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Googling as Research: A Response to "(Google)-Knowing Economics"

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Vicki Macknight and Fabien Medvecky's "(Google-)Knowing Economics" (*Social Epistemology* 34, 3) raises many interesting questions. What does it mean to know in the digital age? Or, more specifically, what does it mean to know when the main source of knowledge is "googling"? The authors address these questions by looking at the topic of economics and by asking what someone might learn by searching Google for "economics". The larger goals of the paper are to understand how googling changes our answers to "classic epistemological questions" and to examine how economics is made public.

To examine what it means to know in the age of Google, it is useful to step back and define what it means to know in general. This is a tough philosophical question, which makes it difficult to analyze changes. Whenever we try to examine digital discourses we have a hard time distinguishing between form and content and analyzing the interplay of medium and the message. Google-knowing is the next twist in the entanglement between technology, communication and cognition. It absorbs previous configurations of knowledge and remodels parts of it according to new technological affordances.

Inquiries into epistemological questions, such as "What is knowledge?" or "What do people know?" have expanded from the traditional "tripartite" conceptualization that knowledge is a true justified belief to understanding that knowledge and modes of knowing exist within the concrete historical-social settings, whether it is the rise of experimentalism in the 17th century or the definitions and treatment of mental illness.[1,2,3] As our justifications for truth and knowledge have become associated almost exclusively with science, the sociological analysis of the latter has problematized the notion of scientific claims as true beliefs and natural undistorted representations of reality and proposed to look at their social functions, including value judgements and the distributions of power.[4,5]

Those developments in critical, constructivist and discursive understandings of science and knowledge provide a rich context for approaching epistemological questions. They offer frameworks for learning about the experiences of others and for examining the effects of the medium as changes in rules that affect both subjects and objects of communication. The authors rely on some of those frameworks when they propose to focus on the subject, or the knower. To avoid a power disbalance between the researcher and its subjects, created by surveys and interviews and to go beyond the data-centric analyses of clicking behavior, Macknight and Medvecky suggested an approach they call agent-centric. Rather than asking or monitoring others and risking crafted (mis)representations of the subject's self, the

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[1] Ichikawa, Jonathan Jenkins and Matthias Steup. 2017. "The Analysis of Knowledge." *Stanford Encyclopedia of Philosophy*. https://plato.stanford.edu/entries/knowledge-analysis/.
[2] Shapin, Steven and Simon Schaffer. 1985. *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life*. Princeton; Oxford: Princeton University Press.
[3] Foucault, Michel. 2009. *History of Madness*. NY: Routledge.
[4] Barnes, Barry. 2013, 1974. *Scientific Knowledge and Sociological Theory*. Routledge.
[5] Haraway, Donna J. 1997. *Modest_Witness@Second_Millennium.FemaleMan_Meets_OncoMouse: Feminism and Technoscience*. Routledge; McGrath, Patrick J. 2002. *Scientists, Business, and the State, 1890-1960*. University of North Carolina Press; Bourdieu, Pierre, Gisele Sapiro, and Brian McHale. 1991. "Fourth Lecture. Universal Corporatism: The Role of Intellectuals in the Modern World." *Poetics Today* 12 (4): 655–669.

authors became "imagined knowers" and searched Google as if they wanted to know about economics.

Knowing by Studying Ourselves

Can we know what others know by studying ourselves? Yes and no. By accessing and exposing their own experiences, researchers who practice this type of research seek to get to the unique, subjective ways of thinking and feeling that reveal silent voices and increase our capacity to empathize.[6] Describing the (somewhat) same results in Google search, however, does not immediately provide access to the ways of thinking, feeling, and knowing. Moreover, looking at Google search results does not even tell us what we ourselves know unless we examine knowing as a "fundamentally internal process and a deeply personal act" (214).

Having acknowledged that knowing is situated and deeply personal, the authors, nevertheless, ignored their own subjectivity and tried to escape "contamination of personalisation" (216). Considering that the majority of users, according to the research cited, use personalization as a default, embracing such "contamination" seems to be a better methodological choice. This attempt at objectivity undermines the depth and critical stance of the concept of situated knowledge used in the paper, the concept that provides a "view from a body, always a complex, contradictory, structuring, and structured body, versus the view from above, from nowhere, from simplicity."[7]

The issue is complicated further by the lack of transparency in Google search that was acknowledged by the authors. They tried to avoid personalization by using the private incognito mode, but that mode is not fully anonymous.[8] It still tracks one's location and if the user is logged into their Google account, the user's search patterns can still be tracked. Third-party sites are also able to track browsing patterns in the private browsing mode. For example, news sites with paywalls and a limited number of free articles can detect and block visitors even in the incognito mode.[9] The only way to counteract that without using VPN or Tor technologies is to incorporate lack of anonymity into the inquiry and explore its limits and effects.

A description of search results from a disembodied perspective shifts the research focus from knowers and knowing to knowledge representation. By looking at what is out there we can examine how information is being presented to us and, more importantly, who is responsible for presenting and how certain representations get promoted to the most

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[6] Ellis, Carolyn, Tony E. Adams, and Arthur P. Bochner. 2011. "Autoethnography: An Overview." *Historical Social Research / Historische Sozialforschung* 36 (4, 138): 273–290.
[7] Haraway, Donna. 1988. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies* 14 (3): 575–599.
[8] Chandler, Nathan. 2019. "What Does Browsing in Incognito Mode Really Do?" *HowStuffWorks.com* https://computer.howstuffworks.com/incognito-mode.htm.
[9] Clarke, Laurie. 2019. "Google Chrome's Incognito Mode is Way Less Private Than You Think." *Wired* 20 July. https://www.wired.co.uk/article/google-chrome-incognito-mode-privacy.

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prominent positions. One of the links with definitions, for example, that showed up when the authors googled "economics" was "The Library of Economics and Liberty (EconLib)."[10] This website is funded by the *Liberty Fund, Inc.*, a libertatian conservative foundation that advances the ideal of a society of free and responsible individuals.[11] How did it get to the top 5 search results?

Testimonial Knowledge Online

Representations on the Internet are what the authors call testimonial knowledge, or knowledge gained "second-hand from others" (215). The main difference between knowledge through testimony and knowledge through perception is mediation, i.e., someone else mediates the world for us to know how it is.[12] Testimonial knowledge claims always involve a speaker who makes the claims (testifies) and an audience that evaluates those claims and agrees to accept or reject them. The position of the speaker or "who is doing the saying" (217) affects how the claims are evaluated. Macknight and Medvecky make a connection between the digital (and googling) and lack of objectivity.

Citing Wikipedia as an example, the authors argue that authority in the digital age comes from multiple subjectivity rather than objectivity of the source. Does this criterion of multiple subjectivity apply to digital resources other than Wikipedia? Does it apply to non-digital sources? The question of how we determine authority and whether consensus takes over from authority (217) turns into a deeper and more interesting discussion once we go back to the constructivist frameworks mentioned above. Encyclopedia Britannica, for example, has its own history of multiple subjectivity and our perception of its authority and objectivity is a product of time and labor of its multiple contributors.[13]

Multiple subjectivity and consensus as the criteria for knowledge are not exclusively characteristic of digital resources and the Google search engine. Rather, it is a characteristic of the modern world where the number of speakers and sources increases. The digitization only accelerates the pace of these developments. As Kuhn and others have shown, science develops through disruptive cycles that rely on developing an agreement (consensus) over the standards by which the problem and its solutions can be evaluated and accepted.[14] The main argument in support of climate change is scientific consensus: "Multiple studies published in peer-reviewed scientific journals show that 97 percent or more of actively publishing climate scientists agree." [15]

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[10] https://www.econlib.org/.
[11] https://en.wikipedia.org/wiki/Liberty_Fund.
[12] Faulkner, Paul. 2000. "The Social Character of Testimonial Knowledge." *The Journal of Philosophy* 97 (11): 581–601.
[13] https://en.wikipedia.org/wiki/History_of_the_Encyclop%C3%A6dia_Britannica.
[14] Kuhn, Thomas S. 1996. *The Structure Of Scientific Revolutions,* 3rd edition. Chicago, IL: University of Chicago Press; Knorr Cetina, Karen. 1999. *Epistemic Cultures: How The Sciences Make Knowledge.* Cambridge, MA: Harvard University Press.
[15] "Scientific Consensus: Earth's Climate is Warming." *NASA.* https://climate.nasa.gov/scientific-consensus/.

So it is not consensus that is problematic in establishing authority and trust, but rather the rules that govern the speakers' behavior and the intentions and motivations of those who are advancing the knowledge claims (testifying). Science as a knowledge production enterprise has been described as mutual adjustment of independent actors coordinated through a set of norms that promotes disinterestedness and constant re-evaluation of knowledge claims.[16] Such seeming independence and disinterestedness have been also criticized and shown to be undermined by the alliances with corporations and the state and by the division of scientific labor, which fragments and decontextualizes the objects of knowledge[17]. Coupled with other "steering imperatives", such as money and power, claims to authority, reliability and trust become ever more problematic.[18]

Searching for Epistemic Status

The search for "economics", a rather decontextualized keyword, returned definitions that the authors found to be neither neutral nor objective. Other written and audio-video resources promised to entertain while making profit for their publishers and appeared to be shallow and more consumerist than pedagogical. Can we attribute these characteristics to the non-epistemic status of "economics", to contemporary communication platforms that are driven by advertisements and massive and abusive data collection, or to one of the largest threats to public discourse (at least in the US)—corporate power?

Searching for other disciplines, such as "sociology", "biology", or "computer science" returns very similar results: an entry from a dictionary right on the search results page, followed by snippets of several other definitions that come from various websites, then suggestions for books, followed by some news and related YouTube videos. Some disciplines are more heavily customized depending on one's location, even if the search is done in the incognito window. For example, if a user lives in a city that has a university that offers a program in a certain discipline, the site of that university may come up first, before definitions and other content. The fact that most disciplines are represented similarly in Google search speaks not about how these disciplines are made public, but rather about how Google deploys its technologies in an attempt to absorb all other resources and become a one-stop source of information, shopping, and entertainment.

With the development of its Knowledge Graph technology, Google moved away from being a search engine, i.e., a tool that retrieves multiple sources that may or may not contain answers, to a content provider, i.e., a resource that provides answers and services. It is as if when you asked a librarian about an event in history, say, Napoleonic wars, and instead of pointing you to books or encyclopedias, he or she just said "Oh, it refers to several major conflicts between 1803 and 1815 between the French Empire and a number of European powers and the United Kingdom" and offered you to buy a customized t-shirt. This shift

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16 Merton, Robert K. 1973. "The Normative Structure of Science." In *The Sociology of Science* edited by Norman W. Storer, 267–278. Chicago, IL: University of Chicago Press.
17 Aronowitz, Stanley. 1988. *Science as Power: Discourse and Ideology in Modern Society*. University of Minnesota Press.
18 Habermas, Jürgen. 1984. *The Theory of Communicative Action, Volume 2: Lifeworld and System: A Critique of Functionalist*. Translated by Thomas McCarthy. Beacon Press.

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from sources to information and services may be a breakthrough in technology (ontologies, semantic search, AI, and so on) and it is very convenient when you want to know, say, the capital of France. But it limits one's ability to choose what and how to learn when it comes to more complex information queries.

Science seems more epistemic than economics in Google search not because economics lacks certain representations, but because Google Knowledge Graph has created more semantic connections for science as an entity due to its popularity. The authors rightly point out that algorithms have a special power in the age of Google. Algorithms rank pages, replace relevance, value and quality with popularity, and we do not know how they work. Figuring out how they work is probably one of the most important tasks of STS research, not only because the algorithms can be unfair and carry out human biases, but because algorithms are deployed by technology companies that consolidate unprecedented resources in search, online advertising, and cloud computing. Such consolidation blocks competition and the multiplicity of voices in the information space.

Many factors contribute to the challenges of making economics public, but it seems that Google and its technologies are not really to blame. Many science communication stories, including vaccinations, genetically modified food, climate change, and even the current COVID-19 communications, illuminate the inadequacy of the simplistic models that try to educate the public so that people start making "good personal and collective decisions" (215). The disconnect between the sciences and the public runs deeper, and over the years it has been getting more and more political, especially, in the areas that have a connection to profit-making or vested interests. The Nobel Prize laureates in economics in 2019, for example, found that providing more textbooks and teachers does not help students learn more, but providing free health care does.[19] It is hard to believe that this finding can be "made public" as openly and independently as, say, a discovery of a black hole.

Describing Google-Knowing

The questions, examples, and reflections in this response are not intended to criticise the paper. Macknight and Medvecky took the initial steps in describing Google-knowing of economics and revealed that understanding Google-knowing is inseparable from larger media and information critique. Their attempt to disentangle Google and knowledge has confirmed that there is a complicated relationship between media, technology and society and that this relationship constantly opens and closes opportunities that shape the knower-knowledge-knowing triangle. If our current ways of knowing are characterized by lack of objectivity, knowledge commoditization and the simplified or sensationalized modes of expertise, we need to examine the conditions that led to this, discuss better alternatives, and seek opportunities for change.

One way to open up opportunities is for researchers to not label themselves as "non-experts" or "imagined knowers", but, rather, to use their experiences and analyze modes of

[19] 3 economists who study poverty win Nobel Prize: https://apnews.com/777efc95f30f41cc997ee47ce04c1c89.

digital knowledge and patterns of domination and resistance in the digital age. We need to evaluate the assumptions that research subjects have no agency and that science communicators know what the public needs. The Google-knowing public is more complicated than a disembodied imagined "Google-knower" and the term "Google-knowing" needs terminological clarity. If it is specifically related to googling, we need to dig deeper into how Google technologies affect knowledge representations, but also compare it to "Alexa-knowing", "Siri-knowing", and even "Bing-knowing". If Google-knowing is a metaphor for knowledge in the digital age and we see evidence that knowledge representations increasingly blur the boundaries between facts, ideologies, entertainment, and consumerism, we need to examine the effects of such blurred boundaries, study actors other than Google, and look into such characteristics of digital space as participation in digital forums and communities such as Reddit and influencer-mediated audio-visual methods of consuming information that are increasingly adopted by the younger generations.