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Sum of all knowledge: Wikipedia and the encyclopedic urge

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5. Conclusion

"Making fun of *Wikipedia* is so 2007" one French journalist reportedly told Sue Gardner, the executive officer of the *Wikimedia Foundation*, during the 2011 edition of the annual *Wikimania* conference (Cohen, 2011). While celebrating its 10 years in existence, *Wikipedia* is shifting its focus from trying to establish itself as an acceptable source of knowledge to efforts of sustaining its community and improving quality in existing languages while fostering the growth of others. Amidst the growing acceptance of *Wikipedia* as an instantly accessible replacement for the modern encyclopedia set, a multitude of issues and concerns remain unresolved. While a doctoral dissertation might not be the ideal context to satisfactorily address these issues, I aim to situate *Wikipedia* within the encyclopedic tradition of the West, to provide a better understanding of its novelties while also highlight previously overlooked continuities.

To achieve this goal, I started in the first chapter by demonstrating that encyclopedic thought is as old as culture itself. I presented the emergence and evolution of the physical manifestations of this thought from its origins in Ancient Greece to the beginning of 20th century. Initially emerged as the stated goal of Plato's famed *Academy*, encyclopedia refers more towards an ideal, an urge to compile, organize and store knowledge rather than a particular set of practices. Following Plato and Aristotle, Roman compilers such as Pliny and Cassiodorus expanded their ideas, partly enabled by the cheap availability of paper and introduction of the book form, and created encyclopedic works of landmark importance. In the following centuries, Medieval compilers further evolved the basic format arrived at by their Roman predecessors and produced compilations of great size and breadth organized under Christian Theology and motivated by their urge to preserve the written heritage in their protection. This established system defined encyclopedia making for centuries and was only disrupted by the ideas of Francis Bacon and the *philosophes* of the Enlightenment. Motivated by their revolutionary ideals and given the outpouring of new knowledge due to the bourgeoning scientific revolution, new encyclopedias have emerged, led by the *Encyclopédie* and *Cyclopaedia*, embracing alphabetical organization and specialist

contributors from diversity of fields. The modern encyclopedia, shaped among these ideals, continued to evolve, most visible in the successive editions of *Britannica*, and arrived at the beginning of the 20th century as an established and mature component of modern societies.

While the evolution presented above was drastic, common ideas and motives define the outlook of all the works I have discussed above. To frame this commonality and also better understand novelties, I identified three concepts that underlie the entire span of encyclopedia history: *knowledge, authorship* and *organization*. Initially defined in written form by Plato and Aristotle, the question of how to define knowledge and verify it according to which principles has been a central issue of western philosophy and evolving understanding of knowledge was key for all stages in encyclopedic development. Closely related to knowledge and its verification is the question of the role of *Authorship* and through which assumptions or principles encyclopedia editors and contributors establish their inherent authority. The third concept, *organization*, encircles knowledge and authority while infusing every encyclopedic work with unique characteristics, therefore presenting its own analytical challenge. The history I related in the first chapter is a testament that a change in the organizational scheme can have drastic and long-lasting consequences.

At the end of the historical survey I presented in chapter one, I observed that the modern encyclopedia was at a point of maturity at the beginning of the 20th century. Faced with the ever-increasing speed and diversity of knowledge, the editors of modern encyclopedia were becoming increasingly aware of the limitations of print. In chapter two, I present a survey of 20th-century attempts to challenge conventions of encyclopedia making that was concentrated on transcending these boundaries. Over the course of this chapter, I discussed the most notable examples of this struggle coming from disciplines as diverse as librarians to science fiction authors. This program was complimented by the prominent literary theorists and philosophers of the 20th century who dealt extensively with the conceptual roots of knowledge, authority and authorship. While their work is instrumental in analyzing the impact of *Wikipedia* in later sections, I excluded them from the discussion of 20th century encyclopedias since my research does not point to any evidence that their

influence had any direct impact over the editors of present encyclopedias or over the creators of the tools that allowed the emergence of *Wikipedia*.

In this regard, it is striking that some of the most challenging ideas concerning encyclopedias during the 20th century have come from science-fiction writers. While speculating on the future of culture and technology can be considered a core tenet of science fiction, a genre of literature that fully emerged during the 20th century, it is possible to interpret this as a sign of maturity of the modern encyclopedia and its place within the society. In contrast, any intellectual of the Middle Ages or early Enlightenment who had radically different opinions on how an encyclopedia should be compiled might have actually tried to realize their vision instead.

However, it is noteworthy that most science fiction authors who have written on the topic have concentrated on the physicality of encyclopedia and largely concerned themselves with ideas to increase access and availability of knowledge, rather than with the question of how that knowledge can be produced and by whom. Early pioneers like Otlet and Wells clearly saw the need to go beyond printed volumes issued at periodic intervals, however they had no motivation to think a technical innovation might alter the way knowledge is produced, since any mention of computers were still regarded as autonomous calculators, if at all. By the time Adams imagined his portable, wirelessly updating and collaboratively written *Hitchhiker's Guide* in the 1980s, the computer has been transformed from brass cogs and levers of Babbage's *Difference Engine* to a general purpose, easy-to-use and affordable appliance and was about to become the gateway to a global network that allowed previously unimaginable alleys of communication and collaboration

It is clear that the social implications of these breakthroughs, specifically as authoring tools, were beyond the imagination of most science-fiction authors and futurists. Although computers came into existence as calculating machines, the underlying ideal behind their design, from the time of Leibniz to Bush, has been to provide a personal tool for dealing with cerebral processes. As the technical capacity of computers increased exponentially, they likewise become evermore accessible through steadily falling prices and graphical user interfaces. Pioneers of computer science were aware of the capacity of such a personal assistant to surpass any print-based tool in organizing and accessing knowledge.

However, only when networked did computers become ubiquitous, so that their inherent advantages and latent potential to challenge established notions of knowledge and authority became accessible. The relative ubiquity of computers was achieved at the turn of the last century, which also marked the birth of online communities focused on building free and open source software. These focused communities of specialists were pioneers in the space of online collaboration and the community guidelines and best practices emerging from their efforts became an influence for online collaborative efforts of all types.

In the third chapter, I followed the creation and development of *Wikipedia*, starting with the observation that founding principles and guiding ideals of the online encyclopedia are a distillation of a century of speculation about the future of encyclopedias and the practical approach of the open source software communities. Combining these ideals, illustrated in depth in the previous chapter, with the ubiquity of personal computers and Internet access, *Wikipedia* demonstrably resulted in one of the most successful and comprehensive intellectual undertakings in history.

At the heart of the *Wikipedia* project lie the collaboratively defined notions of *Neutral Point of View*, *Verifiability* and *No Original Research.* Together they define *Wikipedia*'s claim to knowledge. Every epoch in encyclopedia making settled on and propagated its unique approach to creating and collecting knowledge and *Wikipedia* is not an exception. While the exact implications of the *Core Content Policies* are subject to discussion and ultimately fluid, it is evident that they represent a significant change with respect to the modern concept of encyclopedias as they exited until the 20th Century.

While encyclopedia articles have never been the most prominent display of individual authorship, it is clear that the collaborative authorship style inherent in the wiki technology poses a challenge towards established notions regarding the identity of an author and his/her implied authority. An added complexity concerning this issue is *Wikipedia*'s previously unimaginable feature of self-archiving and the ability to revert the entirety or a part of an article to any of these previous edits in an instant. While the loss of the authorial voice is an evident issue concerning *Wikipedia*, the evident distancing between the authors of a given article and the visible text accessed by readers is an altogether novel and equally interesting problem.

As the previous chapter noted, 20th century was marked by a desire to transcend print, triggered by the prevalence of other mass media leading to a realization of the specificity of print based knowledge creation, transmission and organization. While the technologists and pioneering authors of the previous century saw the failings of bound volumes and alphabetical organization, the ubiquitous personal computing devices and persistent and affordable Internet access delivered the alternative. Today, *Wikipedia* offers instant access to any article with the ease of an Internet search, made even easier by the prominent result the encyclopedia gets in Google searches. However, one of the fundamental roles of the encyclopedias since ancient times has been to provide an overview, a scheme to all knowledge. While *Wikipedia* offers manually maintained categories and thematic portals, its strongest organizational element remains the links within the article to other relevant part of the encyclopedia. By transforming the browsing experience with hyperlinks, *Wikipedia* arguably achieves the dream of Otlet, Bush and other computing pioneers. However, the question remains, are hyperlinks and the ability for users to create their own 'forking paths" enough or should an encyclopedia aspire to present the totality of knowledge in a coherent scheme? While the analysis I have presented in the entirety of this study provides insights into these questions, this chapter illustrated that *Wikipedia* is a native of its medium and could have only emerged through the affordances of the Internet and ubiquitous personal computing.

In chapter four, I illustrated that *Wikipedia* is the latest step in a process that moves across time and re-organizes both the author function as well as the reader and user functions in ways that have really shaken up our relationship to knowledge and the authority by which knowledge is both generated, verified and established while embracing the latest developments in technology to advance the organizational structure of an encyclopedia. Arguably the most fundamental observation that can be made concerning the findings of this analysis is the interconnectedness of all the aspects that make up each era of encyclopedia making. The components of medieval encyclopedia were all borne out of, and enabled, each other. The same is applicable for the modern encyclopedia. *Wikipedia* emerges as a new form in the long history of encyclopedias only through a combination of its approach to knowledge, authorship and organizational practices.

The history of encyclopedic knowledge emerges as one long trend spanning two millennia, increasingly separating the claim to knowledge and its creator. In the first section of this chapter, I demonstrated the evolution of the components of the claim to knowledge with the theoretical framework provided by philosophers like Foucault and the historical insight provided by scholars such as Burke and Eisenstein. The encyclopedic form emerges as a mirror image of assumptions concerning knowledge in each era I have investigated which gives any observation concerning *Wikipedia* additional significance. While certainly flawed and very much a work-in-progress, the fundamental principles of *Wikipedia*, like Neutral Point of View, No Original Research and Verifiability, ensure a flexible and dynamic understanding of knowledge that embraces the strengths of the Internet as a resource while staying true to the encyclopedic ideal. The most dramatic shift embodied by *Wikipedia* is the inclusion policy based on "Verifiability" and not "truth". The ambiguity of the terms being intentional, the working definitions, especially concerning what constitutes verifiable sources, are constantly negotiated within the community. While medieval encyclopedias based their claim to true knowledge on the fact that they were written and passed down from generation to generation, modern sets prided themselves on their reliance on specialized, external sources of validified knowledge. I argued that *Wikipedia* furthers this separation between the claim to true knowledge and based on the strengths of its community and its chosen medium, it limits its claim to reporting what is, currently defined as, verifiable.

The second section of this chapter analyzed the figure of the encyclopedia author and the implicit source of his/her authority. During the course of the 20th century many philosophers and literary theorists have analyzed the author function and its construction through history. Barthes argued for investigating diverse sets of meaning in each text beyond the simple association with an author figure, while Foucault presented the evolution of the author function as it emerged and evolved with the rest of society. Building on this framework, I have demonstrated the way both Medieval and Modern encyclopedias have utilized the prevalent authors functions of their time. While encyclopedias have not been considered as works with great authorial intent, I argued that the attitudes of encyclopedia compilers throughout ages have also evolved according to patterns laid out by Foucault, in

the sense that the source of the authority implied in encyclopedic writing has shifted from the individual towards institutions. Given the trajectory of this trend, authorship practices of *Wikipedia* towards encyclopedic knowledge can be considered as the next logical step. Whereas the modern encyclopedia has shifted the source of the authority from the compiler to the accredited individual contributor, *Wikipedia* authors are merely tasked by verifying their sources and edit according to community guidelines. As Foucault argued, modern scientific principles rendered names of individual authors more as organizational aids instead of the basis for their claim to authority. *Wikipedia* takes this process further while introducing new aspects to the relationship between a text and its author. Since every single edit is individually archived and the accumulated data is freely available to be organized and processed in endless combinations, a dual, and seemingly contradictory, relationship becomes evident in the case of *Wikipedia* and authorship. While the author of an encyclopedia article and the implied source of his/her authority has never been more distant, in that sense continuing the trend of Western Encyclopedias, *Wikipedia* simultaneously offers a model where authorship is definitively recorded and visible for the entire Internet to observe on a granularity never before imagined.

In the third section, covering organizational principles, I returned to the relationship between encyclopedias and different communication media, given that the particular characteristics emphasized by any given media of communication over encyclopedias can be observed most prominently in the organizational schemes adopted by compilers. The historical survey I have conducted in the earlier section of this study illustrates that organizational principles of encyclopedias are always manifestations of assumptions held compilers regarding the overall scheme of knowledge. Following from Aristotle, throughout the Middle Ages, compilers aspired to distinguish themselves, and their editorial prowess, by providing a superior organizational scheme. The adoption of the alphabetical ordering, in its very neutrality towards all subjects, embodied principles of the Enlightenment, following the writings of Bacon and particular examples of Chambers and Diderot. In the case of *Wikipedia*, alphabetical ordering of articles is supplanted by the hypertext, whose benefits and potential were foreshadowed and predicted by 20th century visionaries like Borges and Otlet. The completely digital, densely interlinked database of *Wikipedia* articles can be

browsed completely randomly while simultaneously be organized according to any order of classification one can devise. Given the exponential growth in Internet enabled mobile device usage, such as smartphones and other portable, relatively low-cost devices, the accessibility and ease-of-navigation offered by *Wikipedia* is undoubtedly a revolutionary transformation in the history of encyclopedias. However, my analysis so far has shown that this improvement in organizational principles can only be achieved through a coupling of simultaneous changes in knowledge and authorship.

At the outset of this study, my goal was to identify what made *Wikipedia* special. To position it along the long history of encyclopedia making and highlight its novelties. After reviewing more than two millennia of history and witnessing the process through which its technical and theoretical foundations were set up over a century, I came to identify the novelties and the continuities of *Wikipedia* as parts of a whole. In its breakthrough approach to knowledge, authorship and organization, *Wikipedia* might be perceived as anathema to all the values traditional encyclopedias seem to embody. However, as a result of this study, in all its revolutionary aspects, *Wikipedia* emerges as yet another step in achieving the impossible goal of the original encyclopedic ideal. The most novel aspects of *Wikipedia* constitute, in essence, the strongest embodiment of its heritage.