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Reflection on the Principle of Least Effort

As Mann describes in his essay by the same name, the Principle of Least Effort states that the majority of users choose to utilize the most easily available information sources, even when these sources are of inferior quality. Mann argues that people usually opt for “perceived ease of access over quality of content” (93) when selecting an information source, citing research findings supporting this claim that sources “tend to be chosen on the basis of perceived ease of use” (94). Users choose sources that require minimal effort, even when they are of lower quality. Users are also satisfied with whatever information they obtain via minimal effort, bypassing higher-quality sources for the most easily accessed ones, even those that yield results less favorable results. Mann asserts that designers should account for this behavior when creating information systems and services. As “processibility is as important as availability” (Mann 99), quality search results are the library’s responsibility. Lesser-quality research may result when libraries fail to design based on ease of use in favor of volume of information. Mann points to Rosenberg’s investigation of information-seeking behavior: “the basic parameter of the design of any industrial information system should be the system’s ease of use, rather than the amount of information provided, and that if an organization desires to have a high quality of information used, it must make ease of access [to it] of primary importance” (Rosenberg, qtd. in Mann 93). Mann uses a pinball game analogy to emphasize the multiple factors that determine search results. The overall slope of the pinball gameboard, writes Mann, influences game play regardless of player skill or experience. Ensuring ease of accessibility ensures use of quality information, as the direction in which the system steers the user, or “slope” of the system, is more important than the user’s experience or skill. To further

the game analogy: systems designers can level the playing field by taking user into account. By anticipating this “principal of least action” and accounting for user behavior, designers can build systems that allow searchers to find the most quality information most of the time.

In 1876, over a century before Mann’s assertion, Cutter’s objectives of the catalog articulate this idea of shaping systems around “what the user needs and has in hand” (Svenonius 15). Though these objectives have evolved over time, they are still “intended to reflect user needs” (Svenonius 19). In fact, the addition of the “navigation objective” acknowledged the need to establish bibliographic systems to guide users who may or may not know what they need. The bibliography’s objectives to locate, identify, select, obtain access and navigate serve users of varying needs. Those who support the inclusion of all five objectives in “full-featured” systems design argue that “users are short-changed by systems that do not adhere to the traditional bibliographic objectives” (Svenonius 28). Adherents point to search research and other user-based indicators to support the full system. Some consider the bibliographic objectives an embodiment or realization of users’ needs.

Before addressing the “invisible substrate” of information science, Bates defines the field’s apparent concern: “Information science is the study of the gathering, organizing, storing, retrieving, and dissemination of information” (Bates 1044). It focuses on the representation and organization of information rather than the knowledge of information. As such, information science is a “meta-science” interested in all disciplines. Information scientists are concerned with information “as a social and psychological phenomenon” (Bates 1048) and “how human beings relate to information” (Bates 1048). The dictum to “follow the information” and examine its use demonstrates a concern with both theory and practice. Bates urges the information scientist to examine the “hidden” foundations of the field “so that we may better understand our own work and communicate it” (1050). A “sociotechnical” field (Bates 1049), information science and its systems aim to serve all users and their wide-ranging information needs.

An examination of these concepts- the Principle of Least Effort, bibliographic objectives, and information science's invisible substrate- reveals a shared concern with effectively serving users of all needs. This principle of information science is most fully embraced by Mann, who assigns responsibility for anticipating and accommodating user needs to the library and those who design its systems. Having articulated the importance of design based on user use, Mann states that librarians must incorporate in "into any new model that would seek to go beyond the existing ones" (91). His directive to "consciously manipulate the 'slope of the gameboard' to make the best channels easier for researchers to perceive" (100) demonstrates a true commitment to the information system's objective of user service.

Works Cited

Bates, M.J. (1999). The Invisible Substrate of Information Science. *Journal of the American Society for Information Science* 50:1043-1050.

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Svenonius, E. (2000a). *The Intellectual Foundations of Information Organization*. Cambridge, MA: MIT Press.