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**HEURISTICS AND HIGH VALUE-ADDED WORK
IN SPECIALIST BIBLIOGRAPHIES :
THE CASE OF COMPUTERISATION AND
THE *INTERNATIONAL MEDIEVAL BIBLIOGRAPHY***

Computer technology has allowed the editors and publishers of the *International Medieval Bibliography* (hereafter the *IMB*) to provide medievalists with a much improved research tool, but information technology offers challenges and opportunities for specialist bibliographies, such as those in medieval studies. With both aspects in mind I wish to organise my comments here in four parts :

(i) the origins of the *IMB* in the 1960s and the proto-computer framework that the founders evidently had in mind for presenting the data in the bibliography, and the benefits that this has provided when developing modern computer applications.

(ii) the four phases of computerisation of the production, data-inputting and data-applications of the *IMB* that have taken place since 1988 and which will be fully in place during 1994.

(iii) issues for the future of medieval bibliographies in an age where electronic information is widely accessible, particularly :

(a) the need for high value-added work in producing specialist bibliographies, such as the *IMB*. Such work must be academic, critical and specialist. The data input must be done in such a way that the bibliographical information has far greater utility than raw data (author, title and publication details) which may be collated by more generalist bibliographies.

(b) the need for data to be presented in a user-friendly form and for bibliographers to maintain a close dialogue with their readers and to understand their requirements.

(c) the need to link medieval bibliographies more closely into the normal teaching and research activities of medievalists, whether stu-

dents or researchers, that is by developing a heuristic training among medievalists and by ensuring that the provision of bibliographical information on computer is linked to proper ease of access or ease of distribution of the publications being cited.

(iv) concluding remarks which indicate some of the challenges that specialist bibliographies are facing and which make some suggestions for improving the delivery of information to medievalists.

Before embarking on the first of these four areas it is perhaps worth locating the *IMB* within its own scholarly remit. The *IMB* is produced by a research unit at one of the best-established centres for medieval studies in the UK. The aims of this unit have recently been expressed in a Mission Statement :

« The [International Medieval Bibliography] Unit aims to remain one of the world's leading institutes in secondary medieval research, that is work that supports the primary activities of medievalists in their research and teaching. The activities of the Unit might include the production of research tools such as bibliographies, administrative support for research activities, the publication of medieval series, research into and support of teaching excellence, the organisation of gatherings of medievalists, the distribution of information in published or electronic form.

The Unit is a self-financing unit within the School of History at the University of Leeds

The Unit is fully international in its orientation, though it recognises particular responsibilities towards its host region of the north of England and the wider EU ... ».

The specific remit of the *IMB* in providing this 'secondary medieval research' may be defined according to its chronological and geographical range, its sources, its classification system, the additional information provided and its indexes.

Chronological and Geographical Range

The bibliography covers all aspects of medieval studies within the date range 450 to 1500. The geographical range is the entire continent of

Europe. It also extends to the Middle East and North Africa for the period before the Muslim conquest and parts of those areas subsequently controlled by Christian powers ; it thus includes the Crusader States, the Armenian kingdoms and non-European parts of the Byzantine empire. Likewise, parts of Europe controlled by Muslim powers are included.

Sources

The bibliographical **items** catalogued in the *IMB* are : articles, review articles, scholarly notes and similar literature. The *IMB* does not cover monographs or short reviews. Items are derived from two sources : **journals** and **miscellanies**. Miscellanies consist of Festschriften, Conference Proceedings and Collected Essays, and are indicated in the text by short titles : [Fest.] [Conf.Proc.] [Coll.Ess.]. The journals and miscellanies covered in each issue are listed at the front of the *IMB*.

Classification System

Items are classified according to over sixty **topics**. Each topic is subdivided by thirteen geographical **areas** ; these areas follow *modern* state (and, in the case of Switzerland, cantonal) boundaries. Items are numbered consecutively throughout the entire text of the bibliography, and arranged alphabetically by author's name within each area, with cross-references to related items given at the end of each area.

Additional Information Provided

When the original **title** of an item is in a language *other than* English, French, German, Italian or Spanish, a **translation** is additionally provided in one of these languages (or Latin). In some cases, where a title is unclear or ambiguous, an **explanation** is provided ; this may include

supplementary information and follows immediately after the title or translation. Where an item includes summaries, graphs, tables, music scores, editions of texts, maps, a bibliography, or illustrations, these are also indicated. Any part of an item originally appearing in Cyrillic or Greek script is transliterated.

Indexes

There are four indexes :

- a) **List of Journals** covered in the particular issue.
- b) **List of Miscellanies** covered in the particular issue, with full bibliographical details.
- c) **Author Index**, that is, of the *modern* authors of the items.
- d) **General Index**, which lists personal names, placenames, subjects, manuscripts and texts. The format of this Index is explained in detail within the *IMB*.

The *IMB* appears in this format twice a year, each issue of some 450 pages containing over 5000 entries, drawn from the regular coverage of 3500 journals and the cataloguing of 200 miscellany volumes per issue. The indexes fill more than 100 pages and contain 18000 to 20000 citations and cross-references.

1. The field-based conception of the *IMB*

The *IMB* was conceived in the mid-1960s at a period when academics and the general public were first becoming aware of the possibilities of computerisation. A number of meetings in the US, some sponsored by the Medieval Academy of America, generated the outline of the project for a comprehensive serial bibliography of medieval studies, centred on the coverage of articles in journals and miscellany volumes. The project was established as a joint one between the University of Minnesota, under the auspices of Prof. R. Hoyt, and the University of Leeds, under

the auspices of Prof. P.H. Sawyer. In the first few years the *IMB* was published in two formats, one of which is the conventional printed book format which continues today ; the other testifies to the influence of computer-thinking. For the *IMB* was also distributed as a series of cards, which scholars could use within their private card indexes. However, the physical presentation of the data on these cards and, in turn, the presentation on the printed page of the *IMB* reflects a conception of data organised into what we would today refer to as database fields.

The layout of these fields on card and on the printed page can be shown by the following examples :

SCANDINAVIA

966 NILSSON, Bertil 12-14

'De sepulturis. Gravrätten i *Corpus Iuris Canonici* och i medeltida nordisk lagstiftning.'

[Burial Laws in *Corpus Iuris Canonici* and medieval Scandinavian law codes]

Dissertation abstract (University of Uppsala, 1989)

Kungliga Humanistiska Vetenskaps-Samfundet i Uppsala. Årsbok for 1990(1991):127-31

Charters and Diplomatics

GENERAL

967 WALKÓWSKI, Andrzej 13

'Transumowanie ogólnocysterskich bulli papieskich 27 I 1234 - IX 1234 w świetle najstarszego kopiarza lubiąskiego.'

[The transmission of the general Cistercian papal edicts from 27 I 1234 to IX 1234 in the light of the most ancient Lubiąż cartulary]

Źródłoznawstwo i studia historyczne [Fest.]:115-21

BRITISH ISLES

968 SLADE, C.F.; LAMBRICK, Gabrielle 12-15

'Two Cartularies of Abingdon Abbey.'

Edition based on MS. Oxford, Bodleian Library, Lyell 15

Oxford Historical Society n.s.32(1990):vii-liv, 1-468 Tables

See also : 102, 1155, 2216, 3487

EASTERN EUROPE

969 CEJNKOVÁ, Dana; USTOHAL, Vladimír; 12-15

STRÁNSKYĀ, Karel

‘Pečetidlo benediktinského kláštera Na luhu v Brně-Komárově.’

[The seal of the Benedictine monastery “Na luhu”

in Brno-Komárov]

Summaries (marginal) : English 120-1, German 121-2

Forum Brunense (1990):119-25

Illustrations

It is possible to portray these fields using the following abbreviations which will be explained below :

| | | | |
|------|------|------|------|
| ORNO | AUTH | | DATE |
| ARTI | | | |
| TRAN | | | |
| EXPL | | | |
| SUMM | | | |
| JOUR | ISSU | PAGE | XTRA |

There are four ‘invisible’ fields at this stage : two (TOPI and AREA) used for classifying the entry and one (INDX) used for generating the General Index. Some of the above fields are used additionally elsewhere : AUTH for the alphabetical Author Index, JOUR and ISSU for the List of Periodicals or List of Miscellanies. However, in this simple field-based structure we have a primitive database and one that could be easily adapted in the 1980s when the *IMB*-generation was computerised.

Today, an entry such as the last of the examples above would be represented on screen within a standard template :

CTRB [= Contributor's or inputter's name]

ARNO [= Presorted number of the entry; entered by Leeds
secretarial staff]
AUTH CEJNKOVÁ, Dana; USTOHAL, Vladimír; STRÁNSKÝ, Karel
ARTI Pečetidlo benediktinského kláštera Na luhu v Brně-
Komárově
TRAN The seal of the Benedictine monastery "Na luhu" in
Brno-Komárov
EXPL @ [@ symbol denotes a blank field]
SUMM (marginal): English 120-1, German 121-2
JOUR Forum Brunense
ISSU (1990)
PAGE 119-25
XTRA Illustrations
DATE 12-15
TOPI Charters and Diplomats; Monasticism
AREA Eastern Europe
INDX Brno, Jihomoravský, Czech Republic|Na luhu monastery
(Komárov);
Sigillography;
Benedictine order|seals;
Komárov SEE Brno;
Seals SEE Sigillography

The structure of the *IMB* is therefore one that is **field-based, not text-based**. The benefits that such a structure has provided when computerising the production of the bibliography, and when developing applications, such as CD-ROM, will now be considered.

2. The four stages of computerisation since 1988

Since 1988 a three-stage computing development project has been undertaken by the University of Leeds Computing Service, under the

direction of Dr Robert V. Sansam. The development work for Stages 1 and 2 have each cost the *IMB* over £15000. Stage 3 represents a vastly greater expenditure.

Stage 1 (1988-91) :

A computer program was written to enable the *IMB* to be produced entirely in-house on computer. This involved the purchase of IBM mainframe terminals and an Apple Laserwriter printer, all of which were linked by a direct line to the university's mainframe Amdahl computer. The data entered on the IBM terminals in the *IMB* Offices were stored on the Amdahl. However three processes were required by this program to process the data into the finished *IMB* printout :

(i) Renumbering the entries and alphabetisation

The 5000 entries in the main Bibliography are catalogued into one of over sixty topical categories and within each of these into one of thirteen geographical areas. Once this sorting is complete all the entries in one section are alphabetised and renumbered from the arbitrary number that corresponded to their order of input. In addition, cross-references are supplied from other sections on occasions where we consider an article may straddle more than one topic or geographical area. This process and the next use the FAMULUS package.

(ii) Sorting the fields of data from the template

From the 13 fields on the standard templates the fields need to be rearranged : in the main Bibliography, for instance, the INDX field is not required ; for the General Index only the INDX field is required ; for the Index of Authors the AUTH field (already used in the main Bibliography) needs duplication ; likewise the List of Journals and Miscellanies at the front of the work needs duplication from the main Bibliography.

(iii) Preparing the data for printing

The data even when prepared in the correct order and location requires encoding so that it prints out in the form that we desire. This involves questions of page and column layout, headings of sections, the types of fonts selected and their size and how they are to be used to distinguish specific fields easily for readers, and the suppression of

certain material that does not need to be printed. This process use the Waterloo SCRIPT package.

Stage 2 (1991-93) :

This stage has involved the transfer of the above programs and packages onto an IBM-compatible PC-based system. That is, from July 1993 the *IMB* no longer uses the university's mainframe computer, but processes all material in-house, right through to the printing of camera-ready copy. This also has the benefit of permitting contributors worldwide to send entries prepared on their own PC to Leeds without the need for re-inputting. Developments in computing will enable the sorting process (which takes 12 hours on a mainframe computer !) to be done in similar time on a simple PC.

Stage 3 (1993-99) :

August 1993 has seen the signing of a publishing contract between the *IMB* and Brepols Publishers to produce the *IMB on CD-ROM*. This is a project that will produce a cumulative CD-ROM of all data from the printed *IMB* for the years 1984-1993 (inclusive), that is volumes 18-27 (published 1985-1994). Over the following five years it is intended to add progressively all the data from the previous years, back to 1967, and to supplement this with data to 1998. Since its origins the *IMB* has catalogued and classified over 210,000 medieval entries (and will have done so for over 260,000 by 1997). These entries will provide an unsurpassed coverage of over 4000 periodicals and over 5000 miscellany volumes (conference proceedings, essay collections and *Festschriften*) from this period. This data will be supplemented by the index of keywords (placenames and medieval political entities, names of medieval individuals and of modern scholars, manuscripts and subjects) which contains over 600,000 references.

The first CD-ROM will be produced in early 1995, but a prototype has already been successfully tested with the partners, ORDA-B, who are programming the DATAWARE software for this CD-ROM application. Researchers will be able to test a demonstration version of the *IMB on CD-ROM* in Spring 1994. Even at this earliest stage of the project this vast corpus of material, produced in a structured, easy-to-use format

will represent a major advance in the *instruments de travail* available to medievalists.

Stage 4 (1994-) :

It is expected that some new development work on the programs written for the *IMB* will allow the computing system to be more sophisticated. Some of this will represent spinoffs from the CD-ROM project. For example, we expect to develop an interface with a database directory of names, addresses and academic interests of all medievalists outside North America ; we envisage an interface with a database of all the journals that we cover at present ; we envisage a cumulative list of all general index terms (in their standard form) which will ensure contributors can select precise forms for index terms ; we expect that this work will enhance the taxonomy of the general index terms used in the *IMB*. In addition the benefits of electronic mail has proved a way of maintaining better contact with the *IMB*'s users, and this is an area which offers an immediate and excellent interface between the editorial staff of the bibliography and its users throughout the world.

3. Heuristics and high value-added work : meeting the demands of tomorrow's medievalists

Within specialist areas of research bibliographies can no longer be superficial or generalist, since this will be better performed by large-scale listings or catalogues. The concept of high value-added work is applicable therefore to specialist medieval bibliographies, which will have to indicate more clearly to their users the division between simple bibliographical listing of core data (which may be done mechanically), and the additional, critical value provided by specialist scholars for the work. Let me indicate this division by citing the structure of the *IMB*.

Taking the various data-fields of the *IMB* we can demonstrate that of the thirteen information fields, only five (AUTH, ARTI, JOUR, ISSU and PAGE fields) would be immediately retrievable by a superficial reading of the publications on which the bibliography is based. A further three (TRAN, SUMM and XTRA fields) are still relatively mechanical

but may require some specialist knowledge and could not be done by scanner.

However, there are five important value-added fields (TOPI, AREA, DATE, INDX and EXPL) which transform the *IMB* from a simple bibliographical listing into a work of scholarship and an *instrument de travail*. The TOPI field identifies sixty narrow areas of interest for medievalists, and within these thirteen geographical areas (AREA field). There are several levels of cross-reference possible between these, so that one article can be signalled to six or more specific areas in which a medievalist may be interested : e.g. an article may be signalled as relating primarily to « *Sermons and Preaching, in France* », but may have secondary cross-references in sections such as « *Education, General* » or « *Theology and Biblical Study, in France* ». This process of cataloguing allows a scholar to scan through a particular area of interest to see those articles recently published in it. The DATE field allows readers to scan material quickly for the century/ies in which they are interested. The INDX field offers 13000 to 15000 citations to keywords : personal names (of medieval figures, and of modern figures and scholars), place-names (settlements, medieval political entities and modern regions or states), manuscripts and subjects. This allows a scholar to focus on extremely narrow areas of interest : a particular text, author, place or subject. The EXPL field offers a simple abstracting service to readers, particularly where the title of the article does not give a clear indication of its content. The skill for the bibliographer in all these processes lies in the ability to retain a keen sense of what use the reader will wish to make of the material, and how the reader will use the resource. That is, the article must be catalogued according to clear rules into topics or areas that the reader will naturally expect to find that particular article. The bibliographer will have to show a wide knowledge of scholarly interests to identify the keywords for indexing which will be of greatest utility and interest to scholars.

Further, the increasing proliferation of information within the humanities raises a number of wider problems which confront medievalists, including : (i) uneven distribution of funding for the purchase of such information and inadequate hardware or networking resources for effective utilisation of computerised material ; (ii) inadequate awareness, training and skills amongst academics and students to make proper use of the material ; (iii) inadequate interface between producers and users, leading to poor design of products, over-complexity of applications and

customer-unfriendly manuals for users of the products ; (iv) inability of researchers to access the publications which have been signalled by the bibliographical resource. The *International Medieval Bibliography* is tackling these problems in the following sorts of ways.

(i) Uneven distribution and accessibility of material

The *IMB* has always been very heavily used in North America and countries of northern Europe. A balance has been required between the increasing expenses incurred through computerisation and the level of staff needed to produce a sophisticated product while maintaining an affordable price for purchasers throughout the world, particularly libraries. Sales to libraries have risen steadily in the recent five years, most probably attributable to a more proactive stance in making the resource more widely known among medievalists. In particular, subscriptions in Germany and Italy have risen significantly. By contrast, in countries such as the US, Australia and the UK where funds have been held very tight the situation has been static. Two new initiatives will help make this bibliographical resource more available to two new groups of medievalists. First, the *IMB* is now able to assist libraries in the former eastern bloc to purchase what is a relatively expensive resource, and some countries, such as Hungary, are now able to make excellent use of it. Second, an affordable package will bring the *IMB* into the price-range of individual scholars. We expect this to be a significant help in making this data available to medievalists swiftly, affordably and direct to their workplace.

(ii) Inadequate awareness and skills to make best use of the resource

In recent years the *IMB* has undertaken several initiatives to train medievalists better and to make such *instruments de travail* more central in teaching and research contexts. These include producing simple introductions in the *IMB* in English, French, German, Italian and Spanish so that readers are directed quickly to the different ways of accessing information within the *Bibliography*, and producing and widely disseminating introductory pamphlets in English, German and Italian. However, there is a far more fundamental problem that needs addressing. That is, certain academic traditions have provided a far better technical training for medievalists particularly in the field of heuristics,

or research methodology. The requirement to use and assess *instruments de travail* is very well established, for instance, in Germany, the Low Countries, Scandinavia and North America. Relatively junior students in Canada and the US are quite accustomed to using resources such as the *IMB* in accessing publications relevant to an essay or other assignment. In the UK, by contrast, tradition and practice is otherwise. The editors at the *IMB* have for several years taught postgraduate students a course in research methods at the University of Leeds and they have presented tailored courses to similar students elsewhere in the UK. Together with the Rijksuniversiteit Groningen and with financial support from the British Council and the UK Government's Department of Employment (Enterprise in Higher Education initiative) the *IMB* is producing a *Manual for Bibliography* which will seek to produce a simple introduction for senior undergraduate and (post)graduate students in major *instruments de travail* and reference tools. Nevertheless, there is still great diversity in academic traditions and the best practice in teaching heuristics needs wider dissemination.

(iii) Inadequate interface between producers and users

While the objective of this presentation has been to highlight the academic role for medievalists of specialist bibliographies, it is important nonetheless to be clear that such bibliographies do not constitute an end in themselves, a scholarly pursuit whose merit can stand alone. Rather, such bibliographies are part of what I have called above 'secondary medieval research', that is an essential support or service offered to medievalists engaged in the primary activities of teaching and research. Attitudes that overturn this priority need to be avoided, otherwise the purveyors of information fall into the role of arbiters of scholarly worth. Such judgement should remain the preserve of the scholars engaged directly in primary research. For, while round-tables such as this one offer an important forum for the producers of such works to meet, it is of greater importance that we meet our users more regularly. Given this necessity, there are great opportunities now for easier communication with the scholars and students that use our specialist bibliographies. It is easy to forget how swiftly we have acclimatised to continent-wide gatherings of medievalists, such as this one, or intercontinental congresses such as that at Western Michigan University, Kalamazoo, which regularly attracts over 2500 participants, or the congress in Leeds in 1994 which is projected to attract over 1000 participants. Such

gatherings offer opportunities for bibliographers to meet their users directly. Likewise, electronic communication (e-mail and e-mail bulletin boards in particular) allows instant global exchange of data and this is an area where bibliographies have been slow to offer their assistance.

(iv) Inability of researchers to access the publications signalled

The information explosion that we are experiencing highlights the inadequacy of conventional library holdings and the inaccessibility of many publications that are of interest to medievalists. Several countries have sophisticated and reliable inter-library loan (ILL) facilities which permit the exchange of publications. But this facility will be under greater pressure and is unlikely to be able to meet increasing demands without attracting greater government or university support or higher financial contributions from the users/beneficiaries of this service. Moreover, these ILL facilities tend to be of limited use in exchange between countries of lesser-known works. It is precisely this area which is gaining prominence through this information explosion. Therefore, for these reasons ILL is unlikely to be the resource that will satisfy this increased demand for access to publications. Pressure has been most acute so far in the US and a glimpse of a likely development is afforded in a study undertaken by the Andrew W. Mellon Foundation into the operations and economics of research libraries as vehicles for scholarly communication, with special attention to the impact of new information technologies. A summary of the report was disseminated recently by the Higher Education Information Resources Alliance and includes the following conclusions :

"Sensitive financial pressure points identified by the Mellon study are these :

- Contrary to conventional wisdom, library budgets have tended to increase less rapidly than other university expenditures. Measured against U.S. Department of Education figures for university E&Gs, budgets of the libraries studied have declined through the 1980s to the point that they have lost almost all the ground gained in the preceding 20 years.
- The rate of increase in books acquired by university research libraries virtually halted in the 1970s and 1980s, while the number of titles published domestically and internationally has increased at a rate of at least 2 percent per year.

- Price increases have driven a 'serials crisis' which is a major contributor to library difficulties today. Serials expenditures have increased steadily for 30 years, at an average rate of 11.3 percent per year from 1963 to 1990, compared to 7.2 percent per year for book prices.
- Salaries as a percentage of total library expenditures have declined from around 62 percent in 1963 to 52 percent in 1991, while other operating expenditures (apparently reflecting computerization of internal operations) have risen from 6 percent to 14 percent.

Broader Use of Electronic Technologies

These conditions will need to be addressed in many ways, but the possibilities of a significant increase in the role of electronic text distribution, maintenance, and use have the potential for being the most dramatic. There is a growing realization that no research institution can sustain a self-sufficient collection into the indefinite future. Even before the 'crisis' libraries were actively collaborating and sharing resources. New electronic technologies allow revolutionary possibilities of uncoupling ownership from access, material object from its intellectual content. Libraries are beginning to use technology much more broadly than for automating existing internal functions of circulation, cataloging, and acquisitions :

- New technologies are capable of providing secondary bibliographic resources – information about information, access to other institutions' holdings, etc. Large-scale projects that provide computerized bibliographical information are under way, most notably through the OCLC (Online Computer Library Center) and the RLG (Research Libraries Group). Both of these national organizations are experimenting with ways to make their large databases, reporting the holdings of member libraries, more accessible and useful. Of particular interest are widespread efforts to improve the quality and availability of bibliographic information on non-traditional materials – everything from musical compositions to unpublished archival sources.
- The next step beyond obtaining information about information is to share the texts themselves. Document delivery services recently developed include the UnCover service of the Colorado Alliance of Research Libraries (CARL), which supplies abundant bibliographic data on articles, and UnCover2, which provides rapid delivery service for full text via mail or fax, with Internet delivery planned. RLG's Ariel system allows any printed material to be scanned directly as a page image, then stored, transmitted over the Internet, and received for printing at the target site. The 'virtual library', with all the world's published riches at one's fingertips, is a po-

tent, if distant, vision. Only fuller experience will enable institutions to analyze cost implications balancing collection development with resource sharing.

- When the primary artifact is itself electronic the real revolution will begin. Electronic texts can remove the limitations of print on paper. They can be dynamic and mutable, and are potentially eminently interactive. Experiments are already under way creating textbooks on demand out of available online materials" [Pp. 2-3 of a synopsis by Ann Okerson for the Higher Education Information Resources Alliance of : Anthony M. Cummings, Marcia L. Witte, William G. Bowen, Laura O. Lazarus, and Richard H. Ekman, *University Libraries and Scholarly Communication : A Study Prepared for The Andrew W. Mellon Foundation* (Washington, D.C. : The Association of Research Libraries, 1992)].

The synopsis of the report continues by identifying a number of issues that will be confronted by this transition in the role of libraries within scholarly information exchange. These issues will affect the environment in which specialist bibliographies will be operating in coming years. They include : peer supervision of work published and distributed electronically ; mechanisms for distribution of electronic texts ; the upgrading of campus electronic networks ; the role of national and international electronic networks (sometimes known as 'superhighways') ; overcoming technical problems of access, retrieval protocols and digitisation of information ; some blurring in the distinctions among the historic roles of publishers as producers, vendors as intermediaries and librarians as archivists ; and, adaptation of copyright practices.

Conclusion : challenges and opportunities in delivering information to medievalists

There are a number of challenges for specialist bibliographies in a field as relatively peripheral as medieval studies. In many countries, librarians are increasingly grappling with reduced or static budgets in real terms. This is exacerbated by the high costs of new computerised products, together with demands for basic textbooks for large numbers of undergraduate students. There is a danger that specialist medieval works will become squeezed in the middle. Further, there are dangers in

the superficial attraction of certain generalist computerised resources, some aiming to offer bibliographies of the entire humanities. Many such products are derived from simple scanning of old material and their utility must remain superficial to serious scholarship. Specialist medieval bibliographies, therefore, will have to ensure that the high value-added work that they incorporate is clear to the end-users as well as to the initial purchasers, librarians.

Let me conclude this presentation by indicating several possible ways forward for specialist bibliographies in serving the needs of medievalists worldwide :

A . Encouraging editors of journals and miscellany volumes to respond to the huge levels of information now available to scholars by signalling much more clearly the content of the article. Editors can help by ensuring that articles published by them conform to certain guidelines :

(i) that article titles which are ambiguous or elliptical contain a very clear statement of content as a subtitle or within the opening few sentences of the article proper ;

(ii) that authors state very clearly in the opening paragraph basic information for the non-specialist reader. Such information may include :

- the author of any texts cited, together with alternative forms for the author or text ;

- an indication of time-period if this is not immediately obvious ;

- the full manuscript reference (including city and full title of library or archive, in its native form, with a complete shelfmark) ;

- a simple statement of objective or methodology, including full references to opinions or scholars whose views are being challenged or supported in the article ;

- a precise identification for lesser-known settlements (either by grid-reference or administrative location) ;

- an indication for religious houses of the religious order to which they are affiliated and the nearest city or town if it is rural ; and

- a clear statement of the city or town in which a religious house, church, confraternity, hospital or whatever may lie.

(iii) that a recognised system of keywords be adopted for medieval studies, in the same way as is commonly the case in the social sciences.

It should in future be possible to organise meetings between editors, medievalists, bibliographers, librarians and other interested parties to seek to establish some principles or guidelines for best practice in this area.

B . Establishing more effective methods of disseminating best practice in teaching research methods to medievalists.

C . Establishing links with librarians and the former intermediaries between publisher and archivist (the 'vendors'), in order to take best advantage of the opportunities afforded by electronic communications.

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