

Memory versus logic: two models of organizing information and their influences on web retrieval strategies

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Abstract

The first anticipation of the World Wide Web hypertextual structure can be found in Bush paper of 1945, where he described a “selection” and storage machine called the Memex, capable of keeping the useful information of a user and connecting it to other relevant material present in the machine or added by other users. We will argue that it is not by chance that was Vannevar Bush who conceived this type of machine. During the 1930s, in fact, he invented and built the Differential Analyzer, a powerful analogue machine that was used to calculate various relevant mathematical functions. The model of the Memex is not the digital one, because it relies on another form of data representation that emulates more the procedures of memory than the attitude of the logic used by the intellect. Memory seems to select and arrange information according to association strategies, i.e., using analogies and connections that are very often arbitrary, sometimes even chaotic and absolutely subjective. The organization of information and the knowledge creation process suggested by logic and symbolic formal representation of data is deeply different from the former one, though the logic approach is at the core of the birth of computer science (i.e., the Turing Machine and the Von Neumann Machine). We will discuss the issues raised by these two “visions” of information management and the influences of the philosophical tradition of the theory of knowledge on the hypertextual organization of content. We will also analyse all the consequences of these different attitudes with respect to information retrieval techniques in a hypertextual environment, as in the Web. Our position is that it necessary to take into accounts the nature and the dynamic social topology of the network when we choose information retrieval methods for the network; otherwise we risk creating a misleading service for the end user of web search tools (i.e., search engines).