Book Reviews

I. AGGER, Steen, JENSON, Henrik: **The Book House: Visual Design.** Roskilde, Denmark: Risoe National Laboratory 1989. = Risoe-M-2812

II. GOODSTEIN, L.P., PEJTERSEN, Annelise Mark: **The Book House: System Functionality and Evaluation.** Roskilde, Denmark: RisoeNational Laboratory 1989. = Risoe-M-2793

III. PEJTERSEN, Annelise Mark. **The Book House: Modelling User's Needs and Search Strategies as a Basis for System Design.** Roskilde, Denmark: Risoe National Laboratory 1989. = Risoe-M-2794

(The three volumes are cited here in alphabetical order by author. A Roman numeral has been given to each volume, and the numerals are used in citations in this review.)

A.M. Pejtersen's Analysis and Mediation of Publications (AMP) fiction classification system has been evolving since the 1970s (see (5)). The three books reviewed here report on a major research project undertaken on the database containing AMP records. North American public libraries often separate fiction by genre (e.g., Baker (2)), and interest in analyzing fiction for subject retrieval is increasing (e.g., Olderr (4)). AMP in Denmark, however, seems to be the only fiction classification system operating in a public library. It is thus the most fully-developed fiction analysis system that exists, and tests of its capabilities are welcome.

The point of departure for the development of AMP was Pejtersen's conviction that public library usersshould beconsulted before a fiction system was designedk for their use. In general, she argued that the value of a classification system arises from its ability to retrieve what users ask for, and that involving users in system design would increase the probability that the system would meet complex user needs. Her initial research found that fiction readers' requests most often contained one or more of four major "dimensions": Subject-matter; Frame: Time/Place; Author's Attitude/Intention; and/or Accessibility. These dimensions and their subdimensions have evolved through slightly different versions (cf. (6)) and are now expressed in AMP as (III, Fig. 5, p. 29):

DIMENSION 1: Subject-Matter
- a. action and course of events
- b. psychological description
- c. social relations

The subject content of the novel: What the story is about.

DIMENSION 2: Frame
- a. time: past, present, future
- b. place: geographical, social environment, profession

The setting in time and place chosen by the author as the scenario of his work.

DIMENSION 3: Author's Intention
- a. emotional experience
- b. cognition and information

The author's attitude toward the subject. The set of ideas and emotions which the author wants to communicate to his readers.

DIMENSION 4: Accessibility
- a. readability
- b. physical characteristics
- c. literary form
- [d. omitted in original]
- e. main characters
- f. age of main characters

The level of communication in terms of those properties which facilitate or inhibit communication, such as difficulty of contents and language, composition, typography[,] etc.

Bibliographical data:
Title, author, illustrator, translator, editor, publisher, pages, year of 1st edition, year of classified edition, cover of book, serial, illustrated, screen version, title[,] country and year of original edition, etc.

The research presented in these three volumes had two goals: to evaluate AMP itself and to evaluate the user interface developed for the AMP-classified fiction database. This review concerns primarily the evaluation of the AMP classification system itself. Accordingly, the review concentrates on volumes II and III because volume I concerns technical problems of the overall visual design of the database and of the icons that were used to depict various subjects and commands.

The tests were carried out with the SPRING database in the Hjortespring Library, a public library in a Copenhagen suburb. The database contained AMP-classified records for about 3500 novels. The novels had been classified by four librarians who skimmed and classified about one book an hour. About 6000 different keywords were used. (Published reports to Oct.1991 do not include lists of the 3500 novels or the 6000 keywords. According to a letter from A.M.Pejtersen dated Oct.10, 1990 to this author, the indexing rules developed for the project will be published at a later date.) Initial research was carried out with a text-only menu-based version of the database called Book Automat (BA). The second, more comprehensive, stage of the research used the Book House (BH) database, which had an icon-based user interface with both icon subject representations and icon commands. Ordinary library users participated throughout, including children (defined as from 7 to 16 years old) and adults (17 and over). Research techniques included individual and group interviews, online and paper questionnaires, online transaction log analysis, and observation. Different numbers of users participated in these different techniques. Users had an initial choice of using either the whole database or the parts of the database containing only works for children or only works for adults. Users also had a choice among four search strategies: analytical (i.e., choosing indexing terms

from AMP); analogy (i.e., finding a book similar to another book); browsing through books (i.e., looking at records starting with one chosen by the system at random); and browsing through icons (i.e., looking at pictures indicating book content).

Chapter 3 in volume II contains an interesting overview of the problems that attempt to evaluate whole systems created for research design. The section distinguishes between the properties of "empirical" ("bottom-up" ergonomics-driven) and "analytical" ("top-down" purpose-driven) evaluation strategies. These two types of evaluation were seen as complementary and appropriate for different situations. In general, the researchers decided that

"issues regarding the *content* of information for the user [e.g., issues about AMP itself] should be evaluated analytically while issues related to its *form* [e.g., user interface design] involve context, user experience and preferences and therefore need to be looked at more from an empirical point of view"
(II, p. 71, original emphasis).

One of the problems for the analytic "top-down" evaluation of AMP that seems to arise from this distinction is that the user's "dialogue" with the database does not seem to be exactly related to the categories available in AMP as described in these publications.

For example, the user choosing an analytic search strategy in BH could choose from 12 categories (GENRE; PLOT; PLACE; TIME PERIOD; SETTING; EMOTIONAL EXP[ERIENCE]; COGNITION; ACCESSIBILITY; FRONT COVER [for children's books]; MAIN CHARACTER; AUTHOR; TITLE (II, Fig. 2-10, p. 57, and III, Fig. 26, p. 91, original capitalization). Comparison of these 12 BH categories with the text of AMP above shows, for example, that GENRE was added to AMP's categories and that "psychological description" and "social relations" in "Subject-Matter" from AMP were omitted in BH. In AMP, "DIMENSION 2: Frame" (presumably SETTING in BH) was subdivided into "time" and "place" and these were further subdivided appropriately. It is not clear if a user who searched SETTING in BH would then be asked to specify PLACE and/or TIME PERIOD, which appear separately in the 12 BH categories.

The problem of relating AMP to BH also occurs in the reports of results. For example, a list of percentages of use are reported for 13 BH search terms (Genre; Plot; Place; Emotional experience; Author; Title; Time period; Setting; Readability; Main character; Theme; Intention; Front cover (II, p. 87, reported in decreasing order of use)). Comparison with the choices presented for the analytic search strategy shows that "Theme" and "Intention" have been added. COGNITION has been dropped, and "Readability" has apparently been substituted for ACCESSIBILITY. "Theme", like GENRE/Genre in both lists, does not seem to come from any AMP dimension. "Intention" presumably came from "DIMENSION 3: Author's Intention", which in AMP is subdivided into "emotional experience" and "cognition and information". The first of these appears separately in the list of search terms, and the second appears in COGNITION in the 12-category list, but not in the reports of percentages of the 13 search terms. The term "information" from the DIMENSION 3 category "cognition and information" does not appear in either the 12-category of the 13-category list. In addition, in a report of results of the operations that were chosen within each category (e.g., "lookup", "find more", "see books"), an unexplained new category ("Impression") is included (III, Fig. 27, p. 97).

It is thus difficult to relate the results of the research to the actual AMP classification system and it is not clear whether or not different versions of AMP were used at different stages. For example, one may compare two statements about the overall results:

1. The BOOK HOUSE experiment has... demonstrated that a highly structured and selective access to content keywords divided into eight dimensions/facets helps the user to formulate his/her need more precisely and therefore leads to a better search result (II, p. 133).

2. The BOOK HOUSE experiment has demonstrated that a highly structured and selective access to content keywords divided into thirteen dimensions/facets helps the user to formulate his/her need more precisely and therefore leads to a better search result (III, p. 96).

Several questions arise from these passages. One of them is "BOOK HOUSE 'leads to a better search result' than what?" Since no other online fiction analysis systems exist, comparative statements seem unfounded. It is premature to claim that AMP produces better search results than any future system. Another problem is that the "eight dimensions/facets" mentioned in the first statement do not appear to be identified anywhere in the publications. AMP itself, as reported above, contains 4 major dimensions and a total of 12 subdimensions. The results that are reported thus do not seem to offer conclusive confirmation of the usefulness of AMP itself.

This discussion of a small part of the research seems to demonstrate that additional difficulties need to be addressed in tests designed to evaluate both a subject access system and a user interface for fiction. One may suppose that the exigencies of the user interface required that, for example, additions, deletions and/or expansions be made to AMP dimensions, but those changes appear to detract from the rigour of the evaluation of the effectiveness of AMP itself as a search tool for users, and the discrepancies need to be explained. Since the researchers determined to use analytical "top-down" techniques for evaluating access to the information content of the database, the need to report exactly what versions and/or parts of AMP were used seems critical for understanding the results. For example, one would like to know why certain subdimension terms from AMP were not included as possible search categories (e.g.,

"social environment", "profession"). It would be interesting also to extract from the tables of results the categories that came from AMP in order to see if those had been searched significantly more often than the non-AMP categories (e.g., "Genre").

Both the Hjortespring librarians and the library's users were enthusiastic about BH. Among users, 93% said they "liked to use" BH and 63% said it was "easy to understand". A group interview with librarians after the tests were completed showed "a general agreement that a system like the BOOK HOUSE is a useful tool for the daily work with information retrieval tasks in fiction" (III, p. 117). Here, as in all the results reported for the research, only percentages are reported. Statistical significance does not seem to have been calculated for any of the data. For example, in 3358 logs, "Genre" and "Plot" were chosen most often (13% each) and "Intention" and "Front cover" were chosen least often (4% each) (II, p. 87). It would be useful for the revision of the system to know if any of these results occurred more often than could occur by chance. If the results could not have occurred by chance, revisions might be undertaken to enhance those dimensions that had been statistically validated as user preferences. Similarly, in 6000 logged searches, 31% of users chose an analytical strategy (i.E., AMP plus and/or minus various categories), 27% chose to browse icons, 23% chose to search by analogy, and 20% chose to browse records. It would be interesting to know whether these results could have occurred by chance or whether the apparent preference of users for analytical, classificatory searching was statistically significant. This information could prove invaluable in persuading other researchers and/or libraries to pursue the complicated tasks of developing and instituting databases for the content of fiction documents.

Analysis of fiction for information retrieval is a relatively new field, and a number of important problems need study. Research with the SPRING database has addressed some of them, but other equally salient questions do not seem to have been considered. One problem is what constitutes "relevance" in fiction retrieval. This question was raised by J. Austin (1) in reporting the results of previous tests with AMP, and its implications have not been fully explored. Another issue is that categories that occur in the various AMP dimensions and in BH are neither self-evident nor mutually exclusive. As the authors of these volumes pointed out, "overlapping categories such as genre, subject matter and theme were... difficult to distinguish between" (II, p. 133). Their research, however, did not address the problems these complex terms raise for the development of fiction retrieval systems and for users of the systems. Iivonen noted that genres are not mutually exclusive because they are not "defined through their mutual relations, e.g., one genre as the negation of the other" (3, p.15). The same point can be made about "theme", and the implications of this circumstance need further exploration. It would be interesting, for example, to see whether users could find a novel with which they were familiar by using only the subject analytic capabilities of a fiction analysis system.

We have little experience in analyzing the content of fiction for information retrieval, and the development of AMP has contributed much to our knowledge of fiction retrieval. In particular, the enthusiasm with which users have greeted AMP shows that fiction analysis systems are needed. The tests on AMP and the SPRING database have increased our understanding of the questions that remain to be aired. One main problem for this new research field is that we do not yet seem to have reached consensus on which questions about fiction analysis and fiction retrieval are the most salient for directing fruitful research on designing fiction retrieval systems. Another problem is that we do not yet know how or how much effective fiction retrieval systems differ, if they do, from effective non-fiction retrieval systems. One may hope that work on AMP and the SPRING database will proceed further and that the research field in general will continue to gather momentum.

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The totality of world problems presents a highly complicated structure. Also, we must not expect that there exists an optimal approach to describe this structure from a unique point of view without contradictions. The authors and the compiler of this Encyclopedia, A.J.N.JUDGE, have tried to solve a problem that seems to utterly defy solution. Nevertheless they have solved it in some way.

Of what kind are these problems? To give an idea