

which an individual actively participates, it is frequently the only process to which she gives serious consideration. When the individual is seeking information on a particular topic, her attention is focused on the set of resources retrieved by the information system. If these resources appear to be pertinent to the immediate problem, she may not give a second thought to the appropriateness of the terms used to query the information system. Nonetheless, it is the processes of selection, representation, and organization that provide the foundation without which information retrieval (IR) is less than effective, if not impossible. How resources are represented constrains the organizational structure(s) that can be imposed on a collection of information resources; the organizational structure of the collection dictates the search strategies that can be used for retrieval; and the representations themselves determine the set of resources that will be retrieved by the system.

Shera (1956/1965) affirmed the critical roles of representation and organization when he observed that effective retrieval requires an accord between the cognitive organization imposed on information by the individual and the formal organization imposed upon representations by the system. Shera's argument for accord between the individual and the retrieval system rests on three basic assumptions: that there are certain cognitive structures that can be identified and described; that it can be demonstrated that these structures are shared across individuals; and that identification of these shared structures will provide the basis for a theory of organization.

That cognitive accord can be achieved across individuals is a fundamental assumption of the shareability constraint proposed by Freyd (1983). She argued that the intent to communicate without loss of information causes the individual to modify her internal conceptual representations to reflect the cognitive organization assumed to be held by the other participant(s) in the communicative process. If participation in an intentional act of communication does promote normalization of conceptual representations across individuals, as Freyd (1983) argues, it follows that an intentional act of communication between the individual as natural intelligence and the information system would be subject to a similar shareability constraint. Assuming that the processes of representation, organization, and retrieval are necessarily interdependent, failure to address communication between the individual and the information system from the perspective of the system is a significant omission. Thus, an accounting of the dynamics of information should address the role of representation and organization in the creation and communication of meaningful information. More importantly, it should account for the semantic implications occasioned by differences in the forms of organization that can be used to structure an information system.

The need for effective communication between the information system and the individual points to five areas of research: (i) Is communication