Chapter 5
Methodological decisions

*Comparisons are odorous. (*Dogberry, in William Shakespeare's *Much ado about nothing*, Act 3, Scene 5)

Comparison is the basis of almost all fields of human inquiry. (Bray & Thomas 1995:472)

OUTLINE

5.1   Introduction

In Chapter 4, Section 4.3, the relationship between metatheory, methodology and method was examined. Following Dervin (2003, 136–37) and Pickard (2007, xv–xvii). I proposed to consider methodology as the bridge between *metatheory*, the general higher-level assumptions (also referred to as paradigms or world views) that underlie researchers' work, and *method*, the specific practical procedures they use in collecting, analysing and interpreting data. This chapter deals with methodology in the broad sense outlined there.

As noted in Chapter 2, Section 2.5, there has been ongoing methodological rethinking and discussion in other comparative social science fields, such as in comparative education, law, politics, social policy, and comparative social research generally as well as in cross-cultural studies such as cross-cultural social work (Tran 2009), among many others. This chapter draws on methodological writings in these comparative fields, with emphasis on comparative politics and comparative education. In this I follow in the footsteps of Foskett (1977), who provided the LIS profession with an overview of comparative studies in other disciplines at a time when there was much new interest in comparative librarianship. Not all the considerations set out in these texts can be readily transposed to our field. It must be borne in mind that concepts and methodological practices differ widely between the social sciences, so that an attempt to synthesize methodological guidelines from the literature of a wide range of disciplines is a hazardous undertaking. Nevertheless, we have much to learn from other disciplines.

While sections 5.1 to 5.4 are of general import, the remaining sections of this chapter focuses on comparative librarianship. Much of what is said there will also be found relevant to non-comparative research in international librarianship or to research into library and information phenomena more generally in other countries.

5.2   Methodological decisions and metatheory

Pickard (2007, xvi) echoes a fairly common standpoint that there are only two basic methodologies: quantitative and qualitative. The choice between these two is the highest level methodological decision. However, in international comparative studies there are two further areas of decision making which in my view belong to methodology rather than to method as understood in the Iceberg Model. I therefore distinguish two further levels of decision making: comparative strategy (Section 5.7 below), and comparative research design (Section 5.8 below).

The metatheoretical assumptions discussed in the previous chapter have a strong influence on the first methodological choice, between quantitative and qualitative approaches. Quantitative methodology is usually associated with a positivist and post-positivist metatheoretical stance, and qualitative methodology with an interpretivist or allied metatheoretical stance (cf. Hantrais 2009, 57–59). These in turn affect decisions on comparative strategy and research design. Figure 5.1 depicts the relationship between the three main metatheoretical positions that were discussed in the previous chapter, and methodological choices in comparative studies.
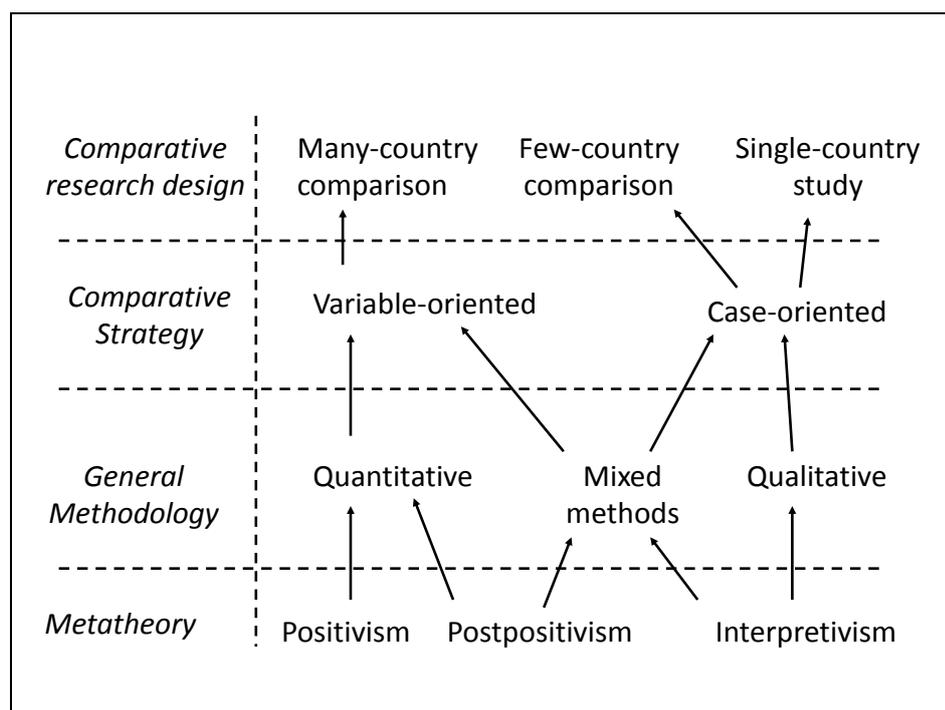
Figure 5.1: Relationship of comparative methodological choices to metatheory

To remain within the Iceberg Model (Chapter 4, section 2.4), the diagram should be read from the bottom (the metatheoretical level) upwards. I therefore start with the choice to be made between quantitative and qualitative approaches and the option of a mixed methods approach, before dealing with comparative strategy and research design.

5.3   Quantitative and qualitative methodologies

In most general social science research methods texts, including texts in LIS, the majority of chapters are devoted to quantitative methods, with the emphasis on the formulation of hypotheses, operationalization of concepts, measurement (a metaphor derived from the physical sciences), the development of instruments (a similar metaphor), the design of experiments or surveys, sampling, and the statistical testing of hypotheses. In such texts, quantitative methods are regarded as the standard or default approach. Often a single chapter is devoted to qualitative (also called naturalistic or ethnographic) methodology. We may find here that qualitative approaches are subsumed under a positivist methodology. This seems to be the case in the political science texts of Pennings, Kerman and Kleinnijenhuis (1999) and Landman (2008, 7). Landman considers what he calls "conceptual description" to be the first "objective" (where 'objective' refers to a step, activity or procedure) in a process leading to quantitatively conceived hypothesis testing and prediction. However, whereas in the past political scientists tended to see qualitative methodology as a last resort, only to be used when quantitative methods were not feasible, the distinctive advantages of qualitative methods are now increasingly appreciated (Mahoney 2007, 122). In comparative education positivism in-spired a drive for the use of educational data from a large number of countries, on the assumption that large-scale studies would be more 'scientifically' reliable. However, as a

counter-trend this period saw a move towards more interpretivist methodology, including phenomenology and ethnography, in comparative education (Hayhoe and Mundy 2008, 10–13). The trend towards more use of qualitative methodology is also visible in other social science disciplines

In their introduction to the *Handbook of qualitative research*, Denzin and Lincoln (1994, 3–4) offer the following definition of qualitative research:

> Qualitative research is an interdisciplinary, transdisciplinary, and sometimes counterdisciplinary field. It crosscuts the humanities and the social and physical sciences. Qualitative research is many things at the same time. It is multiparadigmatic in focus. Its practitioners are sensitive to the value of the multimethod approach. They are committed to the naturalistic perspective, and to the interpretive understanding of human experience. At the same time the field is inherently political and shaped by multiple ethical and political positions.

From the overview given by Denzin and Lincoln in their introduction, a picture emerges of an extremely diverse methodology with a confusing array of competing paradigms.

Many texts (e.g. Mouton and Marais 1990, 160–62; Creswell 2009, 12–17; Hantrais 2009, 98) present tables contrasting quantitative and qualitative methodology. It is hardly necessary to add to this discussion, but for the convenience of the reader, Table 5.1 summarizes some important characteristics. Terms used in the table and not encountered in Chapter 4, are explained in the course of this chapter.

Table 5.1: Characteristics of quantitative and qualitative methodology

Characteristic	Quantitative	Qualitative
Metatheory	Positivist, Postpositivist	Interpretivist
Nature of reality	Singular, stable, independent of observer; external reality	Multifarious, culturally determined, socially constructed; holistic reality,
Relation of investigator to what is studied	External, observing from the outside; in artificial setting	In the study setting, observing from within; in real-life setting
Relation to social phenomenon	Neutral Empirical	Engaged Normative
Research aim	Nomothetic; hypothesis testing; generalizing	Idiographic; hypothesis generating; contextualizing
Strategies	Structured; theory-derived variables identified beforehand; controls; operationalization & measurement	Unstructured; open-ended, theory developed during research; concepts that are rich in meaning
Typical methods	Experiments, surveys	Participant observation, case studies
Criteria for judging research	Validity & reliability; objectivity	Credibility, transferability, dependability; authenticity

There is a huge literature discussing the pros and cons of quantitative versus qualitative approaches. It is routinely dealt with in current social science research methodology texts. It is also reflected in debates among comparativists about the respective merits of large surveys

in many countries, in-depth comparisons of few countries, and single-country case studies – an issue to be discussed in later sections.

In this connection, it is worth noting the distinction that is made in psychology and various social sciences between *emic* and *etic* approaches.[1] An emic approach focuses on the unique issues and phenomena that are found within a single cultural or national group. It emphasizes the variations within groups. An etic approach emphasizes differences among groups. It "studies behavior, attitudes and social values based on the assumption that they are universal" (Tran 2009:7) and thus incurs the risk of imposing external concepts on the group being studied. On the other hand, the emic approach, taken to extremes, would make cross-cultural or cross-national comparisons impossible. Contrasts between emic and etic, relativist and universalist, interpretivist and positivist recur in the literature of comparative method, with emic, qualitative, relativist and interpretivist approaches, and etic, quantitative, universalist and positivist approaches respectively being frequently but not automatically associated (cf. Denzin and Lincoln 2005, 12; Olive 2014, 2–3).

An inspection of literature in comparative LIS suggests that it can be divided into six categories on the basis of two criteria: (1) whether the approach is *quantitative*, *qualitative* or *mixed methods*; and (2) whether this approach is adopted in a conscious, sophisticated and *premeditated* manner or in a *'common-sense'* (naive or unreflective) manner.[2]

Roughly two-thirds of the comparative studies in LIS are primarily of a qualitative nature, and by far the most of these are 'common-sense' descriptive or narrative accounts, without overt evidence of methodological reflection.[3] This genre goes back many decades, and includes some fine studies, many of which were mentioned in Chapter 2, e.g. Munthe (1939), Danton (1963), and Hassenforder (1967). As time passed, the scope of these comparisons became narrower, being restricted to particular library and information phenomena, such as aspects of LIS education (e.g. Akinyotu 2003; Raju and Arsenault 2007), national LIS policies school and children's library development (e.g. Knuth 1993, 1995, 1999), post-independence library development (e.g. Dean 1970; Maack 1982), disaster response (e.g. Baba 2007), and intellectual property (e.g. Fernandez-Molina and Chavez Guimarães 2010). These are just a few examples. Many of them include some statistical data (e.g. Danton 1963; Dean 1970).

By premeditated qualitative studies I mean studies in which qualitative methods were chosen consciously, as evidenced by discussion of naturalistic or ethnographic methods, grounded theory, and methods for the judicious analysis of qualitative data. True qualitative comparative studies are infrequent. Studies such as those of Dalbello (2008, 2009), Ignatow, Webb, Poulin, Parajuli, Fleming *et al.* (2012), Shachaf (2003), Armstrong, De Beer, Kawooya, Prabhala and Schonwetter (2010), Crews (2008) and Šauperl (2005) are exceptions in that they provide explicit rationales for, and descriptions of, the qualitative methods used.

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[1] It is helpful to remember that the word 'emic' derives from the linguistic term 'phonemic' and 'etic' from 'phonetic'. A phoneme is a speech sound which in a specific language distinguishes one word from another, as in 'got' and 'hot', the initial sounds of which are distinguished in English, but not in all languages. Phonetics is the study of speech sounds generally, not limited to any specific language. In the International Phonetic Alphabet (IPA) the same symbols are used for different languages.

[2] This analysis was carried out on a set of almost 200 articles, dissertations, books and book chapters purporting to be comparative studies or flagged as such in bibliographic databases, with emphasis on the period 2005-2012.

[3] This assessment may be a bit harsh. In LIS it is quite common for journal articles to be published without a rationale for or description of the methodology used. The absence of such rationale and description does not necessarily mean that authors did not reflect on their methodology.

Around one third of comparative studies are primarily quantitative in nature. The majority of these are of the common-sense variety, lacking an explicit rationale. In most cases they do not put forward and test formal hypotheses, but rely on the presentation and comparison of averages and percentages in tables and graphs, e.g. interesting studies by Lauer (1984), Afaq and Mahmood (2005), and Gallardo (2007). There appears to be increasing use of content analysis, particularly of web sites, as for example in Chatfield and Alhujran (2009) and Švencionyte (2005), and LIS school curricula, e.g. Gardijan, Moric, Pehar, and Jelusic (2009). The use of non-numeric data does not necessarily indicate a qualitative study, as data derived from such content analyses are frequently processed, analysed and reported in quantitative terms. Of course, quantification does not preclude insightful comparative discussion, for example in Hermelbracht, Decker and Cüster (2006), who used a scenario development technique and analysis of secondary sources to develop alternative future scenarios which library executives respondents in five countries were required to evaluate. Their results were presented mainly quantitatively, but with significant discussion.

Use of terms such as 'measurement' and 'instruments' usually signals a more rigorous, premeditated quantitative study. Such studies often test formal hypotheses using inferential statistical techniques. Examples are studies by Lau (1988, 1990), who used cluster analysis to examine the relationship between information development and social development; Tenopir, Wilson, Vakkari, Talja and King (2008), who studied the reading of electronic journal articles in three countries and applied statistical tests to differences between these countries; and Ignatow (2011), who used crisp set analysis to test hypotheses about the conditions under which public libraries are established in developing countries. Bibliometric studies can also be applied in comparative librarianship, for example Hua ([1997] 2008) and Onyancha (2009).

Somewhere between the two extremes of quantitative and qualitative comparisons is a study by Lauer (1984), who used published data from 14 European countries plus the USA and Canada, to explore why public libraries are used more heavily in some countries than in others. Lauer took the number of books loaned per inhabitant per year as his major dependent variable. A range of independent variables was considered. These included per capita Gross National Product (GNP), population density, percentage of the population employed in agriculture, length of the work week, amount of private book purchasing, newspaper circulation, expenditure on education, and the influence of religion (Protestants are thought to use libraries more heavily than Catholics). Several hypothesized independent variables proved difficult to measure, because good quality, comparable data were not available from all the countries studied. There was no attempt at statistical analysis, but interesting, potentially hypothesis-generating, insights emerged.

5.4   Mixed methods

Given the strong contrasts drawn in the literature between quantitative and qualitative approaches, it may come as a surprise to see them combined in what is known as 'mixed methods research'. Ngulube (2010, 254–55) usefully cited and reviewed a sample of definitions of mixed methods research, arriving at the following summary:

> The views of the scholars are converging on the fact that MMR involves collecting,
> analyzing, integrating and interpreting qualitative and quantitative data concurrently

or sequentially in a single study or in a series of studies investigating the same problem, irrespective of whichever research methodology is dominant, in order to exploit the benefits of combining them and to enhance the validity of the findings.

There has been a growing acceptance of 'methodological pluralism' in the social sciences generally and in comparative studies specifically. The use of mixed methods is now covered in many research methods texts (e.g. Mason 1996; Teddlie and Tashakkori 2003) and the topic has also been addressed in LIS (e.g. Creswell 2009; Pashaeizad 2009). Hantrais (2009, 109–13) dealt specifically with multiple methods in comparative social research, distinguishing between three approaches:

- Triangulation: two or more different research strategies are used to investigate the same phenomenon so that findings or insights from one strategy can be corroborated by the other(s); specifically, quantitative and qualitative approaches are used in parallel.
- Facilitation: more than one approach is used, but one of them is dominant and different techniques may be used sequentially (for example a qualitative study to generate hypotheses before a quantitative study is undertaken).
- Complementarity: different approaches are integrated rather than used in parallel or sequentially, as when researchers shift repeatedly from the one to the other.

Further types, based on their purpose, were identified by Greene, Caracelli and Graham (1989), who developed a conceptual framework in which five types were identified based on the purpose for which they were applied: triangulation, complementarity, development, initiation, and expansion. They recommended relevant research designs for each type.

Hantrais (2009, 59; 103-108) pointed out that the quantitative/qualitative divide may have been exaggerated and that for many researchers it is no longer so important. According to Aldrich (2014), the qualitative/quantitative dichotomy fails to account for the breadth of collection and analysis techniques currently in use, and perpetuates the belief that non-statistical approaches are less rigorous than statistical ones. Ngulube (2010, 252–53) asserted that the "paradigm wars" between the quantitative and qualitative camps have ended and that more "flexible and pragmatic" approaches are now in use in which quantitative and qualitative approaches are combined.

However, while the quantitative and qualitative methodologies can be complementary and while there are advantages to combining them, some authors point to a risk that the results will be irreconcilable. Guba and Lincoln (2005, 200), labelled as "purists" by Green, Caracelli and Graham (1989, 257), argued against what they call "accommodations", while Goertz and Mahoney (2012) have pointed to significant ontological and epistemological differences in qualitative and quantitative approaches to concepts and measurement. In general it seems that in most research one of the two approaches is dominant while the other is secondary and supplements it (Ragin 1987, 69–78). Mason (2006) has argued for a "qualitatively driven" approach to mixing methods, and for an approach which ultimately transcends the quantitative-qualitative divide. Problems can arise when mixed methods are used by researchers who are insufficiently aware of the metatheoretical implications of the methods they are using. Mason (1996, 79) advised that "a researcher must think strategically about the integration of multiple methods, rather than piecing them together in an *ad hoc* and

eclectic way." Therefore, researchers must be aware of the ontological, epistemological and other assumptions underlying their methodology.[4]

An implication of this is that the term 'mixed methods' should not be loosely applied to studies in which both quantitative and qualitative elements occur. As mentioned earlier, the use of non-numeric data such as text does not necessarily make a study a qualitative study. An example is a study by Galuzzi (2014), who carried out a comparative textual analysis of newspaper articles about current library issues. His data was qualitative in nature (text), but the data processing and analysis were essentially quantitative, the findings being presented primarily in the form of percentages, tables and graphs. No quantitative study can stand by itself without some qualitative background, usually in the literature review and problem statement, and often in the discussion of findings and conclusions. The presence of these elements does not make it a qualitative study or a mixed methods study. Conversely, the presence of numerical data, for example in sketching the background to an essentially qualitative study, does not make it a mixed methods study.

In current LIS research mixed methods are used quite widely, but often this seems to be done from a predominantly quantitative perspective. If under mixed methods we understand the thoughtful, premeditated use of both qualitative and quantitative methods, with some evidence of reflection on how and why they were used in combination, this leaves a relatively small number of studies in comparative LIS, for example the study by Henri, Hay and Oberg (2002) on the influences of school principals on school library effectiveness, and one by Luyt (2006) comparing the newspaper coverage of Internet access in public libraries in Canada and Singapore.

5.5   The comparative method

Historical development

The Biblical scholar comparing fragments of ancient papyri, the lepidopterist comparing a collected moth specimen with a field handbook, and the palaeontologist comparing growth rings of petrified trees to determine climatic conditions in the distant past, all illustrate the truth that comparison is fundamental to all scholarly and scientific activity, for identification, classification and establishing relationships. The comparative method is of venerable antiquity. Hayhoe and Mundy (2008, 2–3) traced the origins of comparative education to Plato's *The Republic*, Xenophon, and Cicero, while Macridis (1978, 18) identified Aristotle as the "first student of comparative politics". The origins of modern comparative science have been traced to the anatomical studies of Edward Tyson (1651-1708), who systematically catalogued the anatomical differences between humans and chimpanzees and described his findings in 1699, contributing to the establishment of comparative anatomy as a field of study and to the eventual development of the theory of evolution (Carpi and Egger 2008).

The introduction of the comparative method was a significant feature of the rise of modern empirical science and the emergence of academic disciplines. During the late 18th and 19th centuries the comparative method became the method of choice for generating and analysing

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[4] In comparative political science, Peter Hall (2003) has contributed a useful analysis of the relationship between ontology and methodology.

empirical data, especially in life sciences. The comparative method was soon adapted in the human sciences:

> …the project of establishing scholarly fields devoted to the comparative study of language, law, religion, political constitutions, and, eventually, education is one of the earliest and most prominent examples of the transference of a successful methodological approach from the natural sciences – particularly the life sciences – to the human and social sciences (Schriewer 2000, 308).

This led to the comparative study of fields such as languages, law, religion, political systems and education.[5] In fact, early comparative work was foundational in several disciplines such as the science of education. The seminal work on comparative education by Marc-Antoine Jullien (1817), which contained several hundred comparative questions, was also the first to introduce the concept of 'science of education' in France (Schriewer 2000, 308–9).

Also during the first half of the 19th Century, in 1843 John Stuart Mill ([1843] 1889) published his influential work, *A system of logic, ratiocinative and inductive*, setting out his "eliminative methods of induction", known today as the five methods of experimental inquiry (Mackie 2017). These methods historically laid the basis for the experimental method – a method which involves a great deal of comparison – as the primary method for establishing causation. Experimentation "…involves the controlled manipulation of the subject under study in an effort to isolate causal factors" (Landman 2008, 14). Simplistically stated, in an experiment, we seek to establish that a given factor (or independent variable), and no other, is the sole and necessary cause of an effect that is under investigation.[6] All other factors (confounding variables, or confounders) that could cause the effect, must be ruled out. The experimenter intervenes in this artificial situation by manipulating the independent variable and observing to see whether the expected effect occurs. Thus, observations or measurements before and after the intervention (pre-test and post-test) are compared. In a true experimental design, further control measures are introduced. Experimentation is therefore characterized by interventions, control, observation and before-after and between-group comparison.[7] However, in many situations it is not possible to intervene through manipulation and to exercise strict control over all the possible confounding variables. In research dealing with human subjects there may be ethical objections, or the phenomenon being observed may develop over a very long time-scale as in politics.

During the 19th Century the foundations of sociology and the social sciences were laid by pioneers such as Auguste Comte (1798-1857), Karl Marx (1818-1883), Herbert Spencer (1820-1903), Émile Durkheim (1858-1917) and Max Weber (1864-1920), who undertook pioneering comparative and historical studies encompassing sociology, economics, and political economy (Hantrais 2009, 24–25). Seeking to approximate the scientific method, pioneers in the social sciences saw comparative research as a suitable alternative to experimental research (Arnove, Kelly, and Altbach 1982, 35; Mabbett and Bolderson 1999;

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[5] Edwards (1970, 245–47) has outlined what is meant by 'comparative' in several of these fields, showing that 'comparison' may be understood differently, and function differently, in them.

[6] In some studies the effects of combinations of such factors are investigated.

[7] In a typical true experimental design, subjects are assigned to experimental and control groups randomly to ensure that they are equivalent, and in an elaborate design such as the Solomon four-group design there may be four such randomly assigned groups: two are given pre-tests and post-tests and two are given post-tests only, to ensure that the possible influence of the pre-test can be assessed. One of the two pre-test-only groups and one of the two pre-test-post-test groups are subjected to the intervention. Such an experiment includes a good deal of comparison, between pre-test-only and pre-test-post-test groups, before and after the intervention (cf. Connaway and Powell 2010, 198–99).

Hantrais 2009, 26). Since it is not possible to manipulate nations, societies or cultures and control the variables impacting on them as in an experiment, an alternative is to compare existing nations, societies and cultures, seeking cases where particular conditions exist or do not exist. Émile Durkheim expressed this as follows:

> We have only one way of demonstrating that one phenomenon is the cause of another. This is to compare the cases where they are both simultaneously present or absent, so as to discover whether the variations they display in these different combinations of circumstances provide evidence that one depends on the other. When the phenomenon can be artificially produced at will by the observer, the method is that of experimentation proper. When, on the other hand, the production of facts is something beyond our power to command, and we can only bring them together as they have been spontaneously produced, the method used is one of indirect experimentation, or the comparative method (Durkheim 1982, 147).

Such a situation could be likened to a 'natural experiment'. In recent years natural experiments have become quite popular in social science, but currently the term is used in a somewhat narrower sense to refer to research designs in which social or political processes create situations that approximate experiments.[8] An example is the use of a lottery to determine randomly which young men are drafted for military service and which are left to continue their careers uninterrupted (Dunning 2012, 8–9).

From an overview of approaches to comparative studies in a range of disciplines in the social and human sciences (Hantrais 2009, 22–44), it would seem that in the course of the 20th Century there was a general movement from humanistic and conceptual origins (including the use of typologies or ideal types for classification and explanation) towards a more pronounced positivist epistemological stance. As comparativists strove for academic and scientific respectability they increasingly adopted empiricist and quantitative approaches.[9] In comparative politics this is exemplified by the following definition:

> The comparative study of political institutions and systems... entails the comparison of variables against a background of uniformity, either actual or analytical, for the purpose of discovering causal factors that account for variations. More generally, it has a threefold function: (1) to explain such variables in the light of analytical schemes and to develop a body of verified knowledge; (2) to appraise policy measures and to identify problem areas and trends; (3) to reach a stage where prediction of the institutional trends or processes is possible (Macridis 1978:18 (1955).

This is a typical statement of the goals of explanation and prediction pursued by social scientists in emulation of their colleagues in the natural sciences, striving to contribute to knowledge by building a scientific edifice of general laws explaining social phenomena.

Comparative studies have reflected the paradigmatic shifts in the social sciences. During the 20th Century, under the influence of positivism, comparativists in the social sciences migrated from idiographic to nomothetic approaches and increasingly sought to emulate the research designs used in the natural sciences. More recently, there has been a shift back towards more

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[8] These are situations "…in which social and political processes, or clever research-design innovations, create situations that approximate true experiments. Here, we find observational settings in which causes are randomly, or as good as randomly, assigned among some set of units, such as individuals, towns, districts, or even countries. Simple comparisons across units exposed to the presence or the absence of a cause can then provide credible evidence for causal effects, because random or as-if assignment obviates confounding (Dunning 2012, 2–3).

[9] Hantrais (2009:44) cautions that the pattern of epistemological preferences was by no means uniform. There was considerable variation among the disciplines, the boundaries of which were in any case in a state of flux.

idiographic approaches. Thus, in comparative studies, efforts to establish causation shifted from in-depth comparisons of small numbers of countries to statistical studies of large numbers of countries, and, more recently, back again. For example, in modern comparative politics a "comparative method" using studies of small numbers of countries and based on Mills' methods of agreement and difference, came into its own in the 1960s and 1970s. These comparisons entailed in-depth studies of the selected countries. Because of the limitations of such studies, comparativists turned to comparisons of many countries using statistical techniques such as regression analysis to explore relationships among variables. However, as recognition grew that these procedures entail arguably untenable assumptions about the nature of the causal relations being examined, there has been renewed interest in more sophisticated methods for comparing small numbers of countries (Hall 2003, 376–83). With the qualitative turn of the late 20th Century, in comparative politics studies of small numbers of countries were no longer necessarily seen as a last resort when studies of many countries were not feasible, but as a strategy in its own right, and one which could be combined with others (Mahoney 2007, 122)

Is there such a thing as "the comparative method"?

There is little agreement in the social sciences today on whether the comparative method as applied in a given discipline should be considered a distinct subfield and an area of content (as suggested by terms such as 'comparative education' or 'comparative politics') or as a methodology – or even, whether there is such a thing as *the* 'comparative method'.[10] In an influential article on comparative politics, Lijphart (1971, 682), a political scientist, situated the comparative method as a basic method in its own right, alongside the experimental, statistical and case study methods. Farrell (1979, 4), an scholar in comparative education, stated his point of departure that "there is no such thing as comparative methodology. There are comparative data, to which a variety of analytical tools may be applied, the whole enterprise being constrained by the requirements of the scientific method". Øyen (1990, 4–6) pointed out that social research is essentially comparative in that it implies implicit and explicit comparisons, and posed the question, "whether comparisons across national boundaries represent a new or different set of theoretical, methodological, and epistemological challenges, or whether this kind of research can be treated just as another variant of comparative problems already embedded in sociological research." (p.4). Different groups of sociologists answer this question differently: "purists" believe that there is no difference between cross-national and any other kinds of studies; "ignorants" give no thought to the possibility that comparison across national borders may add to the complexity of interpreting their results; "totalists" are aware of the problems and complexities but push on regardless, unwilling to get bogged down by intractable problems; finally, "comparativists"[11] recognize the problems and insist that it is necessary to address the distinctive characteristics and challenges of cross-national research (pp.5-6).

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[10] Many comparative methodology texts present at least a brief discussion of this issue (e.g. Kennett and Yeates 2001, 41–43; Pennings, Keman, and Kleinnijenhuis 1999, 21–26; Hantrais 2009, 5–9). Kelly, Altbach and Arnove (1982, 511–15) discussed in some detail the question whether comparative education is a method or an area of content.

[11] I use the term 'comparativist' generally to refer to scholars undertaking cross-national, cross-cultural and cross-societal comparative studies, not in the narrower sense in which it used here by Øyen.

Sartori (1991, 243), a political scientist, stated categorically that comparative politics is a "field characterized by a method". However, this did not end the disagreement as to the status of the comparative method. More recently, Mabbett and Bolderson (1999, 34) stated that

> …many of the issues surrounding the theories and methods in comparative work are not exclusive to cross-national studies... There is no distinct social science 'cross-national method' although such research highlights some of the issues in making scientific as opposed to impressionistic comparisons.

I note in passing that the idea that comparative social science is no different from any other form of social science and that it does not have any unique methodological issues, is attractive from a positivist perspective because it suggests that all social sciences use basically the same methods and because it underlines the 'scientific' nature of comparative social science (cf. Ragin 1987, 2).

The significance of "large macrosocial units"

Ragin (1987, 1–6) pointed to significant differences between the orientations of most comparativists and most 'noncomparativists'. These differences have methodological implications. The distinctive orientation of comparative social science is that it is concerned with what he called "large macrosocial units", a term he used to refer to countries, nations and other larger political entities. Although all social scientists claim to study societies or things that happen in society, most do not feel the need to define the macrosocial units within which their research is conducted and they are not much concerned with the properties of these units. They can take their existence for granted. This is different for comparativists, because they compare macrosocial units as such:

> At a very general level, comparativists are interested in identifying the similarities and differences among macrosocial units. This knowledge provides the key to understanding, explaining and interpreting diverse historical outcomes and processes and their significance for current institutional arrangements. Cross-societal similarities and differences... constitute the most significant feature of the social landscape, and, consequently, these researchers have an unmistakable preference for explanations that cite macrosocial phenomena... Most comparativists... are interested in the cases themselves, their different historical experiences in particular, not simply in relations between variables characterizing broad categories of cases (Ragin 1987, 6).

Similarly, Pennings *et al*. (1999, 50) argued that comparisons are made across political and social systems that are defined in relation to territorial space. Arnove *et al*. (1982, 2) discussed disagreement in comparative education on whether sub-units of national systems can be utilized as units of comparison in addition to the national systems themselves, and whether these can be compared at different points in time. There are advantages and disadvantages to selecting countries as 'comparators' (the units being compared). One disadvantage is that sometimes within-country differences are obscured, since in some national units, e.g. post-unification Germany, internal diversity may be greater than the diversity observed when comparing countries with one another, e.g. Germany with other EU countries (Hantrais 2009, 54). Snyder (2001) discussed the benefits of "scaling down" and comparing "subnational units". Teune (1990, 50–51) has pointed out how the relative significance for purposes of comparative analysis of countries, regions and cities has shifted over time. Lijphart (1975, 166–67) critically discussed the issue of "whole-nation bias" and

the arguments for and against the focus on countries. A wide-ranging and conceptually rich discussion of the concept 'nation' is found in Galtung (1982). In their work on the impact of national cultures on organizations, Hofstede, Hofstede and Minkov (2010, 20–22) also discussed the distinction between states, nations and societies and pointed out that in research on cultural differences it is far easier to obtain data on nations than on societies. Hence using nations is a matter of expediency, but this should be done circumspectly. In comparative education the assumption, called "methodological nationalism", that "nation-states and their boundaries are the 'natural' containers of societies and hence the appropriate unit of analysis for social sciences" has been problematized by Dale (2005, 124–28). Methodological nationalism was discussed in Chapter 2, section 2.9.

In this chapter I follow the approach that emphasizes comparisons between territorially distinct macrosocial units, i.e. international (or cross-national)[12] comparisons. However, much of the discussion is also relevant to comparisons of cultural, societal or linguistic groups that are distributed within or across countries. I further adopt the perspective that comparative studies are sufficiently distinct to justify considering the comparative method at the level of methodology as defined in Chapter 4.

5.6   Theory and mechanics of comparison

Comparison is an essential element of daily life. In every conscious moment we compare what we perceive around us. Objects perceived through visual, auditory, olfactory, tactile and other senses are compared with one another, with past experiences and with generalized or imaginary experiences.

> Thinking without comparisons is unthinkable. And, in the absence of comparisons, so is all scientific thought and all scientific research, No one should be surprised that comparisons, implicit and explicit, pervade the work of social scientists… (Swanson 1973, 145)

But what happens when we compare? The nature of comparison has been the subject of study by philosophers and psychologists. Philosophers such as Hume and Locke discussed comparison as an operation of the mind, in which differences and agreement (similarity) are discovered. Some philosophers went further to propose that comparison is goal-directed: comparisons serve practical ends and only those differences and similarities which are relevant to a particular decision or problem are considered while the others are ignored. Generally, philosophers were interested in what happens in the mind when we apprehend or discern similarities or differences, or when we assign objects to classes and form types in typologies. Psychologists, on the other hand, were more interested in the relation between the strength of physical stimuli and the intensity of perceived sensations and in quantifying these differences by means of scales and other measuring instruments. They saw comparison not as a "deliberative act, but as an attribute of behavior" (R. Edwards 1970, 242–45). This, of course, was written when behaviourism was the dominant paradigm in psychology.

Fundamental questions about what happens when we compare objects A and B concern processes of abstraction and concept formation. One such question is how we decide what

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[12] For a discussion of the terms 'international', 'cross-national', etc. see Chapter 2, section 2.9. It would seem that an 'international comparison' may imply a comparison of two or more countries, and a 'cross-national comparison' a comparison of entities in two or more countries, and not the countries as such. However, these terms are not used consistently across disciplines and are treated here as more or less synonymous.

warrants our attention. If a standard or a set of criteria for comparison is applied, how is it arrived at? Is this simply a checklist listing which of the attributes of A and B are to be attended to? Or is it a hypothesis? Do we come to the comparison with an *a priori* list, or is it developed *a posteriori* following inspection of A and B? In other words, to what extent is the comparison theory-driven in the sense that it is determined by a conceptual framework? This question arises in early texts in comparative education and comparative librarianship. Here it worth looking at the method proposed by George Z.F. Bereday (1964), whose book, *Comparative method in education*, was frequently cited by comparativists in LIS. In his book Bereday set out a four-step method for a comparative study:

> First description, the systematic collection of pedagogical information in one country, then interpretation, the analysis in terms of social sciences, then juxtaposition, a simultaneous review of several systems to determine the framework in which to compare them, and finally comparison, first of select problems and then of the total relevance of education in several countries (Bereday 1964, 27–28).

The four-step method was depicted by a diagram reproduced here as Figure 5.2, and illustrated by a worked example in which Bereday compared educational reform in France and Turkey (1964, chap. 2).

Fig 5.2
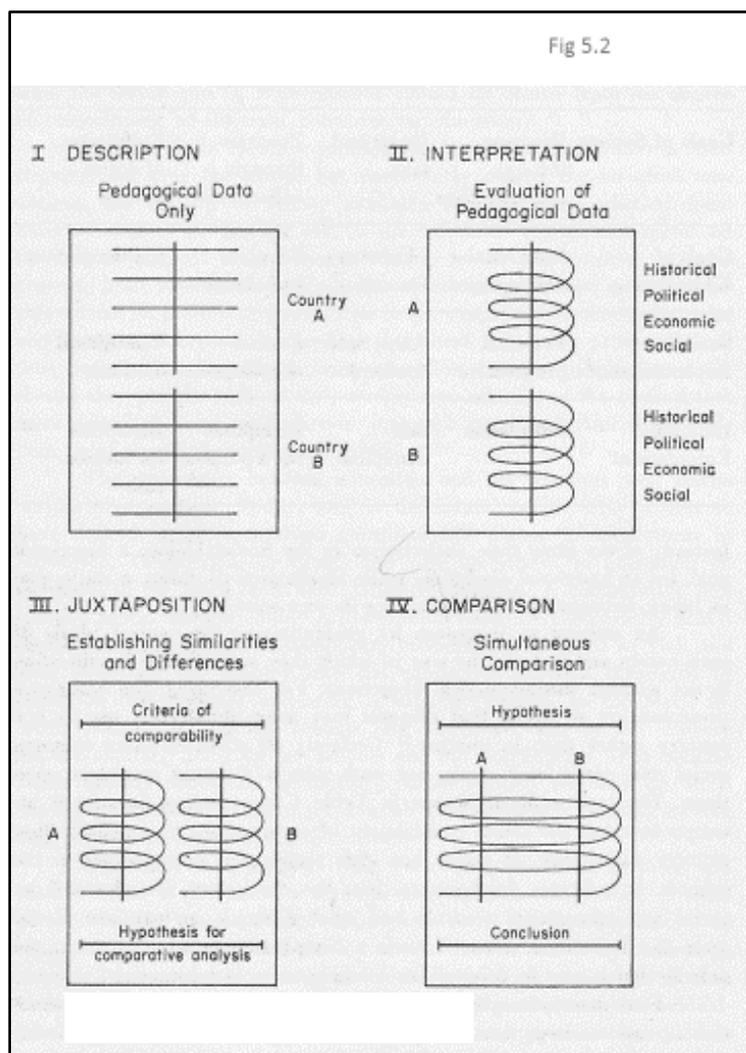
Figure 5.2: Bereday's four-step method
(Source: Bereday 1964, Figure 3, 23) <<COPYRIGHT clearance needed>>

The first two steps, description and interpretation, are carried out separately for each country. *Description* should be based on systematic data gathering, carried out following "carefully thought out and matched plans of research", and data should be presented as far as possible in tabular form, tables being "constructed according to preconceived analytical categories" rather than the exhaustive checklists used by earlier comparativists (Bereday 1964, 17). This suggests a process which, at least to some degree, is guided by a conceptual framework.

In the *interpretation* step the collected data has to be interpreted "in terms of other social sciences" (p.19) such as sociology, anthropology and political science, and other scientific disciplines, among which Bereday counted philosophy, psychology, [natural] science, history and economics (p.20).

In the last two steps, juxtaposition and comparison, we arrive at comparative education proper. While in the first two steps, the countries being compared are treated sequentially, one after the other, in the last two steps they are dealt with side by side or tabulated under a set of rubrics following the sequence: Theme 1, Country A, Country B; Theme 2, Country A, Country B; Theme 3… Bereday paid much attention to the structure of the comparative process, to the extent that both his description of the procedure and his illustrative examples appear excessively mechanical. In this respect, he was followed in the work of Krzys and Litton, referred to in Chapter 2. These authors followed Bereday's procedure very closely and described a systematic process which entailed a great deal of awkward repetition (Krzys and Litton 1983, 37–41). The mechanistic approach is also seen in the worked examples devised by Simsova (1982), who had also been much influenced by Bereday, in her *Primer of comparative librarianship*.

Juxtaposition was described by Bereday as "a preliminary confrontation of data from different countries... done for the purpose of establishing the *tertium comparationis*, the criterion upon which a valid comparison can be made and the hypothesis for which it is to be made" (Bereday 1964, 9–10).[13] As discussed by Marín Ibáñez (1988) the term *tertium comparationis* has been used in different ways in comparative education, and it is unclear whether it is an *a priori* or *a posteriori* criterion, a set of criteria, or a check list of elements to be compared. Raivola (1986, 270) interpreted Bereday's *tertium comparationis* as an *a posteriori* theory, and objected that "theory and hypotheses are what form the comparative dimension in comparative research, not the raw material itself." In Raivola's view similarity and difference depend on the relationship between the observer and the data, and therefore we cannot expect that some "comparison dimensions will emerge from [the data] automatically."

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[13] *Tertium comparationis*, Latin for the third [part] of the comparison; in rhetoric it refers to that element that two things being compared have in common. It is commonly found in metaphors and similes. For example, in the expression 'information explosion' what information and an explosion have in common (the *tertium comparationis*) is a rapid and uncontrollable expansion. (See Wikipedia, "Tertium comparationis", https://en.wikipedia.org/wiki/Tertium_comparationis, accessed 2017-03-30.) Bereday's use of this term is confusing. He appears to use it to refer both to his proposed hypothesis and to the criterion for comparison. For a study to be comparative, Bereday required it to be "prefaced by a defining statement under which the material is to be compared" (p.22). This defining statement was also referred to as a "theme", and it was said to be "summed up in a hypothesis stating the gist of the comparative analysis that is to be finally undertaken (p.22)". Thus, the hypothesis appears to be arrived at inductively from the juxtaposition of the data (p.42).

Farrell (1979, 11–12) also criticized Bereday's assertions regarding juxtaposition. He commented that similarity is not

> …a sort of preordained or inherent characteristic, which is somehow obvious to the discerning observer. This is simply not true. Similarity is not something which inheres in the data. It is a characteristic of the relationship between the observer and the data, and depends upon the conceptual structures within the mind of the observer.

The final step is comparison, described by Bereday as "a simultaneous analysis of education across national frontiers" (p.10). It is guided by the hypothesis that was formulated in the previous step. Bereday was rather vague on what comparison entails:

> …the comparison entails a simultaneous treatment of several and all countries studied to prove the hypothesis derived from the juxtaposition. A comparison is in a final analysis an ordering process; it means not *laying out* but *highlighting* educational materials previously processed (p.22). [Bereday's italics]

Typically, Bereday paid more attention to the presentation of the results than to the mental process that is involved. He proposed a "system of continued alternation" in which the countries must be dealt with simultaneously, so that "[a] reference to one country must elicit an instantaneous comparison to the other" (p.46). Underlying this insistence is the principle that simply describing educational phenomena in a number of countries sequentially does not constitute true comparative education. Inspection of his illustrative examples show that the comparison step is concerned with pointing out similarities and differences between the countries, and explaining them in terms of the contextual (social sciences) factors identified in the second step.

Early authors in comparative librarianship (e.g. Danton 1973; Krzys 1974; Simsova and MacKee 1975; Simsova 1982; Krzys and Litton 1983) were at pains to emphasize that simply studying two or more cases is not enough. For true comparative research, we need to go beyond parallel studies and the juxtaposition of results. The researcher has to proceed to the identification and analysis of observed similarities and differences, and thence to their explanation in terms of contextual factors and relevant theory. Only if this stage is reached can the study hope to contribute to the development of theory, the aim being to formulate "theories or laws of librarianship" (Krzys and Litton 1983, 37–41).

More recently, Phillips (2006, 289–91) updated Bereday's model of comparative inquiry, emphasizing the role of context and historical background. His scheme of comparative inquiry is reproduced in Figure 5.3.
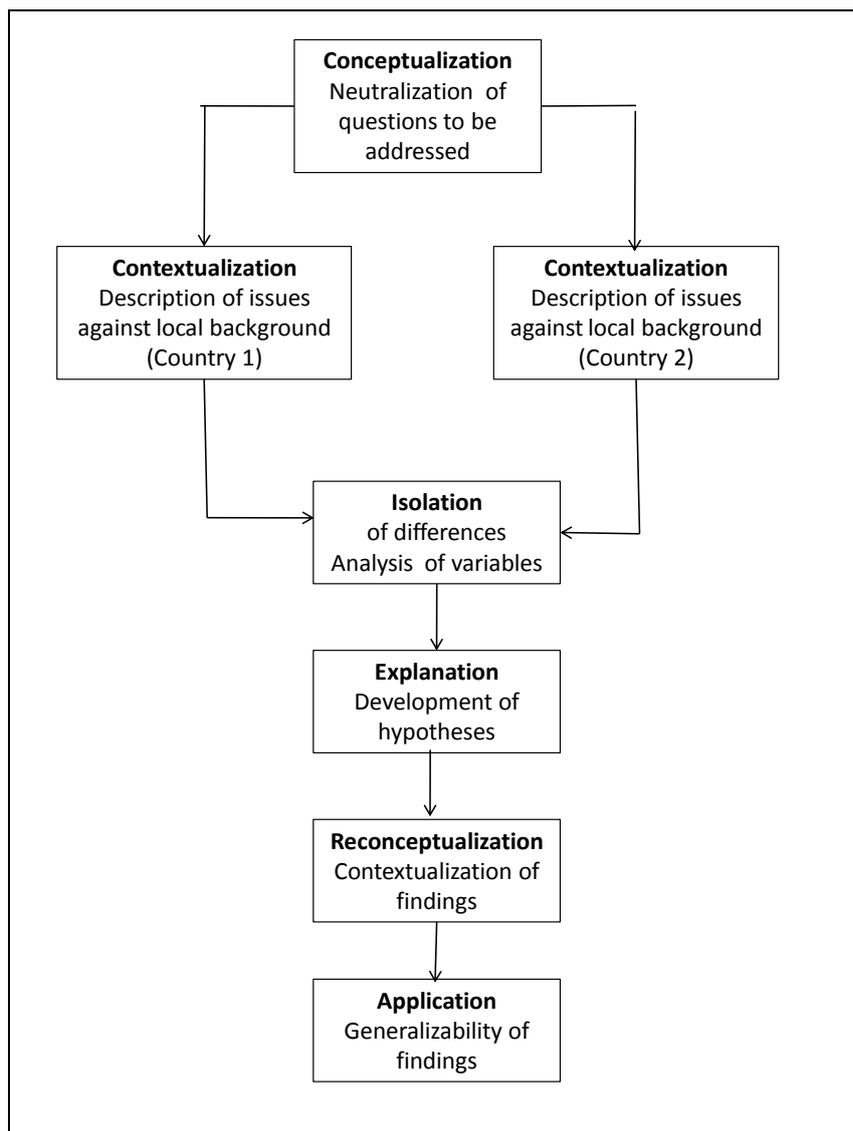
Figure 5.3: Phillips' Structure for comparative inquiry
Source: Phillips (2006, Figure 16.5, 290) <<COPYRIGHT clearance needed>>

The scheme starts with the conceptualization of the issues to be addressed, but (as implied by the term "neutralization") in general terms, not in a specific context. The issues are then analysed in depth in their respective contexts (historical, political, economic and social), as in Bereday. This is done for the countries in parallel. Differences and the variables that might account for them can then be identified. This is followed by an attempt to explain the differences against the background of their contexts, and hypotheses are developed. The original issues are then re-conceptualized and an attempt is made to determine whether the analysis has yielded any features that are of more general applicability.

In Phillips' scheme the conceptualization that precedes the juxtaposition of data goes some way towards addressing Raivola's objections. The emphasis placed on historical context is also noteworthy. There are many ways to schematize the comparative process. It is not necessary to follow a rigid procedure. The key points are that the phenomena or issues of interest (in our case, library phenomena) need to be considered in their contexts and that these contextualized phenomena should be subjected to systematic comparative analysis in order to

identify similarities and differences for which the comparativist attempts to provide explanations.

In LIS, the vast majority of studies in which data from more than one country are presented are not comparative. Tables are presented in which data from different countries are juxtaposed (put side by side) so that it can be seen that in some countries libraries are more numerous, larger, better-equipped, better staffed, etc., than in others, or in which differences between countries in regard to such matters as usage, attitudes of users, staff characteristics, leadership styles, information literacy, websites, cataloguing policies, etc., are evident. These are enumerative and/or descriptive reports on international surveys. But in most cases they do not take the next step in the process of comparison, which is systematically to compare the data in relation to the historical, political, socio-economic, cultural or other context of the countries concerned. This is the contextualization step, the penultimate step depicted in Phillips' diagram.

From the extensive literature on the comparative method it becomes clear that the method has been seen quite differently in the various disciplines and at different periods. A general observation by Mills, van de Bunt and de Bruijn (2006, 621) in which they contrast the search for similarity with the search for variability, is worth noting:

> The underlying goal of comparative analysis is to search for similarity and variance. Those searching for similarity… often apply a more general theory and search for universals or underlying general processes across different contexts. The ontology of social patterns is often assumed as universal and independent from time and space. …comparative research is used to separate patterns that are more general and isolate regularities from the context-laden environment. Following Weber's comparative sociology, the search for variance places more emphasis on context and difference in order to understand specificities. Comparisons not only uncover differences between social entities, but reveal unique aspects of a particular entity that would be virtually impossible to detect otherwise.

This is relevant to decisions on comparative strategy and comparative research design which are dealt with in Section 5.8 and 5.9 below. First, however, we need to clarify the terminology that will be used there.

5.7   Terminology

Before we look more closely at comparative strategy and research design, it is helpful to clarify some key terms. In this section I use the terminology commonly followed in quantitative research, where comparative politics and comparative social policy provide useful examples. The reader is warned that basic terms such as 'case', 'level of analysis' and 'unit of analysis' may not be understood in the same way in every discipline, or even within the same discipline, and at different periods. Nevertheless, for the purpose of this chapter, a number of terms are defined and illustrated here.

A data matrix

A useful way to start is to consider a data matrix as depicted in Table 5.2:

Table 5.2: Data matrix for six public libraries (hypothetical data)

		Variables				
		A: Population served	B: Number of registered users	C: Number of books in stock	D: Number of loans per year	E: Type of governing authority
Cases	Library 1	8,100	5,887	17,600	33,245	Village board
	Library 2	18,700	12,465	31,900	68,432	Municipal council
	Library 3	4,100	2,345	8,600	13,911	Village board
	Library 4	23,100	9,855	38,100	71,313	County council
	Library 5	14,700	8,288	25,500	68,113	Municipal council
	Library 6	7,500	3,853	12,250	23,911	Village board

Table 5.2 presents a data matrix containing a set of data on six public libraries. Libraries constitute the *unit of analysis*.[14] The unit of analysis is the category or type of entity that is being studied, about which, ultimately, we want to make statements or conclusions. In this case the researcher will want to make summary or comparative statements about the libraries (Mouton 1996, 92). Each library constitutes a *case*, also referred to as an 'observation'. In this table, each case occupies a row. The number of cases is often abbreviated using the capital letter N.[15] Here N=6. For each library five categories of information have been collected. These categories are the *variables*, sometimes referred to as 'units of variation'. Each variable occupies a column. The number of variables is sometimes abbreviated using the capital letter K. Here K=5. At the intersection of a case and a variable we find a data *value* (or 'data point').[16] Hence for Library 3 the value for the number of registered users (Variable B), namely 2,345, is found at cell B3. This data matrix has 6x5=30 data values. All this will be familiar to users of Excel and statistical analysis software. Note that there are sometimes missing values, and that values are not necessarily numeric, as illustrated by the nominal level variable in column E. Variables may be at different levels (or scales) of measurement (nominal, ordinal, interval and ratio), as routinely described in most LIS methodology texts, e.g. Connaway and Powell (2010, 65–66).

Mouton (1996, 92) emphasized that it is necessary to distinguish between the unit of analysis and the data sources. In a comparative study these are not necessarily the same. For example, in a comparative study of cataloguing practice in different countries, the researcher might interview cataloguers or question them by means of self-administered questionnaires, inspect national cataloguing codes, and draw samples of entries from library catalogues.

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[14] 'Unit of analysis' is a label for all the cases, hence used here in the singular. In the literature the term 'unit of analysis' may be used quite differently. Writing about a comparative education study of how school systems deal with ethnic minorities in situations of majority-minority conflict, Wirt (1980, 177–80) identified three "units of analysis", the level of government, the ethnic group, and government education policy. Using the terminology set out in this book, these would be called variables. The purpose of this comment is not to argue that Wirt was wrong, but to illustrate that the consumer of research should be aware of possible misunderstandings arising from differences in terminology.

[15] Conventionally upper-case N is used to designate the number of cases in a population. Lower-case n designates the number of cases in a sample.

[16] Landman (2008, 18–19) uses the term 'observations' for what I refer to as 'values'.

Levels of analysis

As has been argued in Chapter 2 above, in comparative librarianship we usually compare macrosocial units such as countries, societies or cultures. Bray and Thomas (1995, 471–73) identified seven levels of the geographic or locational dimension of comparative education: world regions or continents, countries, states/provinces, districts, schools, classrooms and individuals. In comparative studies, any phenomenon can be studied at various *levels of analysis*. For example, if information literacy education is studied, we could investigate aspects of such education at the level of countries, provinces, school districts, or individual schools, classes, teachers or students. At each level of analysis, different *units of analysis* might be appropriate. Table 5.3 lists some levels of analysis with a selection of appropriate units of analysis for a hypothetical study of education for information literacy.

Table 5.3: Levels and units of analysis in a study of information literacy education

Levels of analysis	Units of analysis
Country	Countrywide policies, curricula, syllabi, materials, standards; total resources; aggregate student performance measures; international rankings
Province, School District	Provincial or district-wide policies, curricula, syllabi, materials, standards; total resources; aggregate student performance measures; national rankings
School	Classes in which instruction is given; number of hours of instruction; number of teachers certified to give instruction; types of materials used; aggregate student performance measures; provincial or district rankings
Student	Class in which enrolled, number of hours of instruction received; performance on tests

Note that a picture at a higher level of analysis may be built up by aggregating data from a lower level. For example, the test scores of all the individual students in Grade 5 may be summarized using measures of central tendency (mean, median, etc.) and dispersion (range, standard deviation, etc.) by class, school, school district, province or country. At each higher level, we get further from the nitty-gritty detail and some information is sacrificed for the bigger picture. In the social sciences a distinction is to be made between *individual data* (data about individuals) and *ecological data* (or aggregated data), where data has been aggregated in larger units at higher levels of analysis, such as, in the above case, schools, districts, countries, etc. (cf. Landman 2008, 43). In multilevel studies researchers utilize data from different levels of analysis, which may have been acquired using different methods, to yield a richer, more complex understanding of the phenomenon.

However, confusion about levels of analysis can lead to *aggregate fallacies* or 'wrong level' fallacies, which result from making inferences about units of analysis at one level based on observations of units of analysis at another level (Hantrais 2009, 55). This can happen in particular when data are collected about individual persons and about territorial units such as countries. There are two kinds of aggregate fallacy. The *ecological fallacy* occurs when we make inferences about individuals on the basis of data about larger units. To take a trivial example, the ecological fallacy would occur when we infer that Jessica, a student at Central High, has a low level of information literacy skills because the mean score on an information

literacy test of students in her school's school district is below the mean for her district or province. This is a trivial example, but more seriously, this kind of reasoning is behind much unwarranted generalization and prejudice. In statistical studies the ecological fallacy may occur when variables measured at different levels of analysis are correlated. For example, in an international study of the relationship between the state of school libraries and students' ability to read, we might try to relate the performance of individual students on a reading assessment test (individual data) in each country to the percentage of schools in that country that have a school library (ecological data). Such a correlation must be regarded with caution.

The opposite of the ecological fallacy is called the *individualistic fallacy*, also called the 'exception fallacy'. Here individual level data are used for drawing inferences about phenomena at the aggregate level. For example, it would be inappropriate to arrive at conclusions about the school district's policies on teaching information literacy simply on the basis of test scores from Jessica's class at Central High. Further examples are found in comparative social sciences texts, such as Landman (2008, 43) and Hantrais (2009, 55).

In comparative studies it is particularly important to be clear about the levels and units of analysis. As shown above, these may, but do not necessarily have to, coincide. In a comparative study of public libraries in different countries, we could use data collected at various levels:

- Individual library users (e.g. their attitudes to libraries, frequency of use, number of books borrowed per year)
- Individual librarians (qualifications, salaries, length of service, etc.)
- Individual libraries (population served, number of registered users, etc.)
- Library consortia or districts (number of libraries, holdings in union catalogue, volume of resource sharing, management software used, etc.)
- Countries (total population and area, number of libraries, total registered users in all the libraries, national library legislation and policies, etc.)

Table 5.4 illustrates that data collected at more than one level can be used in a comparison of countries.

Table 5.4: Data matrix for six countries (hypothetical data)

		Variables			
		A: Population x 1,000,000	B: Number of public libraries	C: Number of books in public libraries x 1,000,000	D: Number of loans p.a. by public libraries x 1,000,000
Countries	Country 1	12.4	687	27.2	89.8
	Country 2	53.5	865	32.6	108.4
	Country 3	2.8	17	0.1	0.1
	Country 4	14.1	858	32.5	103.7
	Country 5	87.1	2282	150.5	312.8
	Country 6	8.6	113	2.8	3.9

Table 5.4 presents data about the libraries in each country. Here the cases are countries, and for each country only one data value is given for each variable. Note that the level of analysis in Table 5.4, where countries are compared, is different from that in Table 5.2, where libraries are compared. In Table 5.4 column A presents census data for each of the countries, while the data in column B represent a simple count of the number of libraries in each country. These are country-level data. The data in columns C and D are aggregated data based on statistics that would have been kept in each individual library and would have been reported in surveys or statistical returns to yield the information depicted for one country in Table 5.2. (To compile Table 5.4 the researcher would need an equivalent of Table 5.2 for each country.) Note that the detail (data for individual libraries) that is provided in Table 5.2 is lost here.

In comparative librarianship most comparisons do not cover a country as a whole, but focus on a particular aspect, which might very specific, for example, a comparison of the contents and usability of university websites in two countries (Sapa 2005), a comparison of the information provided about copyright on a sample of library websites in a number of countries (Shachaf and Rubenstein 2007; Wang and Yang 2015) or staffing of academic libraries in two countries (Shen 2006). In all these studies the unit of analysis was libraries, and data collected about them were aggregated and summarized so that comparisons at country level among the respective countries could be presented. In such a comparison, conceptually speaking there is a data matrix similar to that in Table 5.2 for each of the countries. This is illustrated in Table 5.5.

Table 5.5: Comparison of two countries

Table 5.5

In a comparison of this nature the two countries may be referred to as *cases* or 'comparators' (Hantrais 2009, 49). *Comparators* is a useful umbrella term to cover not only countries but also other large macrosocial units such as cultures and societies. I avoid using 'cases' to refer to countries, reserving it rather to refer to the units of analysis at lower levels, such as, in this case, the libraries. A distinction should be made between cases and comparators. In the example depicted in Table 5.5 each country has seven cases.[17] Is N=2 or N=14? Opinions differ on this point. Some authorities use N to refer to the number of countries (so that here N=2), thus they use the term 'small-N' studies to refer to studies of a small number of countries and 'large-N' studies to refer to studies covering many countries. These expressions are frequently seen in the literature. Others, e.g. Landman (2008) and Gerring (2007) use N to refer to the number of cases (so that here N=14). Differences in the terminology used by various writers can lead to confusion. Pennings, Keman and Kleinnijenhuis (1999, 10–11) discussed this problem and concluded that usage depends on the research question. If the research question concerns:

- an international comparison (comparison of countries), N refers to the number of comparators (countries) included. (In Table 5.4: N=6);
- a cross-national comparison (where in each country a number of units such as libraries or library systems might be studied and where the resulting comparison would mainly refer to these units), N refers to the number of cases. (In Table 5.5 N=14); or
- a comparison of change over time, where data for each country are reported at more than one point in time, then the number of cases is equal to number of time-units for

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[17] Comparisons are not necessarily so symmetrical. Often the number of units of analysis will not be the same for all the countries.

all the countries, e.g. two countries each at four points in time equals eight cases; and one country at two points in time and another at three points in time equals five cases.

The upshot is that, in reading comparative methodology texts or evaluating comparative studies, one should be aware that comparativists do not always agree on terminology. This is because comparative research is done in many different disciplines.

5.8   Comparative strategy

One of the most prominent issues discussed in comparative methodology texts in the social sciences is the question of how many cases (where cases refer mostly to countries) should be studied. In fact, the distinction between studies with many countries (large-N studies) and those with few countries (small-N studies) has given rise to a major typological division of comparative social science research. For example, Lijphart (1971, 683–84) distinguished between the statistical, comparative and case study methods. By the latter Lijphart meant single case studies. By the "statistical" method he meant quantitative comparative research using many cases and large amounts of data. He reserved the term 'comparative' for small-N comparisons. For Lijphart the crucial difference between the statistical method and the comparative method was that the latter uses fewer cases – too few for the statistical control that can be exercised in the analysis of survey data. His point of departure is essentially positivistic. It accepts the experimental method as the norm which other methods try to approximate. Similarly, Landman (2008, 26) adopted a three-part division of comparative studies into "comparing many countries, comparing few countries, and single-country studies".

How many countries?

Generally, a study of a single country can be very intensive and conducted in considerable detail, but the more countries there are, the less feasible it is to study each one intensively. This is illustrated in Figure 5.4, in which I have used Landman's (2008, 26) categories for the number of countries dealt with.
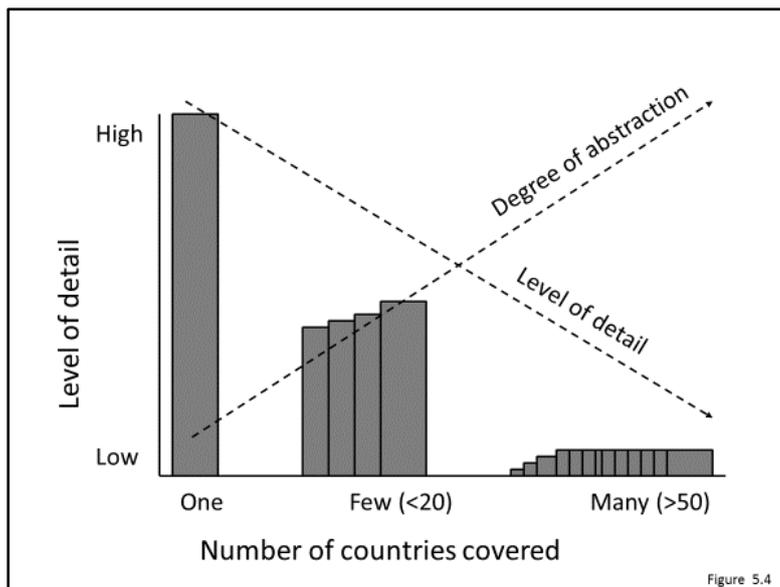
Figure 5.4: Number of countries studied: level of detail and degree of abstraction

Figure 5.4 suggest that comparative studies lie on a continuum and that the major differences between studies at the two ends lie in the number of countries covered and the degree of detail provided about each. Landman (2008, 26) indicated that the continuum can also be looked at from another angle: the level of abstraction. The more countries are included in the study, the higher the level of abstraction. Abstraction here refers to the concepts used. This issue will be dealt with in Chapter 6. Nevertheless, Landman (2008) insisted that all comparative studies (regardless of the number of cases) are "grounded in one logic of inference" (2008, 45), which is part of a program of hypothesis testing (2008, 7; 9), theory building and prediction. If this implies that there is a single ontological and epistemological basis for all comparative research, such a view appears to be an over-simplification. Advocates of qualitative research take a quite different view of small-N studies, arguing that they have distinct advantages (Mahoney 2007). The number of countries to be compared are a key element of comparative research design and will be discussed in Section 5.8. The choice is not purely a matter of feasibility. Underlying the choice between small-N and large-N studies, are strategic considerations.

Variable-oriented vs. case-oriented strategies

Ragin (1987) has distinguished between 'variable-oriented' and 'case-oriented' strategies, in which quantitative and qualitative methods respectively are applied in comparative studies.

Typically, in *variable-oriented studies* many countries are studied. The focus is on a limited number of variables, which are abstracted and removed from the concrete reality and context of the countries that are studied by means of simplifying assumptions. As Ragin (1987, xiv) stated, the approach tends to "eliminate complexity instead of deciphering it". Formal hypotheses stating universal relationships, the use of operational definitions and emphasis on quantitative data obtained by means of 'measurement' and the use of 'instruments' combine to distance the researcher from the phenomenon that is studied. All this reflects an underlying positivist ontology and epistemology, and falls within the nomothetic tradition.

In *case-oriented studies* a single country or a small number of countries is studied. The focus is on the individual country in its historical specificity and its full context. Each case is considered as a whole, taking into account the total configuration or constellation of factors and conditions. Ragin (1987, 26) emphasized the need to unravel the "multiple conjunctural causation" that characterizes social phenomena:

> ...social phenomena are complex and difficult to unravel not because there are too many variables affecting them ... but because different causally relevant conditions can combine in a variety of ways to produce a given outcome. In short, it is the combinatorial, and often complexly combinatorial, nature of social causation that makes the problem of identifying order-in-complexity demanding.

This embrace of complexity and the use of 'thick description' rather than statistics in case-oriented studies fall within the idiographic tradition and reflect a greater affinity for interpretivist paradigms. However, the qualitative and quantitative approaches have complementary strengths and they may meet in mixed methods studies, in the grey area between the two extremes.

5.9   Comparative research designs

In this section, we consider how the mainly qualitative case-oriented approach and the mainly quantitative variable-oriented approach are manifested in the three main comparative research designs: single-country studies, many-country (large-N) comparisons, and few-country (small-N) comparisons. They are dealt with in this order because the first two are clearly distinguishable while few-country comparisons occupy a more contested middle ground.

Single-country studies (case studies)

There has long been controversy about whether single-country studies (case studies proper) should be considered to be comparative studies. This is also reflected in the literature of comparative librarianship, e.g. in the difference of opinion between Danton (1973, 46–52) and Krzys and Litton (1983, 27–29) on the one hand, who do not consider single-country studies to be comparative, and Collings (1971, 492) and Simsova and MacKee (1975, 30–32) on the other, who accept them. In political science Sartori (1991, 252) insisted that the single case investigation "cannot be subsumed under the comparative *method* (though it may have comparative merit)" (Sartori's emphasis).On the other hand, Landman (2008, 28) states that

> ...a single-country study is considered comparative if it uses concepts that are applicable to other countries, and/or seeks to make larger inferences that stretch beyond the original country used in the study.

Even if a case study does not itself constitute comparative research, good descriptions of individual cases are useful as raw material for comparisons, or as the first step in a comparative study (cf. Landman 2008, 5). Lijphart (1971, 691–93) described the "scientific status of the case study method [as] somewhat ambiguous", but distinguished six types of case studies on the basis of their potential contributions to theory development in political science. From having been treated with some suspicion, the case study is making a comeback. A very thorough and lucid overview of the case study is found in Gerring's (2007)

chapter in the *Oxford handbook of comparative politics*. He suggested that there is growing interest in case study research design, which is possibly to be explained as a movement away from the variable-centred approach due to a number of factors. These include growing discontent with "cross-case observational research" (many-country comparisons) and an epistemological shift away from the positivist model of explanation. However, the case study is still viewed "with extreme circumspection". Paradoxically, Gerring (2007, 93) pointed out that, while case studies have taught us a great deal, not much is understood about the case study method.

Gerring (2007, 94–95) defined a *case* as "a spatially delimited phenomenon (a unit) observed at a single point in time or over some period in time". In comparative politics the nation-state is the dominant type of case, but other social and political units or institutions can also be chosen. A *case study* is "the intensive study of a single case for the purpose of understanding a larger class of cases (a population)", while *case study research* may include several cases. The number of cases is limited by the extent to which they can be investigated intensively. At a given point such intensive study is no longer possible, and the emphasis of a study will shift from the individual case to a sample of cases. Gerring referred to such a study as a "cross-case study" and he saw case studies and cross-case studies as lying on a continuum. It should be noted that when Gerring discussed case studies, his discussion was not limited to single cases.

In the literature of international and comparative LIS the term 'case study' is used to refer to studies of both single and multiple cases. Examples of insight-generating single case studies are those of Mchombu (1992), who studied information needs for rural development in Malawi, Rosenberg (1993), who, in an article discussing the failure of the public library movement in Africa, presented a case study of the Kenya National Library Service, and Sturges (2004), who drew lessons for community libraries in Africa from a case study of demon possession in Uganda. Case studies of this nature, while not strictly comparative, generate insight and provide useful material for comparative research. Many comparative studies present two or more parallel case studies. However, although Gerring accepts these as case studies, I discuss them under small-N studies below.

Case studies are particularly useful for generating hypotheses, exploring phenomena, determining causal relationships, tracing causal mechanisms or pathways, offering in-depth insights, and dealing with heterogeneous entities. Ontologically speaking, "case study researchers tend to have a 'lumpy' vision of the world: they see countries, communities and persons as highly individualized phenomena" (Gerring 2007, 98–109). While this suggests an affinity for interpretivist metatheory, Gerring (2007, 115–16) pointed out that case studies may take on many forms and can be used within any paradigm.

Many-country comparisons

Many-country studies are also referred to in the literature as survey studies, cross-sectional studies, and cross-case research or large-N studies. The methodology is usually quantitative and typically involves multivariate analysis, i.e. simultaneous statistical analysis of data collected on multiple variables. Use of qualitative methods in analysis of many-country comparisons is unusual because "a richer level of information" is needed, including "deep history", which would be difficult to collect and analyse if large numbers of countries are involved (Landman 2008, 52).

Among the ontological assumptions underlying many-country comparisons are that countries can be seen as units, that the features being compared can be measured, that these features are sufficiently similar, and that variations in features in one country are largely independent of variations of the same features in other countries. The latter assumption is referred to as 'unit independence'. Vast differences between countries call into question the assumption that their features are comparable. For example, in 2010 the smallest member of the United Nations, Nauru, had a population of under 10.000, while that of the most populous UN member, China, was estimated at 1,3 billion. The assumption of unit independence can also be questioned (Landman 2008, 52–54). It is possible that some of the cases are not independent of one another. This is referred to as 'Galton's problem': a relationship empirically determined between presumed independent variables P, Q and R and a dependent variable Y within three countries A, B and C may result from the fact that country A influenced countries B and C, rather than from causal relationship between the independent variables P, Q and R and the dependent variable Y. Hence the causal relationship was not within-country but across countries (cf. Lijphart 1975, 171). Globalization further calls into question the assumption of unit independence, particularly in the case of smaller countries which are highly susceptible to outside influences, such as those exercised by Western education and media.

Nevertheless, many-country comparisons lend themselves to the formal testing of hypotheses. When hypotheses are to be tested, a relationship holds between the number of variables and the number of cases. The more variables that may exert a potential influence on the phenomenon under investigation, the more cases are needed to test all the possible combinations of several variables. As an admittedly simplistic example, let us assume that we wished to test the hypothesis that the integration of school media centres in the school curriculum is more advanced in English-speaking countries where school media specialists are formally certified and are required to have dual qualifications in library science and education, than in other countries where there is no formal certification and dual qualifications are not required. Here we have one dependent variable (degree of integration of the media centre in the curriculum), and three independent variables: language of country, presence or absence of formal certification, and qualification requirement (single or dual). Simplistically, to test the relationship formally we would need a three-dimensional contingency table as in Table 5.6:

Table 5.6: Contingency table for three independent variables

Independent variables			Dependent variable: Degree of integration of School Media Centre in Curriculum			
Language	Certification	Single/dual qualification	None	Low	Med	High
English	Yes	Single				
		Dual				
	No	Single				
		Dual				
Other	Yes	Single				
		Dual				
	No	Single				
		Dual				

Using dichotomous variables as here, we need a minimum of 2x2x2=8 cases to control for all possible conditions. If we allowed more values per independent variable (e.g. for Language: English, French, Spanish, Other) we would need more cases (4x2x2=16). If we added another dichotomous variable (e.g. Governance of education system: centralized or decentralized) we would need 4x2x2x2=32 cases to avoid having lots of empty cells. If there are too many of these the results of statistical tests may be suspect. Hence many-country (large-N) comparisons are needed for performing valid statistical tests.

However, there are limitations. The number of variables that can be included in a statistical model is quite limited. Furthermore, there is a limited number of countries that can be included in a comparative study. There are around 220 countries and inhabited territories, of which some 30 have fewer than 100.000 inhabitants. Statistical data may not be available from all of them. Data may be out-of-date or unreliable. Some countries may be disqualified from the study for other reasons. The problem is exacerbated when the study population is limited by other criteria, for example, if we decided to limit the study to democratic countries. To ensure that we obtain enough cases for our statistical analyses we would be tempted to 'stretch' the concept of democracy by using an operational criterion that would not exclude too many countries. We might decide that a country is considered to be democratic if its current leader was elected in a general election, regardless of the fact that such elections are often rigged.[18]

Since the total number of countries is relatively small and this number tends to be further reduced by the factors just mentioned, comparativists do not commonly select countries by means of sampling. Instead, all the countries that satisfy given criteria or belong to defined types and for which data are available, tend to be included. Sampling may, however, be used

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[18] The Intelligence Unit of *The Economist* annually compiles a *Democracy index*, in which countries are scored according to a set of 60 indicators measuring such factors as electoral process, functioning of government, and civil liberties. Such indices are useful tools for comparativists, but they also illustrate the problem of finding sufficient cases: When this index is used, it is becoming steadily more difficult to find fully democratic countries. In 2016 only 19 countries were ranked as "full democracies", down from 20 in the previous year, See *The Economist*, "Democracy Unit 2016",
http://www.eiu.com/public/topical_report.aspx?campaignid=DemocracyIndex2016, accessed 2017-03-22.

in comparative studies in which more numerous sub-national units (e.g. provinces, counties) constitute the cases. Of course, sampling may be used *within* cases if data are collected at a lower level of analysis. For example, the *libraries* in Table 5.4 could have been selected using random sampling even if the *countries* were selected purposively.

In statistically-oriented many-country comparisons there may also be problems relating to the validity and reliability of measures used in comparisons. An example would be per capita GDP, which says nothing about the distribution of income. Another example is the literacy rate, which is measured differently in different countries. The dichotomous variables that were used in the example depicted in Table 5.6 illustrate a measure taken to prevent the occurrence of empty cells. However, dichotomizing this variable holds a threat to the validity of the study: by characterizing certification as either 'certification' or 'no certification', no cognizance is taken of different forms or procedures of certification, which may be germane to the relationships being investigated. To use the distinction discussed in the previous section, many-country comparisons are essentially variable-oriented. Cases are disaggregated into variables. Variables are measured, but a major weakness of quantitative many-country comparisons is that variables tend to be conceptualized and measured at a shallow level. We can determine with some degree of confidence that relationships exist between the variables, but this may not tell us very much about the nature of the relationships (cf. Lijphart 1975; Ragin 1987, chap. 2).

Examples of comparative studies with large numbers of countries are decidedly uncommon in LIS. Although the IFLA *World report* is not primarily a comparative study, its analysis and conclusions section represents a significant comparative study covering 122 countries in the most recent version, out of 173 countries that have contributed data on and off since 2001 (Bothma 2010).[19] In Europe, researchers working for the European Commission conducted a series of LIBECON ('library economics') surveys in which they sought to cover all member countries of the European Union. Commenting on an early report of this work by Ramsdale (1988), Vitiello (1996, 28–31) noted that these large-scale European statistical surveys were hampered by poor quality data submitted by some member states. The findings glossed over disparities, and failed to reflect the "singularity" of the countries surveyed. The LIBECON Millennium Report (Fuegi, Sumsion, and Ramsdale 2000) covered 29 European countries and provided statistical data on a large range of library indicators, including staff, materials, usage, use of IT, service points, and finance. This was not a hypothesis-testing study, but rather descriptive and evaluative. During the life of the project, a large database was built up, which allowed for attempts to rank countries by the quality of their libraries (e.g. LibEcon 2004). Towards the end of the project Fuegi and Jennings (2004) reported on datasets of about forty countries (25 in the European Union and a number of other countries voluntarily participating in the LIBECON statistical database).

In studies other than those seeking global coverage, a selection process is needed. Given the relatively small universe and the various factors that delimit a study population, such studies tend to include all countries that meet certain criteria. In a study of information and communication technologies in public libraries, Gould and Gomez (2010) compared 25 developing countries, carefully selected using four sets of criteria: demographic data, freedom of expression, needs and readiness criteria and "other tipping factors" such as the

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[19] The IFLA/FAIFE world report is available online at https://www.ifla.org/publications/iflafaife-world-report-series, accessed 2017-03-30.

existence of a public library system (p.168). The formulation and reporting of such criteria represents best practice in comparative studies.

An example of hypothesis-testing research at the Large-N end of the continuum is a PhD thesis by Lau (1988). This was a largely quantitative variable-oriented study using the statistical technique of cluster analysis in a study of the relation between information development and socio-economic factors in 31 countries "selected on the basis of data availability" (Lau 1990, 317) over the period 1960-1977. The countries represented different levels of economic development. Five independent variables identified as indicators of socio-economic development were used: food consumption in calories, life expectancy at birth, infant mortality, primary school enrolment, and adult literacy. Fifteen dependent variables representing information activities were used. These represented three components of information development: storage centres for information, accumulation of recorded information, and recording of information activities. Specific indicators included numbers of library service points, size of collections held, and publishing activities. Lau found inter alia that nations with "socially oriented policies" but without high incomes, such as Yugoslavia and Hungary, can experience information development, while high-income countries lacking social development did not show information development (Lau 1990, 326–28).

Few-country comparisons

In terms of the number of cases being compared, few-country comparisons are found on the continuum between single-country studies and many-country comparisons. The countries can be as few as two. Two or three appear to be the most prevalent number in recent comparative studies in LIS. The deciding factor, however, is not so much the number of countries, but the methodological approach.

Various terms are used for studies comprising a small number of cases. For some authors (e.g. Lijphart 1971, 1975) this is "the comparative method"; Lijphart also referred to the "comparative-cases strategy" (Lijphart 1975, 163). Ragin (1987, 34–52) placed it under the rubric of "case-oriented comparative methods". Smelser (1976; quoted in Ragin 1987, 31) referred to it as the "method of systematic comparative illustration", 'illustration' suggesting that it is an adjunct method, not suited for the serious task of testing hypotheses. Indeed, the terminology often reflects the methodological orientation (quantitative/qualitative) of the writer. Quantitatively-oriented authorities tend to see a few-country comparison as a less desirable or watered-down version of studies using larger numbers of cases, and they emphasize methods of compensating for its perceived weakness by approximating the inferential value of many-country comparisons as far as possible (e.g. Landman 2008). Lijphart (1975, 164), who identified a number of advantages of few-country comparisons in relation to many-country comparisons, nevertheless saw them as a "method of testing hypothesized relationships among variables", using the same logic as many-country comparisons, with the difference that countries are carefully selected to compensate for the inability to sample from a large population. In a study of perceived outcomes of public libraries in three West European countries Vakkari et al. (2014) attempted to answer formal research questions using largely quantitative methods, which included surveying large samples of actual and potential library users. The study was subsequently replicated with the addition of two further countries, the USA and South Korea (Vakkari et al. 2016).

In contrast with the quantitatively-oriented scholars, qualitatively-oriented scholars tend to consider few-country comparisons on their own terms as insight-generating, in-depth studies of cases as wholes and as opportunities to study multiple and conjunctural causation. This is more aligned with interpretivist metatheory. Thus they adopt the case-oriented approach as described by Ragin (1987, 35):

> The goals of case-oriented investigation often are both historically interpretive and causally analytic. Interpretive work ... attempts to account for significant historical outcomes or sets of comparable outcomes or processes by piecing evidence together in a manner sensitive to historical chronology and offering limited historical generalizations which are sensitive to context. Thus, comparativists who use case-oriented strategies often want to understand or interpret specific cases because of their intrinsic value. Most, but not all, case-oriented work is also causal-analytic. This companion goal is to produce limited generalizations concerning the causes of theoretically defined categories of empirical phenomena ... common to a set of cases.

What this implies is that the case is of interest in itself and not merely as a bearer of a set of variables, and that relationships within a case are of at least as much interest as the generalized relationships among variables across cases. Because in few-country comparisons the comparativist studies the selected countries in depth and is closer to the data, the problems of comparability and concept stretching (referred to above in connection with many-country comparisons) are alleviated: appropriate countries can be chosen, and richer, multidimensional, less abstract concepts can be employed. Furthermore, considerable attention can be paid to unravelling complex relationships, including relationships of multiple and conjunctural causation, within each country, and over time. As Ragin (1987, 23–26) has pointed out, the complexity of social phenomena is not only a function of the many causes that may be responsible for a given effect. It also derives from the effects of conjunctures, where a particular combination of factors has to be in place or in sequence before a given effect can occur. The depth of analysis makes for a high level of internal validity. On the other hand, despite the considerable investment in time and resources needed for such in-depth studies, their findings cannot readily be applied to develop broad generalizations explaining phenomena in countries not studied – hence their external validity is low compared to that of many-country comparisons.

Earlier I referred to the trade-off between cases and variables. Essentially, in many-country comparisons it is not possible to deal with as many variables, or to deal with them in as much depth, as in few-country comparisons. Many-country comparisons tend to have greater inferential power in terms of the ability to generalize with confidence. On the other hand, in few-country comparisons we can have greater confidence that we fully understand the complex relationships, interactions and causal mechanism among variables. This raises the question as to what can be done to combine the strengths of the two designs, and specifically to increase the inferential power of few-country comparisons. Landman (2008, 27-30; 68-70; 79-82) put much emphasis on combining quantitative and qualitative methods and on methods of statistical inference when few cases are studied. One approach is to multiply the number of cases by repeated measurement over time. This is discussed in Section 5.13.

Ragin (1987) developed a method of "qualitative comparative analysis" (QCA) using Boolean truth tables, which has been lucidly summarized by Landman (2008, 79–81). QCA is a methodology, with origins in political science and sociology, for "complex comparisons of countries or societies". It combines both qualitative and quantitative approaches, using qualitative methods to obtain in-depth information about the cases, and quantitative

techniques to analyse patterns of data relating to causal factors and outcomes. This makes it an appropriate methodology for the evaluation of development interventions in international aid programmes, and for evidence-based policy making.[20]

I conclude this section with a brief note on examples from comparative librarianship. In Chapter 2, Section 2.5, a number of early studies with an ameliorative slant were mentioned, which compared library conditions in a small number of countries, for example those by Edwards ([1869] 2010), Pellisson (1906), Morel (1908). These authors compiled impressive tomes with an amount of detail that is no longer achievable. A later example of an in-depth study, albeit based largely on published literature and statistical data, was a comparison by Hassenforder of public library development in France, the United States and Great Britain, which yielded striking insights into the social and other conditions that favour public library development. In a relatively ambitious, more recent, project financed by the European Union, Davies and Fuegi (2004) based their report on the role of public libraries in promoting social inclusion, lifelong learning and employment on three "national situational reports", on France, Italy and the United Kingdom. Harle (2010) reported on four comparative case studies in which both qualitative and quantitative methods were used to investigate access to research in African universities. However, by far the greater proportion of recent work in the small-N genre has been of much more limited scope, often focusing on individual institutions, as in the separate but parallel case studies of customer relationships in two academic libraries, one in Malta and the other in the UK, described by Broady-Preston, Felice and Marshall (2006), and Lin's (2012) parallel institutional case studies of university digital repositories in Taiwan and Wisconsin, which focused on institutional factors in implementation. Often, library management themes are addressed. In many cases, however, such parallel institutional case studies do not go far enough in contextualizing the cases in terms of national socio-economic, cultural or other factors. Nevertheless, a wide variety of quite specific themes have been addressed by means of small-N studies using mainly qualitative methods. Further examples of such themes are legal deposit (Crews 1988), national information networks in North Africa (Wesley 1990), factors in the development of school libraries (Knuth 1995), graduate programmes of LIS education (Mortezaie and Naghshineh 2002), education for digital librarianship (Bawden, Vilar, and Zabukovec 2005), freedom of information legislation (Kuunifa 2012; Avle and Adunbi 2015), assessment of LIS education (Ocholla, Dorner, and Britz 2013), and the creation of social capital by public libraries (Miller 2014).

5.10   Selection of countries

Surveying comparative studies in LIS a generation ago, Burnett (1973, 4) observed that due to practical difficulties posed by geographical, cultural and political factors, "…the literature gravitates to comparative studies devoted to physically adjacent rather than widely-separated

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[20] Schatz and Welle (2016, 1) briefly described the application of the QCA methodology for the evaluation of development programmes as follows: "The potentially influencing conditions are derived from existing social science theory or a programme theory of change. They are tested for their relative influence through a systematic comparison among a number of cases that aim to achieve the same outcome, some successfully and others unsuccessfully. QCA helps to filter out the more important factors from those that are less likely to make a difference among the cases that are investigated in relation to the same outcome. An important element in this analysis is the identification of 'sufficient' and 'necessary' conditions that occur in conjunction with an outcome. The report by Schatz and Welle is also of interest in that it provides a comparison of the different kinds of logic that may be applied to establish causality (p.2).

countries and to those which are or otherwise homogeneous". Today rapid inter-continental air travel, not to mention the Internet, have alleviated the limitations to which Burnett referred, but the temptation remains for the comparativist to select countries with which she is familiar through periods of residence, or countries that are within easy reach. However, the selection of countries for comparison is a critical question in comparative studies. As indicated in the previous section, comparativists wishing to compare many countries have limited choice. Often they have to include every country that meets the criteria for the study. In single-country and few-country comparisons, the selection of countries is more interesting.

Single-country studies (case studies)

For single-country studies countries may be selected simply because the researcher is familiar with them or has access to them, because they have not yet been studied, or, because they are seen as being important in relation to other cases or studies. Countries may be chosen because they are considered to be representative of a category or group of countries, exceptional, or counterfactual. Much depends on whether the country is chosen for purposes of generating or testing hypotheses.

If case studies are used as a substitute for experimentation with the intention of testing hypotheses, comparativists may seek *counterfactuals*, situations in which the conditions that supposedly gave rise to the phenomenon or situation being studied are absent. Counterfactuals can be theoretical and imaginary, or real cases, where the required counterfactual situation exists naturally (Landman 2008, 14–15). To take an example from LIS: In a text widely used in 'foundations' courses introducing American students to library and information science, Richard Rubin (2004, 260) identified three "prerequisite conditions... for libraries to prosper": centralization, economic growth, and political stability.[21] A country with thriving libraries but lacking one or more of these prerequisite conditions, does not conform to the expectations generated by Rubin's theory and would constitute a counterfactual to challenge it.

Writing on the use of case studies in international relations, Bennett and Elman (2007, 172–78) emphasized the importance of selecting cases thoughtfully, and identified a number of types. These include "deviant cases", which do not conform to theoretical expectations: such deviant or 'outlier' countries, which do not fit the general pattern, may be chosen for more intensive study to determine why they do not conform to the theory. Another category is that of "least-likely" cases, where the characteristics of the case make it very unlikely that it will conform to the theoretical expectation; if it does, it provides strong support to the theory. By means of these strategies, single-country studies can be used to confirm or infirm accepted theory and to provide insights for refining it (cf. Landman 2008, 87–89).

Countries may also be chosen because particular characteristics are present in them to an extreme degree, because the case appears to it lend itself to the study of causal mechanisms, or because a policy of interest has been implemented there. On the other hand, a country may be chosen because it is thought to be representative of a group or category of countries. This raises the question of classifications or typologies of countries, which is briefly discussed below in Section 5.11.

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[21] Rubin cited Harris and Johnson (1984) as the source of this idea. Harris (1999, 4–8) subsequently elaborated on it, emphasizing a number of "ideologies of reading" which provided the justification for expenditure on libraries.

Few-country studies

In few-country studies the countries are seldom selected by sampling. A first step in selecting relevant countries may be to narrow the field to countries in particular regions or in particular categories, such as democratically governed countries, francophone countries, Islamic countries or developing countries. This raises the issue of classification and typologies, which is dealt with Section 5.11 below. In practice, the choice of country may be secondary to the choice of the institutions to be studied, a choice which may be determined by the affiliations of the researchers (e.g. Tbaishat 2010; Lo et al. 2015). Instead they should be carefully selected for the purpose of the study (Ragin 1987, 15). Principles applied in the selection of countries for single-country studies are relevant when we consider few-country comparisons, but additional factors come into play here. It is intuitively obvious that there is little point in comparing entities that are so different that hardly any commonality can be found (e.g. Nauru and China). Neither would it be useful to compare entities that are so similar that little difference of interest can be found. When countries are selected for comparison, they should be comparable but not identical in respect of the phenomenon or theory that is primary interest in the study. Sartori (1991, 246) stated that entities to be compared should have both shared and non-shared attributes. They should be at the same time "similar" and "incomparable".

If it is intended to uncover causal relationships or conditions associated with particular developmental pathways, there are two basic design strategies for selecting countries for comparison. These strategies are related to the methods for determining causation that were formulated by J.S. Mill, who was referred to in Section 5.5. Although Mill identified five methods of induction, the basic choice is between the 'Most Similar Systems Design' (MSSD), which corresponds to Mill's 'Method of Difference' and the 'Most Different/Dissimilar Systems Design' (MDSD) which corresponds to Mill's 'Method of Agreement'. These methods are sometimes combined (Pennings, Keman, and Kleinnijenhuis 1999, 43–49; Landman 2008, 70–76; Hantrais 2009, 59–64).[22]

In a *most similar systems design* (MSSD) we select countries that are very similar in all respects except in respect of the particular factor (or independent variable) of which we want to study the effect. This is illustrated in Figure 5.5.

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[22] Bennett and Elman (2007, 172–78) discuss MSSD and MDSD designs and some alternatives from the perspective of political science.
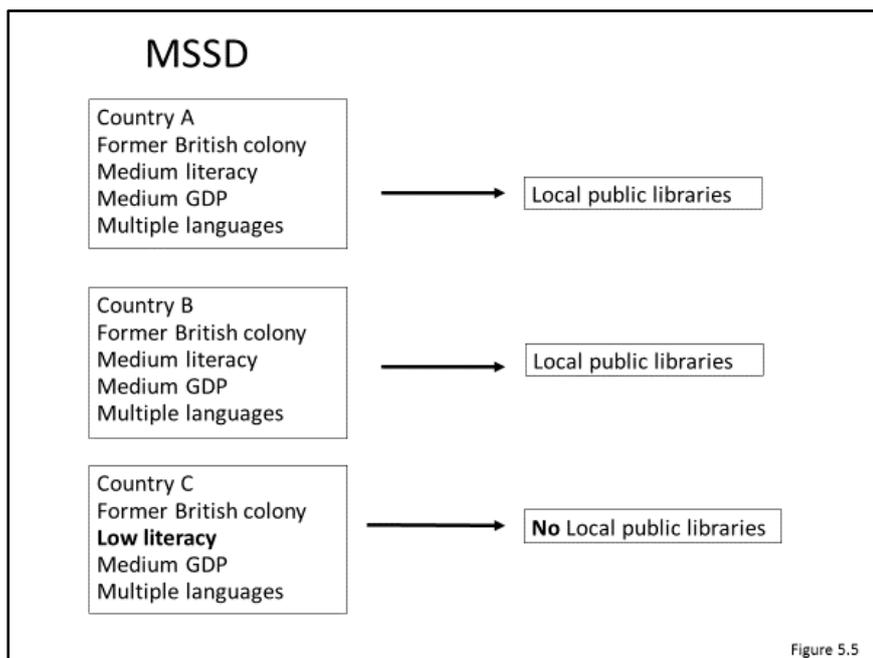
Figure 5.5: Public libraries and literacy: MSSD, most similar systems design

Here we are interested in the role of literacy in relation to the presence of local public libraries. By selecting countries that are very similar in respect of other characteristics (in this case, their colonial history, GDP, and number of languages spoken) we in effect control for the influence of those variables, which otherwise might have been thought to influence the presence of local public libraries. We can therefore say that *ceteris paribus* (all things being equal) there is a relationship between literacy level and the prevalence of public libraries. The *ceteris paribus* principle is important. What we are doing here is in effect to simulate the operation of experimental controls (which we cannot exercise in real life situations) by matching the countries on the variables we need to control for. Note that we cannot say that literacy levels determine or cause the prevalence of public libraries. The relationship of cause and effect may well operate in the other direction, or in both directions.

The study by Ignatow (2011), referred to earlier, comes closest to the MSSD design. Ignatow selected the six countries which were rated between 0.4 to 0.9 on the 1993 Human Development Index of the United Nations Development Program, and which had consistently reported public library data to UNESCO. In a related study, Ignatow et al. (2012) chose three countries (Namibia, Nepal and Malawi) because they have similar levels of economic and human development and have experienced democratic transitions since 1990.

An alternative, the *most different systems design* (MDSD) is depicted in Figure 5.6.
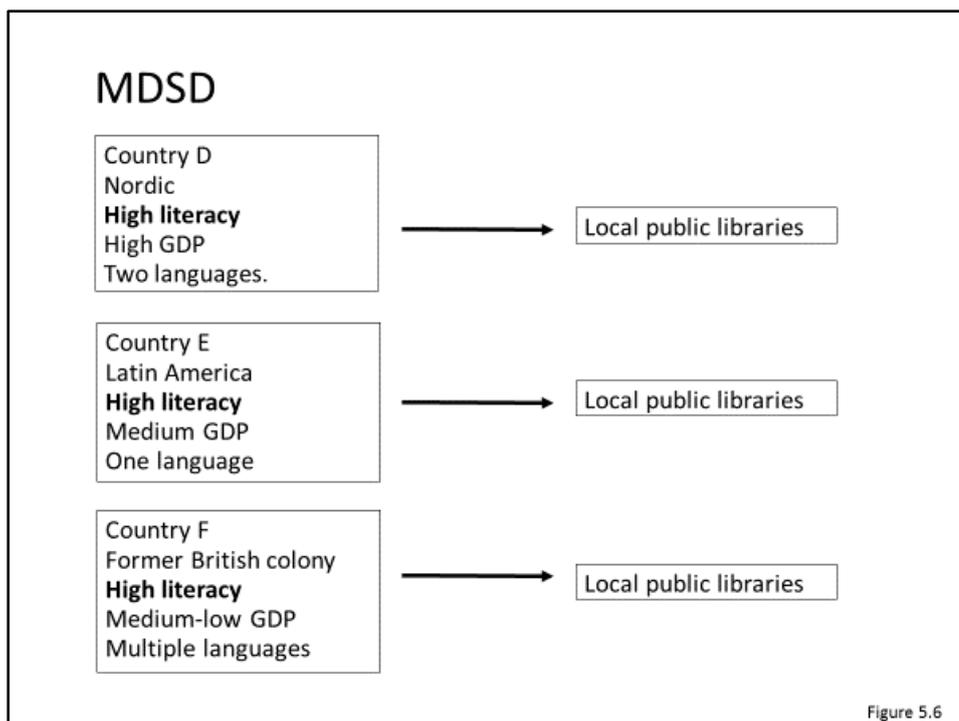
Figure 5.6: Public libraries and literacy: MDSD, most different systems design

In the most different systems design we take the opposite approach. We select a number of very different countries that do, however, share the phenomenon we are interested in, in this case again, the presence of local public libraries – the dependent variable. Here it is the dependent variable which determines which countries are selected. The countries depicted in Figure 5.6 differ in respect of the independent variables: their cultural-linguistic groups, their GDP, and the number of languages spoken. Because local public libraries are present in spite of the differences in these factors, this suggests that there is a relationship the presence of public libraries and the one factor they do have in common, a high literacy rate. Again, it is worth pointing out that we cannot say that the high literacy rate is the cause of the presence of public libraries. We can only say that there is probably a relationship between these variables.

There has been a great deal of philosophical discussion and criticism of Mill's methods and various weaknesses have been pointed out (Hantrais 2009, 62–64). In the decision on a design, other factors such as the number of cases also play a role and further variants and refinements of the methods are possible (Pennings, Keman, and Kleinnijenhuis 1999, 43–49; Landman 2008, 70–78). For example Djelic (1998, 14–15) applied Mill's "two-sided comparative method, combining Mill's methods of agreement and difference.

In studies within the few-country category, where studies involve relatively large numbers of countries, authors tend to include all countries that are eligible. For example, in a study of e-government in Arab countries, Chatfield and Alhujran (2009) included 16 Arab countries out of a possible twenty, the other four being omitted due to lack of relevant information. Juznic and Badinovac (2005) included all the then newly admitted and candidate members of the European Union in their comparative study of LIS education. Authors of few-country studies sometimes attempt to select countries to be representative of particular categories or groupings of countries. Armstrong et al. (2010, 7) selected eight countries to "...represent

Africa's diversity, as well as its economic, linguistic, religious, cultural and legal differences", and their selection encompassed some of the continent's most advanced and least developed economies. Shachaf and Rubenstein (2007) undertook a comparative analysis of websites of academic libraries in order to gauge the librarians' approaches to copyright and intellectual property. The three countries that were selected (Israel, Russia and the United States) were selected as representatives of three categories of countries, the categories being based on countries' rankings on the Corruption Perceptions Index.[23] Classifications can facilitate the selection of countries and help simplify cross-national comparisons (Landman 2008, 5–6). For example, the categories into which Lau (1990) and Fuegi and Jennings (2004) grouped the countries covered in their studies facilitated the discovery of patterns. However, classifications and typologies have ontological implications and may carry ideological baggage.

Authors of comparative studies in LIS do not always give an account of why they chose the countries they compared, other than in very general terms (e.g. selecting a developed and a developing country, or countries from Western and Eastern Europe). In small-N studies it is not unusual for libraries in quite different countries to be compared. McCarthy and Tarango Ortiz (2010) compared two academic libraries, one in Ireland, the other in Mexico, focussing on the cultural influences that shaped them and on the impact of globalization. It seems that the choice is sometimes related to the background of the researcher or is made in light of personal or contingent factors, where a librarian from country A happens to visit country B for some reason or has made contact with a colleague there, or where libraries are linked through sister libraries schemes or development assistance programs. Johnson, Shi and Shao (2010) compared two academic libraries, one in the USA and the other in China, which had entered into a librarian exchange programme. A similar programme led to a comparison of academic libraries in the USA and Chile (Chu 2007). In other cases, the studies appear to have been prompted by contacts made between countries in Western Europe and those in Central and Eastern Europe as part of European reintegration initiatives following the breakup of the Soviet Union. Koycheva (2012) compared two public libraries, one in Bulgaria, the other in Sweden, with particular reference to the themes access for all and "the politics of difference". The language barrier plays a role. Zaïane (2011) limited her study of codes of ethics created by national library associations to ten codes available in English. Convenience of access is also a factor, as cited by Mullins and Linehan (2006a, 2006b). However, if they are to be of more than trivial theoretical interest, countries should be selected on grounds related to the problem under investigation

5.11   Typologies and country groupings

As mentioned earlier, in comparative studies we usually need to select or group countries, or both. Classifications are developed by comparativists to group phenomena such as countries into "distinct categories with identifiable and shared characteristics" (Landman 2008, 5–6). In addition to facilitating the selection of countries for study, classifications help to simplify the complexity that emerges from contextual description by grouping entities into simpler categories that can form the basis for cross-national comparisons along various dimensions, e.g. level of economic development, democracy, or type of regime (Landman 2008, 5–8). Categories can be derived inductively or deductively.

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[23] The Corruption Perceptions Index is published by Transparency International, an international NGO. See http://www.transparency.org/news/feature/corruption_perceptions_index_2016, accessed 2017-04-03.

In this context Mouton (1996, 195–96) preferred the term 'typology' to 'classification', defining a typology as "a conceptual framework in which phenomena are classified in terms of characteristics that they have in common with other phenomena". The basic unit of a typology is a 'type' or (in older terminology) an 'ideal type'. As the latter term suggests, a type is constructed through a process of abstraction. In this process that which is common to examples of that type is emphasized, while incidental individual differences are ignored. The type is therefore an abstraction which is not matched exactly by any individual example or case. The distinction made by Knuth (1995) between "American" and "British" models of school library development approaches such ideal types.

In typologies phenomena are often classified in terms of more than one variable or dimension. An example from political science is Lijphart's well-known typology of democratic political systems in terms of (a) the behaviour style of the political elite (which can be competitive and adversarial, or coalescent and cooperative) and (b) the political culture (which can be homogeneous or fragmented). Applying these two variables produces a typology of four cells, as in Table 5.7, adapted from Lijphart (1968, 38).[24]

Table 5.7: Lijphart's 1968 typology of democratic political systems

		Political culture	
		Homogeneous	Fragmented
Elite behaviour	Coalescent	Depoliticized Democracy (e.g. Nordic countries)	Consociational Democracy (e.g. Netherlands)
	Competitive	Centripetal Democracy (e.g. UK, United States)	Centrifugal Democracy (e.g. Italy)

In addition to serving purposes of exploration and explanation, such a typology can be used as a frame of reference for the collection and analysis of data (Mouton 1996, 196).[25] Ragin (1987, 20) pointed out that typologies are important because they set boundaries on comparability. As an example, he mentioned the comparability of "dependent" countries. Among developing countries, dependence takes many forms, so that one should not expect changes in the world economy to affect them all in the same way. Thus in a few-countries comparison a typology of developing countries may provide a useful framework for the selection of countries. We can adapt this example to LIS. In a study of library development in developing countries, we might be interested in including countries with different colonial backgrounds, taking into account (a) the strategy of control exercised by the colonial power (assimilation vs. indirect control through traditional rulers) and the extent of European settlement (significant vs. minor). This would yield the four-cell matrix presented in Table 5.8.

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[24] Some fifty years later, some of the examples given by Lijphart may no longer be so apt. Arguably the political culture of the Netherlands has become more homogeneous, while that of the USA has become more fragmented.
[25] In an article about the use of case studies in international relations, Bennett and Elman (2007, 181–82) discussed various types and functions of typologies.

Table 5.8: Typology of developing countries by colonial background

		Degree of European settlement	
		Significant (Settlement by Europeans encouraged, significant European minorities present at independence)	Minor (Settlement by Europeans not encouraged, European presence limited to non-permanent officials, soldiers, missionaries, traders & other expatriates)
Strategy of control	Assimilation (Inhabitants encouraged to embrace language and culture of colonial power, becoming "Black Frenchmen" etc.)	Assimilation-settlement colony E.g. Angola, New Caledonia?	Assimilation-expat colony E.g. Guinea-Bissau, Niger, Central African Republic
	Paternalist Indirect control (Control exercised through traditional rulers; ethnic identities recognized, encouraged)	Paternalist-settlement colony Kenya, Namibia, South Africa, Zimbabwe	Paternalist-expat colony Gambia, Ghana, Sierra Leone, India

The matrix would be useful to a researcher planning to do research on library development in former colonies by suggesting countries to consider for inclusion or elimination. If the researcher wished to study the effects of both variables, at least four cases would have to be chosen, one from each cell. If the researcher wished to concentrate on the impact of European settlement, (s)he could select cases from the assimilation or paternalist rows only, as this would control for the effect of the *Strategy of Control* variable by holding it constant.

Note that this typology is presented for illustrative purposes only. A researcher wishing to develop such a typology would be well-advised first to search the literature on the history, politics and government of colonial territories to find existing typologies with theoretical underpinnings before embarking on the construction of a new one. In the case of LIS we do not necessarily have to develop our own classifications. Often we can save ourselves the effort, and make our studies accessible for researchers in other disciplines, by utilizing existing classifications, such as World Bank's classifications by economic characteristics, or formal groupings of countries such as the Organization for Economic Cooperation and Development (OECD), which comprises the wealthy countries, and the African, Caribbean and Pacific (ACP) Group of States, which groups together most of the world's poorest countries. It can also be helpful to utilize typologies drawn up by economists, political scientists and other social scientists. In some cases, however, we may want to develop a typology based on LIS-related criteria. In a study of public library conditions, we might want to compare countries which were pioneers in the provision of free public libraries, with countries which joined this movement later, laggards, and countries that lack public libraries altogether. An interesting example is found in an article by Streatfield and Markless (2011) who, in discussing evidence-based library advocacy, divided countries into three groups according to their history of library development: (1) "ad hoc and opportunist development..."; (2) "... steady progress (in formerly or currently centralist or totalitarian states"; and (3) "countries with well-developed library services [experiencing] a descent from

a more or less mythical Golden Age". If we decide to use an approach of this nature, we need to develop explicit criteria so that the countries can be classified on a logical and consistent basis. We need to bear in mind that typologies reflect ontological assumptions, while certain types of categorization may be ideologically coloured.

5.12   Levels of analysis

The term 'level of analysis' was introduced earlier, when reference was made in Section 5.5 to levels relating to the geographic or locational dimension.[26] Selecting an appropriate level of analysis is an important decision in designing a comparative study. In cross-national studies Nowak (1977, 12) distinguished two levels, one essentially at the national level ("the human aggregate corresponding or equivalent to a nation"), the other at the sub-national level, which can include local communities or individual human beings. Landman (2008, 19–20) made an analogous distinction between macro and the micro levels, whereas three levels, macro, meso and micro levels, were discussed by Kennett (2001, 6–7) and Hantrais (2009, 54–55), who suggested that the term 'meso level' refers to a comprehensive, whole-society approach which combines analysis at the micro and macro levels. The three terms have somewhat different meanings in the various disciplines. Here I follow the terminology used in sociology, where micro level analysis refers to analysis at the level of individuals or small groups, essentially groups such local communities, businesses, or church congregations, that are characterized by face-to-face interaction. Meso level analysis involves "looking at intermediate-sized units smaller than the nation but larger than the local community or even the region. This covers a vast range of groups, from national institutions such as the educational system, to large corporations, political parties and movements, and ethno-cultural groups. Macro level analysis is concerned with analysis of "entire nations, global forces and international social trends" (Ballantine and Roberts 2014, 21–23).

The decision on the level of analysis in a study is closely related to the choice between a variable-oriented and a case-oriented approach, as discussed earlier. Macro level studies tend to be variable-oriented and micro level studies tend to be case-oriented. The choice of level depends on how the researchers see social phenomena and on whether the paradigm within which they are working emphasizes the role of agents (agency) or structures (structure) (Hantrais 2009, 55). There are underlying ontological beliefs affecting the decision. In political science this is referred to as the 'structure-agency' problem:

> Micro-analysts believe that the world of politics is shaped by the actions of 'structureless agents', while macro-analysts believe that the world is shaped by the unstoppable processes of 'agentless-structures' [sic] (Landman 2008, 19).

This can be illustrated by a hypothetical example. In a study of public library development in sub-Saharan Africa, the researcher who tends to emphasize agency might devote much attention to the roles of various individuals who provided leadership and influenced the

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[26] The geographic/locational dimension is not the only dimension of interest. Other levels relating directly to the subject matter of comparative LIS, can be identified, for example:
Highest level: The total LIS system of a country
Intermediate level: LIS sectors such as children's libraries and law libraries; systems such as education for librarianship, legal deposit or bibliographic control; functions, themes or problem areas, such as management, resource discovery, websites, information literacy education, and censorship
Lowest level: Individual libraries, divisions, departments; groups and individual persons

developmental trajectory. This researcher's assumption is that individuals enjoy some freedom to make decisions and take initiatives, and he/she would tend to focus on the micro level: e.g. the development history of individual library projects, and the perceptions, attitudes, beliefs and behaviour of individual librarians and community members. A researcher who emphasizes structure might place more emphasis on analysing library development along political-economic lines, looking at power relations, dependence and the continuing influence of former colonial powers in their newly independent colonies as determinants of library development. This researcher sees actions by individuals as being constrained if not determined by structures and would tend to focus on the macro level, for example, marshalling social and economic data for the relevant countries.

Increasingly international comparisons are conducted at more than one level at the same time. The examples cited above illustrate that combining analysis at the two levels would provide a more balanced assessment. Multilevel studies make possible combinations of methodological approaches, thus providing richer sources of data and applying the principle of triangulation that was referred to earlier. In doing so, however, care must be taken not to fall into the trap of confusing the levels of analysis and committing the aggregate (ecological or individualist) fallacies mentioned earlier (Hantrais 2009, 55). In this connection it is worth mentioning the effect of distance from the phenomenon being observed, as discussed by Hantrais (2009, 56–57). For example, a 'long-distance' study of library development in sub-Saharan Africa undertaken from Europe or North America would reveal a much more uniform situation than a 'close-up' study looking at community libraries on the Cape Flats around Cape Town, South Africa, and rural village reading rooms in Botswana. Depending on the focus, Hantrais suggested that the research design needs to be adjusted to ensure an appropriate level of analysis and the right focus.

5.13   The time dimension

In comparative librarianship, a distinction can be made between synchronic and diachronic studies. In the former, we compare the situation as it exists in more than one country at the same point in time and not much attention is paid to how those situations evolved over time. In diachronic studies the primary interest is in comparing how the situation evolved or developed over time in the chosen countries. In practice, we do not find many studies that are purely synchronic or diachronic. There are always elements of both orientations. Not all scholars agree that a diachronic or historical perspective is appropriate in comparative studies. Some scholars regard the historical and comparative perspectives as complementary but separate. Writing about comparative librarianship, Danton (1973, 116) described it as a "closely related sister" of library history, of which could be considered "a prolongation into the present". Lajeunesse (1993, 7) observed that while library history gives a 'diachronic' view of librarianship, comparative librarianship gives a 'synchronic' view.

In large-N studies such as those of the LIBECON project referred to earlier, the status of LIS in many countries (or societies or cultures) at a given point in time is compared, with little or no historical background. These studies offer a synchronic comparison. In qualitative studies scholars generally recognize that the development of LIS in each country has its own historical trajectory. Therefore, in many small-N studies the historical perspective is seen as an essential component of the detailed description that is expected of each case or country a study of this can help understand the current status. Here a diachronic comparison, in which the comparativist can focus on how the situations evolved over time, is seen as an integral

part of the comparison. Sweeting (2005) discussed the relationship between comparative education and history of education and asserted that they complement each other. The historical dimension adds another level of complexity, as it requires the special expertise needed in finding, evaluating and utilizing primary sources, but Sweeting added that the historical perspective can add much value in cases where

> ...the characteristics of historical analysis – its concern for evidence, its tentativeness, its utilization of historical consciousness, its interest in provenance, agency, seminality, and significance, its interest in connections, and its distrust of teleological[27] explanations – are adopted in the process of comparing (Sweeting 2005, 40).

As a recent example in LIS of an in-depth comparative study combining diachronic and synchronic perspectives, it is worth mentioning Bertrand's (2010) *Bibliothèque publique et public library: essai de généalogie comparée*, in which she compared the American and French public library models. As the subtitle "an essay in comparative genealogy" suggests, the historical development of public libraries in the USA and France is compared, with particular attention to the reception of the American model in France and the development in the latter country of an "unfaithful" or hybridized model.

Figure 5.7 presents a schematic representation of the difference between synchronic and diachronic comparison.
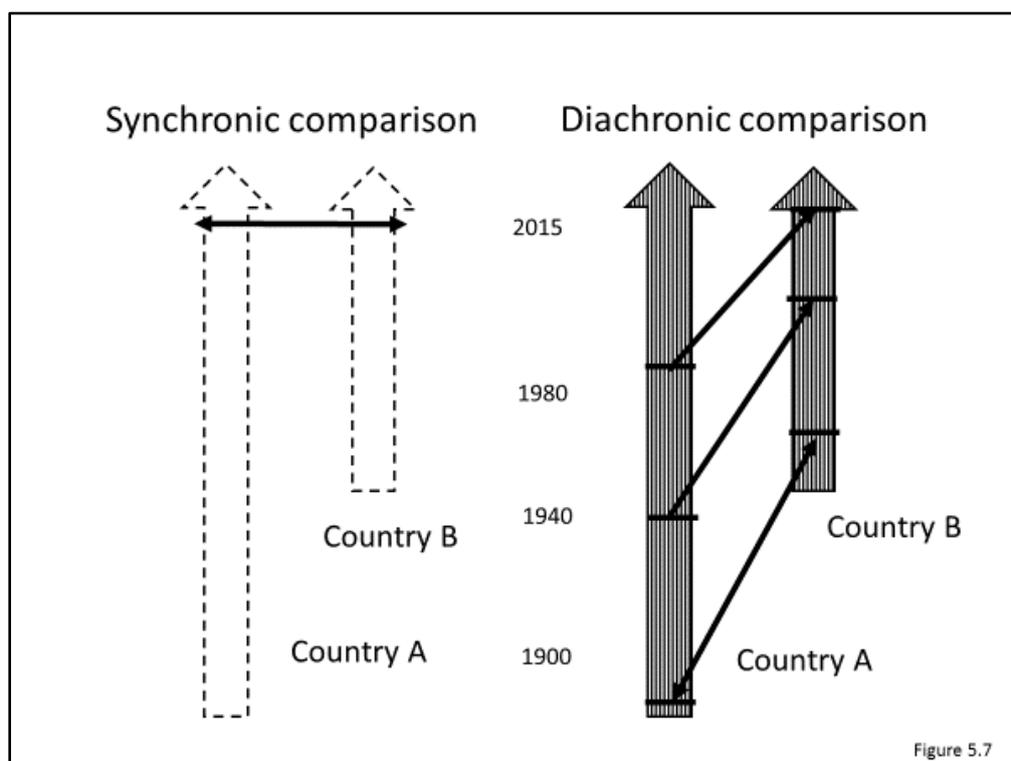
Figure 5.7: Difference between synchronic and diachronic comparisons

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[27] Here "teleological explanations" refers to explanations of historical events in terms of larger frameworks such as 'God's plan for our people', or 'manifest destiny'.

In both approaches, countries with different histories of LIS development are compared. On the left-hand side, in a synchronic comparison, the comparison is "cross-case" (or cross-sectional), and no attention is paid to the prior history. On the right- hand side, in a diachronic ("over-time") (cf. Lijphart 1971, 689) comparison, the individual development trajectories are taken into account, and the state of library development at different stages is compared, using key developmental milestones such as, for example, the founding of the country's national library, adoption of library legislation, and the introduction of computerization. Note that in this case, the lines representing the comparisons are not necessarily parallel, since the rate of library development is not necessarily the same and the intervals between the milestones will differ between the two libraries. In the hypothetical example the intervals in Country B are shorter than those in Country A, suggesting that Country B has a shorter history of library development and that less time has elapsed between the development milestones compared to Country A. Here the historical development is taken into account. An interesting example is provided by Maack's (1985) study of the feminization and professionalization of librarianship in the USA and France. Bennett and Elman (2007, 176) suggest that a combination of cross-case and over-time comparisons can have considerable inferential value, i.e. value in testing theory.

In quantitative studies a chronological dimension may be added when the number of cases is small and researchers want to increase the number of cases for purposes of statistical validity (cf. Lijphart 1971, 689). In a study of two countries, measurements taken four times at say, five-year intervals, could be used to increase the number of cases to 8. This is called the "pooled cross-sectional time-series analysis" (Landman 2008, 32). It should be noted that this is a fundamentally ahistorical approach, as it is the 'snapshots' of the situations at those points in time that are of interest (so that they are conceived as equivalent to separate countries), not the development of the situation over time. In this connection Lijphart (1975, 171–72) warns against the danger of Galton's problem and "case-stretching" when using this method to increase the number of cases. Clearly, if data are repeatedly collected in respect of the same country, these 'cases' cannot be considered to be independent.

More information on the time dimension in comparative studies can be found in Pennings *et al*. (1999, 49–54), who discuss the role of space and time, distinguishing between designs that are located in the time dimension only (time series and cross-sectional designs in single countries) and designs that are located in both time and space, including pooled time series designs in multiple countries. Teune (1990) discussed the pitfalls of cross-time comparisons, and advised that, while countries need not necessarily be compared at the same point in time, the choice of "countries and time-points should be theoretically justified" (p.45).

5.14   Decisions on methodology

By way of a summary, this section lists a set of questions relating to methodological decisions. These questions may serve to characterize and evaluate a given piece of research. The focus is on comparative research, but the questions are also relevant to other international research in LIS.

Methodological sources
- Do the authors cite any methodological texts or articles that they used to develop their comparative methodology (as distinct from general research methodology)?

- Are these sources on research method in social sciences?
- Are there sources on research method in LIS?

Quantitative vs. qualitative approach
- Did the authors explicitly adopt a predominantly quantitative or qualitative approach?
- If a mixed methods approach, does a quantitative or qualitative approach predominate?
- Is the approach that was selected in line with the metatheoretical point of departure?

Comparative research strategy
- Do the authors explain why a comparison was thought necessary or useful?
- How many countries are compared?
- In terms of the number of countries compared, where does the study fall on the continuum from single-country to many-country comparisons?
- Is this a study of a single country? If so does it qualify as a comparative study?
- Was a variable-oriented or a case-oriented strategy chosen?
- How many variables are studied?
- To what extent are relations among variables explored within countries?
- Given the aims of their study, did the authors choose a good balance between number of cases and number of variables?

Comparative research design
- Is this a single-country, many-country or few-country design?
- Why did the researchers choose this design?

Selection of countries
- How was the country (or were the countries) selected?
- Which countries were compared?
- Do the authors provide an explanation of why they chose the countries they compared?
- Were existing or purpose-designed typologies or classifications of countries used in selecting countries?
- Did the researchers choose a most similar systems design (MSSD), a most different systems design (MDSD), or a combination of these?
- Given the aims of their study, was this an appropriate strategy?

Units of analysis
- Are the units of analysis about which data was collected appropriate to the level of analysis?
- Do they use the same units of analysis in all the countries studied?
- Are their conclusions based on data at the appropriate level of analysis?

Levels of analysis
- Have the authors clearly identified the level(s) of analysis?
- Is analysis at the macro, meso or micro level?
- Do they use the same levels of analysis in all the countries studied?

Time dimension
- Is the comparison purely synchronic or is there a diachronic dimension?

5.15   Conclusion

This brings us to the end of the second phase in the sequence metatheory–methodology–method. In the following chapter, we proceed down the research hierarchy to consider some decisions relating to methods, at the level of techniques and procedures.

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