6   Wikipedia and Libraries

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Wikipedia is pushing the venerable field of librarianship to recognize a lesson of the twenty-first century: making knowledge accessible to all requires Wikipedians, librarians, academics, and citizens to work together in collaboration and community.

I am a librarian and a Wikipedia editor. One identity is professional, the other a late-night hobby, but they are two approaches to the same goal: sharing knowledge with the world. Wikipedia and libraries have similar aspirations and goals. They both exist to help people who are looking for information, and they both help curate our society's memory and community. And despite their different cultures and Wikipedia's upstart nature, today there are hundreds of collaborations between librarians and Wikipedians to build the future of open knowledge.

In the areas in which libraries and librarians have participated in Wikipedia, I see three overriding themes that relate to the future of Wikipedia: quality, inclusiveness, and sustainability. In each of these areas, both institutions and individual librarians have already done tremendous work and have a future role to play. It is not a one-way street, either: the aspirations, idealistic values, and joy of the Wikipedia project can also help make the ancient profession of librarianship better, even as we critique and improve Wikipedia.

My story is about building the future of the world's greatest reference work. It is about libraries and Wikipedia, about what it is like to be an author of an encyclopedia, and about being part of a community, and those three things are, for me, inseparable.

In the Beginning

Where to begin? July 2010—staying up late in Gdańsk, Poland (a seaside industrial town and birthplace of the Polish Solidarity movement): shots of vodka fueling intense discussion in a dozen languages. There, the Wikipedians around the table talked about strategies for involving local people in editing online—and about copyright law, of course. Or what about Egypt, in 2008? There, the librarians of the new Library of Alexandria, the Bibliotheca Alexandrina, showed the Wikipedians who were in town how they were turning hand-written Arabic manuscripts from hundreds of years ago into readable digitized text. We spoke about how to put these manuscripts online and what it would mean for that library—or any library—to collaborate with volunteers from around the world who were only coordinated in the loosest of ways. Or, how about starting with Cambridge, Massachusetts? On a hot summer evening in 2006 Wikipedians from around the world (Venezuela, Taiwan, the Netherlands) sat on the steps of the Harvard Law School library, looking out at one of the world's great universities, and day-dreamed about building websites where people anywhere could learn about any subject—where learning would transcend place and where people from all the places we had come from would contribute.

Perhaps I will just begin at the beginning; that is, my beginning. The first time I ever wrote something online that felt momentous was in August 2003. I was sitting at my kitchen table in Seattle, where I was entering a graduate program in library science. I'd read a newspaper article about Wikipedia and was intrigued, so I visited the site and tried it out. I read a few how-to pages, then clicked the "edit this page" tab, composed a couple sentences, and hit save. After a pause, my text displayed in my web browser, and my breath caught in my throat: I had just edited the encyclopedia.

Partly, my astonishment was about how easy it was to edit, which is something that we tend to forget in today's world of slick apps and instant online shopping. By 2003, I had been using the internet and writing online on various platforms for years, but I was also used to most websites requiring accounts or FTP access to update and perhaps a knowledge of HTML. There was nothing beautiful about Wikipedia's early editing interface (and indeed, there still isn't), but as a type of website—that is, the wiki, which had been invented by Ward Cunningham in 1995—it was straightforward. Write in the browser, hit save. Each change, each save, is recorded as a

separate version that you can trace the history of, which makes collaboration and revision between many people possible, even smooth.

And the implication of that technology as applied to an encyclopedia was astounding: online contributors who didn't know each other and who weren't pre-vetted or approved could use this tool to participate in creating the record of *all* knowledge. Together, using the internet, it would be possible to build a perpetually changing and updated site that would capture what we know as a species about every aspect of our world. That implication, that aspiration, still takes my breath away. Today, some twenty thousand edits, dozens of trips around the world to meet with other Wikipedia editors, and uncounted hours of discussion later, I have never forgotten that feeling of wonder.

I have spent the sixteen years or so since my first edit sharing this magical, inspirational, joyful, exasperating, problematic project with others through writing and teaching, trying to open Wikipedia's door to new contributors. I've tried to make the larger Wikimedia community a stronger and more stable place through governance and in-person gatherings. And I've tried to bring together my venerable profession of librarianship with the Wikipedia project, which has more in common with a start-up or an old-fashioned barn raising (all hands on deck, the people who show up make the rules) than with a formal institution. And in so doing, I have thought about the ways we might change each other: how libraries, with their deep collections and community roots, can help Wikipedia and, in turn, how Wikipedia, with its idealism, individual empowerment, and global reach, can help libraries and all the rest of the knowledge ecosystem.

Throughout it all, my life has been changed the most by my friendships and collaborations with other Wikipedia editors. Because Wikipedia, in the end, is about individuals: about the person sitting at their dining table, trying to make an article better because they care about the topic or perhaps just because they care about information being accurate online. It's about photographers organizing group trips to take high-quality free photos of cultural heritage sites to add to Wikimedia Commons, before those sites are lost for good. It's about librarians adding references and citations to articles, tying Wikipedia to published knowledge. It's about translators making Wikipedia accessible in their own tongue, often writing the very first encyclopedia to ever exist in their language. And it's about those warm summer nights around the globe at our annual conference[1] and at other

meetups and pub nights and edit-a-thons, when we get together and work and daydream about a better world. Wikipedia is a community made up of individuals, and like all communities, it is full of jokes and arguments, disagreements and compromise. It is full of ordinary human relationships, too, in person as well as online: our community has had weddings and breakups, births and deaths, and we celebrate and mourn like any group of people that depends on each other would.

When I look at a Wikipedia article, what I see in my mind's eye are the people behind it: the student; the retiree; the person who sat down one day and decided to write about a topic; and the person who came after them and tried to make it better; and the person who came after them. What I see are my collaborators, even if I do not know their names, and the people I am privileged to call friends.

Libraries

I became a librarian because I wanted to help people. Specifically, I wanted to help people who wanted to find information on something. Though it is core to our work, helping others research information is just one of the many missions of libraries. In their various types and locations libraries also serve as community centers, as archival institutions, and as places of learning, whether it's teaching college students to dive deep into the historical record or teaching children how to read picture books at story time. Public libraries serve as civic institutions, often the only public places in a community that are open to all. Libraries and archives of all kinds also have a role to play as conservers of memory through community and research archives. Most fundamentally, libraries are institutions that help you interact with, and learn from, other people's stories and work.

In hindsight, it seems obvious that there is a natural congruence between libraries and librarians, with their broad mission of helping connect people to information, and Wikipedia, with its broad mission of collecting information on all the world's topics. But in 2003, when I was beginning to become both a librarian and a Wikipedian, the site was still mostly unknown. When it was known amongst librarians and educators, it was viewed with deserved skepticism along with the rest of the burgeoning, user-created internet. It was clear that a hobbyist website, built by anonymous contributors, was not the same thing as the multivolume encyclopedia sets, written and edited by

distinguished scholars, which libraries went to great expense and trouble to collect. It was also clear that Wikipedia could not be, and should not be, recommended as an equivalent source; the idea was insulting to many.

And still today, when librarians and educators like myself recommend Wikipedia to students and researchers, that recommendation comes loaded with caveats: Wikipedia articles are inconsistently written and fact-checked, they might be incomplete or biased, and students should rely more on the references cited than on the article itself. And of course Wikipedia is only good for a certain type of information—it aims to include recorded facts that are scientifically vetted, not anecdotes or the type of storytelling that gives richness to our cultural heritage—and as a consequence and because of mirroring the biases of past sources of knowledge, a vast part of the human experience is left out of Wikipedia entirely.

And yet, despite all this reasonable distrust at the beginning, over the first decade of Wikipedia's life the relationship between librarians and Wikipedia shifted. For one thing, Wikipedia itself grew at a tremendous rate, exceeding all expectations. It soon fast exceeded the ability of any other traditional reference source to keep up with the world, especially around topics like breaking news, as Brian Keegan discusses in chapter 4. This first, fast growth of Wikipedia, from 2002 to 2008 or so, came as online participation in general exploded, leading to new potential readers and writers alike. This meant that a few years into Wikipedia's existence, librarians and educators had to grapple with a simple fact: our students and professors and readers were using it. Wikipedia was handy for them, sometimes both handier and more complete than any other source around. It was good for translations, for helping find obscure facts, and for getting freely licensed images. It was remarkably good for finding information on topics that local library collections did not support, particularly in areas where libraries were working with limited resources.[2] And, it was good for education, providing students a window into the process of information collection and curation like no other.

Libraries and archives around the globe also discovered the tremendous power of Wikipedia and her sister projects—Wikimedia Commons in particular—to share archival collections that had previously been locked away, accessible only to a few. Libraries have also interlinked Wikipedia and other Wikimedia projects, such as Wikidata, into technical systems and catalogs to tie existing information resources to Wikipedia.[3] And librarians

have become editors in individual capacities, adding articles and improving them and training others to do so as well.[4]

Lastly, libraries and Wikimedia are similar in their ideals and in their policy goals. Like libraries, the Wikimedia projects exist to promote knowledge availability for all—not a neutral goal. And, both libraries and Wikipedia care deeply about user privacy, about openness and accessibility to all, and about resisting censorship. Wikipedia faces current and future threats from government internet regulations; from national and local censorship; and from laws governing privacy, copyright, and intellectual property. Libraries face the same threats and challenges and should share policy and tactics with the free and open internet movement of which Wikipedia is a part.[5]

Libraries, like Wikipedia, are broadly concerned with issues of information quality, inclusiveness (both in access to get information and to create information), and sustainability of the information ecosystem. These three areas are also crucial to the future of Wikipedia: without continuing to maintain high-quality information in articles, an inclusive and diverse editor base and articles that cover all of the world's knowledge, and a sustainable model for editing and vetting articles, Wikipedia will not continue for another twenty years. These areas, then, are worth digging into for how libraries and Wikipedia can work together.

Quality

Encyclopedias differ from other kinds of nonfiction works and information sources in that they do not report on original discoveries but, rather, on what others report to be true ("no original research" reads the English Wikipedia policy on the subject[6]). This is particularly important for Wikipedia, which is written entirely by an anonymous contributor base—unlike a textbook that relies to some degree on the reputation of the author or a research article that relies on peer review for vetting, it is not easy to tell who wrote any given part of any given Wikipedia article, or what their background is, or whether what has been claimed has been reviewed by anyone else. The Wikipedian who added that sentence might be an award-winning senior scientist, or they might be a particularly bright thirteen-year-old (and in fact, some of the very best Wikipedians I've known have started editing in middle school).

As a consequence, Wikipedia relies on references—citations to reliable published work on a topic. This was not always true. In the early years of Wikipedia, authors wrote largely from personal knowledge, or if they drew from sources, they were inconsistently cited. But it was soon realized that if this global project was going to maintain any kind of quality—and more to the point, keep out conspiracy theories, rumor, fakes, and advertising—we would have to leave the process of peer review and vetting what was "notable" to traditional scholarly and news publishing. Today, in theory, every fact that is in Wikipedia must first be vetted elsewhere and documented in a source, which like a good scholar we will then cite. Over the years, these sourcing guidelines have gotten more rigorous: sources should be published by someone other than the subject of the article; they should be peer reviewed; and they should have multiple confirming sources if possible.

Libraries are, of course, in the business of sources. One project related to libraries and Wikipedia is the #1lib1ref campaign—begun by Jake Orlowitz and Alex Stinson at the Wikimedia Foundation and helped along by dozens of volunteers, "One Lib One Ref" has now taken off into an ongoing project that hundreds of libraries and librarians have participated in.[7] (See Jake Orlowitz's chapter 8.) The idea is that while Wikipedia is missing many citations for existing information, if every librarian with access to a research collection added just one citation—one librarian, one reference—we would begin to make a dent in the backlog of improving Wikipedia's quality.

Why librarians in particular? Of course, as a rule we have a propensity toward sourcing things and looking up information. But we also importantly tend to have access to sources of information, including books and research databases that cost a great deal of money. Improving access to information for all is at the heart of Wikipedia, but this goal is hindered by current systems of scholarly publishing, which restrict access to much of the latest research that is published to subscription journals and databases that are priced out of reach of all but the largest, richest research libraries. This is an issue of social justice as well as economics; only a tiny fraction of the population has access to these university collections. And ironically, most Wikipedia editors—stewards of the single most-read information source in the world—do not have access to these research resources either. For over a decade, libraries globally have addressed this by opening their physical doors to Wikipedians, hosting tours, edit-a-thons, and gatherings

for active editors to increase access to collections. Librarians have also hosted Wikipedians-in-residence, volunteers or temporarily paid researchers who affiliate with an institution for the purposes of adding information available in libraries to Wikipedia.[8] Stinson and Orlowitz have also worked to make published scholarly research available to vetted Wikipedia editors online through the Wikipedia library project;[9] but though incredibly helpful to the work of writing an encyclopedia, this doesn't assist readers, who also need to be able to access the citations that Wikipedia is based on.

As we look forward to how to improve Wikipedia's quality, one continuing area will be increasing open access for scholarly publishing and making previously locked-away collections digital and available to all. Here, Wikipedia's goals converge with the cutting-edge work libraries are doing to change publishing business models and open up archives and catalogs, and Wikipedia itself provides one of the best arguments for continuing to do so. Though open access for research has been recognized for well over a decade as an area where libraries and Wikipedia have similar aspirations,[10] as we look to the future libraries are also moving to open up data as well as publications. The librarians and Wikimedians working on this recognize that the underlying infrastructure of library metadata also needs to be made free and open and connected to the open linked data systems that underlie Wikipedia and Wikidata in order to have a truly open scholarly ecosystem.[11]

I personally love adding citations to articles that are missing them. Diving deep into the research literature to ferret out the source of some plausible-sounding but unsourced information on Wikipedia provides the deep satisfaction of connecting the historical record and makes use of professional skills I've gathered. But it is work that needs many hands, and to make research truly accessible will require deep shifts across both libraries and scholarly publishing.

Inclusiveness

To find sources, you need a library collection. And every collection, regardless of what sort of library or archive it is in, is chosen and curated by individuals. Though there are various mechanisms and metrics for how books are selected depending on the size and style of library, with large libraries often getting automatic shipments of all the books on a particular topic—at some point, a person chose every book that sits on a library shelf.

And even the largest libraries have boundaries on their collections; every library is necessarily incomplete. National libraries might collect every book published in a particular country, for instance; the largest research libraries might collect comprehensively in a handful of areas. But most libraries are much, much smaller than that. As librarians, we carefully create collections policies and choose collections related to our many missions: to serve our community, to provide entertainment, to educate, to steward the historical record. Nonetheless, any given library only ever has the slimmest slice of the historical record represented within its physical or digital walls. And as a result, the story told by any given library's books and journals and archival collections is only, and can ever be, an opinionated subset of human knowledge, biased in particular ways toward particular perspectives—as discussed in the essays of part III.

To help rectify this, libraries have become masters of collaboration: using interlibrary loan, cooperative cataloging, and shared collecting, libraries work together to increase what is available to their communities. But it is more difficult to overcome the biases inherent in publishing: that marginalized stories aren't recorded, or if they are recorded, they are not widely distributed. Libraries tend to collect in the languages of their constituents, leaving out published works from the rest of the world. And as an academic, it is far easier to both get funded and published if you are already a well-funded researcher working in a prestigious university than if you are not. Collections are also living and change: a library collection of the nineteenth century is today only relevant to historians. Curation is as important an activity as collection.

Further, most library and archival collections are locked away, restricted to those who can physically access the collection and have privileges to do so. Mass digitization projects have changed this by converting physical objects to digital ones that can be easily shared or viewed from afar. These digital representations still must be shared openly, however, and Wikipedia and Wikimedia Commons provide a way to do this that has a wide reach. One early project to share a huge collection of archival materials via Wikimedia was the US National Archives and Record Administration's project to add hundreds of thousands of public domain historical images to Wikimedia Commons. Now these files, which are freely available for use by all, can be added to appropriate Wikipedia articles, enriching our understanding of those historical topics.[12] Dozens of libraries and archives around the world

have followed suit either by adding links to collections in Wikipedia articles or adding the collections themselves to Wikimedia Commons.[13] However, thousands of freely licensed collections are still locked away, leaving gaps in our collective understanding of and Wikipedia's representation of the historical record.

In Wikipedia, issues of inclusiveness center around what is written about and by whom. Wikipedia is created by individuals who write primarily about what they are interested in, which can lead to unevenness. Wikipedians have coined a term for the phenomenon of Wikipedia's article coverage leaving out some areas of human perspective and knowledge and emphasizing others: "systemic bias." Systemic bias, on Wikipedia, is the notion that without an explicit corrective, Wikipedia's coverage will drift toward the biases of its contributors and toward the weight of the historical published record which Wikipedia relies on.[14] We see this bias clearly in, for instance, the geographical distribution of article subjects: Wikipedia (in all languages) has vastly more articles on cities, towns, and institutions in North America and Europe than anywhere else.[15] This is both due to the bias of contributors, who tend to be from those places, and the bias of published sources, which thanks to European and Western colonialism have privileged Western history above all other places for hundreds of years.

We see systematic bias again in topical coverage: there is a dearth of articles about women scientists (again, due to the bias of contributors but also due to the bias of historical sources against writing about women in science), and there is an overabundance of articles about military history topics, a topic perhaps of deeper interest to Wikipedia contributors than to the population at large. And we see this bias more subtly in how articles are actually written: in their focus on colonial history rather than native history, for instance.[16] We see it when articles about technologies only give examples on uses in the United States rather than in a global perspective. And we see it when comparing different language editions of Wikipedia, which take different approaches to covering history, even if subtly so. Wikipedia editors aspire to fill in these gaps and correct these biases, but it is unending and often difficult work, subject to debate and rancor as competing goals (that is, to rely only on reliable published sources and also to add things missing from the historical record) clash.

Wikipedia is not finished. Neither is any library collection, but Wikipedia differs in aspiration: it has a perhaps unattainable goal of all the world's

knowledge represented comprehensively and fairly. It is worth asking if this is possible or whether Wikipedia's aspirations should instead grow toward acknowledging the impossibility of ever being neutral and of openly displaying the complications of telling many histories in a single way. As Wikipedians, we have spent the last twenty years demonstrating that the encyclopedia format can be stretched to contain orders of magnitude more multitudes than ever before. In our next few decades we could stretch toward a new aspiration: building an authoritative source that clearly shows there are many possible authorities and stories in parallel and that shows what is missing from the encyclopedia as clearly as we show what is included.

In this way I think Wikipedia both serves as an instructive example and an inspiration not just to other reference works but to libraries in general: to make our biases visible in specific and granular ways. Libraries are not neutral, but we often act as if we are,[17] and we are not particularly skilled at making visible to readers what our carefully curated collections include and do not include and why.

Encyclopedias have existed in one form or another for thousands of years, but Wikipedia differs from past attempts both in scale and coverage.[18] There is no defined audience for Wikipedia, and the only limits in scope are in style rather than in topic (we are not a directory, articles should not be too granular, information should be well sourced).[19] As a result, particularly as the largest language editions of Wikipedia[20] approach some degree of apparent comprehensiveness, we must look again, and again, not just at how we know what we know and at what is missing but at whose stories are told and how.

Sustainability

There's no question that many Wikipedia editors are difficult to work with. Pedantic and focused to the point of obsession, the project attracts those for whom performing precise tasks in the service of writing an encyclopedia is an attractive hobby. Because it is a project that is never finished, to-do lists can stretch over years, which can lead to impatience with new contributors who are starting fresh on the same work. Those who show up make the rules on Wikipedia, and for the better part of two decades those who have shown up are single-minded and argumentative, willing and able to spend hundreds of hours toiling alone online.

And yet, Wikipedia editors are also, by and large, wonderful people. Without exception, every good-faith Wikipedia editor I have encountered (and I have been privileged enough to meet hundreds of editors, at meet-ups across five continents) has been passionate about what they know and about knowledge in general; generous with time, attention, and collaboration; curious about everything; and willing to go to extraordinary lengths to build the project for the good of all.

Without the seventy thousand or so active editors across language editions—and of those, particularly the ten thousand or so who make more than a hundred edits a month, adding articles, removing spam, and generally maintaining the site[21]—there is no Wikipedia. Certainly, there would be static articles—those will be offered up online in perpetuity.[22] But without an active hive of people pruning, updating, and revising, those articles would slowly degrade in quality, go out-of-date, and be prone to intentional or unintentional vandalism and biasing. Wikipedia works the very best at a large scale—when there are many eyes on the problem—and the health and strength of our community will determine Wikipedia's future. As the internet in general changes to a world where there are fewer desktops than mobile users and the Wikipedia site feels dated and complex, acquiring new editors is a real challenge. And, as existing editors leave due to disputes or changing interests, maintaining a large, active editor base is an existential challenge for the long-term viability of Wikipedia.[23]

In addition to needing active editors, Wikipedia needs diversity. To cover the world well, the project needs people of all genders, ethnicities, geographic origins, languages, and socioeconomic backgrounds to participate. In some ways, the Wikipedia project has pioneered diversity online, in valuing contributions from those who speak non-Western languages that are otherwise poorly represented on the internet, for instance. In most respects, however, the contributor base has skewed toward those who have had free time, abundant internet access, and the resources to contribute—mostly men, mostly white people, and mostly contributors located in the Global North, especially North America and Europe.

Libraries aspire to work with and serve people of all kinds, across academic institutions and communities of every description. Like many of my peers in libraries who have worked with Wikipedia, I have taught hundreds of people to understand and edit Wikipedia over the years: from students to professors, both in one-off edit-a-thon events hosted by the library and

in longer classes.[24] Librarians offering training can serve as a bridge between an often seemingly impenetrable site and the people that we work with in our communities. This can help increase the diversity and ultimately the sustainability of the Wikipedia editor base. Most people that we train in workshops and classes will never come back to edit the site on their own. But some will; and many more will have a deeper understanding of what it means to create information online and apply that to other situations. As the internet overall changes to become more commercialized and controlled than ever before—where most people have an experience of being online that exists entirely within the walled garden of mobile apps[25]—being conversant with the user-generated open internet that Wikipedia is an exemplar of will be more important than ever before.

Sustainability, as a concept, also applies in a more fundamental way to the notion of an encyclopedia project at all. What is encyclopedic, and what does it mean to collect and summarize knowledge, and in the end—what does it mean to attempt to represent truth? Is the very idea of an encyclopedia one that will hold up in the future, or is it too simplistic and flawed to continue?

Training students to edit means training them to think like an encyclopedia editor. Partly, this means learning to look at information with a reflexively critical eye. As a Wikipedia editor, "citation needed" becomes a way of life, whether it's reading the newspaper or a bus-stop advertisement. How do we know what we know? How do we separate fact from supposition or recognize beliefs created from culture and our surroundings versus what we learn explicitly, versus what we discover from experimentation and measurement?

In the present moment, as a culture we are grappling with the right way to assess information, factualness, and truth. There are no models that we have, in libraries or outside of them, for what reliability and truth means when artificial-intelligence-generated deep-faked images are indistinguishable from real portraits or when social networks are flooded with rumor-passing memes. We live in a world of weaponized misinformation. At the same time, in areas ranging from sexual harassment to indigenous rights, people who have been historically marginalized are telling their own stories and claiming the right to speak for themselves rather than being subsumed in the histories told by others. The idea that one history can definitively speak for what happened has never been right, and we are relearning that

idea today over and over. Meanwhile, our rate of technological change is faster than it has ever been before: science and technology, like our climate and natural world, are in a state of constant discovery and vast change.

In libraries, for too long we have taught students that there are definitive works and sources that are eminently reliable and that being critical of information can stop with choosing the right source. Some sources are more reliable than others, certainly: more carefully produced, more based on scientific method, and more completely representing knowledge as it currently stands. But no source is entirely complete or entirely definitive; no method of knowledge production is perfect. Wikipedia, with its explicit assumption of being perpetually incomplete and perpetually in progress, can teach every consumer of information an important lesson: that knowledge shifts and that we rewrite the encyclopedia as we go.

Our Future

As we approach twenty years of the Wikipedia project, I worry about our future. Wikipedia, like libraries, has always been a long-term endeavor. On the surface, Wikipedia seems, like most internet companies and websites, to be a project of the moment. In truth, though no one planned for this at the beginning, the aspirational mission of the project is much more than that: to provide and record our heritage and knowledge in perpetuity for everyone. Thinking about Wikipedia like a library, or a museum, makes sense: it is something that must be continually stewarded; something that will be newly discovered, added to, and changed by each new generation; and something that that gains value from longevity.

But to fulfill this promise, to stick around and remain useful and become better, Wikipedia faces many existential challenges ranging from regulation of intellectual property to participation from new editors to the nature of how we perceive truth itself. They are challenges that must be addressed by all of the participants in the project and also by the many kinds of institutions in society (including libraries, archives, and universities) that have a stake in making free knowledge available. Our solutions to these challenges will range from making works available openly to teaching new generations how to think critically about information.

Over the last twenty years I have seen Wikipedia go from something that was an experiment—something we built simply to see if we could do it!—to

something that has become a fundamental part of the internet's information infrastructure; it is difficult to imagine the world without it. Our challenge in our next twenty, fifty, and hundred years is to open Wikipedia's doors wider than they ever have been before—to share the joy of documenting and discovering the curious corners of the world with new editors everywhere. And as Wikipedians and librarians, we must bring Wikipedia together with the institutions that have historically stewarded human knowledge to make Wikipedia more accessible, more open, more complete, and more sustainable than ever before.

Wikipedia, to me, represents a hope: a hope that with the right structures humans can collaborate and cooperate on massive projects without top-down structures or control and a hope that we can see all parts of the world as important and worth documenting. It is an extraordinarily optimistic and idealistic vision, an idea that has its roots in Enlightenment encyclopedic traditions but that in execution has become a type of reference that we have never seen before—a unique creation.

When I look at a Wikipedia article, I see the people behind it—the generous, quirky, enthusiastic souls that write and curate Wikipedia. And I see the weight of accumulated knowledge—what we know and what we do not know yet and what has not yet been recorded in Wikipedia. We are writing the world as it is made and building our future as we go.

Wikipedians I've shared a meal, a conversation, or an article with over the years. And thanks too to friends and colleagues at the University of Washington Information School (iSchool) and at every job I've had since then; they have tolerated and indulged my Wikipedia obsession from day one.

Notes

1. Aptly named Wikimania, the Wikimedia community has been holding an annual conference since 2005: Wikimania, last modified December 30, 2019, http://wikimania.wikimedia.org. This is in addition to the hundreds of more local events and meetups that happen around the world; see Meta-Wiki, s.v. "Events," last modified January 20, 2020, https://meta.wikimedia.org/wiki/Events.

2. The International Federation of Library Associations and Institutions (IFLA) and The Wikipedia Library (TWL), "Opportunities for Public Libraries and Wikipedia" (white paper, December 2016), https://www.ifla.org/files/assets/hq/topics/info-society/iflawikipediaandpubliclibraries.pdf.

3. IFLA and TWL, "Opportunities for Academic and Research Libraries and Wikipedia" (white paper, December 2016), https://www.ifla.org/files/assets/hq/topics/info-society/iflawikipediaopportunitiesforacademicandresearchlibraries.pdf.

4. See Merrilee Proffitt, ed., *Leveraging Wikipedia: Connecting Communities of Knowledge* (Chicago: ALA Editions, 2018) for perspectives on connecting libraries, librarians, and Wikipedia.

5. For a longer argument on this subject, see Stephen LaPorte and Phoebe Ayers "Common Interests: Libraries, the Knowledge Commons, and Public Policy," *I/S: A Journal of Law and Policy for the Information Society* 13, no. 1 (Fall 2016), https://kb.osu.edu/bitstream/handle/1811/81136/ISJLP_V13N1_295.pdf.

6. Wikipedia, s.v. "Wikipedia: No Original Research," last modified December 4, 2019, https://en.wikipedia.org/wiki/Wikipedia:No_original_research.

7. Meta-Wiki, s.v. "The Wikipedia Library/1Lib1Ref," last modified December 10, 2019, https://meta.wikimedia.org/wiki/The_Wikipedia_Library/1Lib1Ref.

8. See also the events associated with the Wikipedia Loves Libraries campaign, which ran as a focused volunteer effort to bring Wikipedians and librarians together from 2011–2016 or so; there have been many independent edit-a-thons and workshops in libraries before and since. See "Wikipedia Loves Libraries/Collaborations," Wikimedia Outreach, last modified January 14, 2019, https://outreach.wikimedia.org/wiki/Wikipedia_Loves_Libraries/Collaborations; of note in particular are the library collaborations run in Italy coordinated by members of Wikimedia Italia. See also the GLAM (Galleries, Libraries, Archives and Museums) projects run at

institutions globally; "GLAM Wiki," Wikimedia Outreach, last modified April 10, 2019, https://outreach.wikimedia.org/wiki/GLAM.

9. Wikipedia, s.v. "Wikipedia: The Wikipedia Library," last modified January 16, 2020, https://en.wikipedia.org/wiki/Wikipedia:The_Wikipedia_Library.

10. See, for example, John Willinsky, "What Open Access Research Can Do for Wikipedia," *First Monday* 12, no. 3 (2007), https://firstmonday.org/article/view/1624/1539.

11. ARL Task Force on Wikimedia and Linked Open Data, "ARL White Paper on Wikidata: Opportunities and Recommendations" (white paper, Association of Research Libraries, Washington, DC, 2019), https://www.arl.org/resources/arl-whitepaper-on-wikidata/; see also the WikiCite project: Meta-Wiki, s.v. "WikiCite," last modified December 19, 2019, http://meta.wikimedia.org/wiki/Wikicite.

12. See Ed Erhart, "Wikipedia Signpost News and Notes for June 25, 2014," last modified February 8, 2017, https://en.wikipedia.org/wiki/Wikipedia:Wikipedia_Signpost/2014-06-25/News_and_notes for a report on this from Wikipedia's own internal newspaper.

13. One of the earliest projects around this I am aware of is reported in Ann Lally and Carolyn Dunford, "Using Wikipedia to Extend Digital Collections," *D-Lib Magazine* 13, no. 5/6 (May/June 2007): 5–6, http://www.dlib.org/dlib/may07/lally/05lally.html.

14. Wikipedia, s.v. "Wikipedia: Systemic bias," last modified January 22, 2020, https://en.wikipedia.org/wiki/Wikipedia:Systemic_bias.

15. See, for example, the work of Mark Graham and the Oxford Internet Institute: Mark Graham, "Wiki Space: Palimpsests and the Politics of Exclusion," in *Critical Point of View: A Wikipedia Reader*, ed. Geert Lovink and Nathanial Tkacz, 269–282, Inc Reader #7, http://www.networkcultures.org/_uploads/%237reader_Wikipedia.pdf.

16. See the work of Carwil Bjork-James; for example, Carwil Bjork-James, "New Maps for an Inclusive Wikipedia: Plotting Strategies to Counter Systemic Bias," Wikipedia Day 2019 NYC, video, 51:12, January 13, 2019, https://livestream.com/internetsociety/wikidaynyc2019/videos/185803949.

17. See Chris Bourg, "Never Neutral: Libraries, Technology, and Inclusion," *Feral Librarian* (blog), January 28, 2015, https://chrisbourg.wordpress.com/2015/01/28/never-neutral-libraries-technology-and-inclusion/.

18. See Andrew Brown, *A Brief History of Encyclopedias: From Pliny to Wikipedia* (London, UK: Hesperus Press, 2011).

19. Wikipedia, s.v. "Wikipedia: What Wikipedia Is Not," last modified January 13, 2020, https://en.wikipedia.org/wiki/Wikipedia:What_Wikipedia_is_not.

20. English is the largest Wikipedia edition, with German in second place; currently, Swedish and Cebuano (a language of the Philippines) have more articles than German, but that is due to automatically bot-created articles, a source of much debate in the Wikipedia community. See Meta-Wiki, s.v. "List of Wikipedias," lsat modified January 3, 2020, https://meta.wikimedia.org/wiki/List_of_Wikipedias for a list of all editions.

21. See "Wikimedia Statistics," Wikimedia Foundation, accessed September 1, 2019, http://stats.wikimedia.org.

22. As of 2019, the Wikimedia Foundation is building an endowment with the specific purpose of ensuring long-term access to the Wikimedia projects, regardless of the vagaries of reader donations. See Wikimedia Endowment, accessed January 22, 2020, https://wikimediaendowment.org/ for details.

23. There has been a great deal of research into the shrinking editor base of Wikipedia. Whether the total number of editors is declining, stable, or growing depends on the language version and how participation is measured. A summary of some research into declining editorship is in Tom Simonite, "The Decline of Wikipedia," *MIT Technology Review*, October 22, 2013, https://www.technologyreview.com/s/520446/the-decline-of-wikipedia/.

24. See the work of the Wiki Education Foundation (http://wikiedu.org), which works with classrooms and faculty, often in collaboration with librarians; there have also been hundreds of independent classroom projects. See also Wikipedia Loves Libraries associated events. "Wikipedia Loves Libraries," Wikimedia Outreach, last modified February 27, 2018, https://outreach.wikimedia.org/wiki/Wikipedia_Loves_Libraries.

25. A discussion page on the very first wiki, Ward Cunningham's C2, discusses the danger of walled gardens and how to identify them: WikiWikiWeb (C2 Web), s.v. "Walled Garden," last modified November 3, 2014, http://wiki.c2.com/?WalledGarden.