, to art and science, praised the major dictionaries and plans for encyclopedias that had been published up to then, and then called for a bigger kind of mega-dictionary, much larger than any dictionary or encyclopedia that had been published to date. In the name of the editorial team (which, again, was still to be assembled), he called for (and promised) a new scope for the new reference work: addressing and embracing, cataloging and presenting knowledge across all of the sciences, the liberal arts, and the mechanical arts.

To accomplish this, the *Encyclopédistes* had assembled artisans and scholars, he said, and assigned appropriate articles to all of them.[30] "The different writers whose talents we have employed have put the stamp of their particular styles on each article, as well as that of the style proper to the subject matter and the object of their part," he wrote. They paid particular attention to the "mechanical arts," as he called them—saying that their writing "impelled us to go directly to the workers."

> We approached the most capable of them in Paris and in the realm. We took the trouble of going into their shops, of questioning them, or writing at their dictation, of developing their thoughts and of drawing therefrom the terms peculiar to their professions. . . . [S]everal times we had to get possession of the machines, to construct them, and to put a hand to the work. It was necessary to become apprentices, so to speak, and to manufacture some poor objects ourselves in order to learn how to teach others the way good specimens are made.[31]

The writing of the *Encyclopédie* was eventually to span almost twenty thousand articles over more than twenty years (1751–1777) —but even at the start the editors could foresee some of the challenges:

> A technique of chemistry will not have the same tone as the

description of ancient baths and theaters; the operations of a locksmith will not be set forth in the same way as the studies of a theologian on a point of dogma or discipline. Each thing has its coloration, and the various branches of knowledge would become indistinct if they were reduced to a certain uniformity.

When it was reproduced in full, as part of the encyclopedia proper, the prospectus would carry a folded map of knowledge as the *Encyclopédistes* conceived it—and it was this majestic, comprehensive vision, based on and inspired by works of Francis Bacon, Gottfried Wilhelm Leibniz, and others, that pointed, in 1750, to the incendiary. This was a genealogical tree, a diagram of knowledge phylogenesis showing where and how forms of knowledge grow, sprung from the three human faculties of memory (wherefrom history is derived), reason (philosophy), and imagination (poetry and fine arts). But it also suggested that new understandings of the human condition could be created by interrogating philosophy, religion, politics, and society all together, and not one (say, for example, religion) singly, or one more so than the others. There was a seedling sense, under this tree, that a social order needed to grow more—dare one say it—logical, reasonable, reasoned: in a word, rational. Diderot considered Bacon the originator of the empirical method, and in one of the articles—"Baconisme"—that he contributed to the *Encyclopédie* he praised the man as the project's intellectual forefather. And why not, as Bacon had hoped in his time to assemble a sweeping encyclopedia, too, with the modest-enough title of *The Phenomena of the Universe; or a Natural and Experimental History for the Foundation of Philosophy*.[32]

The prospectus announced that this new work would be, as we say today, "fact-based"; there would be an underlying and overarching commitment on the part of all contributors and the work as a whole to the verification of its source materials. This commitment to reference—what Princeton scholar Anthony Grafton has called the "curious history" of the footnote—is the

foundation of modern scholarly communication. It's the foundation of what today's Wikipedia terms verifiability, and in many ways the foundation for truth in knowledge and society.[33]

Verification is potentially "a long and painful process," Diderot declared.

> We have tried as much as possible to avoid this inconvenience by citing directly, in the body of the articles, the authors on whose evidence we have relied and by quoting their own text when it is necessary.
>
> We have everywhere compared opinions, weighed reasons, and proposed means of doubting or of escaping from doubt; at times we have even settled contested matters. . . . Facts are cited, experiments compared, and methods elaborated . . . in order to excite genius to open unknown routes, and to advance onward to new discoveries, using the place where great men have ended their careers as the first step.

What this meant in practice was revolutionary: there would be no accepted truths but for those that could be proven and cited.

Fact-based versus faith- and belief-based—the start and spark of the Enlightenment.

Diderot also addressed the scope of the project in one other dimension—that of time, and of the *Encyclopédistes*' commitment to rendering something that would take a lot of it and last for all the rest. "It took centuries to make a beginning," he wrote, referring to the time it had taken to prepare the foundation for the work, "and it will take centuries to bring it to an end." "What an advantage it would have been for our fathers and for us, if the works of the ancient peoples, the Egyptians, the Chaldeans, the Greeks, the Romans, etc., had been transmitted in an encyclopedic work, which had also set forth the true principles of their languages." He expressed the hope that he and his team were making that contribution for us today; he speaks to us, quite directly, from centuries ago. "May the Encyclopedia become a sanctuary," he wrote, "where the knowledge of many is protected

from time and from revolutions. *Will we not be more than flattered to have laid its foundations?*"

The prospectus was not a radical document. But it became something radical. Indeed, when its text, edited some and added to, was published the following year as the grand opening essay in the first one-thousand-page volume of the *Encyclopédie*, the text of that initial discourse, taken altogether, became the first colossal manifesto of human progress (in an . . . encyclopedia!), the greatest single undertaking of the Enlightenment; indeed, as one scholar as written: "It *is* the Enlightenment, insofar as one can make a claim for any single work."[34] This *Preliminary Discourse* (1751) is now compared to the Declaration of Independence (1776), the Declaration of the Rights of Man and of the Citizen (1789), and *The Communist Manifesto* (1848). It is—it instantly became—"one of the great victories for the human spirit and the printed word."[35] The *Encyclopédie* would present to the world 17 volumes of text, each volume containing on average 900 pages, each page (in two columns) containing roughly 1,200 words—some 20 million words in all. But it was through the Preliminary Discourse, itself 45 pages long, that "for the first time large numbers of people were coming to the bracing conclusion that the progress of humanity could be carried forward indefinitely in this world, and men of letters felt they were the prime movers of that progress."[36]

Volume I (*A–Azymites*) appeared in 1751, as did II (*B–Cézimbra*). Volume III (*Cha–Consécration*) appeared in 1753; IV (*Conseil–Dizier, Saint*) in 1754; V (*Do–Esymnete*) in 1755; VI (*Et–Fné*) in 1756; and VII (*Foang–Gythium*) in 1757, all in Paris; and Volumes VIII through XVII (H–Z) in 1765. The eleven volumes of plates appeared between 1762 and 1772.

And the articles: oh!

A sampling:

adorer.
agnus scythicus.
autorité politique.
belbuch & zeombuch.
bramines.

capuchon.
caucase.
chef d'oeuvre.
college.
copernic.
cordelier.
damnation.
ecclésiastique.
école.
égalité naturelle.
encyclopédie.
experimental.
formulaire.
genève.
idole, idolâtre, idolâtrie.
impôt.
intendants et commissaires.
intolerance.
laboreur.
libelle.
liberté naturelle.
liberté civile.
liberté politique.
loi fundamentale.
mages.
magie.
malfaisant.
manes.
massacre.
menace.
milice.
modification, modifier, modificatif, modifiable.
monarchie. (Are we getting it?)
monarchie absolue.
monarchie élective.
monarchie limitée. (Good!)
monarque.
nommer.
obeissance. (Work with me here!)
offense.
origine.
pacifique.
pardonner.
partisan.
perturbateur.
peuple, le.
pouvoir.
presse.

prêtres.
privilège.
promission.
propagation de l'evangile.
propriété.
prostituer, prostitution.
question.
representants.
scandaleux.
sel.
spinosiste.
superstition.
taille a volonté.
théocratie.
traite des negres.
vice.
voluptueux.[37]

The text of the *Encyclopédie* included thousands of articles, on everything from asparagus to the zodiac, as the leading translation effort into English has described it. As a historian of the project has explained, by organizing the work's articles alphabetically—as opposed to thematically—the editors "implicitly rejected the long-standing separation of monarchic, aristocratic, and religious values" from "those associated with bourgeois culture and the country's trades."[38] And at the core of the work were pages, even lines, that rocked and cracked the eighteenth-century intellectual seismograph.

Q Q Q

The words and phrases—single words!—that William Tyndale had newly translated in the Bible had likewise rocked the sixteenth-century establishment—church, state, and especially Thomas More—a hundred ways to Sunday. The Bible's texts before Tyndale spoke of the priest, the Church, charity, and doing penance; Tyndale swept all that away.

He translated the Greek word *presbuteros* as "elder," whereas the church had always translated it as "priest"; he translated *agape* as "love," where the church had always had

it as "charity"; he translated *ekklesia* as "congregation," whereas the church had had it as "church"; and he translated *exomologeo* as "acknowledge," where the church used "confess." Above all, he translated the Greek word *metanoeo* as "repent." *Metanoeo* is a classical and New Testament Greek word meaning "a change in the mind." It means that sort of complete change that can come over people's minds and change the direction of their lives. The Latin church had always translated that as *paenitentiam agite*, meaning "do penance." Now, to do penance involves paying money, so they didn't want the New Testament to be saying "repent." But if you look in Luke 17:3–4, Christ says "repent." In Acts 2:37, the people asked Peter and the apostles, "What shall we do?" The Greek in verse 38 says "repent." The church, however, says "do penance."[39]

The bravado is extraordinary. Tyndale said of the church and to it:

Penance is a word of their own forging, to deceive us withal, as many others are. In the scripture we find *poenitentia*, "repentance;" *agite poenitentiam*, "do repent;" *poeniteat vos*, "let it repent you." . . . Of repentance they have made penance, to blind the people, and to make them think that they must take pains, and do some holy deeds, to make satisfaction for their sins; name such as they enjoin them. As thou mayest see in the chronicles, when great kings and tyrants came to themselves, and had conscience of their wicked deeds; then the bishops coupled them, not to Christ, but unto the pope, and preached the pope unto them; and made them to submit themselves, and also their realms, unto the holy father the pope, and to take penance, as they call it; that is to say, such injunctions as the pope and bishops would command them to do, to build abbeys, to endote them with livelihood, to be prayed for for ever, and to give them exemptions and privilege and license to do whatever they

lust unpunished. . . .

The mother church, and the high altar, must have somewhat in every testament. Offerings at priests' first masses. Item, no man professed, of whatsoever religion it be, but he must bring somewhat. The hallowing, or rather conjuring of churches, chapels, altars, super-altars, chalice, vestments, and bells. Then book, bell, candlestick, organs, chalice, vestments, copes, altar-cloths, surplices, towels, basins, ewers, ship. Censer, and all manner ornament must be found them freely; they will not give a mite thereunto. Last of all, what swarms of begging friars are there! The parson sheareth, the vicar shaveth, the parish priest polleth, the friar scrapeth, and the pardoner pareth; we lack but a butcher to pull off the skin.[40]

He gave people the wherewithal to challenge the church's "vain superstition," "false doctrine," filthy lusts," "proud ambition," and "unsatiable covetousness." We thus can speak of what one of Tyndale's great modern interpreters has described as the "power of articulate contention" that Tyndale's translation work "induced in the common man." By creating "an intimate appeal to the single reader, each and every one," by "removing the encrustations of centuries of turgid and stagnant religious doctrine," and by "freeing the original prisoner-text from an expropriatory Church," Tyndale's texts as well as the very act of assembling and publishing them produced nothing less than a superpower, a moral force, amazingly, that would be "enough to uphold individuals in daring acts of dissent against overwhelming spiritual and political authority and to sustain these individuals during the sufferings that would follow such acts." He also knew that the Bible, for the most part, did not have readers; it had *listeners*; he knew that for the original writers of the Bible, it was "clearly of paramount importance to show people relating to each other through speech," and so he focused on the power of that speech; and he knew that "the dimension of sound would have been all the more urgent for the first audiences to whom these texts were addressed,

who would of course not have read them silently but rather would have listened to them."

> Tyndale opened the door to a Scripture that could belong to Everyman, that could be fashioned and refashioned to suit mundane needs and wants. It was now possible to entertain the idea of a book as something other than monolithic granite, as something as pliable, and yet coherent, as mercury. A Word-to-person symmetry had been proposed, one that would put man on equal footing with his book, in contradistinction to the mother Church, a tome hidden away for prelatical eyes only.

"Scripture," moreover, "now spoke not only to the individual, but more importantly to the new society of individuals who were beginning to be united through their common access to Scripture in the vernacular. . . . The democratization of the Bible is precisely what Tyndale was after."[41]

<p style="text-align:center">Q Q Q</p>

The *Encyclopédie* did the same—in ways that seem subtle today, but it smote orthodoxy with steel sledgehammers. Key articles in among the thousands—on topics that can be grouped under "religion," say, or "philosophy," or "politics and society," challenged the government and the church, even as the censors watched. The article on "Reason," for example, told us that

> No proposition can be accepted as divine revelation if it contradicts what is known to us, either by immediate intuition, as in the case of self-evident propositions, or by obvious deductions of reason, as in demonstrations.

—and the clerics were not fans. An equally impassioned condemnation of the slave trade made few friends among any who had a hand in the business:

Slave trade is the purchase of Negroes made by Europeans on the coasts of Africa, who then employ these unfortunate men as slaves in their colonies. This purchase of Negroes to reduce them into slavery is a negotiation that violates all religion, morals, natural law, and human rights.[42]

Swipes at the monarchy and the church appeared where you might expect—articles on CONSCIENCE, LIBERTÉ DE; FANATISME; TOLÉRANCE; CROISADES—but further, the article on CHAOS contained Enlightenment swipes at the Biblical myth, and FORTUNE on the gross inequalities of wealth in eighteenth-century Europe. Diderot and his colleagues—the most progressive of them, anyway—could be found "putting their bolder thoughts into short and relatively out of the way articles or quite often simply by working them into longer and more prominent ones."[43] Thus, in articles on XENXUS and XOXODINS—about Japanese religion—punches at the Jesuits and the Jansenists, and in explanations of Indian and Mexican religious experiences—SHAVVARKA, YPAINA—potshots at the pope.[44] "The learned article 'Cannibals' ended with the mischievous cross-reference: 'See Eucharist, Communion, Altar, etc.'" Diderot's modern biographer explains that approximately twenty-three thousand articles, or about one-third of the total, had at least one cross-reference. "The total number of links—some articles had five or six—reached almost 62,000."[45]

"The ambition of the *Encyclopédie*," as one history tells us, "was to change the way people thought."

The audacity of this project is brought into focus when considered in relation to the very limited nature of formal education available in eighteenth-century Europe. Universities were accessible only to a privileged elite and their curricula—inherited from the Middle Ages—remained devoted largely to the study of ancient Greek and Latin authors, law, medicine and, most important, theology. The *Encyclopédie*, by contrast, reached a European-wide audience. By 1789, it is estimated that *24,000* complete sets

in various formats and editions had been printed, more than half of which were distributed outside France.[46]

It wasn't only the words and ideas inside the volumes that effected this change. It was the process of taking advantage of print, of commerce, of networks of contributors, printers, and distributors, to situate a major locus of knowledge and authority outside existing power institutions. Not only were contributors and editors and printers and purveyors critical of these power institutions, but they became, by the force of their interrogations and example, a stronger and stronger power institution themselves. Publishing itself was strictly censored—book publishers and pamphleteers were required to have a publishing license, or *privilège*, from the state, or some kind of *permission tacite*; licenses could be, and often were, revoked at any minute.[47] Indeed, the *Encyclopédie*'s license was pulled several times, and its permission to publish was always under threat.[48] The very idea that knowledge could be so established—and further, published with cross-references to other knowledge within the same emerging institution!—was itself a remarkable thing. In an age when "to follow one's reason wherever it led was a crime in the eyes of the orthodox," here "was a work which breathed a new spirit, one which was hostile to tradition and authority, which sought to subject all beliefs and institutions to a searching examination."[49]

The *Encyclopédie* project, in a word, shifted the giant spotlights of knowledge storage and distribution away from monolithic religious orders and behemoths of state-run and state-controlled institutions and shined them on something new—something that looked, in the bright glare, like something that we the people could, one day, control.[50] Remember, as one scholar tells us,

[t]he scholarly societies of the seventeenth and early eighteenth centuries, while hoping to contribute to material progress, were concerned primarily with the erudite and professional activities of closeted savants and did not dream

of transforming the conditions of the world in a fundamental way.[51]

The 1750 prospectus had been run off with a foldout of a chart of knowledge—a diagram of understanding, a topic map or XML schema, a summary of the principles, the *Principia*, of human knowledge—composed and drawn by Francis Bacon and printed as a bonus takeaway, like a pennant or a decal you received free with your mid-eighteenth-century direct-mail solicitation.[52] Much as Google would be developed by two gentlemen fixated—coming, as they did, out of the information-science world—on the value and reference of citation for ranking the verifiability of published information, the *Encyclopédie*, too, was built from a reference mindset. Articles across the enormous project *cited one another*— further solidifying the status of the collected volumes as themselves an ultimate and independent reference. Furthermore, the contributors were identified—by name, initials, codes. Not all of the contributors were major figures like Voltaire or Rousseau; indeed, an annoyed Diderot would write in 1768 that

> [i]n addition to some excellent people, there were others who were weak, mediocre, and totally incompetent. A jumbled work resulted, where a schoolboy's rough draft is found next to a masterpiece, a stupidity alongside something sublime, a page written with force, purity, passion, judgment, reason, and elegance on the back of a page that is poor, trivial, dull, and wretched.[53]

But their contributions—many of them, anyway—were attributed, sourced, verifiable. Of the 140 or so contributors we know about, only 20 or so were paid. And in many ways the most fascinating thing is that in those instances when contributors were not identified, it was often so that their contributions actually could be more pointed; in those instances where the citation framework was not so clear, it was often so that previously banned books and other works could be quoted, and even excerpted, more

freely.[54] The whole damn thing was such a triumph!

The prospectus was not that radical a document. But it became something radical. It became the manifesto of the *Encyclopédie*, the *Encyclopédie* became the manifesto of the Enlightenment— and the Enlightenment became the manifesto of the call to action for freedom and justice and equality that still motivates us today.

The Monsterverse would come for it, of course—but that's for later.

Q Q Q

As William Tyndale had Aaron Swartz, Diderot, too, had his successor, a modern cognate: act of freedom to act of freedom. The prospectus that would follow Diderot's in importance would actually follow in 1999.

That year, MIT's free-software activist and hacker Richard M. Stallman called for a universal *online* encyclopedia, covering all areas of knowledge, and a complete library of instructional courses —and, equally important, as a parallel to what we have been reading and as an inspiration to us today, a movement (quite literally, he says a "movement") to develop it, "much as the Free Software Movement gave us the free operating system GNU/Linux."

> The free encyclopedia will provide an alternative to the restricted ones that media corporations will write.

Stallman published a list of what that the encyclopedia would need to do, what sort of freedoms it would need to give to the public, and how it could get started. This was in 1999. It was to take advantage of the new century's newest connective technology —so it would be online. It would be

> An encyclopedia located everywhere.
> An encyclopedia open to anyone—but, most
>   promisingly, to teachers and students.
> An encyclopedia built of small steps.

An encyclopedia built on the long view: "If it takes twenty years to complete the free encyclopedia, that will be but an instant in the history of literature and civilization."

An encyclopedia built with evangelists: "Let's present . . . examples systematically to the academic community."

An encyclopedia containing one or more articles for any topic you would expect to find in another encyclopedia —"for example, bird watchers might eventually contribute an article on each species of bird, along with pictures and recordings of its calls"—and "courses for all academic subjects."

1999.

An encyclopedia with criteria of freeness.

An encyclopedia that permits universal access.

An encyclopedia that permits mirror sites and verbatim copies.

An encyclopedia that permits translation into other languages.

An encyclopedia that permits quotation with attribution.

An encyclopedia that permits modified versions of pictures and videos, for courses.

An encyclopedia built on only free software.

An encyclopedia without central control.

An encyclopedia that encourages peer review.

An encyclopedia with no catalogue—at least not yet.

An encyclopedia where pages inside link to other pages— but with no links to web pages that are restricted.

An encyclopedia that upholds the freedom of everyone, but especially teachers, to contribute.

An encyclopedia built by people who will spread the word.[55]

The licensing nonprofit Creative Commons would soon after declare Stallman to be its intellectual forebear. "In December

2002," the organization's website notes, Creative Commons "released its first set of copyright licenses for free to the public . . . inspired in part by [Stallman's] Free Software Foundation's GNU General Public License."

More to the point, Wikipedia to this day attributes its founding to Stallman, too, having based its "technological and conceptual underpinnings," it says, on the "free-as-in-freedom online encyclopedia . . . proposed by Richard Stallman in December 2000."[56]

Actually, 1999.

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Lucien Febvre and Henri-Jean Martin, *The Coming of the Book: The Impact of Printing 1450– 1800* (New York: Verso, 1976), https://books.google.com/books? id=9opxcMjv4TUC&printsec=frontcover&source=gbs_ViewAPI#v=onepage&q&f=false; Elizabeth L. Eisenstein, *The Printing Revolution in Early Modern Europe* (Cambridge: Cambridge University Press, 1993), online in part at http://assets.cambridge.org/052184/5432/frontmatter/0521845432_frontmatter.htm. See also "Global Spread of the Printing Press," Wikimedia Foundation, last modified June 2, 2020, 03:38, https://en.wikipedia.org/wiki/Global_spread_of_the_printing_press.

Eisenstein, *The Printing Press*, 147. See also Ithiel de Sola Pool, *Technologies of Freedom: On Free Speech in an Electronic Age* (Cambridge, MA: Harvard University Press, 1983); Elizabeth L. Eisenstein, "Some Conjectures about the Impact of Printing on Western Society and Thought: A Preliminary Report," *Journal of Modern History* 40, no. 1 (March 1968): 52. The *Encyclopédie*'s original publisher, André Le Breton, did a stint in there, too. See John Lough, *The Encyclopédie* (New York: David McKay Company, 1971), 29.

Robert Darnton, *The Business of Enlightenment: A Publishing History of the* Encyclopédie*, 1775– 1800* (Cambridge, MA: Harvard University Press, 1979), 7. See also John Lough, *The* Encyclopédie *of Diderot and D'Alembert: Selected Articles* (Cambridge: Cambridge University Press, 1954), ix.

For the best time line, see "General Chronology of the Encyclopédie," ARTFL Encyclopédie, University of Chicago, accessed October 13, 2020, http://encyclopedie.uchicago.edu/node/82. For the prospectus in French, see "Prospectus," ARTFL Encyclopédie, University of Chicago, accessed October 13, 2020, http://encyclopedie.uchicago.edu/node/174. The heroism of the American academic institutions below involved in keeping this eighteenth-century work alive in the twenty-first cannot be overstated. The full French text from all volumes and plates, thanks to the University of Chicago, is online: "The ARTFL Encyclopédie," ARTFL Encyclopédie, University of Chicago, accessed October 13, 2020, http://encyclopedie.uchicago.edu/. The most authoritative and complete English translation, thanks to the University of Michigan, is here: "The Encyclopedia of Diderot and d'Alembert," Michigan Publishing, University of Michigan Library, accessed October 13, 2020, https://quod.lib.umich.edu/d/did/. John Lough calls the prospectus flat-out a lie. See Lough, *The Encyclopédie*, 20. I am grateful to MIT's Vice President for Open Learning Sanjay Sarma for applying the term "truth engine" to our work at MIT—and by extension to this work of our forebears.

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Anthony Grafton, *The Footnote: A Curious History* (Cambridge, MA: Harvard University Press, 1999). It's funny to footnote a book about the footnote in a section of this book discussing the footnote.

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Darnton, *The Business of Enlightenment*, 13.

Schwab, "Translator's Introduction." See also Lough, *The Encyclopédie*, ix, 64.

Lough, *The Encyclopédie*. For the full chronology, see "General Chronology of the Encyclopédie," ARTFL Encyclopédie. Ultimately more than one hundred printers would get involved with the production of the work; see Melvyn Bragg, "The *Encyclopédie*," *In Our Time*, BBC Radio 4, 45:00, http://www.bbc.co.uk/radio4/history/inourtime/inourtime_20061026.shtml.

Andrew S. Curran, *Diderot and the Art of Thinking Freely* (New York: Other Press, 2019), 118.

David Daniell, *The Bible in English: Its History and Influence* (New Haven, CT: Yale University Press, 2003), 149. For Tyndale's work with the Greek, see Robyn Page, "Tyndale's Crucible," *Vision*, Summer 2003, https://www.vision.org/tyndales-crucible-331; Robyn Page, "William Tyndale: A Bible for the People," *Vision*, Summer 2003, https://www.vision.org/william-tyndale-bible-people-453. For more on the Hebrew, and the history, see Michael Weitzman, "On Translating the Old Testament: The Achievement of William Tyndale," *Reformation* 1 (1996): 165–180, consulted online at http://www.tyndale.org/reformj01/weitzman.html. The depth of exegesis required is extraordinary: "Our knowledge of biblical Hebrew is far from perfect even today. The proper method of deciding what a word means is to examine its usage in a good number of contexts. However, the Bible is brief, and very little else has survived in Hebrew from ancient times. As a result, of the different words attested in biblical Hebrew, four out of five occur fewer than twenty times in the Old Testament. Indeed, about a thousand occur just once."

William Tyndale, *Doctrinal Treatises and Introductions to Different Portions of the Holy Scriptures* (Cambridge: Cambridge University Press, 1848), 238. Quoted in David Ginsberg, "Ploughboys versus Prelates: Tyndale and More and the Politics of Biblical Translation," *Sixteenth Century Journal* 19, no. 1 (Spring 1988), 45–61, online (behind a paywall) at https://doi.org/10.2307/2540960.

"The Church was being edged out as the focal point, the common rallying ground, of man's ambition." Ginsberg, "Ploughboys versus Prelates"; Robert Alter, *The Art of Bible Translation* (Princeton, NJ: Princeton University Press, 2019), 102–103. See also Stephen Greenblatt, *Renaissance Self-Fashioning: From More to Shakespeare* (Chicago: University of Chicago Press, 1980).

Drew Armstrong, "Knowledge Reconfigured," *Constellations*, University of Pittsburgh, accessed October 13, 2020, https://constellations.pitt.edu/article/knowledge-reconfigured.

One Diderot biographer put it this way: "The public soon learned to identify, whether with alarm or delight, the manifold contrivances of editorial guile." Arthur M. Wilson, *Diderot: The Testing Years, 1713–1759* (New York: Oxford University Press, 1957), 131.

Lough, *The Encyclopédie*, 103, 112; Robert Darnton, *Censors at Work: How States Shaped Literature* (New York: W. W. Norton, 2015). The main printer would also censor the work himself from time to time—enraging not a few of the key contributors. See "André le Breton," Wikimedia Foundation, last modified April 18, 2020, 11:58, https://en.wikipedia.org/wiki/Andr%C3%A9_le_Breton; Rose Miyatsu, "A Revolutionary

Encyclopedia," blog post, University Libraries, Washington University in St. Louis, November 14, 2017, https://library.wustl.edu/a-revolutionary-encyclopedia/.

David A. Bell, "What We've Lost with the Demise of Print Encyclopedias," *New Republic*, March 19, 2012, https://newrepublic.com/article/101795/encyclopedia-britannica-publish-information; for the *Encyclopédie* article itself, see Edme-François Mallet, "Cannibals," *The Encyclopedia of Diderot & d'Alembert Collaborative Translation Project*, trans. Dena Goodman (Ann Arbor: Michigan Publishing, University of Michigan Library, 2009), http://hdl.handle.net/2027/spo.did2222.0001.094, accessed October 13, 2020. Originally published as "Anthropophages," *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, 1:498 (Paris, 1751). See also Curran, *Diderot*, 118. Curran maintains that the editors planned out every article—"tens of thousands of possible entries"—in advance of commissioning the first one, for "fear of missing a cross-reference"; Curran, *Diderot*, 110.

Armstrong, "Knowledge Reconfigured," emphasis added.

On the *permission tacite*: "The curious and very common practice constitutes an excellent example of the sort of paradoxical and illogical procedure that the anomalies of the *ancien regime* brought into being. A tacit permission was an official connivance of an infringement of the regulations. The process was so general and so regularized that a register of most tacit permissions was kept on file by the syndic of the corporation of booksellers. Other tacit permissions, however, were accorded orally and without registration, the author and printer merely being given private and non-documentary assurance that they might publish a particular manuscript without molestation from the police. In every case, however, the censors previously read the manuscripts in the usual way and the director of publications knew perfectly well what was going on. [A]ll these numerous books were printed anonymously, with misleading places of publication printed on their title pages, the point being that they should bear every mark of being illicit and clandestine in order to save the government from being officially embarrassed by any statements they might contain." Wilson, *Diderot*, 131–132. Indeed, *Encyclopédie* biographer Philipp Blom goes so far as to say that "the majority of books that appeared during the *ancien regime* were clandestine editions, smuggled into the city in bales of hay and the false bottoms of barrels of salted herring, or printed inside wood piles and on boats, in the alcoves of bourgeois houses and the huts in the gardens around Paris, and hawked in the streets and inns by specialized colporteurs, constantly on the lookout for police." See Blom, *Enlightening the World*, 10–11.

Lough, *The Encyclopédie*, 94, 233–236.

Lough, *The Encyclopédie*, 139, 398.

For a positive take on the teleology of all of this, see John Willinsky, *The Intellectual Properties of Learning: A Prehistory from Saint Jerome to John Locke* (Chicago: University of Chicago Press, 2017). See also Michael Jensen, "The New Metrics of Scholarly Authority," *Chronicle of Higher Education*, June 15, 2007, online (behind a paywall) at https://www.chronicle.com/article/The-New-Metrics-of-Scholarly/5449.

Schwab, "Translator's Introduction."

For more on its inspiration, Francis Bacon, see "*New Atlantis*," Wikimedia Foundation, last modified April 16, 2020, 16:14, https://en.wikipedia.org/wiki/New_Atlantis; https://www.fbrt.org.uk/bacon/; and the website Six Degrees of Francis Bacon, http://www.sixdegreesoffrancisbacon.com.

Quoted in Frank A. Kafker, "The Recruitment of the Encyclopedists," *Eighteenth-Century Studies* 6, no. 4 (Summer 1973): 452–61, online (behind a paywall) at https://doi.org/10.2307/3031579. And Diderot could sling it in hot French: "L'Encyclopédie fut un gouffre, où ces espèces de chiffonniers jetèrent pêle-mêle une infinité de choses mal vues, mal digérées, bonnes, mauvaises, détestables, vraies, fausses, incertaines, et toujours incohérentes et disparates." See Lough, *The Encyclopédie*, 82.

Dan Edelstein, Robert Morrissey, and Glenn Roe, "To Quote or Not to Quote: Citation Strategies in the *Encyclopédie*," *Journal of the History of Ideas* 74, no. 2 (April 2013): 213–36, online (behind a paywall) at https://www.jstor.org/stable/43291299; and Curran, *Diderot*. See also Darnton, *The Business of Enlightenment*; Robert Darnton, *The Literary Underground of the Old Regime* (Cambridge, MA: Harvard University Press, 1982); Robert Darnton, *George Washington's False Teeth: An Unconventional Guide to the Eighteenth Century* (New York: W. W. Norton, 2001).

Richard Stallman, "The Free Universal Encyclopedia and Learning Resource," Gnu.org, https://www.gnu.org/encyclopedia/anencyc.txt. See also "GNE (encyclopedia)," Wikimedia Foundation, last modified June 24, 2020, 12:51, https://en.wikipedia.org/wiki/GNE_(encyclopedia); "The Free Encyclopedia Project," GNU Project Web Server, accessed October 13, 2020,

https://www.gnu.msn.by/encyclopedia/; and "History of Wikipedia," McGill School of Computer Science, accessed October 13, 2020, https://www.cs.mcgill.ca/~rwest/wikispeedia/wpcd/wp/h/History_of_Wikipedia.htm. Stallman's essay is reprinted as this book's Appendix.

https://creativecommons.org/about/history/; "About the Licenses," Creative Commons, accessed October 13, 2020, https://creativecommons.org/licenses/; "History of Wikipedia," Wikimedia Foundation, last modified July 7, 2020, 6:32, https://en.wikipedia.org/wiki/History_of_Wikipedia. Edward Snowden claims inspiration from Stallman, too; see Snowden and Daniel Ellsberg in conversation at HOPE 2014: "HOPE X (2014:): A Conversation with Edward Snowden," Channel 2600, YouTube, July 22, 2014, video, 1:26:20, https://www.youtube.com/watch?v=6PHFjLkwOZE. (Snowden's remarks begin at 41:11.) As Lawrence Lessig has written, "[W]hen our world finally comes to understand the power and danger of code—when it finally sees that code, like laws, or like government, must be transparent to be free—then we will look back at this uncompromising and persistent programmer and realize the vision he has fought to make real: the vision of a world where freedom and knowledge survives the compiler. And we will come to see that no man, through his deeds or words, has done as much to make possible the freedom that this next society could have." Lawrence Lessig, introduction to Joshua Gay, ed., *Free Software, Free Society: Selected Essays of Richard M. Stallman*, 3rd ed. (Boston: Free Software Foundation, 2012), ix.

3. *The Commissariat*

1989. November. As the Berlin Wall started to come down, we in the West who didn't live (yet, anyway) under a system of mass surveillance began to recognize more fully than we ever had before just what a nefarious, ostensibly absolute system had been established to restrict the freedoms of people in the eastern part of Europe—from East Germany and the Baltic states through Hungary, Poland, and Czechoslovakia, down through Romania, Yugoslavia, Albania, and then across all eleven time zones and fifteen republics of the Soviet Union. That system was odious. It crushed the souls of generations, killed millions, and distorted reality for hundreds of millions more. The damage is still being undone.

And for what? Without it, perhaps, we might never have had worlds of art and culture created under these particular eastern tyrannies, including especially those by the writers—Witold Gombrowicz, Tadeusz Konwicki, Bruno Schulz, Václav Havel, Bohumil Hrabal; Nobel laureates such as Czeslaw Milosz, Svetlana Alexievich, Aleksandr Solzhenitsyn, and Boris Pasternak—who have had so much to teach us about beauty, morality, absurdity, and truth. But maybe it existed then to show us now what a system designed and imposed upon us without our consent could actually do to us as people. That system—the Monsterverse, *à la Russe*—was designed and built in the name of the very same Enlightenment that brought us the *Encyclopédie* and Rousseau's *Social Contract* and the American and French revolutions; indeed, it was first installed by a Soviet Commissar of Enlightenment in the 1920s. The Enlightenment that this commissar—Anatoly Lunacharsky, a Russian revolutionary and confidant of Vladimir Lenin—was supposed to preside over never, in fact, materialized. Its last nominal vestige today is the Russian, formerly Soviet, state monopoly publishing house for Russian school textbooks, Prosveshcheniye ("Enlightenment"), headquartered in Moscow.

("Eight generations of Russian people grew up and learned using our books," its website says.)[57] But the Soviet model, and its Central and Eastern European knock-offs, dominated the intellectual and cultural landscape of all of these countries—in the Soviet Union from 1917, and in the Eastern bloc from after World War II—thanks to the power of a military, security, intelligence, and police apparatus that was able to suppress dissent, alternatives, and opposition. It governed all media and information, from newspapers and book publishing to radio and film. It was designed to produce a new type of Soviet socialist man, a socially engineered human being who, in theory, fed a certain diet of information while being controlled, in body and mind, by a governmental system, would behave according to socialist principles and build post–Soviet revolutionary society: a society, in practice and theory, no longer focused on perpetuating private gain, injustice, inequity, and worse.

In reality, of course, the Soviet system became one of the most heinous and oppressive ever built. Any system that leads to the requirement to register every typewriter with the state, as the Soviet-imposed system did in communist Romania, and every Xerox machine and mimeograph with the government, as it did in postwar Poland, is fairly likely to be biased against freedom of thought. Media and communication, as a monopoly business run by the state, becomes an engine, we can see now, that exerts—for systemic reasons, and independent of the personalities involved in stewarding it—a nefarious impact on liberty, equality, and justice.[58] Indeed, monopolies of any kind, state or private, determining a society's media and information landscape will exert a largely nefarious effect on society, wherever that society may be and at whatever time in human history.

The Soviet architecture of totalitarian thought control was built, to be sure, upon earlier imperial systems of censorship and information policies from the Russian, Hapsburg, and Ottoman empires. But the Soviet architects who designed it in Moscow and Saint Petersburg and exported it westward brought it to a whole new level. For the printing press, the dominant media at the time,

the plan's draught was clear. Step one: bring all book-production equipment and materials—typesetting, printing, binding, and packaging machinery, as well as paper production—under state control. Step two: control all publishers' access to outside information and manuscripts. Step three: control the distribution of all printed materials—books, journals, newspapers, and magazines. Step four: control the access of national publishers to foreign readers (and hard currency) and of national readers to foreign literature. Step five: place control of every publisher's finances under the state.

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Saturday, January 27, 1990, four thirty in the afternoon: as the Polish United Workers' Party was meeting in Warsaw's Palace of Culture to formally disband after forty-one years of rule, the curtain rose on Richard Wagner's six-hour opera *Götterdämmerung* ("The Twilight of the Gods") in Warsaw's famous Teatr Wielki. Around five o'clock Warsaw time, as the three Fates watched the golden thread of the future get clipped in two, signaling the end of the eternal rule of the gods on the stage, delegates to the last Communist Party meeting in Poland were singing the "Internationale" together for the last time (a scene televised on the evening news), and hundreds of protesters, in a small and rather cathartic riot, were hurling bottles, rocks, and invective at the ring of blue and white militia vans guarding the Palace. Outside the gates of Warsaw University, on Nowy Świat, the winter sun was setting over makeshift tables where vendors were displaying books and pamphlets by, among other writers, Raymond Aron, Václav Havel, and Jeane Kirkpatrick, and whiskered students were selling little pins that read, "No more communism." One student was selling a sticker of the same Mount Rushmore–type portrait of the four heads of Marx, Engels, Lenin, and Stalin that had graced billboards all over the Soviet Union in the late 1940s. Without a caption, the image conveyed a simple indictment in 1990 Poland: that all systems that begin with Marx

lead inevitably to the savagery of Stalin.

This was a day of carnival in a season of change for Poland—in many ways representative of the situation in Central and Eastern Europe at large. The economic reform program of the new Polish prime minister, Tadeusz Mazowiecki, was at the end of its fourth week of slashing subsidies and eliminating cheap credits and tax concessions, after having already devalued the zloty. According to Polish state television, inflation was at 68 percent that month; prices on basic goods had risen on average 45 to 50 percent since the start of the year four weeks earlier; food prices had skyrocketed 755 percent. Real income had dropped some 40 percent. Mazowiecki's chief spokesperson, Małgorzata Niezabitowska, stated that 55,800 people were registered as unemployed in January (as against 9,600 in December). The country had begun setting up soup kitchens. On Krakowskie Przedmieście, a graffito scrawled in thick red ink provided strollers with one citizen's verdict on the reform and its champion, Leszek Balcerowicz. "Balcerowicz," it read, "is a Mengele of the economy." The clutches of protestors who used to congregate, before the water cannons came, in front of the enormous former Central Committee headquarters on Nowy Świat had already moved on to chant in front of the finance ministry on

Świętokrzyska.

Nowhere was the strain of Polish austerity measures more evident than in the field of culture. That year the new culture minister was Izabella Cywińska, a former theater director and Solidarity member, who had been imprisoned for a period during martial law. Under pressure from both her enemies and her friends to preserve state subsidies for various cultural programs and institutions, she had in fact appeared quite ruthless in withdrawing government funding, in line with the Balcerowicz reform program. As a result, some 160 theaters had had to close, 130 weeklies had failed, and 300 journalists were already out of work in Warsaw. Acknowledging herself, on the record, to be "*la donna mobile*," Cywińska reversed herself on earlier promises to keep down the state price of Polish newsprint and book paper and to keep up subsidies to important literary journals. As a result, the price of paper—2.8 million zlotys (US $300) per ton in December and 12 million zlotys (US $1,280) per ton in January—had risen as high as the world price, and book publishers had begun to turn to the better-quality and more readily available paper of Finland.

Cywińska, like other post-communist culture ministers in the region, had surrounded herself with advisors who had been close colleagues from the literary and theater underground. In her view, those who knew how to economize on a microscale to obtain supplies and services on the black market would be able to find ways of economizing on the macro—given the free market that had started to emerge. It is true that the black market seemed to be regulated by the same laws of supply and demand that had begun to exert their effect on the unregulated general economy. But the rules of these two economies were not identical, and so Cywińska and her top advisors found themselves being criticized on two fronts. On the one hand, there were those who charged that the ministry was not using enough nonmarket mechanisms to prop up valuable institutions during the difficult transition period of shock therapy. (As an example, this group was demanding reform of the absurd tax laws in Poland that made the costs of private philanthropy—the donation of cash, equipment, or services to