

Fast “Truths” and Slow Knowledge; Oracular Answers and Wikipedia’s Epistemology

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Heralded for years by librarians and media scholars, the lack of proper information literacy training has brought about a public crisis in which social media encloses more and more of public life. Numerous theories and frameworks have surfaced, attempting to both understand and intercede with the mis/disinformation pervading the ever-changing and fast-paced social media landscape. For better or worse, students and instructors struggle to grapple with these issues, espousing the often repeated (and often belied) mantra of “do your own research.”

danah boyd notes in *It’s Complicated: The Social Lives of Networked Teens* (2014) that this idea of “do your own research” might have backfired on information literacy education. This concept might have rung true within a larger context of information literacy pedagogy (often within the more extensive system of teaching traditional research skills) but shifted potential interpretations as terms like “google” became culturally synonymous with “look up information” or “research.” This linguistic slide helps explain how information literacy pedagogy might have “backfired,” but it was not to blame for the concerns.

Of course, along with the rise of powerful and ubiquitous search tools also came Wikipedia, which represented a massive shift in democratizing the authoritarian process of information curation and access to the encyclopedic form. Along with this massive shift came significant (and rightful) concern for the “encyclopedia anyone can edit” to maintain any semblance of reliability, particularly during its early years, when Wikipedia was seen as unreliable, especially amongst educators. Unfortunately, these teachings about Wikipedia persisted, despite Wikipedia becoming far more reliable as it matured. As expected, boyd notes that students were told to “avoid Wikipedia” and do their own research. Furthermore, students “heard that Google was trustworthy, but Wikipedia was not” (boyd 2017). In light of the history of these concepts (research, Google, and the history of how Wikipedia was viewed), it makes sense that despite students being trained to engage media with a “critical” lens, the evolution of media itself shifted much about what the outcomes of “doing research” meant.

With the speed of Google and the astounding amount of information delivered by its algorithmic searches, students (both those enrolled in traditional or formal institutions as well as anyone seeking to learn) remain bombarded with a veritable cornucopia of information consumption choices, often with high production values and seemingly reliable pedigrees. To be fair to information literacy educators, what boyd and others are concerned about is not necessarily that information literacy training has failed. Instead, there’s a need to address the confusion that emerges from having nearly unlimited information available instantaneously - seeking “answers” and “Truth” – rather than seeing (as the ACRL’s *Framework* puts it) “research as inquiry” and “searching as strategic exploration” (*Framework* 2015). To put it another way, formal and informal information literacy necessitates a distinction between fast “Truths” and what we call “slow knowledge” to indicate a gradual process of knowing, understanding how to interact with knowledge, and understanding the construction of that knowledge.

The speed of these fast “Truths,” both in terms of students’ queries and the rate at which they acquire answers, contrasts deeply with a sustained process of inquiry - and, as we will explore, often ignores foundational checks such as source reliability and verifiability. Our use of capital T “Truth” gestures towards a critique of the foundational (or transcendental) “Truth” perceived when users approach the Internet (and Google in particular) as an objective oracle, as opposed to a socio-technical (and subjective) community and space of engagement.

Google’s Knowledge Graph project, which introduced infoboxes or “knowledge panels” into search results beginning in 2012, remains a prime example of the Internet functioning as an oracle, as the “answers” it provides feeds not only infoboxes but also Virtual Assistant (VA) devices (such as Google Home, aka Nest), literally “speaking the answers” to the user. However, infoboxes (and VAs) often camouflage the referential process, hiding the source of data that creates the “answers,” and forwarding this omniscient oracular stance, which then characterizes user experiences and habits. This stance is particularly problematic in an era of weaponized misinformation because it not only habituates users to seek decontextualized answers (“Truths”) but also creates and feeds new desires within a particular and idealized vision of technology. Stiegler argues that collective anticipations are being replaced by computational systems that deliver a guaranteed result, “destroying every expectation of the unexpected,” which redirects desire towards the expected result - what those technological systems provide (2016: 20). In the “epoch” of algorithms and especially as new applications of big data and algorithms seek to create and answer previously unknown, or unanticipated needs, we should be especially critical of promises like the one Google made when first introducing the Knowledge Graph in 2012: “the perfect search engine should understand exactly what you mean and give you back exactly what you want” (Singhal 2012). Essentially, Google admits to Steigler’s concern: they wish to replace the unexpected with precisely what is expected (that, in turn, one desires only the expected).

As the Internet remains an amalgamation of technologies, it also remains an amalgamation of accidents. As Virilio (2007) notes, the invention of technologies always implies the possibility of accidents: “To invent the sailing ship or the steamer is to invent the shipwreck. To invent the train is to invent the rail accident of derailment” (10). Representation of “truth” is no stranger to these accidents, even before the Internet, and the Internet has created the potential (and has been the site of) innumerable technological “accidents.” More so than this desire for only the requested and expected, these technologies create a destructive desire, even accidentally so, for easy answers without the need or invitation for active engagement. We attempt here to frame a small aspect of the site of this “accident,” as it often remains hidden from view due to the ongoing cataclysms pervading the Internet (and the world) through addressing the technologically driven automated “answers” provided through algorithmic systems such as Google Knowledge Graphs. As speed transforms the essence of things and often dominates against that which is slower (Virilio 1986), it is imperative to consider the pace at which different systems process information and how that assists in the subjugation of other systems. In this paper, we explore concerns around the speed of information, how users access that information, and why it should matter for education (both traditional and nontraditional, formal and informal).

By contrasting this notion of “fast Truths” with an oppositional process, we call “slow knowledge,” we seek to problematize the ways that Google’s Knowledge Graph Project and VAs decontextualize the construction of knowledge from the data itself — often presenting information or “answers” to users in a way that fails to display a reference, and more generally, omits the sociotechnical process that goes into the creation of information. This is where the “accident” here of “fast Truths” emerges, as the rapid velocity ignores critical information literacy components. In contrast, Wikipedia has been referred to as a “happy accident” (Reagle 2009), and we use it here to illuminate the notion of “slow knowledge” as it encourages engagements with information that uncover this sociotechnical construction. Wikipedia has illuminated the processes for this construction of information since its foundation (especially in the meta genres that document its policies, histories, and guidelines), undeterred by its detractors.

Despite Wikipedia’s meager beginnings, the past two decades of its existence illuminates that the encyclopedia offers something fundamentally different from how information is handled and presented on the rest of the Internet. Numerous studies have shown Wikipedia’s reliability in comparison to other encyclopedias (Brown 2011; Giles 2005; Hwang et al.; Kräenbring 2014), and countless researchers have explored its educational value when it comes to core information literacy concepts (Ayers and Zanni 2017; Dowel and Bridges 2019; McDowell and Vetter 2022; Vetter and Woods 2018). Although its reliability and pedagogical usefulness help to illuminate its importance, an additional value of Wikipedia, we argue, is that it can help to differentiate approaches to information representation.

In contrast to the Internet’s offerings of “fast Truths” as “answers” that respond to an immediacy (often the antithesis to information literacy and learning), Wikipedia offers this “slow knowledge” that focuses on reliable, verifiable information, recognition that representation of information neutrally is complicated and messy, and requires understandings of deep research and information literacy concepts to grok the information within it fully. Additionally, the speed of the rest of the Internet relies on procedural knowledge (how to do something to get a result, find a thing, or participate) that offers “results” (as in Google or otherwise), while Wikipedia (by and large) relies on conceptual knowledge (understanding principles, concepts, and theories) to participate fully and engage with the information it holds. Wikipedia’s reliance on verifiable knowledge that can be traced back is imperative to its reliability, which defies the production of “fast Truths” that the Internet is so ready with. While merely contrasting these oppositional concepts provides a productive critique, what has emerged in Google Search in recent years has further blurred the lines between these concepts in ways that are additionally problematic and that demand critical interrogation.

Web 3.0: Big Data and Information Literacy in Google’s World

As is commonly known for anyone who uses Google Search, the top results are often Wikipedia articles. This is no mistake, as Google has been a massive supporter of the Wikimedia Foundation. This foundation is responsible for running and supporting the software and community which comprises Wikipedia and its sister projects. Over the years, these top results became influenced and were supplemented with Google’s “Knowledge Graphs” (displayed in infoboxes on the top right of the browser page). Wikipedia refers to Knowledge Graphs as “a knowledge base used by Google and its services to enhance its search engine’s results with information gathered from various sources. The information is presented to users in an infobox next to the search results” (“Google Knowledge” 2022). These Knowledge Graphs not only supply infobox “answers”; they are often comprised of the same content that VA devices “read” to users - answers that are extracted from Wikipedia. However, what is fascinating here, and somewhat terrifying as well, is that unlike Wikipedia, which is cited in a visibly verifiable way, this information is often de-linked, and therefore de-verified, and most often represented without any transparent way to trace back the sourcing, reliable or not, to the information’s place of extraction.

Where and how Google extracts, this information has shifted over the years. Sourced initially from Wikipedia, Google linked these answers back to the actual articles, which then cited verifiable, reliable data (or if it did not, it was verifiably apparent), backing up its knowledge representation with sources. This was necessary since Wikipedia might be the “free encyclopedia,” but its CC-BY-SA licensing requires attribution. Knowledge Graphs can now extract much of their information from Wikidata, a sister project to Wikipedia, with no such licensing barriers requiring attribution. Wikidata is licensed as CC0, public domain, which is free to link to, extract from, and use in any way - commercial or noncommercial, attributed or not. The CC0 license allows for commodification and re-appropriation of content initially licensed under a CC-BY-SA license and created by a volunteer community in Wikipedia. Specifically, Wikidata scrapes Wikipedia metadata as part of how it populates its system with information. Although (meta)data isn’t copyrightable currently (and there are ample reasons why it shouldn’t be), the original information which has been utilized was created by countless volunteer hours under the guise of this “ShareAlike” license. Although, at first glance, Wikidata might sound like a step forward in providing truly free data, the ways in which large tech companies utilize this data and where this data originated from highlight the epistemological crisis of these “fast Truths.”

In the case of Google's Knowledge Graphs, which not only provide easily digestible answers via infobox but also provide those answers for VA devices, the issue is both that Google's "answers" are provided authoritatively by Google itself, as well as that they distract from (or even amputate) the source of that information - creating both the experience of Google as the authority (and author) of that knowledge as well as ensuring that the information is not seen as something requiring verifiability in the first place. In a *Washington Post* op-ed, "You Probably Haven't Even Noticed Google's Sketchy Quest to Control the World's Knowledge," Caitlin Dewey (2016) offers an accessible critique of the way that Google Search, and in particular its use of Knowledge Graphs, is evidence of a "looming literacy crisis." Dewey interviewed Dario Taraborelli, former head of research at Wikimedia Foundation, who describes the problem in the following: "[The Knowledge Graph] undermines people's ability to verify the information and, ultimately, to develop well-informed opinions" (qt. in Dewey, n.p.). The main issue at stake here, as Dewey sees it, is that the knowledge graphs "provide information but often leave out any context on where that information came from" (n.p.). Even if the infobox remains linked to a Wikipedia article (as some still do), they quickly disappear as Wikidata continues to grow. The "answers" provided are either de-emphasized on the infobox or, more and more likely to be the case, provided by a VA without an audible referent. Essentially, users experience these "fast Truths" from Google (and others) in a way that actively hides the most important aspects of information literacy - the ability to evaluate reliable sources and trace verifiable information as a routine procedure.

Doubly concerning, as boyd noted, is the idea that users trust Google while skeptical of Wikipedia, as they are often unaware that information they are receiving from Google is socially and historically constructed by volunteers in the Wikipedia community. As a result, we have a double conundrum here regarding big tech's appropriation of Wikidata. Not only does Google purposely obscure reference trails; but it also violates and extracts from the digital commons for commercial motives. As noted before, early implementations of Google's Knowledge Graphs, "infoboxes" displayed in response to a search query credited Wikipedia for the information presented. Such attributions, in the form of links to the original article, were de-emphasized and then disappeared altogether. In an interview quoted by Kolbe (initially conducted by Heather Ford in 2014), Max Klein notes the concern over how this came to be: "Wikidata being CC0 at first seemed very radical to me. But one thing I noticed was that increasingly this will mean where the Google Knowledge Graph now credits their "info-cards" to Wikipedia, the attribution will just start disappearing. This seems mostly innocent until you consider that Google is a funder of the Wikidata project. So in some way it could seem like they are just paying to remove a blemish on their perceived omniscience." (as cited in Kolbe, n.p.).

But it is not just the case that Google can "remove a blemish on their perceived omniscience" but instead that CC0 allows them to display data unattributed. The data becomes "part of" their larger data ecosystem, and is able to be used in any way they deem fit - whether simply stating facts in the knowledge panels, feeding VAs, or to utilize in machine learning systems. This disassociation of data sourcing breaks the reference trail imperative to Wikipedia's accountability (as verifiability of sources remains a fundamental tenet of Wikipedia) but also breaks the promise of Wikipedia's licensing - that information contributed to Wikipedia is legally secured as "ShareAlike." When Google uses Wikidata's data derived from Wikipedia, it now has free access to do with it what it will. Not only does this violate the citational ethos of the commons, but in its pursuit of "fast Truths," it also breaks the chain of verifiability, effectively bypassing the "experiential epistemology" that comes from engaging with transparently verifiable information. This extraction should concern anyone involved in the countless hours of labor volunteered to support Wikimedia's free knowledge movement, mainly because that movement is based on and supports critically necessary information literacy skills.

Wikipedia and Experiential Epistemology - learning conceptual information literacy skills

As previously articulated (McDowell and Vetter 2021; McDowell and Vetter 2020), Wikipedia provides an "experiential epistemology" - a process for engaging users in the critical evaluation of information through an assemblage of policies and guidelines agreed upon by the community. Although much of these benefits arise alongside learning how to edit and write Wikipedia, this does not necessarily require in-depth training as even the most casual

audiences of the encyclopedia are likely to have encountered an invitation to help the community evaluate information, most typically in the form of a “[Citation needed]” tag, encouraging readers and would-be editors to provide a verifiable reference for unsourced or poorly sourced content. The space itself is structured in ways that experientially inform readers about proper sourcing, neutrality, and many other aspects of information literacy. To help frame how Wikipedia participates and constructs this “slow knowledge,” we further explore how policies and guidelines related to reliability and verifiability constitute and create this “experiential epistemology.” This will help to articulate and underscore why the loss of engagement within these Wikipedia systems and policies is devastating to information literacy education when procedures and policies are effectively bypassed through a more automated process, what Tom Simonite, writing for *Wired*, labeled a “robot epistemology” (2019).

WP: Verifiability and WP: Reliability as foundations of knowledge representation

Despite the ubiquitous jokes and criticisms of Wikipedia’s reliability, the encyclopedia has endured, matured, and improved its reputation (especially in the last few years), leading Richard Cooke to label it “the last best place on the Internet” (2020). While certainly related, our current concern is not so much with the encyclopedia’s accuracy of content but instead with the way Wikipedia provides a kind of “public pedagogy” (Hood 2008; Vetter 2014) and, in particular an “experiential epistemology” that engages users in the process of evaluating information in terms of verifiability and reliability. This is no mistake, of course, as reliability and verifiability are central to the fundamental policies and guidelines that govern Wikipedia.

Wikipedia’s project namespace (often abbreviated simply as “WP,” as opposed to “mainspace” articles) contains a collection of pages related to the administration of Wikipedia itself. This is where meta genres such as guidelines, policies, and even essays about the community norms are found, and it is this namespace that houses policies and guidelines related to how the community approaches the application of concepts such as reliability and verifiability, among over 200 others. These guidelines are, at first glance, fairly straightforward; however, they are voluminous and much like Wikipedia mainspace entries, linked, filled with references, and (even individually) often quite lengthy. WP: Verifiability and WP: Reliability are no exception to this.

Arguably the most crucial policy on Wikipedia, WP: Verifiability helps to underscore that Wikipedia is an *encyclopedia* and a tertiary source (and so far from firsthand information that it is not recommended to cite original research as a “proper source”). Wikipedia requires that all content be verifiable through a (secondary) source that directly supports a statement in any given mainspace (content) article. This policy remains imperative to a “chain of evidence” as to why the information *could be trusted*, as each statement on Wikipedia must be neutrally stated and backed up by a reliable source, ensuring that whatever is written on Wikipedia can be checked by anyone to be representative of the source’s information. While there have been essential critiques of how WP: Verifiability limits the types of both sources that can be used to build Wikipedia as well as the content that can be added to a mainspace article (Gruwell 2015; Menking and Rosenberg 2020), WP: Verifiability remains an essential arbiter in the more extensive knowledge ecosystem, not only of Wikimedia but in all of the knowledge representation (especially on the web). The notion of verifiability helps underscore why it is of utmost concern that information extracted from Wikimedia (from Wikidata, for example) must include attribution. De-attribution cuts away the most essential part of why that information could be trusted. In other words, WP: Verifiability initiates the process that invites any user (reader or contributor) into the experiential epistemology of Wikipedia, as it presents the invitation to verify the representation of the source in the statement. As the policy ensures that information can be traced back to another authority, WP: Verifiability sets up the ability to assess the reliability of a source in either the existing content or in developing new content.

The policy of WP: Reliability is, in a nutshell, Wikipedia’s answer to the notion of “truth,” as it seeks to ensure information represented on Wikipedia can be verified from a *trusted* source. This is where Wikipedia distinguishes itself from these “fast Truths” and approaches the notion of knowledge as many reliable representations of “truth” existing simultaneously. Furthermore, WP: Reliability defines both the proper use of and definition of reliable sources:

“Wikipedia articles should be based on reliable, published sources, making sure that all majority and significant minority views that have appeared in those sources are covered” (“Reliable sources”). The guideline covers both recommended (e.g., secondary research vetted by specific academic communities) and more questionable types of sources (e.g., sponsored content). WP: Reliability pushes off the responsibility for factual and reviewed content onto publishers, particularly favoring ones with fact-checking and peer reviewing. Consisting of six sections and nearly thirty subsections, this guideline alone is already quite comprehensive in providing a pedagogical overview for information literacy as it speaks to evaluating sources and understanding where information arises from. However, the recommended practices come alive in the day-to-day interactions and editing work happening in the encyclopedia as editors update articles with new secondary sources and challenge unsourced or questionably-sourced content, as well as when readers encounter both reliable and unreliable sources content across the encyclopedia’s main content articles. Editorial changes and reader encounters constitute a type of experiential epistemology characterized by knowledge-making practices that are quite traditional, given the history of the encyclopedic genre (Vetter 2020).

In the end, Wikipedia has established a robust system for information processing - both in terms of the critical evaluation of all types of source material, as well as the assessment of how those sources are used to create coverage of any given topic. While WP: Reliability and WP: Verifiability represent only a few of the hundreds of guidelines and policies on Wikipedia, the two of these represent perhaps the most essential elements of how Wikipedia’s “slow knowledge” emerges, one which is experienced both as the ability to find answers as well as trusting those answers because of the ability to verify them.

Wikipedia depends on quality secondary sources to create tertiary article content. WP: Verifiability presupposes and creates the space where readers can then question reliability, while the policy of WP: Reliability seeks to ensure accountability for “factual” information. Such policies are the basis for constructing knowledge in Wikipedia, but they do not act alone. Instead, they are part of a messy struggle to represent knowledge with algorithms, editors, readers, and other agents in the ongoing creation of what we have referred to as ethical assemblages (McDowell and Vetter 2021: 29). These assemblages create movement within the representation of “truth” and this movement cannot exist without this messy process allowing knowledge representation to exist in a constant state of interpretation, evaluation, and improvement. This is the pedagogical experience of knowing - that rather than fast “Truths,” the value of information transcends immediate answers (see McDowell and Vetter 2022) and even “truth” remains overwhelmingly contingent upon numerous aspects of subjectivity.

Conclusion

Despite the call for better information literacy and skills to combat mis/disinformation, it is evident that the constant desire for immediate answers runs counter to healthy epistemologies indicative of information literacy. Treating a socially and technically constructed machine as some sort of oracle is an easy way out of the slow, complex, and messy learnings that represent the reality and history of human knowledge. The speed at which information is accessed can only be handled appropriately when both the teachings have been properly imparted and when the information’s sourcing remains transparent. Although we cannot solely blame tech companies for the lack of education or the speed at which things move, we do need to hold big data accountable to specific standards of transparency as well as for obfuscating and profiteering off of the lack (and lag) of public information literacy education. Nothing comes from nothing, and allowing tech giants to act as priests of knowledge, delivering information as if they themselves are the intermediaries or arbiters of all that is “True” and factual, remains problematic at best and particularly dangerous in a time of rapid-onset disinformation. The experiential here is of concern - the idea that answers are final/uncontested itself runs counter to how knowledge functions, and without the ability to engage with the knowledge, we can undoubtedly expect mass atrophy in information literacy habits and skills. Furthermore, the increasing exploitation and enclosure of the digital commons threaten all this. The orientation of tech giants as ubiquitous oracles casts the struggles of the commons aside and devalues the combined love and labor of those who seek to share and participate.

Rather than settle for oracular answers, we need platforms and engagements that emphasize dynamism - that of knowledge creation and curation, sharing, and community. Systems of verifiability give us a roadmap, both within larger historical systems and the “modern” (albeit ancient in Internet terms) systems that govern Wikipedia. Recognizing how the Wikipedia community has come to work alongside machinic systems (bots, AI, and otherwise) while retaining socially-governed practices and commitment to epistemological foundations illustrates and illuminates not only the need for transparent, open, and grounded information systems but also that the ethics of information representation remain in good hands when curated by these messy human-led assemblages. In the end, Wikipedia might move slowly in comparison to these fully automated systems, but it also demonstrates that *faster is not necessarily better* (particularly when we understand the long-term potential consequences). Although learning “how to know,” and understanding the construction of knowledge takes time, it is time well spent.

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