2 How to Conduct a Literature Search

Synopsis

Identifying the most relevant, up-to-date and reliable references is a critical stage in the preparation of essays, reports and dissertations, but it is a stage which is often undertaken unsystematically and in a hurry. This chapter is designed to help you improve the quality of your literature search.

The chapter is organized into the following sections:

- The purpose of searching the literature
- Making a start
- A framework for your search
- Managing your search
- Search tools
- Evaluating the literature

THE PURPOSE OF SEARCHING THE LITERATURE

The purpose of this chapter is to support you in developing and using your literature search skills over a range of media, including paper and the web, not just books and journals. It is aimed primarily at undergraduate geography students needing to search the literature for research projects, dissertations and essays in human and physical geography. However, the search methods and principles are applicable to most subjects and, if you are a postgraduate geography student, you should also find it a useful refresher to get you started. Many sources are available worldwide, though details of accessing arrangements may vary. Country-specific sources are illustrated with selected examples of those available in the UK, North America and Australia.

Exercise 2.1 Why read?

Make a list of the reasons why you should read for a research project. Compare your list with those in Box 2.1. Most also apply if you are preparing an essay.

Reading the literature is an important element of academic research. It is a requirement with essays and projects as well as dissertations for you to relate your ideas
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to the wider literature on the topic. Reading around the subject will also help you broaden and refine your ideas, see examples of different writing styles and generally improve your understanding of the discipline. When undertaking a dissertation or thesis, reading will help you identify gaps, find case studies in other areas which you may replicate and then compare with your findings, and learn more about particular research methods and their application in practice (Box 2.1). Effective reading may, of course, take many different forms depending on your purpose – from skimming, through browsing, to in-depth textual analysis – and will rarely involve just reading from the beginning to the end (Kneale, 2003).

Box 2.1  Ten reasons for reading for research

1. It will give you ideas.
2. You need to understand what other researchers have done in your area.
3. To broaden your perspectives and set your work in context.
4. Direct personal experience can never be enough.
5. To legitimate your arguments.
6. It may cause you to change your mind.
7. Writers (and you will be one) need readers.
8. So that you can effectively criticize what others have done.
9. To learn more about research methods and their application in practice.
10. In order to spot areas which have not been researched.

Source: Blaxter et al. (2006: 100)

MAKING A START

Your literature search strategy will vary with your purpose. Sometimes you may want to search for something specific, for example a case study to illustrate an argument. In other situations a more general search may be required; for example, you might wish to identify 15 articles which have been written on a particular topic for an essay. Your search strategy may also vary with the level at which you are in the higher education system and your motivation. Identifying half a dozen up-to-date books on a topic may be appropriate at the beginning stage, while at graduate level you may need to explore whether any PhD theses have been written on the topic you are proposing to undertake for your thesis (e.g. Theses Abstracts: www.theses.com).

Exercise 2.2  Starting your search

You have been set a research project on a topic you know little about (e.g. organic farming). Before reading any further, write down the first three things you would do to find out what has already been written on the topic.
When we have used Exercise 2.2, the most common responses were to look in the subject section of the library catalogue, use a search engine on the internet and ask a lecturer. These are all sensible strategies, though the usefulness of most search engines is exaggerated due to the lack of regulation and quality control on the sites found. However, apart from possibly asking the lecturer/professor who set the assignment for one or two key references to get you going, usually the first things you should do are to identify and define the key terms in the assignment and construct a list of terms to use in your literature search. Only then is it appropriate to turn to the search tools, such as library catalogues, reference books, indexes, databases and websites, and seek help from a librarian.

Making a start is usually the most difficult stage of undertaking a research project or assignment. The issues involved in identifying your own research topic were discussed in Chapter 1. When you have a provisional idea about your topic and the research methods you may use, or when a research project or assignment is given to you, take a little while to plan your literature search. Defining the key terms in the topic or assignment is a good starting point. The dictionaries of human and physical geography are essential references for all geography students (Thomas and Goudie, 2000; Gregory et al., 2009). The indexes of appropriate textbooks will also help. These references will further help you identify search terms, as will a thesaurus, a good English dictionary and a high-quality encyclopedia. For example, the Oxford Reference Online (www.oxfordreference.com) includes subject dictionaries and an encyclopaedia as well as English dictionaries. The Geobase subject classification is another source (see the section below on abstracts and reviews). Remember to allow for American English spellings of words as well as standard English spellings.

In identifying search terms, group them into three categories: broader, related and narrower. The first will be useful in searching for books, which may contain useful sections on your topic, while the second and third will be particularly helpful in identifying journal articles and websites and using indexes to books. Box 2.2 illustrates how to make a start with searching the literature for a research project on organic farming.

**Box 2.2  Defining key terms and identifying search terms: an example**

**Topic:** Socioeconomic aspects of the geography of organic farming.

**Definition:** ‘This system uses fewer purchased inputs compared with conventional farming, especially agri-chemicals and fertilizers, and consequently produces less food per hectare of farmland …, but is compensated by higher output prices’ (Atkins and Bowler, 2001: 68–69).

**Search terms:**

<table>
<thead>
<tr>
<th>Broader</th>
<th>Related</th>
<th>Narrower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural geography</td>
<td>Organic farming</td>
<td>Certified organic growers</td>
</tr>
<tr>
<td>Farm extensification</td>
<td>Organic agriculture</td>
<td>Organic organizations</td>
</tr>
<tr>
<td>Farm diversification</td>
<td>Organic production</td>
<td>Soil Association</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Alternative farm systems</th>
<th>Organic growers</th>
<th>Organic food retailers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food, geography of</td>
<td>Organic food</td>
<td>Organic food markets</td>
</tr>
<tr>
<td>Sustainable agriculture</td>
<td>Organic movement</td>
<td>Organic food shops</td>
</tr>
</tbody>
</table>

*Note: 'Organic farming' is not listed in *The Dictionary of Human Geography*, although discussion of 'agricultural geography' and 'food, geography of' provides a useful context. The index of Atkins and Bowler (2001), which is on the ‘Food and the Environment’ course reading list, identifies four mentions of ‘organic farming’. These lead to a useful introduction to the topic and to several recent references, and are a source for some of the above search terms.*

**TIP**

If you are collecting data as part of your research project remember to carry out a literature search on research methodologies and techniques as well as on your main topic. Many of the later chapters in this book will help you with this.

**A FRAMEWORK FOR YOUR SEARCH**

A summary of how to search the literature is given in Figure 2.1 – which also provides a framework for the structure of this chapter. Where you start depends on the purpose of your search. For example, if you are looking to see whether the government has any policy documents on your topic you might begin by searching the Directgov website (www.direct.gov.uk). If you want to check news stories you might go to one of the newspaper database sites given in the other literature sources section, while if you are searching for journal articles to start you on an assignment you might look at a citation index such as Web of Knowledge. Figure 2.1 might suggest that undertaking a literature search and writing an essay or a literature review is a linear process. The reality is much messier. There is frequent interaction between the different stages. As you begin to identify and scan the key references, your knowledge and understanding of the topic will increase, which will lead you to identify particular subtopics that you wish to investigate in more detail. A further search, using new key terms may then be appropriate. Iteration is a key element of the search process. You should not give up after entering the first obvious key word in a search engine. Further thoughts are also likely to arise as you begin to draft your essay or literature review, which may call for additional searches. Saunders *et al.* (2007) capture some of this interactivity by conceptualizing the literature review process as a spiral.

**TIP**

Identify a few key references, skim read them, then revise your search criteria in the light of your new understanding.
Ensure that you use references appropriate for degree-level study. Your lecturer/professor will not be impressed if you use textbooks, dictionaries and magazines aimed primarily at school/college-level study, or if you cite Wikipedia. Only a small proportion of websites are likely to be appropriate (see later). Many of the most appropriate references will be academic journal articles. Remember also to check the library catalogue to see that you have the latest edition of a textbook in the library (e.g. at the time of writing *The Dictionary of Human Geography* is in its fifth edition). Remember that earlier editions are usually the ones that your colleagues will leave on the open library shelves. A copy of the most recent edition of a popular textbook may be in the short loan collection.

A useful place to start building your list of references is the reading lists your lecturers/professors provide for their courses. In many institutions these are put on their Intranet.
MANAGING YOUR SEARCH

The search process, as just indicated, is one that you will keep coming back to at various stages in your research. It is therefore sensible to keep a search diary, which includes the sources searched, the key words used and brief notes on the relevant references they reveal. This is, perhaps, best done using a word-processing package, which will enable you to list your key words, cut and paste the results from your online searches and keep track of which search engines and sources you have used. Alternatively packages such as EndNote or Reference Manager may be useful in keeping track of your references. However, some programs may require further training as they can be complicated to use. For further advice on working online, Dolowitz et al. (2008) provide much useful information on search strategies using the internet, emphasizing the need to develop a search strategy. They suggest that you should begin by asking yourself three main questions: ‘What am I looking for?’ ‘What are the most relevant search terms?’ and ‘What tool will be the most useful for helping me find it?’ (Dolowitz et al., 2008: 52).

TIP
Have a memory stick available when you are searching. Many of the databases enable you to save your searches direct to a memory stick or a PC. Some will also allow you to email them to yourself. Chapter 5 in Ridley (2008) provides useful advice on keeping records and organizing information to help you with your searches.

TIP
When using key words you can easily miss articles, as authors may have chosen different key words than you to describe their work. Look at the key words authors have chosen to use to describe their work in the articles you do find. Making a list of these key words will help to increase your search terms and avoid missing other useful references (Ridley, 2008).

How long to spend on the search process depends on the purpose of your search. For example, are you seeking ten key references for an essay, or 50 or more references for a dissertation? Generally, the broader the topic and the more that has been written on it, the longer the search tends to take. This is because much of the effort is spent in trying to identify the key references from what may be a list of several hundred marginal or irrelevant ones.

TIP
Aim to identify two to three times as many relevant references as you think you will need for your assignment/dissertation. Many may not exactly meet your needs when you obtain them.
and/or may not be accessible in the time you have available. If you are finding what appear to be too many relevant references, focus on the most recent ones and the references most frequently cited, and consider narrowing the search by, for example, focusing on a subtopic or restricting the geographical coverage. If you are finding too few relevant references, try some new search terms and consider broadening the topic or the geographical area. Also ask a librarian.

To avoid any possibility of plagiarism (that is, the unacknowledged use of the work of others), be sure to take down the full bibliographic details of the references you find, including, where relevant, the author(s)' name(s) and initials, year of publication (not print date), title of book, edition (if not the first), publisher and town/city of publisher (not printer), title of article/chapter, journal title, volume number and page numbers, and names of editors for edited books. Be sure to put all direct quotations in quotation marks and give the source, including the page number(s) (Mills, 1994). The same applies to material taken from websites. However, avoid direct quoting too much, and cutting and pasting information from websites, instead summarize and paraphrase material. Take particular care in citing websites, giving wherever possible the author/organization responsible for the site, the date the page/site cited was last updated, the title of the page/site and the date you accessed the site, as well as the URL.

**TIP**

Inconsistent referencing and missing or erroneous information are some of the most common comments made on student writing (see also Chapter 32). Most geographers use the Harvard style of referencing, but departments vary on the format in which they like references to be cited. Guidance on how to provide correct references, including websites, is available from Kneale (2003). It is best to acquire the habit of using one way of formatting references and to apply this consistently whenever you note a reference (down to the last comma, full stop and capital letter!).

**TIP**

When taking notes remember to put any sentences you copy (or paste from a website) in quotation marks and note down the page number(s) so that if you decide to use the author's direct words later you can acknowledge this properly.

**SEARCH TOOLS**

Various features are used to search databases and the web. As these vary it is important to check their ‘help’ facilities. Most allow you to use exact phrases.
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Simply place the phrase in double quotes (“ ”) (e.g. “organic farming”). Most search engines support the use of Boolean operators. The basic ones are represented by the words AND, OR and NOT (e.g. “organic farming” AND “UK” ; “organic farming” OR “organic food”; “organic farming” NOT “North America”). The use of wild cards (*) may also be available. For example, ‘farm*’ will find records containing the word ‘farm’, including farm, farms, farmer, farmers and farming. It will also identify farmhouse, farmstead and farmyard. Bell (2005), Flowerdew and Martin (2005), and Dolowitz et al. (2008) provide further information on search tool techniques.

Library catalogues

In most cases the first place to search for relevant books is the subject index of your library catalogue. You will usually need to use your broader list of search terms. Unfortunately the classification systems used in most libraries put geography books in several different sections of the library. But do not restrict yourself to books with ‘geography’ in the title. The integrative nature of the subject means that many books written, for example, for sociologists, economists, planners, earth scientists, hydrologists and ecologists may be just as relevant. Once you have found the classification numbers of relevant books check the catalogue for other books with the same number and browse the relevant shelves. Looking at other books on the shelves near to the ones you are looking for often reveals other relevant references. Use your list of related and narrower search terms to explore the book indexes. Do not forget to also check where short loan and oversize books and pamphlets are shelved. Older books may be in store. Furthermore, a search for a topic on a website such as Amazon (www.amazon.co.uk) provides a list of a large number of the books published within that topic area (Ridley, 2008).

TIP

One of the quickest ways to generate a list of references is to find the latest book or article covering your topic and look at its reference list.

For a wider search try the combined catalogues of 29 of the largest UK and Irish research libraries, which are available online through COPAC (copac.ac.uk). The British Library Catalogue provides a national collection (www.bl.uk). The equivalent in the USA is the Library of Congress, which may be searched along with the catalogues of many other libraries in the USA and other countries via the Z39.50 Gateway (www.loc.gov). To check book details try WorldCat (www.worldcat.org). This is a huge database of over 1.2 billion references held in more than 10,000 libraries worldwide.

When you are away from the university it may be worth seeing whether your local university or public library has the book you require in stock. The Library Catalogue of the Royal Geographical Society (www.rgs.org/OurWork/Collections)
holds more than 2 million items tracing 500 years of geographical research and receives over 800 periodical publications. You can use the library free if your department has an Educational Corporate Membership, or otherwise there is a small fee charged per visit.

Abstracts and reviews

Evaluating the relevance of a book or journal article simply from its title is difficult. Generally each journal will articulate the purposes of the journal and its intended audience in each issue published, providing you with some idea of the relevance of the type of articles in that journal (Ridley, 2008). Abstracts give a clearer idea of the contents of articles. One of the most useful set of abstracts for geographers is Geobase, which provides international coverage of the literature (particularly journal articles) on all aspects of geography, geology, ecology and international development. The database provides coverage of over 2000 journals and contains close on 1.4 million records from 1980 onwards. Book reviews which appear in the journals abstracted are also included. These are useful for evaluating the significance of books and finding out what has recently been published. It is available online via Science Direct. There is also a CD version. LexisNexis (www.lexisnexis.com/academic) provides similar coverage, and CSA Sociological Abstracts (www.csa.com) is useful for some human geography topics. You should also check recent issues of review journals, particularly Progress in Human Geography and Progress in Physical Geography, for appropriate articles and updates on the literature in particular subfields. Environment Complete (www.ebscohost.com), which some libraries are using instead of Geobase, is available through EBSCOhost. It offers deep coverage in applicable areas of agriculture, ecosystems, energy, renewable energy sources, natural resources, geography, pollution and waste management, social impacts, urban planning, and more. This contains more than 1,957,000 records going back to the 1940s.

Citation indexes

Probably the most useful tool that you will find for searching the literature is the ISI Web of Knowledge. So it is well worth investing some time in exploring how to use it effectively. The ISI Web of Knowledge includes proceedings of international conferences, symposia, seminars, colloquia, workshops and conventions as well as the ISI Web of Science. ISI Web of Science consists of three citation indexes covering the social sciences, the arts and humanities, and science. It is the prime source for finding articles published in refereed journals, which is where most research is first published. As well as providing data on the number of times articles published in a wide range of journals are cited by authors of other articles, they also provide a valuable source for identifying journal abstracts and reviews. They can thus be used for generating lists of
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articles with abstracts on particular topics, as well as identifying influential articles. You can also use the indexes to identify related records that share at least one cited reference with the retrieved item, and hence may be contributing to the discussion of related topics. The ISI Web of Knowledge contains sophisticated ways of restricting searches including by subject area, date of publication and country. However, not all geography or related journals are included in the ISI database.

TIP
Some articles are cited frequently because they are heavily criticized, but they have nevertheless contributed to the debate. In the world of citation analyses the only real sin is largely to be ignored, which is the fate of most published papers. However, a few papers are ahead of their time and are not ‘discovered’ until several years after they have been published.

The three citation databases include articles published in over 13,000 journals, plus book reviews and editorials. There are over 23 million records extending back to 1981, which are added to weekly. Virtually all higher education institutions in the UK and many elsewhere have taken out a subscription to the ISI Web of Knowledge. In the UK access is through Mimas (www.mimas.ac.uk). Most universities in the UK now offer automatic access to such resources through Intranet services available off campus. Currently access is via Athens but this is gradually being replaced by a new generation of access management service, based on the Shibboleth technology.

TIP
Once you have identified key authors who are writing on your topic it is worth checking abstracts and citation indexes to see what else these authors have written, some of which may be on related topics. Beware when searching that the way authors’ first names are cited may differ between publications. For example, the first author of this chapter appears variously as: Michael; Michael J; Mick; M; and M J.

Citation analyses are used to rank the impact that journals have on intellectual debate. They thus provide a crude guide as to which journals to browse through in the library and a possible basis for choosing between which of two, otherwise apparently equally relevant articles, to read first (Table 2.1). Lists of journal ranking may be obtained from ISI Journal Citation Reports (scientific.thomsonreuters.com/products/jcr) if your institution has a subscription. One of their limitations is that many of the key articles used by geographers are not published in mainline geography journals.
Bibliographies

A range of specialized bibliographies are available. The most useful are annotated. Some are in printed form. For example, the Countryside Agency Accession List includes details of new books, reports and pamphlets received at the Countryside Agency Library, and the Countryside Agency Selected Periodical Articles lists articles from recent journals under subject headings. An increasing number are available on the web at no charge and without registration (Table 2.2). Others may be available if your university has taken out a licence.

TIP
As you generate your list of references check whether your library holds the books, and if so whether they are on loan. If they are on loan put in a reservation request. In the case of journals, check whether the library takes them. Also check whether your library has a subscription to the journals identified in your search for accessing the full text of articles online. If so, obtain passwords and check how to access them and whether you can do this off-site. If the library does not hold the book or journal, consider ordering the reference on inter-library loan (ILL). Make sure that the journal article is relevant by reading the abstract first if one is available. To check the relevance of the book it is worth doing a Google Scholar search (scholar.google.co.uk) for the text as you may be able to read a few pages of the introduction or a sample chapter before ordering the book. Journal articles can usually arrive within 24 hours electronically or between a week and ten days for a hard copy. Recalling books, or ordering them through ILL, often takes longer. Check whether your library entitles you to a certain number of free inter-library loans or, if not, what the charge is per loan.

### Table 2.1 Top geography journals, 2008

<table>
<thead>
<tr>
<th>Rank</th>
<th>Journal title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Transactions, Institute of British Geographers</td>
</tr>
<tr>
<td>2</td>
<td>Global Environmental Change</td>
</tr>
<tr>
<td>3</td>
<td>Progress in Human Geography</td>
</tr>
<tr>
<td>4</td>
<td>Economic Geography</td>
</tr>
<tr>
<td>5</td>
<td>Journal of Economic Geography</td>
</tr>
<tr>
<td>6</td>
<td>Annals of the Association of American Geographers</td>
</tr>
<tr>
<td>7</td>
<td>Geographical Analysis</td>
</tr>
<tr>
<td>8</td>
<td>Antipode</td>
</tr>
<tr>
<td>9</td>
<td>Political Geography</td>
</tr>
<tr>
<td>10</td>
<td>Environment and Planning D</td>
</tr>
<tr>
<td>11</td>
<td>Cultural Geography</td>
</tr>
<tr>
<td>12</td>
<td>Landscape and Urban Planning</td>
</tr>
<tr>
<td>13</td>
<td>Environment and Planning A</td>
</tr>
<tr>
<td>14</td>
<td>Area</td>
</tr>
<tr>
<td>15</td>
<td>Professional Geographer</td>
</tr>
</tbody>
</table>

*Note: Based on ranking journals by their ‘impact factor’ (a measure of the frequency with which the ‘average article’ in a journal has been cited in a particular year).

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Table 2.2 Examples of web-based geography bibliographies

<table>
<thead>
<tr>
<th>Bibliography</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Heritage Bibliography (<a href="http://www.environment.gov.au/heritage/ahc">www.environment.gov.au/heritage/ahc</a>)</td>
<td>Full access is provided from this site but professional users will find subscription service on CD-ROM or access through the Informit server at Melbourne which provides greater flexibility in search formulation and output</td>
</tr>
<tr>
<td>Disability and Geography Resource (DAGIN) (isc.temple.edu/neighbor/research)</td>
<td>Alphabetical list of references compiled for Disability and Geography International Network, last modified in 2003</td>
</tr>
<tr>
<td>Gender in Geography (<a href="http://www.emporia.edu/sosci/fembib/index.htm">www.emporia.edu/sosci/fembib/index.htm</a>) GIS Bibliography (campus.esri.com/library) International Bibliography of the Social Sciences (IBSS)</td>
<td>Alphabetical list contributed by members of the discussion list for Feminism in Geography ESRI Virtual Campus Library provides a searchable database of over 67,000 references Produced by the London School of Economics and Political Science, this database includes 2.5 million references dating back to 1951, focusing on four core social science disciplines – anthropology, economics, politics and sociology</td>
</tr>
</tbody>
</table>

Websites

An increasing amount of useful information is being placed on the web. However, identifying this from the huge amount of irrelevant and low-quality information is a time-consuming task. The general search engines, such as Google (www.google.co.uk) and AltaVista (www.altavista.com), and meta search engines, such as Dogpile (www.dogpile.com) and Ixquick (www.ixquick.com), which search other search engines’ databases, are indispensable when searching for specific information, such as the URL address of an institution’s website. One of the problems with search engines is that ‘even the largest of search engines have only indexed a small proportion of the total information available on the internet’ (Dolowitz et al., 2008: 62). The ‘deep web’ consists of databases, non-textual files and content available on sites protected by passwords. Items such as phone directories, dictionary definitions, job postings and news are all part of the deep web. To access these may involve a two-stage process: first searching for database sites (e.g. UK newspapers) and then going to the database itself and searching for the information you want. More advanced search engines, such as Google, are beginning to incorporate access to some parts of the deep web. Google Scholar (scholar.google.co.uk) is a specialized web search database which focuses upon scholarly literature and therefore the quality of the content of results should be higher, although caution is still advised.

This is where internet gateways or portals can be useful because they provide links to sites on particular subjects which have been evaluated for their quality.
Most of the ones mentioned below can be accessed via Pinakes (www.hw.ac.uk/libwww/irn/pinakes/pinakes.html). Among the more useful internet gateways is BUBL (bUBL.ac.uk), which provides a catalogue of selected internet sources for higher education classified by subject and Dewey classification number. Its main interface, BUBL LINK/5:15, offers between 5 and 15 sources for most subjects. It includes many sites relevant to geographers. Intute (www.intute.ac.uk) is another free internet service dedicated to providing effective access to high-quality internet resources for the learning, teaching and research community. There is a separate section for geography but many of the resources used by geographers may be found under other subject headings, such as earth sciences, environment, sociology, or travel and tourism. ELDIS provides a gateway to development information (www.eldis.org). In the USA, Academic Info provides a gateway to college and research-level internet resources for many subjects, including geography (www.academicinfo.net/geogmeta.html).

**TIP**
Check out the advanced search facilities on search engines and databases. These allow you to focus your searches in a variety of ways and make them much more efficient. For example, you can restrict your search to one domain. So if you want to search for documents published by the US government departments search within '.gov'.

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**Box 2.3  Searching the literature: an example**

**Assignment:** a 2,000-word essay.

**Topic:** Socioeconomic aspects of the geography of organic farming.

**Library catalogues:** 98 books on agricultural geography and 30 books on sustainable agriculture were listed in the University of Sheffield library catalogue; 11 specific ones on 'organic farming'. **COPAC:** key word search found the following number of books: "organic farming" (1,134), "organic agriculture" (181), "organic production" (134), "organic growers" (45), "organic food" (400), "organic movement" (19).

**Abstracts and reviews:** Environment Complete: key word search resulted in the following number of references: "organic farming" (3,059), "organic agriculture" (307), "organic food" (580), "organic production" (207), "organic growers" (67), "organic movement" (46), but the majority were about scientific aspects. One useful article was found in a recent issue of *Progress in Human Geography*.

**Citation indexes:** ISI Web of Knowledge: search for "organic AND farming" gave Web of Knowledge (5,873); Web of Science (2,843); Social Science Citation Index (231); Social Science Citation Index (UK OR England OR Wales OR Scotland OR Northern Ireland – alternative key words to cover UK geographical area) (21).

**Bibliographies:** A search for "organic farming bibliography" on Google Scholar found three listed, but when the search was changed to "organic AND farming AND bibliography" about
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5,440 records were found. Several useful references were also found from reference lists of books and articles identified by the above search tools and the economic geography reading list.

**Websites:** Inputting “organic farming” into general search engines result in a huge number of hits e.g. Google (about 3,300,000; about 178,000, UK). In contrast BUBL identified eight organic farming websites, whereas Intute identified 238 websites. Restricting the Intute search to social science sites gave 22 different websites. Atkins and Bowler (2001) identify five organic food organizations in the UK. A Google search found specific websites for all of them.

**Other sources:** Proquest Newspapers: key word search found the following number of articles: “organic farming” (150), “organic agriculture” (8), “organic production” (3), “organic growers” (9), “organic food” (87), “organic movement” (0). Direct Government (a ‘quick search’) revealed 61 matches on “organic farming”.

**Summary:** Given the nature of the assignment (2,000 words, 30 per cent of marks for course) and the number of references identified in early searches, it would be sensible to focus the search (e.g. only on the UK). It would be best to start with the most frequently cited and most up-to-date references, websites and newspaper articles and those that appear to be the most comprehensive. Apart from sources such as ISI Web of Knowledge, which have sophisticated ways of focusing a search, much time will be spent on weeding out non-relevant references which deal with topics such as methods of farming or environmental impacts. Expect to find further references and undertake more specific searches as you become more familiar with the topic. Make a shortlist of references (two to three times as many as you think you are likely to need) to show your lecturer to ask his or her advice on identifying key ones and any major omissions.

Many departments and institutions also provide links to websites relevant to areas in which they teach and research. The University of Colorado (www.colorado.edu/geography), the University of Utrecht (Geosource) (www.library.uu.nl/geosource) and the Universities of Gottingen and Freiberg (Geo-Guide) (www.Geo-Guide.de) all provide extensive lists.

**TIP**

When doing searches using the internet it may be useful to be more specific with your search terms and select particular fields to search (e.g. search only academic journals or peer-reviewed titles in order to focus your search). QUT (2006) provide a useful tutorial for negotiating the vocabulary to work through when considering your exact search terms.

**Other literature sources**

For many topics newspapers can be a useful source of information, especially for up-to-date case studies. Proquest Newspapers provides access to library subscribers to UK broadsheets from 1996 or earlier, as does Lexis-Nexis Butterworths (www.lexisnexis.co.uk). Several papers can be searched simultaneously. Dialog®
CARL, is a North American subscription service which provides access to 275 databases, including the full text of most major US newspapers. Many individual newspapers provide free online searchable databases. World Newspapers provides a searchable directory of online world newspapers, magazines and news sites in English (www.world-newspapers.com).

If you are undertaking your own thesis it is important to check whether anyone else has written a thesis on a similar topic by looking at the Index to Theses which has Abstracts Accepted for Higher Degrees by the Universities of Great Britain and Ireland since 1716 (www.theses.com). Dissertation Abstracts Online is a definitive subject, title and author guide to virtually every American dissertation accepted at an accredited institution since 1861. An institutional subscription is required to access it.


The use of videos is becoming increasingly common in higher education. Some universities provide audio and/or video content of many of their lectures (e.g. MIT ocw.mit.edu/OcwWeb). NewsFilm Online provides access to 3,000 hours of footage from about 60,000 stories from the ITN/Reuters archives for staff and students at subscribing universities (www.nfo.ac.uk).

**TIP**

Continue to refine your search as you progress using the cycle illustrated in Figure 2.1 in order to compile a list of useful references. Start with more general sources in the early stages of your search moving towards more specific ones later on (Dolowitz et al., 2008).

**EVALUATING THE LITERATURE**

Do not be put off undertaking a systematic literature search, such as is illustrated in Box 2.3, because you feel you will not have time to read all the references you find. Indeed, you will not have time to read them all. The purpose of the literature search is to identify the most appropriate references for the task in hand (Table 2.3): ‘learning how to determine the relevance and authority of a given resource for your research is one of the core skills of the research process’ (Olin and Uris Libraries, Cornell University, 2006). Websites in particular need to be evaluated critically for their origin, purpose, authority and credibility.

If you follow the advice above you should have reduced the list of references several fold before you have even opened a book or journal or read a newspaper article or website, for example by focusing on the most frequently cited and
How to Conduct a Literature Search

up-to-date references. The titles and abstracts will also help you to judge those references likely to be most relevant.

**TIP**

Avoid listing all the references you have found simply to try to impress your lecturer/professor. You must use some relevant idea or material from each one to justify its inclusion. Ensure that you include a reference to each in the text, usually by following the Harvard system of referencing.

**Exercise 2.3**

Select four references from different sources on a topic that you are preparing, such as a website, a textbook, a journal article and a newspaper report, and use the criteria in Table 2.3 to evaluate their relevance, provenance and source reliability.

**Table 2.3** Reducing your list of references to manageable proportions

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Possible (Score 4 points)</th>
<th>More doubtful (Score 2 points)</th>
<th>Probably forget it (Score 0 points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance to my topic – judged by title and/or abstract (double the score for this criterion)</td>
<td>High</td>
<td>Moderate</td>
<td>Tangential</td>
</tr>
<tr>
<td>Up-to-date</td>
<td>Last 5 years</td>
<td>6–15 years’ old</td>
<td>Over 15 years’ old</td>
</tr>
<tr>
<td>Authority – the author or paper is cited in the references I have already read</td>
<td>Extensively cited</td>
<td>Recent paper not yet had time to be cited extensively</td>
<td>Older paper cited infrequently or not at all</td>
</tr>
<tr>
<td>Respectability and reliability of source publication</td>
<td>Published in major geographical publication or that of sister subject or something very close to my topic</td>
<td>Publication is not in geography or an allied field</td>
<td>Informal publication or unreliable Internet source</td>
</tr>
<tr>
<td>Nature of publication</td>
<td>Peer-reviewed academic journal or monograph</td>
<td>Textbook or conference proceedings</td>
<td>Popular magazine</td>
</tr>
<tr>
<td>Originality</td>
<td>Primary source of information – the authors generated this information using reliable and recognized methods</td>
<td>The authors take their information from clearly identified and reliable secondary sources</td>
<td>The authors assert facts and produce information without providing appropriate supporting evidence</td>
</tr>
<tr>
<td>Accessible</td>
<td>Instant – by download or short walk to library</td>
<td>Obtainable with effort – reserve, interlibrary loan</td>
<td>Unobtainable</td>
</tr>
</tbody>
</table>

Source: Modified from an idea by Martin Haigh (personal communication 29 January 2002)
Exercise 2.4

Take a book or article relevant to your topic. You have five minutes to extract the key points it contains.

Researchers rarely read books from cover to cover and they read relatively few articles in their entirety. Like you, they do not have the time. They are practised at evaluating references in a few minutes by skimming the abstracts, executive summaries, publisher’s blurbs, contents pages, indexes, introductions, conclusions and subheadings. This enables them to select the references that deserve more attention. Even then they will usually identify key sections by, for example, reading the first and last paragraphs of sections and the first and last sentences of paragraphs. This is not to suggest that all you need is a superficial knowledge of the literature; rather, that you should read selectively and critically to ensure that you obtain both a broad understanding of the topic and an in-depth knowledge of those parts of the literature that are particularly significant. If you are not familiar with the processes involved in critical and strategic reading, have a look at the relevant chapters in Blaxter et al. (2006) and Kneale (2003).

Exercise 2.5

In your next essay or research project try applying the framework (Figure 2.1) for searching the literature outlined in this chapter. Good hunting!

Summary

The aim of this chapter has been to identify effective and efficient ways to systematically search and evaluate the literature:

- The first stage is to define the key terms for your topic and to identify a range of search terms.
- You should then systematically search a range of sources, including library catalogues, abstracts and reviews, citation indexes, bibliographies and websites, being careful to keep a search diary.
- Having made a record of the references you have found you should evaluate each of them for such things as relevance, whether they are up to date, authority, respectability, originality and accessibility.
- Although searching the literature needs to be systematic, it is also iterative and, as your knowledge and understanding of your topic and of the number and quality of the references you are identifying increase, you will inevitably need to make modifications to your search and repeat and refine many of the stages several times.
- For a quick guide, look at the exercises, boxes, tables and tips in this chapter and the framework for undertaking a literature search shown in Figure 2.1.
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Further reading

Few books focus only on searching the literature, though Hart (2001) is an exception; most are guides to study skills or how to research, which put the literature search process in a broader context.

- Bell (2005) presents a chapter on finding and searching for literature. This includes a useful introduction to searches using computers and ways to help limit or broaden your criteria. It is part of a guide to doing research.

- Blaxter et al. (2006) provide an excellent user-friendly guide on how to research; they include chapters on reading for research and writing up.

- Cohen (2008) has compiled a very useful set of internet tutorials.

- Dolowitz et al. (2008) present a thorough guide to searching for information on the internet including advice on how to approach searching and different techniques to use within the search strategy.

- Flowerdew and Martin (2005) provide a guide for human geographers doing research projects; they include a chapter by Flowerdew on finding previous work and a chapter by Clark illustrating the benefits and issues of using secondary data sources which also provides further information on how to use search engines to their best advantage.

- Hart (2001) provides a comprehensive guide for doing a literature search in the social sciences.


- Ridley (2008) presents a step-by-step guide to writing a literature review. This book includes a chapter on doing a literature search and a chapter focusing on information management.

Note: Full details of the above can be found in the references list below.

References


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