Compromised Need and the Label Effect: An Examination of Claims and Evidence

Jeppe Nicolaisen
Royal School of Library and Information Science, Birketinget 6, DK-2300
Copenhagen S, Denmark. E-mail: jni@db.dk

To establish whether the compromised need/the label effect is a frequently occurring phenomenon or not, available studies of the phenomenon are examined and claims are compared with evidence. Studies that reportedly have verified the phenomenon are shown to suffer from technical problems that put the claim of verification in doubt. Studies that have reported low percentages of questions changing from the initial query during large-scale studies of user-librarian negotiations could indicate that users are quite often asking for precisely what they want. However, these studies are found not to be definite falsifications, as the librarians did not conduct in-depth interviews and therefore may have failed to discover the users’ real information needs. Whether the compromised need/the label effect is a frequently occurring phenomenon or not cannot be conclusively confirmed or disconfirmed. However, the compromised need/the label effect is not the obvious truism or empirical fact that it has otherwise been claimed to be.

Introduction

Robert S. Taylor’s theory of information need development has been a major inspiration for research in Information Science from its early publication (Taylor, 1962, 1968) until today. According to Taylor’s theory, an information need progresses through four levels from the visceral need to the conscious need to the formalized need to the compromised need. The first three levels occur inside the head of the inquirer. The fourth level is the need as it is formulated by the inquirer to the intermediary.

Taylor’s theory has been a major inspiration, as it has made it possible to integrate Information Science problems into Psychology, thereby offering a methodological approach to the field (Hjørland, 1997). Markey (1981) acknowledges that Taylor’s theory represents what he terms “a confusion of two different things: the development of the knowledge of the primary problem and the change in the information need as a consequence of this primary development” (Hjørland, 1997, p. 165). The fourth level of the need development continuum was not directly challenged by Hjørland (1993, 1997). This level is termed the compromised need and is a variant of an old and widely held belief signified by the following quotation:

“It has been known for a long time that more often than not, the question that is asked at the reference desk bears little resemblance to the question that should have been posed by a patron” (Mount, 1966, p. 575).

Whether this is just a myth or a genuine phenomenon has been subject for discussion among researchers in the area of information seeking for many years. Peter Ingwersen from the Royal School of Library and Information Science is usually seen as one of the pioneers in this research area. Although he terms the phenomenon the label effect, he acknowledges that the compromised need and the label effect are the same thing1 (e.g., Ingwersen & Järvelin, 2005, p. 204). The question whether the compromised need / the label effect is a genuine phenomenon is not a trivial one. The answer has great consequences for practical reference work. If the phenomenon occurs frequently (i.e., if inquirers often misrepresent their true information needs when presenting them to the intermediary) then reference librarians need
to know how to retrieve the real information need from the inquirer. One implication is that interpersonal communication and interview techniques would then become important research areas for library and information science, as well as a central part of library school curricula. If, on the other hand, the phenomenon is only rarely occurring the importance of interpersonal communication and interview techniques would seem to diminish proportionally. This would allow library and information scientists and professionals to focus more on traditional core competences like information seeking in databases and on the Internet, knowledge organization in libraries and in society, domain analysis, etc.

The aim of the article is to examine available studies on the subject and to compare claims with evidence, thus attempting to establish to what extent claims about the compromised need / the label effect are supported by empirical evidence. The consequences of the results are discussed subsequently.

Claims and Evidence

According to Taylor (1968, p. 185) “it is an obvious truism to every librarian who works at an information or reference desk that inquirers seldom ask at first for what they want.” Instead the information need is believed to be presented as a compromise between the formalized need and the inquirer’s expectations of what the library or information system has to offer.

That inquirers tend to compromise their questions is an old belief among librarians and information scientists. Consequently, it is widely assumed that inquirers frequently fail to specify their true information needs. Instead, it is assumed that inquirers often express their needs using so-called labels typically consisting of “one or several concepts more generic than or out of context of the need, formalized within the mind of the user” (Ingwersen, 1986, p. 221). Ingwersen & Järvelin (2005, p. 204) claim that Ingwersen empirically verified the compromised need in an article from 1982 and that he demonstrated how the compromised need leads directly to the concept and issues concerning the label effect. The phenomenon is explained partly as being caused by search task expectations and assumptions, and partly as being caused by difficulties involved in expressing many interrelated concepts in a few words (Ingwersen, 1982, 1986, 1992).

According to cognitive information-seeking theory, the label effect is always in play when users want to explore concept relations outside known subject matter, but only rarely when users want to follow up on aspects of well-known subjects. However, Ingwersen (1986, p. 223–224; 1992, p. 117; 1999, p. 7) and Ingwersen & Wormell (1990, p. 29) argue that in practice inquirers may compromise even conscious topical needs and verificative needs.² It is easy to understand what may make inquirers tend not to specify their true information needs when seeking information to resolve problems outside known subject matter. In such situations, inquirers may be able to describe potential approaches to the answers, and they may be able to specify constraints on the solutions that help designate the area of the problem space to search. Yet lack of subject knowledge precludes them from specifying exactly what is needed in order to solve their problems. It is much more difficult to understand why inquirers would compromise their questions when seeking for known items and/or aspects of known subject matter. In such situations the inquirers know perfectly well what they want. If the information need is a verificative need, the inquirer is in possession of bibliographical data, and if the information need is a conscious topical need, the inquirer is in possession of terms and concepts necessary for expressing the required information. However, when confronting the intermediary, inquirers allegedly tend to specify their needs using other terms and concepts, which mitigate or misrepresent their true information needs. It almost seems like the inquirers deliberately pull the wool over the eyes of the intermediaries, thus making it much harder for them to provide the desired information.

But how common is this phenomenon? According to Ingwersen (1992, p. 227) it is an “empirical fact” that inquirers often tend to misrepresent their true information needs. According to Ingwersen (1992, p. 229), “the label effect is a manifestation of the delta problem.” Explaining the delta problem he notes:

“The empirical fact that a conceptual ‘distance’ often exists between an information need, as represented in the actual user’s mind, and the user’s request formulation(s). Requests may consequently take the form of labels” (Ingwersen, 1992, p. 227).

Ingwersen is not the only one treating the label effect as empirically well founded. A recent example is found in Skov (2009, p. 14):

“Ingwersen […] discusses Taylor’s work and he empirically verifies the compromised need and demonstrates how it leads to the Label Effect: searchers rarely express all what they actually know about their information gap.”

Earlier examples are easy to find (e.g., Hyldegaard, 1994; Mizzaro, 1998; Borlund, 2000, p. 18; Freund & Toms, 2002; Smyth & Balfe, 2006, p. 2006; Kirkegaard, 2008, p. 38). Interestingly, none of them discuss or even reflect on the empirical evidence. It is as if they simply take it for granted.

What empirical evidence is there to support the claim that inquirers often compromise their questions? Most of the studies that are treating the label effect as empirically well-founded cite a study reported in Ingwersen (1982). One would

²Ingwersen (1986) and Ingwersen & Wormell (1990) cite an article by “Brooks et al. (1984)” as evidence for their claim. The title of the article is quoted as “Using problem structures for driving human-computer dialogues.” Ingwersen (1992, 1999) does not cite this article (or any other) as evidence for the same claim. An intensive search for an article bearing this title with Brooks as first author failed to retrieve the article in question. Instead, an article by Daniels, Brooks, & Belkin (1985) with the exact same title was found. However, when carefully examining the article by Daniels, Brooks & Belkin (1985) no evidence for the claim in question was found.
automatically expect this study to be a large-scale study including many inquirers and many questions. However, this is not the case. In the section describing the experimental design of the study, one is informed that “the five users who participated were chosen from persons with a limited library experience: four were technicians and one a college student” (Ingwersen, 1982, p. 173). Later one is informed that these five users together had seven information needs that were extracted using a thinking-aloud method: “The user was told to find a problem within a field of interest, about which he was unable to provide adequate answers himself. He was asked to think aloud during his own search. If he found no relevant material, he was to verbalize his information needs to the librarian” (Ingwersen, 1982, p. 174). During the whole search process the users were wearing [sic!] tape recorders and were followed by two observers. Before discussing the results of the user-librarian negotiations, Ingwersen (1982, p. 177) notes that “for technical reasons, only four protocols out of seven were subjected to analysis.” However, in the original report of the study (Ingwersen & Kaae, 1980) the reader is informed that not four protocols, but in fact just two had been analyzed:

“We have confirmed our analysis mainly to the ‘Non-aggression pact’ and the ‘Boolean algebra’ protocols, because different technical and topical reasons make other protocols more or less unusable as a whole at this analysis level” (Ingwersen & Kaae, 1980, p. 93).

There are probably a number of problems associated with the experimental design of the study reported by Ingwersen (1982) and Ingwersen & Kaae (1980). Wearing tape recorders, being followed by two observers, thinking aloud, letting researchers do the coding of the protocols, etc., may very well have influenced the results of the test (Ericsson & Simon, 1993). Yet when it is now clear that the results are based on only two protocols, which, moreover, “display different characteristics” (Ingwersen & Kaae, 1980, p. 93), there is no need for a deeper investigation of the experimental design. A study based on only two protocols lends no support to the strong claim that the label effect is an empirical fact. This was actually also acknowledged more or less by Ingwersen & Kaae (1980, p. 93) who noted “we are not dealing with statistical samples,” and by Ingwersen (1982, p. 177) who noted that the “findings have more the character of indications, which later research studies may investigate further.”

Before turning to later studies of the phenomenon, it is worth remembering the study by Lynch (1978), who had also studied user-librarian negotiations, but on a much larger scale than Ingwersen & Kaae (1980). Among the interesting results of her study is the result that only 13% of questions negotiated in 309 transactions changed significantly from the initial query. Reviewing Lynch’s work, Sandstrom & Sandstrom (1995, p. 189) claim: “Her findings challenge the still widely held assumption that patrons either cannot or choose not to express their true information needs.” However, finding that questions do not change during the course of the reference interview is not necessarily equivalent to the claim that these stable questions accurately represent the inquirer’s real information need. This was actually also acknowledged by Lynch (1978, p. 137):

“One caveat which must be remembered when interpreting this finding is that an analysis of interview transcripts can reveal only cases when the actual query was found to be different from the original query. It is entirely possible that the original question asked in other cases was not the real question but the librarian did not discover the discrepancy.”

Ingwersen (1992, p. 116) claims that the label effect is also demonstrated by others: “Other protocol analyses, for instance by Belkin, Oddy, & Brooks (1982) and Belkin (1984), often demonstrate this label effect.” After having carefully examined the article by Belkin, Oddy, & Brooks (1982) no evidence to support this claim was found. The article in question is a well-known article in our field, and one which has been heavily cited. However, the only citation that claims that the article lends empirical support to the label effect appears to be Ingwersen (1992). Neither does Belkin (1984) lend strong support for the claim. In fact he warned the reader not to draw too strong conclusions from his results:

“[W]e should be careful to note that we have only two cases, and so we should be reluctant to draw strong conclusions of any sort of generality” (Belkin, 1984, p. 126).

The studies reported by Hauptman (1987) and Nordlie (1999) appear to be the only larger studies of the phenomenon since the study reported by Lynch (1978). Robert Hauptman, a reference librarian and assistant professor, described how he became aware of what he entitled “The Myth of the Reference Interview”:

“During the course of answering tens of thousands of queries at two academic research libraries, I was struck by the infrequent necessity of posing a complex series of questions in order to ascertain the patrons’ real needs” (Hauptman, 1987, p. 48).

To confirm his general impression, Hauptman kept track of 1,074 questions asked during a 101-hour period. His findings were “revelatory.” “Some questions, to be sure, required brief discussion, but only six queries demanded extensive interviewing” (Hauptman, 1987, p. 49). This study was followed by an observation study including 229 user-librarian negotiations conducted at eight different libraries. Hauptman (1987, p. 49) reported that “[d]uring the eight hours of observation librarians conducted no interviews.” According to Hauptman (1987) there was simply no need for such interviewing. The users knew exactly what they needed and had asked for it clearly.

Like in the study reported by Lynch (1978), the original question asked in each of Hauptmann’s reported cases may not have been the real question; as the librarian did not conduct an in-depth interview s/he may have failed to discover
the discrepancy. This was actually also acknowledged by Hauptmann (1987, p. 49):

“Perhaps all those patrons who asked for the MLA International Bibliography really wanted the Humanities Index or Grzimek’s Animal Life Encyclopedia; those who needed film reviews of Annie Hall, really were looking for quotations of Robert Hall stock; and those who needed straight-forward facts—like how many 1978 foreign automobiles were sold to punk rockers—naturally had ulterior motives, which only a carefully orchestrated interview could elicit.”

Nordlie (1999, p. 16) claims that his study of user-librarian negotiations in a medium-sized Norwegian public library shows that at least 60% of the initial queries are substantially modified during the course of interaction. However, there seems to be something wrong with his calculations. Nordlie (1999, p. 12) explains that “[a] total of 170 interactions, involving six different librarians, were recorded. Of these 170 interactions, exactly half were topical inquiries, 50 of these were selected for transcription and analysis. The criterion for transcription was that some interaction was taking place between the user and intermediary, apart from the initial question and the final negotiation of the retrieved item(s).” Half of 170 interactions equals 85. From these 85 interactions were selected 50. The remaining 35 were not selected because no interaction took place between user and librarian. Consequently, the initial query was not modified during any of these interactions. Nordlie’s claim about 60% modified queries concerns only the 50 interactions selected for further analysis. However, counting the remaining 35 interactions as well seriously changes the result. Sixty percent of 50 interactions equals 30. Thirty interactions out of the total 85 equals only 35%. However, calculations are not the only problem. Nordlie (1999, p. 15) gives two examples of “the discrepancy between the initial problem statement and the negotiated user need as it is expressed later in the interaction.” At least one of the two examples begs the question whether this is really an example of an initial query that changed substantially during the course of interaction:

Initial query: “Say, I wondered—do you have any material on things that happened in the year 1895?”

Later expression: “Yes, we are celebrating her 100th year birthday, you see, so that’s like the year she was born—what happened then, just some short pieces—”

If the two examples provided by Nordlie (1999, p. 15) are representative of his assessment of substantial changes, then only half of the 30 interactions show signs of substantial changes during the course of interaction. Fifteen interactions out of 85 equals 18%—not too far from the 13% reported by Lynch (1978). This clearly illustrates that valid results in this area of research necessitate a clear distinction between an inquirer misrepresenting his/her true information need and an inquirer representing his/her true information need, although not in as much detail as is necessary for the intermediary to assist without asking questions, leading to a slight modification of the initial query. This was already observed by Lynch (1978) who modified Jahoda’s (1976, pp. 51–56) list of eight reasons why a reference interview might be needed with two additional reasons:

1. The real query may not be asked.
2. Librarian is unfamiliar with the subject of the query.
3. Ambiguity or incompleteness of query statement.
4. Amount of information needed is not specified.
5. Level of answer is not specified.
6. The query takes more time than you can spend on it.
7. Answer to query is not recorded in the literature.
8. Language, time period, geography of type of publication constraints need to be added to query statements.
9. The librarian is familiar with subject of the query, but needs some specific fact(s) about the subject to facilitate the search for an answer (Lynch, 1978, p. 138).
10. The librarian needs to know where and how the patron searched for an answer already if he/she has done so (Lynch, 1978, p. 138).

**Discussion**

Table 1 summarizes the results of the studies of the compromised need / the label effect.

Despite the lack of adequate supporting evidence, Ingwersen continues to refer to the label effect as empirically well founded. In his book The Turn (coauthored with Kalervo Järvelin) he writes:

“He [Ingwersen] empirically verified the compromised need (1982)—and demonstrated how it leads directly to the concept and issues concerning the Label Effect” (Ingwersen & Järvelin, 2005, p. 204).

For the sake of argument let’s assume that the principle of induction is an unproblematic epistemology. According to the principle of induction we may obtain true knowledge about the world by generalizing from a finite list of singular observation statements to a universal statement provided certain conditions are satisfied (Chalmers, 1982, p. 4):

1. The number of observation statements forming the basis of a generalization must be large.
2. The observations must be repeated under a wide variety of conditions.
3. No accepted observation statement should conflict with the derived universal statement.

None of these conditions were satisfied in the study reported by Ingwersen (1982). 1. The number of observation statements forming the generalization was just 2 (two!). 2. The observations were not repeated under different conditions. 3. The observations “display different characteristics” (Ingwersen & Kaae, 1980, p. 93). Clearly, when claiming that he has empirically verified the compromised need back in 1982, Ingwersen disregards his own former reservations (“we are not dealing with statistical samples” / “findings have more the character of indications, which later research studies may investigate further”). “Forgetting” about former reservations is of course not a hallmark of academia.
<table>
<thead>
<tr>
<th>Study</th>
<th>Results</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
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<tr>
<td>Ingwersen &amp; Kaae (1980); Ingwersen (1982)</td>
<td>Claim to have found the label effect in two protocols.</td>
<td>Insufficient data sample. Problems with the experimental design. Results show different characteristics.</td>
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<td>Belkin, Oddy &amp; Brooks (1982)</td>
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<td>Ingwersen (1992, p. 116) claims that the label effect is demonstrated in the protocol analyses of Belkin, Oddy &amp; Brooks (1982). After having carefully examined the article, no evidence to support this claim was found.</td>
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<td>Hauptman (1987)</td>
<td>1,074 questions asked during a 101-hour period. Some questions required brief discussion, six queries demanded extensive interviewing, 229 user-librarian negotiations conducted at eight different libraries. No interviews.</td>
<td>The intermediary may have failed to discover the real information need.</td>
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<td>Nordlie (1999)</td>
<td>60% of questions negotiated in 50 transactions changed significantly from the initial query.</td>
<td>A reassessment and correction of the results leads to the conclusion that only 18% of questions negotiated in 85 transactions changed significantly from the initial query.</td>
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However, in all fairness to Ingwersen the phenomenon is not that uncommon. Collins (1992, p. 145) terms it “distance lends enchantment,” and argues that “the more distant in social space or time is the locus of creation of knowledge the more certain it is.” It is, nevertheless, a problem that needs to be dealt with properly. According to Thagard’s (1978) demarcation principle, a theory or discipline which purports to be scientific is pseudoscientific if:

1. it has been less progressive than alternative theories over a long period of time, and faces many unsolved problems; but
2. the community of practitioners makes little attempt to develop the theory towards solutions of the problems, shows no concern for attempts to evaluate the theory in relation to others, and is selective in considering confirmations and disconfirmations.

Exaggerations like Ingwersen’s are not bringing us closer to the solution of the problem. It is consequently problematic that so many researchers have taken the empirical well-foundedness of the compromised need / the label effect for granted. The explanation for this lack of organized skepticism (Merton, [1942] 1973) is probably caused in part by a collective belief in this “obvious truism” (Taylor, 1968, p. 185). Yet, as Steven Jay Gould (1996, p. 57) has put it, “the most erroneous stories are those we think we know best—and therefore never scrutinize or question.”

**Conclusion**

We have examined available studies of the compromised need / the label effect and have compared claims against evidence. The aim was to establish whether the compromised need / the label effect is a frequently occurring phenomenon or not. We found that the studies that reportedly had verified the phenomenon (Ingwersen & Kaae, 1980; Ingwersen, 1982; Belkin et al., 1982; Belkin, 1984; Nordlie, 1999) all suffer from technical problems that put the claim of verification in doubt. Two other studies (Lynch, 1978; Hauptman, 1987) that report low percentages of questions changing from the initial query during large-scale studies of user-librarian negotiations might indicate that users are quite often asking for precisely what they want. Although it is difficult to imagine that so many users would have accepted leaving with unanswered information needs, the fact that the librarians did not conduct in-depth interviews, and therefore may have failed to discover users’ real information needs, preclude us from making definite conclusions. However, what we can conclude is that the compromised need / the label effect is not the empirical fact that it has otherwise been claimed to be.

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**References**
