

THE REFERENCE PROCESS AND POPPER'S ONTOLOGY

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ABSTRACT

The interaction of librarian, patron and collection in a three-way dialogue is given validity by Popper's three world ontology. With his view of the logical contents of books and other man-made objects (World 3) as part of the existing world, World 3 objects may be seen as active agents in the process of information searching in centres devoted to that purpose.

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RESUME

A partir de l'ontologie de Popper, l'auteur confirme la validité de l'interaction du bibliothécaire, du client et de la collection, exprimée dans un dialogue tri-dimensionnel. Considérant que le contenu logique des livres et des autres objets fabriqués par l'homme (Monde 3) font partie du monde existant, les objets du Monde 3 peuvent être considérés comme des agents actifs du processus de recherche de l'information dans les centres destinés à cette fin.

INTRODUCTION

Models of the process of query negotiation and the search strategy have ignored, for legitimate reasons, the cognitive aspects of the steps identified. One reason for this is that the mental factors in the process of referring inquirers to sources of information are far more complex than can be economically shown in flow charts (Jahoda and Olson, 1972), search bridges (Benson and Maloney, 1975), or analyses of non-verbal behaviour (Boucher, 1976 and Munoz, 1977). Karl Popper's (1973) conception of ontology as encompassing three 'worlds' can help identify the subjective factors missing from the existing models. This paper will present a description of the reference process based on an analysis of protocols of reference interviews in public libraries (Lynch, 1977), interviews with inquirers (Dewdney, 1982a), and interviews with experienced librarians (Dewdney, 1982b). Popper's three worlds will be applied to the factors discovered to set them in a system of relationships.

Briefly stated, Popper defines three worlds of existence: World 1, the physical world; World 2, the subjective world of our conscious experiences; and World 3, the logical contents of human artifacts - arguments, theories, myths, and other types of ideas found mainly in books, but also the design element in all human productions, including institutions.

Inasmuch as the logical content of a book is available to anyone, argues Popper, it is autonomous. It is no longer subjective (in the mind of the author). It is objective, or objectified, knowledge and has, in this sense, its own existence. (For a fuller treatment of the three worlds, see Neill, 1982.)

THE SEARCH STRATEGY

Let us look at the bare elements of the search for information in a library or in any collection of information. The inquirer is in interaction with the librarian and the collection - with the librarian more than the collection if the inquirer has little or no knowledge of the library's holdings. The librarian interacts with the inquirer and, even before physically searching it, with knowledge of the collection. During the initial stage, the collection is passive, but the librarian, in going to the shelves or searching the data base with the inquirer, actively involves the collection in the process - titles, tables of contents, illustrations, terms, all trigger thoughts that help to clarify the problem and articulate the question more clearly.

We have a situation where two individuals, each with a unique cognitive structure, store of knowledge, personality, and style of thinking, feed each other bits of information until they have a degree of cognitive matching - until each understands that the other understands what the other understands, at least to a degree that allows the search to continue (for examples, see Auster and Lawton, 1979, pp. 89-91 and

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Dewdney, 1982B, p. 41). The initial question, for instance, might be gibberish to the librarian. With the help of dictionaries, encyclopedias, and explanations by the inquirer (all, including the explanations, are objects in World 3), understanding sufficient to make an appropriate reference is achieved. On the other hand, the inquirer may not understand the nature of librarians, libraries, or information searches, and asks a very general question which the librarian, with the help of books on the shelf or some illustrative citations, finally gets the inquirer to state in words that might have been used in the first place if human beings were other than they are.

FACTORS IN THE REFERENCE PROCESS

This interaction of inquirer and librarian with the logical contents of books - the collection seen as, and deliberately used as, a third party in the process of clarification and search, is given a philosophical base in Karl Popper's three worlds ontology. By accepting, for the time being, the validity of Popper's argument for a World 3, we can use this view of the world to identify the cognitive nature of the multitude of factors in the reference process. That is, by analysing the reference process from the vantage point of a three part ontology, rather than an ontology that sees the world as physical only, or the dualist view that the world is made up of matter and mind, we see that much that is taken for granted actively influences what is happening, from the ideological nature of the broader society to the clothes worn by the inquirer.

It is well-known that librarians and patrons use a book's colour as a mnemonic. With Popper's ontology we can now place discussion of this phenomenon in a philosophical system. Such use of colour is use of World 1 - the physical quality alone of the book. No interpretation is made and no meaning is added to the content by the colour. When a library uses a skull and crossbones label to identify detective stories, however, the physical sign is also a symbol and has logical content that is available to all. Indeed, there is an assumption by the librarian that most people know the meaning of the skull and crossbones as a sign for death. The interpretative process that takes place when we see the sign takes place in World 2 and may involve thinking thoughts about poison, murder, detectives, and even pirates. The significant difference between World 2 and World 3 is that World 2 is a process and World 3 is the product of that (human) process. If we think of the factors in the reference process as belonging to these three worlds, we will find a greater involvement of the World 3 aspects of the physical materials (World 1) as processed by inquirer and librarian (World 2) than is usually discussed in the literature, yet is recognised by most practitioners if you ask them (Dewdney, 1982b).

The following is an illustrative listing of elements that affect what happens when an inquirer comes into a public library to ask a question. The nature of the community and the society outside the library is ignored in this analysis. We assume that both inquirer and

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librarian come from the same community and have that much in common to start with. To do otherwise would make the list of factors unwieldy.

The Library

1. Architecture
 - external
 - internal
 - layout of service points
 - signage
2. The service points
 - who is first seen
 - number of transfers from one point to another
 - staff organization as a whole
3. Furniture
 - as barriers or tools
 - machines and how they are used

In other words, what is considered here are the physical (World 1) items, including the people, as bodies, and the design elements (World 3), including colour, which are interpreted or processed in some way (World 2) by the inquirer to influence the overall mood on entering the building and looking around - the mood and the concept of 'library' and all the expectations that are flushed to the surface of the inquirer's mind. The librarian also has a subjective relationship to the building and its spaces, and either likes, dislikes, or is indifferent to them. If the librarian dislikes the design of the furnishings or their arrangement, he could be snarky about them - a snarkiness that might influence work with inquirers. At a further distance from the action, but with no less potential for influencing what happens, is the administrator and her attitudes to the building and the organization of staff bodies and desks.

The Inquirer

1. Character, personality, values (World 2 factors used in the reference process).
2. Age (World 1 elements are the physical signs of age. World 2 elements include the influence of the age of inquirers on the librarian's attitude - that is, the librarian could like older people and hate teenagers).
3. Education (World 2 as used in the process).
4. Knowledge (World 2 when processed; World 3 as memorized items).
 - special subject knowledge
 - general knowledge
 - knowledge of information sources in general
 - knowledge of this library's collection

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5. Cognitive abilities (World 2)
 - use of memory
 - problem solving skills
 - cognitive style
6. Communication abilities and style
 - verbal (World 2)
 - non-verbal (World 2 as interpreted; World 1 - as physical things or behaviour)
 - sound of voice (World 1)
7. Appearance
 - clothes (World 1)
 - design of clothes (World 3)
 - interpretation of appearance (World 2 - by inquirer about herself, and by the librarian about himself and about the inquirer).
8. Perception of and assumptions about libraries and librarians (World 2)
 - mausoleum
 - servants
 - service
 - for educated people only
9. The question - the background situation, including physical objects (for example, machine parts unknown by the librarian, or, as in Taylor (1968), known by the librarian; see also Dervin, 1977) (World 1).
 - the kind of question (World 3)
 - informational
 - experiential (McFadyen, 1975)
 - language used (World 3 - disregarding the sound of the voice (World 1), and taking the logical content only into consideration).
 - grammar (World 3)
 - vocabulary (World 3 - grammar and vocabulary could influence the librarian's subjective attitude thus finding a place in World 2, when the World 3 items are processed by the mind).
10. The answer
 - spoken, written, printed, or electronically displayed (World 1. How it is presented physically could have a bearing on the acceptance or rejection of the answer, depending on the inquirer's perception (World 2) of these media).
 - the meaning or logical content of the words (World 3).

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- the anticipated answer (World 2. If clear and specific, this would be World 3; if vague, and uncertain, still in process of being formulated, World 2).
- the acceptable answer (World 2, and as above).
- the intended use (World 2, and as above).
- the actual use (World 3).

The Librarian (Except for variations, sublistings will be the same as for Inquirer.)

1. Character, personality, values (World 2).
2. Age (World 2, World 1).
3. Education (World 2).
4. Knowledge (World 2, World 3).
 - of the organization of knowledge (World 3 - e.g. classification schedules).
5. Cognitive abilities (World 2).
6. Communication abilities and style (World 1, World 2)
 - interviewing skills (World 3, inasmuch as the design and choice of words used is important, that is, that the content of sentences is chosen to elicit information and keep the conversation alive and moving toward a goal).
7. Appearance (World 1, World 3, and World 2 for the interpretive aspect).
8. Perception of users (World 2 - typology of users (World 3 if firm), that is, expectations in general based on sex, age, dress. The librarian's experience is a relevant factor in the development of attitudes toward users in general as well as in the expectations about the types of people who normally use this collection).
9. The question
 - classes of questions expected (World 3)
 - kinds of questions the librarian likes (World 3, World 2).
 - interpretation(s) of this question (World 2).
10. The answer
 - possible answers based on: interpretation of inquirer's needs (World 2), first interpretation of the question (World 2), second and other interpretations of the question (World 2).
 - the proffered answer (World 3; in some medium (World 1)).

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11. Experience

- memorized sources (World 3)
- preferred tools (World 3, and the interpretation that these are better than others, World 2)
- workload and approachability (World 2, the interpretation by the inquirer regarding approachability and the attitudes engendered)
- physical location (World 1, the desk, machines, papers, books; World 2, the inquirer's attitude as affected by these).

12. Attitude to service generally, a philosophy of library and information science (World 2, e.g. to serve the public rather than the administration would be a principle that would have to be 'thought about' in certain circumstances).

The Collection

1. Display

- the design elements and attractiveness (World 1, World 3)
- shapes
- colours, such as the appearance of books enhanced by plastic jackets
- physical arrangement

2. Keys to the collection (World 3, intellectual access; World 1, regarding their physical embodiment, e.g. cards, terminals, fiche).

3. Scope

- adequacy (World 3, the scope of the logical contents; World 2, some interpretation of the adequacy of the collection by the librarian and the inquirer).

4. Use of the collection in the reference process to prompt ideas, clarify the question, take new directions

- accidentally, or normally, i.e. without thinking (World 3)
- deliberately (World 2 - use of the knowledge that the collection can be used in this way; thinking about how to do it).

CONCLUSION

There are three reasons for using Popper's ontology in this way: (1) by accepting Popper's worlds uncritically and using the conceptual system as an analytical tool, we can come to a clearer understanding of the elements involved in information work; (2) all of these factors are researchable, for example: the effects of the exterior of and the entrance to the building; the influence of the interview style or manner

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of the librarian; the effect of the gender of the inquirer vis a vis the gender of the librarian; the role played by the physical and intellectual organization of the resources available to librarian and inquirer, in and out of the building; the appropriateness of the information provided based on a study of its use by the client; (3) by developing the three world ontology, it might be possible to discover, at last, a valid philosophical foundation appropriate to our field. The establishment of the validity of Popper's ontology belongs to a philosophy of library and information science.

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