

STS C200, Week 11: Algorithmic Life

Orr Paradise

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1 Algorithms of Oppression / Safiya Umoja Noble [8]

In *Algorithms of Oppression*, Safiya Umoja Noble studies how an internet search engine, a seemingly “neutral” technology, reinforces the oppression of marginalized people. This is a focused and situated book. It is methodologically connected to previous readings, but its spirit is different; it is not centered around a theoretical discussion or a survey of a certain area of science and technology. I will do my best to articulate some connections and impressions that I formed.

A recurring method in the book is the use of technological ‘glitches’ to reveal structures of oppression and discrimination in society. The main example in the book—a search for “black girls” that results in pornography—is not only an instance of colonial phenomena (commodification and sexualization of black women), but is used by Noble to further understand the phenomena themselves. The extensive use of this method ties this book with Benjamin’s *Race After Technology* [1], which has a theoretical discussion of this method [1, ch. 2].

In 2018, when this book was published, internet search was already a fairly stable technology. In the spirit of Latour [6], Noble opens the black box that encompasses this allegedly ‘neutral’ technology. By analyzing the algorithmic component of Google search, PageRank, she demonstrates how Google search is an inherently political artifact, whose concerns are not necessarily the retrieval of credible or accurate results: “search results are deeply contextual and easily manipulated, rather than objective, consistent, and transparent, and that they can be legitimated only in social, political, and historical context.” [8, p. 45].

In a book concerned with a technology that attempts to show the user a narrow view of the massive and complex Internet, it is unsurprising to see *perspective* play several key roles, discussed next. First, I’d like to highlight the unique and present *voice* that the author has in this work. Noble presents her work as a “Black feminist perspective” [8, p. 30], which, I think, *situates* it as a concrete perspective, in the sense of Haraway [5]. She “consider[s] [her] work a practical project, the goal of which is to eliminate social injustice and change the ways in which people are oppressed with the aid of allegedly neutral technologies” [8, p.13]. This situated voice makes this book stand out from the ‘classic’ STS that we read earlier in the semester (e.g., [10, 6, 3]), in which the authors avoid any ethical stance on the technology or science in question.

The immanent perspective of the author strengthens her presentation of bias in search. The results of a Google search for “black girls” is not just disturbing, it is a symptom of a racist system, and evidence that Google is deeply affected by this system. Google is certainly not a ‘neutral’ courier of knowledge—if such ‘neutrality’ even exists.

Perspective is not just an (“external”) attribute of the book, but also an (“internal”) subject of interest. Noble considers the perspective of Silicon Valley, a fairly homogeneous body of white, male engineers that places the weight of diversification onto those it pushes out (“Black women need to learn how to code”, see also [8, p. 68]). She also considers the perspective of a Google “user”, or rather, the (inaccurate) perception of Google of its users as white and male. The latter observation (that Google thinks its users are white and male) is of particular importance, given an earlier assertion by Noble that search results optimize for click-by-*user*, rather than credibility or accuracy: the perceived identity of the user affects the outcome of the search; had Google perceived its user as, say, the mother of a black girl, it certainly would not have returned pornography when queried for “black girls”.

The book's emphasis on "concrete problems" had me wishing, at times, for a deeper theoretical discussion. As an example, let me unpack her statement that "We are the product that Google sells to its advertisers" [8, p. 162]. It posits the existence of actors that are simultaneously the users of a technology as well as the resource that it harvests. This is a rather unique object, and it would be interesting to see how various frameworks handle it. For example, how does Hughes's [2] framework of the evolution of technological systems handle such user-resources? (Recall that he lists the components of a technological system, a list that includes organizations, scientific elements, natural resources, and so forth.)

My last thought will come after a disclaimer: I am about to speak from my position as an 'outsider'; that is, as an initiate of computer science rather than a neophyte of STS.¹ At the end of chapter 4, Noble calls for regulatory solutions to "the many increasing problems that unregulated commercial search engines pose" [8, p. 133]. I wonder what Noble would think of a radical technological solution, such as the creation of a search algorithm that *inherently* cannot sell its users' clicks, and is therefore nonmonetizable.² I am stressing that this solution would be an *inherently* nonmonetizable technology, as opposed to Noble's "Imagine Engine" [8, 180], which could still be used to track users' clicks.

Questions and topics for discussions

- Discuss the idea of users that are resources (see above), or the idea of search as an "epistemological ranking" [8, p. 118].

References

- [1] Ruha Benjamin, *Race After Technology: Abolitionist Tools for the New Jim Code*, Polity, 2019.
- [2] Wiebe Bijker, Thomas Hughes, Trevor Pinch (eds.), *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, Cambridge, MA: MIT Press, 1987. Essay by Hughes (1-82).
- [3] David Bloor, *Sociology of Scientific Knowledge*, in Ilkka Niiniluoto, Matti Sintonen and Jan Wolenski (eds.), *Handbook of Epistemology*, Kluwer Academic Publishers, 2004.
- [4] Benny Chor, Eyal Kushilevitz, Oded Goldreich and Madhu Sudan, *Private Information Retrieval*, J. ACM, 1998, 45:956-981.
- [5] Donna Haraway, *Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective*, *Feminist Studies*, 1988, 14:575-599.
- [6] Bruno Latour, *Science in Action*, Cambridge, MA: Harvard University Press, 1987.
- [7] Robert K. Merton, *The Normative Structure of Science*[1942], in *The Sociology of Science: Theoretical and Empirical Investigations*, Chicago: University of Chicago Press, 1973.
- [8] Safiya U. Noble, *Algorithms of Oppression*, New York: New York UP, 2018.
- [9] Femi G. Olumofin and Ian Goldberg, *Revisiting the Computational Practicality of Private Information Retrieval, Financial Cryptography and Data Security - 15th International Conference, FC 2011, Gros Islet, St. Lucia, February 28 - March 4, 2011, Revised Selected Papers*.

¹The reason for this disclaimer is that what follows can easily be seen as an attempt to "technologize" a solution, an entirely tone-deaf position to take when reflecting on a book that works so hard to break the monopoly of technologists over sociotechnical matters.

²In theory, there are cryptographic tools that could allow such a search algorithm: a *private information retrieval* (PIR) [4] protocol allows users to retrieve information from a server without revealing which search term is used. The practicality of PIR [9], or the realization of a nonmonetizable Google from this tool, is outside the scope of this discussion.

[10] Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle and the Scientific Life*, Princeton: Princeton University Press, 1985.