these papers would have utility as update guides to various current aspects of computer-aided text retrieval, but as conference papers they collectively reveal an absence of that hard labour at the blank wall of research which IIS participants could expect. There is perhaps a danger of too many conferences for librarians and information scientists turning into a mixture of tutorial and software (or hardware) sales talk.

Looked at with this reservation, this set of proceedings does contain some useful descriptive material. Readers wanting a quick description of major hardware components used in information retrieval will find Paul Burton's paper very useful, and it will certainly be added to my introductory reading list. Jennifer Rowley's overview of the available text retrieval software will be a welcome initial guide to those considering the purchase of suitable packages, and Robert Kimberley's short paper on training programmes for users of text retrieval software is a sensible component to include in these proceedings, reminding readers of an easily overlooked but important part of any move to text retrieval systems.

Three other papers which will commend themselves to readers are those by J.E. Pache, N. Nunn-Price, and Tony Hendley. Nunn-Price gives an interesting insight into the problems facing the manager of a large text database who requires high quality input and must consider the problem of validating data input. Hendley's review of interfaces with existing and new large storage media draws proper attention to the unsatisfactory nature, for performance or cost, of currently available hardware. Pache's brief review of downloading practices and software will be helpful as a guide to possible options and available products.

Overall this is a useful publication, and the editors have done a good (and in the case of one paper difficult) job. One must protest however at the price of £15.00 for 154 pages for what is effectively typescript. The people who listened to thirteen papers in one day should also be congratulated. I hope these proceedings go to them free, otherwise I do not see how they can possibly have digested the fare . . . there can be overload on text retrieval systems too!

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Redesign of Catalogs and Indexes for Improved Online Subject Access: Selected Papers of Pauline A. Cochrane. P. A. COCHRANE. Oryx Press, Phoenix, AZ (1985). xii + 484 pp., $45.00. ISBN 0-89774-158-7.

Why Pauline Atherton Cochrane should at this time be presenting a collection of her writings is answered by herself in her preface (p. ix): "I had the time to prepare this collection while I was on leave from Syracuse University and residing in Papua New Guinea, far away from the daily preoccupation with teaching and related activities. The physical distance from the United States seemed to give me a perspective on why there might be some merit in such a collection at this time . . . " Another reason, she goes on to note, is that some of the writings are not readily available elsewhere. Altogether 31 papers, ranging from two pages to 64, are presented. Some are co-authored. They are roughly organized around five questions:

"1. Where are we going in the redesign of catalogs and indexes?
2. What do we know about users and catalogs?
3. What can we do to improve subject access?
4. Will classification have a use online?
5. What can be learned from subject access research?" (p. ix)

Presumably a basis for selecting papers to be included in the volume is relevance to one of the five questions. Yet one wonders at the exclusion of a paper as provocative as "An Analysis of Controlled Vocabulary and Free Text Search Statements in Online Searches" (with Markey, K. and Newton, C. in *Online Review* 4:225–236 (1982)).

The earliest of Cochrane's collected papers was written while she was a student at the University of Chicago (with Virginia Clark) in 1961; the latest was delivered in 1984 at a conference in Bath on online public access to library files. The period from 1961 to 1984 was both seminal and fruitful in the development of online catalogs; in it the history of library automation is writ, from the first glimmerings of possibilities to the actual implementation and evaluation of working online catalogs. Cochrane's writings provide interesting snap shots of what was happening during this period. At the early end of it we see Coates' comparison of three forms of subject catalog, with a view to

compatibility, the library profession's call for a systematic approach to catalog code design and Ranganathan's powerful ideas. At the late end of this period we read of the possibilities of augmenting MARC records by terms from the indexes and tables of contents of books, of analyzing data from online catalog transaction logs and of browsing classification schedules online. A certain amount of repetition occurs throughout the volume; for instance, K. Gapen's unheeded research findings (pp. 64 and 149) and SDC's warnings about the dangers of lack of standardization (pp. 23 and 138). However, some redundancy might be expected in a volume of this sort.

If Cochrane's collected papers is to be used as a text, the most useful papers are those reporting research, for instance the classification projects, most notably AUDACIOUS (with Robert Freeman) and the Subject Access Project. (Again one misses the above mentioned paper reporting research carried out on the ERIC data base comparing free and controlled vocabularies.) Cochrane observes that the subject access project is the most popular of all her research (p. 393). However, in this reviewer's opinion at least, the AUDACIOUS project, for its conceptualization and innovation is the more outstanding. This was an early (1967–68) project involving the development of a retrieval system using the UDC Classification. Interesting ideas and recommendations resulted from it, some of which are recognizable in more recent experimentation with classification in online catalogs; some, however, have been unheeded—only in part is the past prologue to the future.

The thread running through these papers is that of the author's vibrant personality. Cochrane's interest in improving methods of subject access is dedicated and energetic. Over the years she has conveyed the excitement of change and possibility. Gatekeeper and gadfly to the profession, she has called for the uprooting of past practice, has drawn attention to research findings (her students' as well as those of others) and has demanded that librarians be involved in the development of online public access systems. Above all, as this volume bears witness, the profession owes her a debt of gratitude for keeping before the public eye the important goal of improving subject access to information.

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The Awards of Science and Other Essays: Essays of an Information Scientist v.7 E. GARFIELD, ISI Press, Philadelphia, PA. (1985). 675 pp., $30.00. ISBN 0-89495-044-4. Distributed in Europe by STM Distribution Ltd., Enterprise House, Ashford Road, Ashford, Middlesex, TW15 1XB, England.

The Awards of Science is the seventh volume of Gene Garfield's collected essays and commentaries originally published as the "Current Comments" column in the ISI publication *Current Contents*. As in the first six volumes, this collection includes articles on a variety of topics ranging from detailed bibliometric studies of the journal literature in selected subject areas and discussions of new or improved ISI products to thoughtful and informative reviews of topics of current interest such as animal rights, anorexia nervosa and social gerontology. The title of this collection highlights an informative series of essays on the 1982 and 1983 Nobel Prize recipients as well as profiles of Ching-chih Chen (ASIS—Information Science Teacher Award), Frank Bradway Rogers (ISI—Information Advancement Award), and E.R. Hilgard (APA—Excellence in Scientific Reviewing). In 1984 Garfield was awarded the first Derek DeSolla Price Medal by the journal *Scientometrics*—a brief version of Garfields' comments on Derek Price as an historian of technology and proponent of the importance of scientific instrumentation in the advancement of science is included here. Of particular interest to students of the social studies of science is the second part of a discussion of the more than 50 "Non-Nobel" awards, many of which are considered "predictors" of future Laureate status. In this essay, the 1982 award winners are listed along with one "significant" publication [highly cited or identified as significant by the awardee]. Bibliometric measures of these authors' prominence, and variations in communication, publication and citation practices across fields are discussed. Also worthy of note are profiles of Miriam Rothchild and S.R. Ranganathan.

Bibliometric analysis is ISI's stock-in-trade and most of the essays include the results of citation or cocitation analysis in one way or another. Essays on the various Nobel Laureates include "Research Fronts" (multidimensional scaling maps of cocited document clusters) and "cluster strings" (document clusters linked over a series of years) illustrating changes in the field over time. (The research fronts and cluster strings are also examined in a separate essay on The ISI Atlas of Science: Biotechnology and Molecular Genetics, 1981/82.) Garfield notes that "primordial" contributions in basic life sciences research are frequently published in general medical journals. Accordingly, essays on "100 Classic Articles" from *Lancet, New England Journal of Medicine*, and *Annals of Internal Medicine* are included in this volume. The multidisciplinary nature of the mathematics and computer science literature is highlighted in two essays on highly cited articles and books in the *CompuMath*