# 7

# Brief Descriptions of Comparative Research Methods

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This chapter chronicles eight comparative research methods. They span from Case-oriented to Cross-national approaches.

## Case-oriented Comparative Approaches

For many decades, there was a general view in the social sciences that research should be based on variables, yet a good number of studies especially in political science and some branches in sociology are case-oriented: that is, these studies are aimed at identifying few examples of a certain phenomenon. Case-oriented Comparative Approaches seek to understand complex units and they are concerned with making sense of a small number of cases. Usually, there are between one and 50 cases selected that are substantively or theoretically significant in nature (Eckstein 2000). The aim of Case-oriented Comparative Approaches is to reconstruct from the complexity of empirical processes patterns which can be theorized as 'general' concerning their relevance in a specific social field.

Case-based research can be viewed in the social context where its pattern can also illustrate how members of society specifically react to social problems in their authentic life contexts (Breckner 2007). The selected cases are viewed as complex but meaningful configurations of events and structures. According to Ragin (1997), cases are treated as singular, whole entities that are selected decisively

not as homogenous observations of equally plausible selections drawn from a random pool. A good number of case-oriented studies see social phenomena such as organisations, cities, neighbourhoods, regions, cultures, etc. as parallel to each other, thereby allowing for comparison and contrasting.

Lijphart (1971) proposes six types of case studies for comparative research. They are as follows: (1) atheoretical case study refers to the traditional single-country or single-case analysis; (2) interpretive case study resembles the atheoretical case study in one respect – it, too, is selected for analysis because of an interest in the case rather than an interest in the formulation of general theory. It differs, however, in that it makes explicit use of established theoretical propositions; (3) hypothesis-generating case study begins with a more or less vague notion of possible hypotheses and then attempts to formulate definite hypotheses to be tested subsequently among a larger number of cases; (4) theory confirming case study; and (5) theory affirming case study refer to analyses of single cases within the framework of established generalizations – the difference between the two is that while a theory confirming case study strengthens the proposition in question, a theory affirming case study weakens the generalizations marginally; and (6) deviant case study is an examination of single cases that are known to deviate from established generalizations.

Case-orientated Comparative Approaches have been applied to migration research and can be traced back to the Chicago School. According to Breckner (2007), the research of Isaac W. Thomas and Florian Znaniecki on the 'Polish Peasant' in the late 1920s was based primarily on biographical material as Thomas and Znaniecki endeavoured to understand, from a comparative perspective, how migration was connected to processes of personal and societal change, how these processes were dealt with, and how the changes on the personal and societal levels were interrelated.

One of the situations for which researchers can adopt a Case-oriented Comparative Approach is in health maintenance organizations (henceforth, HMOs). Here, a researcher might adopt a Case-oriented Comparative Approach to study a small number of HMOs in an in-depth manner. For example, suppose several HMOs are thought to be unusually successful in lowering costs through preventive medicine, thereby helping their members lead healthier lifestyles. One might ask the question 'how do they do it?' To answer this question, the researcher would have to conduct an in-depth study of the HMOs in question, focusing on the ways in which they accomplish this outcome (Ragin 1999).

## Variable-oriented Comparative Approach

The Variable-oriented Comparative Approach is mostly centralized in theory testing (Ragin and Zaret 1983). Thus, simplification is preferred over complexity. There is a rejection or acceptance of the 'null hypothesis.' The method's main focus is on variables and their correlations. The main limitation of this approach is the inclination towards abstract and sometimes void generalizations (Denzin and Lincoln 1994). The Variable-oriented Comparative Approach is also weakened by complex conjectural contributing opinions. These beliefs involve the assessment of the consequences of a substantial amount of interface conditions or the division of a sample into various distinct sub-samples (Ragin 1989; Pickard 2007).

The approach has four important steps in its application, according to Ragin (1989). First, the variables and associations of theory to be tested must be clearly detailed. Second, the social structural variables (competing descriptions of the phenomenon of concern) must be conceptualized. This is important because analyses of selected theories must be conservative in form and be compared against alternatives. The third step involves selecting measuring scales of chosen variables that are valid and reliable. Fourth and finally, statistical analysis should be employed to examine the associations among the measures based on data from a systematically identified set of observations used to test the theory against alternative explanations (Ragin 1989). Also, statistical correlations derived from cross-sectional and longitudinal variables can serve as the basis to delineate generalizations from structural procedures identified in theories (Creswell 2009). Furthermore, correlational analysis offers specific penalization of principles of structural causation (Hantrais 2009).

Consequently, as Ragin (1989) observes, the inevitable application of multivariate statistical techniques to cross-national data has benefited comparative analysis in many ways. Such benefits include the ability for comparative social scientists to investigate more than a handful of cases at a time, a new interest in reliable quantitative cross-national data, a new tendency for investigators to consider alternative explanations more carefully when testing a theory, the socialization of comparative social science, as knowledge of countries is no longer the domain of only the area specialists. These techniques have also forced comparative social science to be more cautious in formulating empirical generalizations, they have counteracted the tendency among some comparativists to favor particularistic explanations when faced with many deviating cases, and they have allowed investigators to employ approaches of statistical control: i.e. subtract the effects of control variables on the dependent variable when estimating the effect of a specific causal/independent variable.

The Variable-oriented Comparative Approach has been extensively applied in the social sciences. For example, it was used by Von Eye (2006) to analyze the relationship between parents' attitudes and gender in relation to youth alcohol consumption. Cacace et al. (2013) also made use of the Variable-oriented Comparative Approach to assess the quality of health systems and policies across countries.

## Comparative Strategies of Emile Durkheim and Max Weber

Emile Durkheim (1858-1918) and Max Weber (1864-1920) are regarded as the major proponents of comparative strategies in the history of sociology (Mazman 2005). The Comparative Strategies of Durkheim and Weber attempt to explain social reality causally by relating particular facts to general principles. Their theoretical and methodological approaches come from two different traditions of sociology. In order to compare the theorists, we will give brief descriptions of their theoretical approaches in terms of the constitution of social order or social reality. We will also show how their methodological approaches have been applied to understand social reality and give practical examples based on their theoretical and methodological departures.

Max Weber, on the one hand, developed his intellectual orientation in the German rationalist tradition, influenced by the German philosopher Emmanuel Kant. He emphasized the meaning and interpretation of individual action in his studies. He also emphasised the point that modern scientific studies should set apart the subjectivity of the human world and the objectivity of the external world (Mazman 2005). Weber tried to synthesize both perspectives by connecting interpretative understanding and causal explanations regarding the social action that sociologists studied. Durkheim, on the other hand, emerged as a philosopher and sociologist under the influence of a positivistic and idealistic intellectual milieu in France (Coser 1977). He represented the French intellectual orientation in sociological theory and proposed ideas like 'collective consciousness' and 'social collectivity'. According to Ibrahim Mazman, Durkheim (1895) argued that Sociology is a 'science of social facts, that is to say, the science of those phenomena which show the life of societies itself.' (Mazman 2005:77). Mazman adds that Durkheim, 'elevated the 'social fact' to the discipline of Sociology's subject matter' to attain objectivity and depart from the psychological states of individuals' (cited in Mazman 2005:77). Mazman further atstea that according to Durkheim, the 'sociological method as we practice it rests wholly on the basic principle that social facts must be studied as things, that is, as reality external to [the] individual' (quoted by Mazman 2005:77).

Weber's attempt to constitute his sociological orientation was based on concepts such as 'meaning', 'social action', 'interpretation', and 'methodological individualism'. Durkheim, however, tended to emphasize the importance of social collectivity and its determination over individual consciousness by noting concepts like 'sui-generis of social facts', 'function', 'causality', and 'generality' in his studies. The two sociologists differ in that Durkheim argued that social phenomena are not unique but universal because of the objectivity of social facts while Weber argued that there is no objective scientific analysis of culture. There is, instead, the uniqueness of historical facts. While Weber's 'methodological individualism' sees the essence of society as being constituted by individuals, the essence of society is considered as a social whole in Durkheim's 'methodological collectivism' (Wrong 1970). Both philosophers agreed that the discipline of Sociology offers sociologists the opportunities to understand society methodologically through scientific practice (Mazman 2005). The main convergences and divergences of both theorists, first, deal with how both sociologists understood social order or social reality: namely, their ideas about the basis of social order at the theoretical level. Second, it shows how they tended to approach this social reality in order to understand it at the methodological level (Mazman 2005).

For Durkheim, because individualistic needs are infinite, 'society imposes limits on human desires' (Coser 1977:132). In this manner, Durkheim's idea of social action refers to 'sui generis of social facts': namely, the determination of 'external conditions', which implies not a probability but a certainty (Münch 1988:20). Durkheim proposes in his methodological collectivism that 'to understand the way in which a society thinks of itself and of its environment, one must consider the nature of the society as a whole, and not that of the individuals' (Durkheim 1964:xlix). Social continuity arises from the domination of social regulations over individualistic biological and psychological needs and desires. In the Weberian sense, however, social action has to do with probability and not certainty. For example, when Weber explained the types of action orientation, he defined 'usage' saying 'if an orientation toward social action occurs regularly, it will be called 'usage' insofar as the probability of its existence within a group is based on nothing but actual practice' (Weber 1968:29). In essence, Weber approached the problem of social regulation through the question of how this regularity became possible out of the chaos of individualistic ambiguity. In this manner, he searched for the underlying rules and principles in this order.

Using the concept of 'social order' in terms of Weber and Durkheim, we need to remember that Weber saw the basis of regulation in society in the meaningful sphere of social action. This regulation may or may not imply that it is probable in

society (Weber 1968:29). In this context, there is no structurally determined social order; therefore, 'social regulation' is preferred in terms of Weberian sociology. For Weber, people attach subjective meaning not only to their own behaviors but also to behaviors of other people in their reciprocal relationships, because 'the action of each takes account of that of others' (Weber 1968:26). According to Weber, social continuity or social order is constructed at the individualistic consciousness level through the ways in which social actors assign meaning to their actions. Weber asserted that the real empirical sociological investigation begins with the following question: What motive determines and leads the individual members and participants in this socialistic community to behave in such a way that the community came into being in the first place and that it continues to exist? (Weber 1968). Weber proposed that the reason behind regular actions is the meaning which individuals attribute to their actions. Individuals' attributions of meaning to action and social relationships give social life its regularity, and these regularities in social and individualistic levels merge in social action. Conversely, as society itself requires and determines an order, albeit the term of 'social order' is more suitable to describe regulation in society in Durkheimian sociology.

For Weber, ideas can assume a role in social change and history. Weber searched for 'reciprocal relationships' of different factors in his sociology (Münch 1988:8) and emphasized 'a full spectrum of causal factors' (Kalberg 1994). For instance, Weber proposed that the explanation of the emergence of Western civilization cannot be reduced to only either materialistic or idealistic reasons. In this context, Weber's 'aim' was not 'to substitute for a one-sided materialistic and equally one-sided spiritualistic causal interpretation of culture and of history since each is equally possible' (Weber 1958:183). In terms of 'the spectrum of causal factors' in his sociological theory, Weber considered individual ethical, economic and political spheres as being intermingled when Western civilization emerged. Similarly, in his study on Protestantism (Weber 1958) the Protestant ethic, primarily the Calvinist ethic, enabled people to make rational ends-means calculations by developing 'a certain type of personality largely shaped by the preachments of Calvinist divines' and a type of 'self-discipline' to Western peoples (Coser 1977:226). At the same time, a newly emerged impersonal bureaucracy, its laws limiting personal, arbitrary, and unpredictable political decisions and the absolute authority of rulers, was in the arena during the emergence of Western civilization. All these factors played significant roles in preparing the objective, predictable and protected social conditions for individual decisions and rational calculations (Weber 1968).

Durkheim, in his *Division of Labor in Society* (1949), attempted to demonstrate that individualistic ideas and thoughts could never affect the path of history or

the existing social order. He argued that 'individuals are much more a product of common life than they are determinants of it' (Durkheim 1949:338). He also posited that population growth and the advance of communication and transportation opportunities paved the way to a complex specialization in modern society (Durkheim 1949). In the Durkheimian approach, then, social change comes out of 'a non-social substrate operating outside the sphere of the exercises of human mind and will' (Westby 1991:251).

## Causal Inference in Comparative Research

Causality refers to the 'way of knowing' that one thing causes another. Early philosophers concentrated on conceptual issues and questions. Later philosophers concentrated on more concrete issues and questions. Of course, both the definition of 'cause' and the 'way of knowing' whether X and Y are causally linked have changed significantly over time. Modern scientists, on the other hand, define causality in limited contexts: e.g., in a controlled experiment (Philosophy of Science Online n.d.).

Many discussions of causality begin with Aristotle's *Metaphysics*. There Aristotle defined four distinct types of cause: (1) the material, (2) formal, (3) efficient, and (4) final causes. To illustrate these definitions, imagine a vase, made (originally) from clay by a potter, as the 'effect' of some 'cause'. Aristotle would say that clay is the material cause of the vase. The vase's form (versus some other form that the clay might assume such as a bowl) is its formal cause. The energy invested by the potter is its efficient cause. And finally, the potter's intent is its final cause of the vase (Philosophy of Science Online n.d.).

Galileo was one of many Enlightenment scientists who wrote explicitly about causality. Galileo viewed cause as the set of necessary and sufficient conditions for an effect. If X and Y are causes of Z, then Z will occur whenever both X and Y occur; on the other hand, if only X or only Y occurs, then Z will not occur. This can be stated more succinctly as 'If and only if both X and Y occur, then Z occurs' (Philosophy of Science Online n.d.).

David Hume's major philosophical work, *A Treatise of Human Nature* (1738), laid the foundation for the modern view of causality. Hume rejected the existing rationalist concept of cause, arguing that causality was not a real relationship between two things but, rather, a perception. Accordingly, Hume's definition of causality emphasizes three elements that can verified (albeit post facto) through observation. According to Hume, 'X causes Y' if (1) Precedence: X precedes Y in time; (2) Contiguity: X and Y are contiguous in space and time; and (3) Constant

Conjunction: X and Y always co-occur or not occur (Philosophy of Science Online n.d.).

Unlike earlier philosophers who concentrated on conceptual issues, John Stuart Mill concentrated on the problems of operationalizing causality. Mill argued that causality could not be demonstrated without experimentation (Philosophy of Science Online n.d.).

One approach to the practical problem posed by Hume's constant conjunction criterion is to make the criterion probabilistic. If we let P(Y | X) denote the probability that Y will occur *given that X has occurred*, then constant conjunction requires that (Philosophy of Science Online n.d.):

$$P(Y \mid X)=1 \text{ and } P(Y \mid \sim X)=0$$

Many proposed causalities work well in one context (or appear to, at least) but not in another. To solve this problem, some modern philosophers have tried to limit their causalities to specific contexts, circumstances, or conditions. Accordingly, Rubin Causality (named for Donald B. Rubin) is defined in the limited context of an experimental *milieu*. Under Rubin Causality, any relationship demonstrated in an experiment (where the units of analysis are randomly assigned to experimental and control groups) is a valid causal relationship; any relationship that cannot be demonstrated in an experiment is not causal (Philosophy of Science Online n.d.)

Transportation safety studies are casual in nature (Karwa, Slavković and Donnell 2011). The questions that motivate most studies in the health, social and behavioral sciences are not associational but causal in nature (Pearl 2009). For example, what is the efficacy of a given drug in a given population? Can data prove that an employer is guilty of discrimination when hiring? What fraction of past crimes could have been avoided by a given policy? What was the cause of death of a given individual in a specific incident? These are causal questions because they require some knowledge of the data-generating process. They can neither be computed from the data alone nor from the distributions that govern the data.

## Boolean Approach

The Boolean Approach to comparative research is a rigorous method for testing process theories based on qualitative evidence: for example, case studies. It is stated that the Boolean Approach compensates for some of the weaknesses of the conventional approach to process studies by systematically comparing observations without forsaking much complexity. The approach involves systematic attempts to falsify and identify hypotheses based on truth tables constructed from

qualitative data (Rihoux 2006:4). The approach is also utilized to explain political phenomena by identifying the combinations of causal conditions present in cases where the phenomena are verified rather than searching for the frequency with which a particular causal relationship can be detected, as in quantitative research (Hicks and Janoski 1994:314). The Boolean Approach begins by identifying the conditions that are present in every available case of a phenomenon being investigated – i.e. a necessary conditions). It then compares the cases in order to establish whether there is a factor that produces the phenomenon on its own – i.e. a sufficient condition (Marsh and Stocker 2010:5).

Of course, a variety of Boolean methods exist for qualitative comparative research applications. Nonetheless, four of these methods have gained currency in the field. The first method involves making a distinction between combined and synthetic comparative strategies. This method, according to Ragin (2000), calls for integrating several features of case-oriented and variable-oriented approaches. Instead of completely synthesizing case-oriented and variable-oriented methods, it selectively unites certain features of the two. Thus, like the case-oriented strategy, the method facilitates the assessment of complex patterns of multiple and conjunctural causation; and like the variable-oriented strategy, the method facilitates the examination of large numbers of cases. The combination has the potential to emphasize relationships among variables and structural explanations while at the same time emphasizing the chronological particularities of cases and human agency.

The second method involves the employment of data and truth tables in comparative research. As Ragin (1994) demonstrates, data tables are utilized to provide a summary of all possible combinations of the variables involved in addition to the causal conditions that differentiate sets of cases. The user of this approach utilizes truth tables to organize data in a manner that allows the simplification of causal configuration vis-à-vis the specific procedures that are demonstrated.

The third method involves the application of Boolean methods to macro-social inquiry. Ragin (1989) shows how this method can be applied to elaborate the configurational approach: i.e. an approach that seeks to bridge the gulf between case-oriented and variable-oriented strategies. He also demonstrates how the method provides a direct avenue for uncovering simplifying assumptions, making it possible to bring them forward for inquiry.

The fourth method involves the dialogue of ideas and evidence in Boolean analysis. Building on the preceding three methods, Ragin (1989) suggests that this fourth method allows researchers to both digest many cases and to assess

causal complexity at the same time. It helps researchers to structure a qualitatively different dialogue between ideas and evidence – a dialogue that is simultaneously case-oriented and variable-oriented.

The Boolean Approach to comparative analysis, as mentioned above, can be applied using a raw data table that displays a specific combination of conditions (with 0 or 1 values) and an outcome (with 0 or 1 values) followed by a truth table that displays the data as a list of configurations (Rihoux 2006:4). A configuration is a given combination of some conditions and an outcome in which a specific configuration may correspond to several observed cases. The goal of a Boolean analysis then is to detect deterministic dependencies between the items of a questionnaire or similar data-structures in observed response patterns. These deterministic dependencies have the form of logical formulae connecting the items. Assume, for example, that a questionnaire contains items *i*, *j*, and *k*. Examples of such deterministic dependencies are then $i \rightarrow j$, $i \wedge j \rightarrow k$, and $i \vee j \rightarrow k$ (Rihoux 2006:4).

Today, Boolean analytical methods are used in many social science studies to gain insight into the structures of dichotomous data. Bart and Krus, for example used the Boolean Approach to establish a hierarchic order on items that described socially unaccepted behaviors. Janssens used a method of Boolean Approach to investigate the integration process of minorities into the value system of the dominant culture. Also, Romme introduced Boolean comparative analysis to the management sciences and applied it in a study of self-organizing processes in management teams (cited by Levy 2001).

## Comparative Systems Research Designs

As Gerring (2004) observes, a Comparative Systems Research Design is advocated as the ideal design for theoretically deductive studies as well as inductive studies such as those using the Constant Comparative Method and the Grounded Theory approach. Additionally, Comparative Systems Research Designs are used in comparative studies that employ either quantitative or qualitative methodologies, or a mixture of both, and which produce diachronic as well as synchronic data (Lieberma 2005).

Consequently, discussions of Comparative Systems Research Designs usually begin with British philosopher and political economist John Stuart Mill's methods of agreement and difference and then move on to most similar and most different systems. While the method of agreement refers to the study of similar cases in order to determine their causes, the method of difference refers to the study of

contrasting cases in order to determine their causes. A most similar system design allows a researcher to compare as many similar cases as possible on the belief that the more similar the cases compared the more possible that a researcher can isolate the factors that explain the differences between them. A most different system design allows a researcher to compare as many contrasting cases as possible in order to determine the robustness of a relationship between independent and dependent variables. The latter design is based on the belief that by demonstrating that the observed relationships hold in a range of contrasting settings, the better the research supports the argument (Faure 1994).

Faure (1994) delineates four types of Comparative Systems Research Designs. The first is the most similar system research design with a method of difference that deals with differences in similar cases. The second is the most similar system research design with a method of agreement that deals with similarities in similar cases. The third is the most different system research design with a method of difference that deals with differences in different cases. The fourth is the most different system research design with a method of agreement that deals with similarities in different cases.

Comparative Systems Research Designs are thus characterized by great flexibility, openness and variety. Furthermore, the method may be the logical choice when answering some questions aimed at developing valid theoretical concepts for describing empirical phenomenon and other questions aimed at identifying explanations. The method can be descriptive, explanative, and explorative in nature (Burau 2007). It can also be both variable- and case-orientated (Ragin 1987). The method may also be conducted at the macro, the meso, or the micro level (Burau 2007), as for example the national bureaucracy, the administrative organization(s), or administrative behaviour.

The method works differently in different research methodologies. In quantitative research, the method is characterized by the manipulation of an independent variable to measure and explain its influence on a dependent variable (Bureau and Salomonsen 2012). It is helpful in establishing correlations in comparative studies. Examples of such studies include the ones that seek to compare large amounts of demographic or employment data from different nations that define or measure relevant research elements differently. In qualitative research, the method is characterized by observing and recording outcomes without manipulation. Data are collected primarily by observation, and the goal is to determine similarities and differences that are related to the particular situation or environment of the groups being compared (Bureau and Salomonsen 2012).

Studies using Comparative Systems Research Designs require collaboration, strong teams, advanced technologies, and access to international databases, making them more expensive. It is therefore advised to use the method only when the necessary resources are available. It is equally urged not to use the method where there is little funding, limited access to necessary technology, and few team members. Because of the large scale of these studies, they should be conducted only if adequate population samples are available. Furthermore, data for these studies require extensive measurement analysis. If the necessary organizational and technological resources are not available, the method should not be used (Bureau and Salomonsen 2012).

The method has been used to investigate public administration and policies. Bureau and Salomonsen (2012), for example, note that the method was used in the comparison of the policies and politics of community nursing in Britain and Germany, a comparison of the social organization of maternity care systems in North America and Europe, a comparison of the institutionalisation of political advice in the Danish civil service, and a comparison of the implementation of a national diabetes service framework in British primary care trusts. Burau (2007) also used the method to compare the policies and politics of community nursing in Britain and Germany.

## Comparative Research Design Simulation for Program Evaluation

Computer simulations have become useful tools of mathematical modeling for many natural systems in physics, chemistry, biology, human systems in economics, psychology, and the social sciences, and in the process of engineering new technology to gain insights into the operations of those systems. They are useful for (a) improving students' understanding of basic research principles and analytical techniques, (b) investigating the effects of problems that arise in the implementation of research, and (c) exploring the accuracy and utility of novel analytical techniques applied to problematic data structures. In simulation, an analyst first develops data according to a known model and then examines how well the model can be detected through data analysis. Simulations even have advantages over abstract theorizing about abstract research issues, as they enable an analyst to come into direct contact with the assumptions that are made and develop a concrete 'feel' for their implications on different analysis techniques (Trochim and Davis (1986).

Trochim and Davis (1986) describe the uses of micro-computer simulations for the context of comparative human service program evaluation. The three most common research designs used in the evaluation are (1) a pre-test and post-test

randomized experiment, (2) a pre-test and post-test non-equivalent group design, and (3) a regression discontinuity design. These designs were then simulated using a single program called MINITAB – a statistical computing package (Ryan et al. 1978). Six constraints that defined the parameters for the simulations were applied. For each model, the program printed out the group means and standard deviations. Next, the researchers constructed bivariate plots for each model. The designs were then analyzed using the analysis of covariance (ANCOVA) regression model. The results could be used for comparing the effectiveness of different programs designed for teaching. The simulations also provide a way of evaluating implementation problems. They further make it possible to examine the potential of new data analysis techniques.

## Cross-national Approaches

According to Linda Hantrais (1995), a study is cross-national and comparative when individuals or teams set out to investigate particular issues or phenomena in two or more countries with the express intention of comparing their manifestations in different socio-cultural settings. These settings could include institutions, customs, traditions, value systems, lifestyles, languages, or thought patterns to be investigated by using the same research instruments either to carry out secondary analyses of national data or to conduct new empirical work. The aim of such a study, according to her, can be to seek explanations for similarities and differences, to generalize from the explanations, or to gain a greater awareness and a deeper comprehension of social reality in different national contexts.

Hantrais (1995) expressed that in many respects, the methods adopted in cross-national comparative research are similar to those employed within-nation comparisons or other areas of sociological research. She notes that the descriptive or survey method, which usually results in a state-of-the-art review, is generally the first stage in any large-scale international comparative project. At this stage, a juxtaposition approach is often adopted to gather data according to agreed criteria; the data are generated from either existing sources or new empirical work and are presented side by side frequently without being systematically compared.

Hantrais adds that some large-scale research projects are intended to be explanatory from the outset and, therefore, focus on the degree of variability observed among the different national samples. Such projects may draw upon several methods such as (a) the inductive method, starting from loosely defined hypotheses and moving towards their verification; (b) the deductive method, applying a general theory to a specific case in order to interpret certain aspects;

and (c) the demonstrative method, designed to confirm and refine a theory (Hantrais1995).

The major requirement for these approaches, according to Hantrais, is that instead of each researchers or group of researchers investigating his/hers/its own national context and then pooling information, a single researcher or single-nation team of researchers (dubbed as the 'Safari Approach') must formulate the problem and research hypotheses and conduct studies in more than one country. He/she/it must employ replication of the experimental design, generally to collect and analyze new data. Hantrais admits that this approach is more suited to the study of a smaller number of countries and for more qualitative studies whereby researchers are examining a well-defined issue in two or more national contexts and must possess intimate knowledge of all the countries under investigation. The researchers may combine surveys, secondary analyses of national data, and personal observations and interpretations of the findings vis-à-vis their wider social contexts. She adds that irrespective of the approach utilized, a shift is occurring moving the emphasis away from descriptive, universalistic and 'culture-free' approaches to social phenomena (Hantrais 1995).

In their seminal work titled *How to Compare Nations: Strategies in Comparative Politics* (1984), Mattei Dogan and Dominique Pelassy presented a detailed discourse on a method they called Binary Analysis, which refers to a comparison limited to two countries, that deserves special attention. As they warned, however, although this method is the most natural, it is not necessarily the easiest. They distinguished two kinds of binary comparisons. The first kind is the implicit, which refers to the perception of any 'other', thought of as different, continually seen in relation to the observer's own culture. Dialectically, the view from afar strengthens a researcher's reflections of himself/herself, his/her own culture, and his/her own society. The second kind is the explicit, which makes use of the historical method and enables a researcher to easily find out what determines the uniqueness of each nation. Dogan and Pelassy (1984) noted that the strength of Binary Analysis hinges on the fact that it leaves out neither the specific (inductive) nor the general (deductive). They added that the method's two shortcomings are that (1) it normally implies contributions by a series of experts and (2) the comparison may be based on a subject that is clearly more appropriate to one country than to the other.

## References

Breckner, Roswitha, 2007, 'Case-oriented Comparative Approaches: The Biographical Perspective as Opportunity and Challenge in Migration Research', *Concepts and Methods in Migration Research: Conference Reader*, 113-152, retrieved on April 13, 2017 from https://www.academia.edu/2528100/Case-oriented_comparative_approaches_the_biographical_perspective_as_opportunity_and_challenge_in_migration_research

Burau, Viola, 2007, 'Comparative Health Research', in M. Saks and J. Allsop, eds., *Researching Health: Qualitative, Quantitative and Mixed Methods*, London, UK: Sage Publications.

Bureau, Viola and Heidi Houlberg Salomonsen, 2012, 'Comparing Comparative Research Designs', *Working Papers from the Department of Political Science*, Aalborg University, Denmark, retrieved on May 41, 2017 from http://vbn.aau.dk/files/73680818/2012_1_Heidi_Salomonsen.pdf

Cacace, Mirella, Stefanie Ettelt, Nicholas Mays, and Ellen Nolte, 2013, 'Assessing Quality in Cross-Country Comparisons of Health Systems and Policies: Towards a Set of Generic Quality Criteria', *Health Policy,* 112: 156-162.

Coser, Lewis A., 1977, *Masters of Sociological Thought: Ideas in Historical and Social Context*, New York, NY: Harcourt Brace Jovanovich, Inc.

Creswell, John W., 2009, *Research Design: Qualitative, Quantitative, and Mixed Method Approaches*, 4th ed., Thousand Oaks, CA: Sage Publications.

Della Porta, D., 2008, 'Comparative Analysis: Case-oriented Versus Variable-oriented Research', in D. Della Porta and M. Keating, eds., *Approaches and Methodologies in the Social Sciences: A Pluralist Perspective*, New York, NY: Cambridge University Press.

Denzin, Norman K. and Yvonna S. Lincoln, 1994, 'Introduction: Entering the Field of Qualitative Research', in N. K. Denzin and Y. S. Lincoln, eds. *Handbook of Qualitative Research*, Thousand Oaks, CA: Sage Publications.

Dogan, Mattei and Dominique Pelassy, 1984, *How to Compare Nations: Strategies in Comparative Politics*, Chatham, NJ: Chatham House Publishers, Inc.

Durkheim, Emile, 1964, *The Rules of Sociological Method*, translated from the French by S. S. Solovay and J. H. Mueller and edited by G. E. G. Catlin, New York, NY: the Free Press.

Durkheim, Emile, 1949, *Division of Labor in Society*, translated from the French by George Simpson, Glencoe, IL: The Free Press.

Durkheim, Emile, 1895, 'The Rules of Sociological Method', S. Lukes, 1982, *Library of Congress Cataloguing in Publication Data*, New York, NY: The Free Press.

Eckstein, Harry, 2000, 'Case Study and Theory in Political Science', in R. Gomm, M. Hammersley and P. Foster, eds., *Case Study Method*, London, UK Sage Publications.

Faure, Andrew Murray, 1994, 'Some Methodological Problems in Comparative Politics', *Journal of Theoretical Politics*, 6, 3:307-322.

Gerring, John, 2004, 'What Is a Case Study and What Is It Good for?', *American Political Science Review,* 98, 2: 341-354, retrieved on May 31, 2017 from https://fekmekci.files.wordpress.com/2014/11/gerring-case-study.pdf

Hantrais, Linda, 2009, *International Comparative Research: Theory, Methods and Practice*, Basingstoke, UK: Palgrave Macmillan.

Hantrais, Linda, 1995, 'Comparative Research Methods', *Social Research Update* 13, retrieved on April 13, 2017 from http://sru.soc.surrey.ac.uk/SRU13.html

Hicks, Alexander M. and Thomas Janoski, 1994, *The Comparative Political Economy of the Welfare State*, Cambridge UK: Cambridge University Press.

Karlberg, Stephen, 1994. *Max Weber's Comparative Historical Sociology*, Chicago, IL: The University of Chicago Press.

Karwa, Vishesh, Aleksandra B. Slavković and Eric T. Donnell, 2011, 'Causal Inference in Transportation Safety Studies: Comparison of the Potential Outcomes and Causal Diagrams ('Bayesian Networks' – in original submission)', *The Annals of Applied Statistics*, 5, 28:1428-1455, retrieved on April 13, 2017 from https://arxiv.org/pdf/1107.4855.pdf

Levy, Jack S., 2001, 'Explaining Events and Developing Theories: History, Political Science, and the Analysis of International Relations', in C. Elman and M. Elman, eds., *Bridges and Boundaries: Historians, Political Scientists, and the Study of International Relations*. Cambridge, MA: MIT Press.

Liberman, Evan S., 2005, 'Nested Analysis as a Mixed-Method Strategy for Comparative Research', *American Political Science Review,* 99, 3:435-452, retrieved on May 31, 2017 from http://www.rochelleterman.com/ComparativeExam/sites/default/files/Bibliography%20and%20Summaries/Lieberman%202005.pdf

Lijphart, Arend, 1971, 'Comparative Politics and the Comparative Method', *American Political Science Review*, 65, 3:691-693.

Marsh, David and Gerry Stocker, eds., 2010, *Theory and Methods in Political Science*, London, UK: Palgrave Macmillan.

Mazman, Ibrahim, 2005. 'Max Weber and Emile Durkheim: A comparative Analysis on the Theory of Social Order and the Methodological Approach to Understanding Society', *Sosyal Billimler Dergisi*, 67-83, retrieved on April 13, 2017 from http://asosindex.com/cache/articles/article-1423867208.pdf

Mills, Melinda, Gerhard G. van de Bunt and Jeanne de Bruijn, 2006, 'Comparative Research. Persistent Problems and Promising Solutions', *International Sociology*, 21, 5:619-631, retrieved on April 21, 2017 from http://euroac.ffri.hr/wp-content/uploads/2012/10/Comparative-Research_Problems-and-Solution.pdf

Münch, Richard, 1988, *Understanding Modernity: Toward a New Perspective Going beyond Durkheim and Weber*, New York, NY: Routledge.

Pearl, Judea, 2009, 'Causal Inference in Statistics: An Overview, *Statistics Surveys* 3:96–146, retrieved on April 13, 2017 from http://ftp.cs.ucla.edu/pub/stat_ser/r350.pdf

Philosophy of Science Online, n.d., 'Causal Inference in Comparative Research', retrieved on April 13, 2017 from http://poli.haifa.ac.il/~levi/inference.html

Pickard, Alison Jane, 2007, *Research Methods in Information,* London, UK: Facet Publishing.

Ragin, Charles C., 2006, 'How to Lure Analytical Social Science Out of the Doldrums: Some Lessons from Comparative Research', *International Sociology*, 21, 6: 633-646.

Ragin, Charles C., 2000, *Fuzzy-Set Social Science*, Chicago, IL: The University of Chicago Press.

Ragin, Charles C., 1999, 'The Distinctiveness of Case-oriented Research', *Journal of Health Services Research*, 34, 5:1137-1151.

Ragin, Charles C., 1997, 'Turning the Tables: How Case-oriented Methods Challenge Variable-oriented Methods, *Comparative Social Research* 16:27-42, retrieved on April 13, 2017.

Ragin, Charles C., 1994, *Constructing Social Research: The Unity and Diversity of Method*, Thousand Oaks, CA: Pine Forge Press/Sage Publications.

Ragin, Charles C., 1989, *The Comparative Method*, Berkeley, CA: University of California Press.

Ragin, Charles C. and David Zaret, 1983, 'Theory and Method in Comparative Research', *Social Forces*, 61:731-754.

Rihoux, Benoît, 2006, 'Qualitative Comparative Analysis (QCA) and Related Systematic Comparative Methods: Recent Advances and Remaining Challenges for Social Science Research', *International Sociology*, 21, 5:679-706.

Ryan, Thomas A., Brian L. Joiner and Barbara F. Ryan, 1978, *Minitab Student Handbook*, North Scituate, MA: Duxbury Press.

Trochim, William M. K and James E. Davis, 1986, 'Computer Simulations for Program Evaluation, *Evaluation Review*, 10, 5:609-634, retrieved on April 13, 2017 from http://www.socialresearchmethods.net/research/Computer%20Simulation%20for%20Program%20Evaluation.pdf

Von Eye, Alexander, G. Ann Bogat and Jean E. Rodes, 2006, 'Variable-oriented and Person-oriented Perspective of Analysis: The Example of Alcohol Consumption in Adolescence', *Journal of Adolescence,* 61:981-1004, retrieved on April 13, 2017 from http://rhodeslab.org/files/Voneye.pdf

Weber, Max, 1958, *The Protestant Ethic and the Spirit of Capitalism*, translated by Talcott Parsons, New York, NY: Scribner.

Weber, Max, 1968, *Economy and Society: an Outline of Interpretative Sociology*, edited by G. Roth and C. Wittick, translated by E. Fischoff et al., New York, NY: Bedminster Press.

Westby, David L., 1991, *The Growth of Sociological Theory: Human Nature, Knowledge, and Social Change*, Upper Saddle River, NJ: Prentice-Hall Inc.

Wrong, Dennis Hume, ed., 1970, *Max Weber (Makers of Modern Social Science*), Upper Saddle River, NJ: Prentice-Hall Inc.