

# Chapter 44

## Google Scholar as the Co-Producer of Scholarly Knowledge

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### ABSTRACT

*Search engines in general, and Google Scholar in particular, are co-producers of academic knowledge. They have a profound impact on the way knowledge is generated, transmitted, and distributed. This chapter first explores how Google Scholar works as a human-technological system in order to analyze the site's technology in combination with its inscribed usage and its actual use and users. The chapter then scrutinize the complex power relationships of digital networks with Google at its epicenter. Following Manuel Castells's (2009) proposal to "unwire" the construction of academic knowledge through the coded dynamics of search engines, the author examines the larger legal and political-economic implications of the platform's architecture and organized structure. Combining these two layers of analysis should inform an enriched type of information literacy.*

### INTRODUCTION

Digitized searching has changed the way we learn and read, and it might well be argued that the production of scholarly knowledge has never been easier because we now have more access to more sources than ever before (Carr, 2008a). A college student assigned to write a paper or thesis these days is likely to start with Google Search, Google Scholar, or Wikipedia. When you ask students how they researched their topic, their likely answer is

that they "Googled" it, meaning they clicked on the 10 top-ranked results.<sup>1</sup> The role of libraries and librarians has changed dramatically—from being mediators in the process of searching to being facilitators of digital processes, and from being managers of *collections* to being managers of *connections*. One reason students appreciate the university library these days is LibraryLink, a Google service that, coupled with the library's online journal subscriptions, provides convenient access to full-text downloads. As information

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specialist Stephanie Taylor (2007) points out, many students think of library services as “an add-on to the Google Scholar service, rather than the other way around” (p. 5). Search engines are commonly regarded as neutral tools for information gathering. In this chapter I argue that Google Scholar, in particular, is a co-producer of academic knowledge because it has a profound impact on the way knowledge is generated, transmitted, and distributed.

Production of knowledge, as we have learned since Foucault (1980), is intricately intertwined with the *technologization of power* and the *mechanisms of power distribution*. Search engines play an important role in organizing the world’s information (Segev, 2008). In order to identify how knowledge is produced through search engines, I will first explore how Google Scholar works as a human-technological system, meaning that we need to analyze the site’s technology—its ranking systems and profiling systems—in combination with its inscribed usage and its actual use and users. Google Scholar is in fact a piece of *social* software whose value is highly defined by the activity of millions of users whose click-activities result in automated click-aggregation. Socially based methods of information retrieval, such as search engine optimization, augment the so-called “filter bubble” phenomenon in which the information gatekeepers are Web-based services like Google.

The second level of investigation examines the mechanisms underlying the complex power relationships of knowledge production sites, with Google at its epicenter. Whereas academic libraries, publishers, and journals conventionally dominated the public dissemination of academic knowledge, Google Scholar brought a new set of values to academic-oriented search and database technologies. How do values like popularity ratings and reputational rankings relate to traditional library values like neutrality, confidentiality, and relevance? I follow Manuel Castells’s (2009) proposal to “unwire” the construction of academic knowledge through the coded dynamics of search

engines, thus examining the larger legal and political-economic implications of the platform’s architecture and organized structure.

Combining these two layers of analysis should help spark a critical discussion of digital knowledge production. Society needs students and scholars who are not only competent users of search engines, but who can also reflect critically on the principles underlying knowledge formation. Teaching information literacy, including the strengths and weaknesses of various proprietary and public search tools, may partly remedy the growing influence of Web search engines. Therefore, I suggest in the conclusion to expand information literacy to include reflective skills on the social construction of knowledge and thus to account for the political and ideological dimensions of automated search.

## GOOGLE SCHOLAR AS A HUMAN-TECHNOLOGICAL SYSTEM

For decades, library information and reference systems have relied on transparent yet complex systems for indexing. As a student, finding your way through the giant numbers of academic sources often required the help of professional librarians trained in the coded structure of the reference labyrinth. The Dewey system, which relies on appropriate labeling of keywords, never was the easiest system to use, and even if electronic library services (Web of Science, Metalib, Project Muse, etc.) made searching faster and more efficient, users’ dependence on keywords applied by reference librarians and publishers restricted retrieval and slowed down access. Electronic library services are less well known than search engines.<sup>2</sup> University libraries serve academic interest by filtering, ordering, and ranking quality materials on the basis of their evaluated academic weight. They have always been public service institutions, relying on traditional library values, such as usefulness and reliability, neutrality and

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