# Comparative Research

Persistent Problems and Promising Solutions

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*abstract:* The enduring importance and utility of comparative research in sociology are as old as the discipline itself. Although comparative research flourishes within this discipline, methodological problems persist. After defining comparative research, this article outlines some of its central problems, including: (1) case selection, unit, level and scale of analysis; (2) construct equivalence; (3) variable or case orientation; and (4) causality. The discussion finishes with a brief introduction of the critical and innovative articles within this special issue that not only address these problems, but also present promising solutions.

*keywords:* comparative analysis  $\blacklozenge$  methodological problems  $\blacklozenge$  quantitative and qualitative methods  $\blacklozenge$  small-*N* research design

# Introduction

Comparison in sociology is inescapable. The importance and utility of comparative research are as old as the discipline itself. In a now famous quote, Durkheim insisted that: 'Comparative sociology is not a particular branch of sociology; it is sociology itself, in so far as it ceases to be purely descriptive and aspires to account for facts' (Durkheim, 1938: 139). Although comparative research flourishes within this discipline, persistent methodological problems remain (see, for instance, Hoffmeyer-Zlotnik and Wolf, 2003). Comparative research poses several key methodological

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problems that continue to frustrate, captivate and stimulate researchers. These are the selection of cases (including the unit, level and scale of analysis), construct equivalence, variable vs case orientation and the pivotal problem of causality.<sup>1</sup>

The goal of this article is to define comparative research, situate its value and effectiveness, outline central problems and introduce promising solutions. The relevance of a special issue on Comparative Research for *International Sociology* is evident. First, the topic of comparative research transcends subject matter, time, space and methodological affiliation. It relates to the international audience of sociologists across all regions of the world studying a wide range of subject matter and operating from diverse methodological standpoints.

An added reason for this special issue is the need to delve further into the heated debate and growing conflict on the identification and acknowledgement of problems in comparative analysis. Some researchers are challenging fundamental, taken-for-granted 'rules' relating to the way that social scientists conduct research, study causality, select cases or samples, generalize and undertake key aspects of comparative analysis. Smelser (2003) characterized this as the debate between radical positivism and radical relativism with the former searching for identifiable 'social facts' and the latter arguing that nothing can essentially be compared. Although we are unable to include the many sides of this debate within the limitations of one publication, this special issue provides a forum for scientists at the forefront of this conflict.

Charles Ragin endeavours to lure us 'out of the doldrums' by arguing that sociologists have fallen into a template-based research trap. In doing so, he challenges many of the fundamentals of standard quantitative social science. Kittel argues that one of the most customary and popular methods in comparative research – macro-quantitative comparative research – is in fact a 'crazy methodology' (following a claim made by Cartwright, 2002). Rihoux provides a state-of-the-art review of qualitative comparative analysis (QCA), one of the dominant methods used in comparative research and then critically assesses recent developments, current debates, key issues and future development of QCA and related methods, such as multi-value QCA and fuzzy sets. Gerring forces us to rethink the logic of conventional comparative case study research by presenting the methodological elements of the single-outcome study from three analytical angles: nested, most-similar and within-case analysis. Finally, Mjøset takes on the enduring problem of generalization of case studies and introduces a new pragmatist strategy of generalization for the social sciences.

Before turning to central problems and promising solutions in comparative analysis, it is essential to first understand what we mean by comparative research. We then turn to a brief discussion of the central, largely methodological, problems in comparative analysis followed by a brief synopsis of the articles within this special issue.

## **Comparative Research**

Comparative research or analysis is a broad term that includes both quantitative and qualitative comparison of social entities. Social entities may be based on many lines, such as geographical or political ones in the form of cross-national or regional comparisons. There is a large body of crossnational comparative research, including the cross-national variation in public support for cuts in unemployment benefits (Fraile and Ferrer, 2005), the analysis of changing health care systems in OECD countries (Castilla, 2004), measurement of demographic and socioeconomic variables in cross-national research (Wolf and Hoffmeyer-Zlotnik, 2003), or the crossnational comparison of employment careers (Blossfeld et al., 2006). Comparisons are also common across categories or social groups, such as in the study of stratification by social class (Erikson and Goldthorpe, 1992) or core emic categories in ethnographic studies in the study of ethnic classification (e.g. Gravlee, 2005).

The underlying goal of comparative analysis is to search for similarity and variance. Those searching for similarity (i.e. the regression equation) 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. However, it remains difficult to determine these universal patterns in social research. For this reason, comparative research is used to separate patterns that are more general and isolate regularities from the contextladen 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.

## Persistent Problems in Comparative Research

There are enduring methodological problems in comparative research, several key problems include: (1) case selection, unit, level and scale of analysis; (2) construct equivalence; (3) variable or case orientation; and finally, (4) issues of causality.<sup>2</sup>

#### Case Selection, Unit, Level and Scale of Analysis

Ebbinghaus (2005) recently argued that case selection or sampling is one of the most critical problems within comparative research. In cross-national

comparative research, cases have been preselected due to historical and political processes. In small-*N* case studies, the selection of cases is often deliberate and theory-driven. In a detailed discussion of this problem, Ragin (this issue) categorizes this as the difference between a 'given' and 'constructed' population. Since the constructed population is more theorydriven, it is likewise more driven by the researcher and may be open to favouring the findings of a particular research question. Conversely, although given or taken-for-granted populations are seemingly objective, they may contain many irrelevant cases that significantly impact the results (Mahoney and Goertz, 2004). As Ragin maintains in this issue, this can be a large problem: 'if these irrelevant cases all exhibit zero or very low scores on both the hypothesized causal conditions and the outcome, they are automatically theory confirming'. This is not the aim or desire of the social sciences.

In addition, researchers have to decide on the scale of the analysis. The choice lies between a small and a relatively large N (i.e. sample size), which each pose specific problems. In the case where the researcher chooses to include a large number of units (e.g. countries) with only scant, more general comparative variables she or he runs the risk of producing superficial, though potentially statistically sound results. On the other hand, if the researcher chooses to include only a few units of analysis with numerous variables she or he takes the risk of having too many variables and too few cases to effectively test causal models.

Yet it is not only the unit, but also the level of analysis that is vital for comparative research and specifically, the study of macro-phenomena in general. This has been extensively discussed both in theoretical (e.g. Schelling, 1978; Lindenberg, 1985; Coleman, 1986, 1990; Esser, 1993) and methodological terms (e.g. Blalock, 1984; DiPrete and Forristal, 1994). Studying the effects of macro-structural aspects of entire nations, such as the gross national product (GNP) per person or unemployment rates is quite different from examining the effects of micro-level individual characteristics such as the impact of an individual's education or age. Kittel (this issue) offers an interesting angle to this problem. Another related problem that emerges with case selection is that the unit of analysis or population under study is not always self-evident, such as the nationstate in cross-national studies (Dogan and Pelassy, 1984; Harkness et al., 2003). Finally, among others, there are the issues of standardization and subsequent differences across groups such as variation in the real value of wages or cost of living across nations in cross-national studies.

#### Construct Equivalence

Since the goal of comparative research is to search for both similarity and variance in cases, research necessitates equivalent instruments or definitions to measure constructs. Many argue that cross-national or cultural comparisons are only valid when there is construct equivalence (e.g. van de Vijver and Leung, 1997; Harkness et al., 2003; Moors, 2004). Construct equivalence refers to the instance where the instrument measures the same latent trait across all groups, or nations, or cultures. Prime examples include the considerable efforts to build cross-national comparative categorizations of class (e.g. Erikson and Goldthorpe, 1992) and a socioeconomic index of occupational status (Ganzeboom et al., 1992).

The necessity of equivalent comparison within comparative studies also forces us to debate the utility and meaning of standard analytic concepts such as 'race' and 'class', but also seemingly straightforward concepts such as 'age' and 'gender'. The term 'race' as used in the North American context, for example, is vastly different from Latin Americans' use of the same term (Gravlee, 2005). Cross-national or cross-cultural comparisons of constructs allow researchers to identify which definitions transcend a particular context or which are nation- or cultural-bound.

### Variable or Case Orientation?

The case-oriented approach aims at fully understanding one or only a few cases, thereby using many variables, whereas the variable-oriented approach stresses the search for parsimony: statistical explanation of variance in many cases by means of only a few variables (see, for instance, Pennings et al., 1999). In The Comparative Method, Charles Ragin (1987) was the first to advocate what he termed a complementary logic to the tradition of multivariate statistical techniques. Using Boolean algebra, he promoted a shift to case- rather than variable-oriented research, and historical as opposed to causal. Several authors in this special issue (Ragin, Kittel) raise the issue of whether variable-oriented statistical models à la King et al. (1994) are superior to more case-oriented approaches. Ragin encourages research not only in terms of variables, but also in terms of 'sets' of cases. His work on fuzzy sets (Ragin, 2000) involves the categorization of the degree of membership of particular cases in sets thereby providing a combination of quantitative (i.e. interval scales) and qualitative (i.e. more focus on theoretical constructs) measurement.

#### Causality

Untangling causality has been a central methodological problem within sociological research. The core of the debate lies in the distinction between more positivist nomothetical notions of causality such as that advocated by John Goldthorpe, and the more interpretative and critical approaches introduced by scientists such as Charles Ragin. Coleman's (1990) revision of Merton's 'bathtub' model, which is discussed shortly, translates causality into the analysis of transition mechanisms between the macro- and micro-levels. This work inspired Goldthorpe (2000), who adopts the model and situates causal explanations along three stages. First, following Weber, Goldthorpe maintains that we need to establish social regularities at the macro-level, which is achieved via statistical techniques mostly based on correlations. In the second stage, he argues for the need to specify hypotheses regarding underlying social mechanisms and processes that generate these regularities. Adopting the rational actor model, he maintains that the central tendency of actions by social actors is rational and thereby specified to contain common regularities as well as uncommon aspects. But, Goldthorpe argues, uncommon elements do not systematically depart from common regularities. Moreover, when aggregated, the two effectively eliminate one another, leaving a final pattern that reflects the common elements of social action. He concludes by arguing that these explanations must be validated by whether they result in unintended patterns on an aggregated level.

Ragin's approach clashes with Goldthorpe's focus on the necessity to establish universals. Drawing upon previous empirical applications, Ragin (this issue) asks us to rethink several standard assumptions in quantitative research. The first is the analytical separation between independent variables as causes of the dependent variable. Instead of viewing independent variables as linear and additive with 'net' effects, he urges thinking in terms of 'recipes' or a combination of causally relevant conditions that must be present in order to witness a particular outcome. In other words, causal combinations, particularly for estimating complex interaction effects, would replace linear-additive models. In a second argument, he takes on the standard use of correlations, by arguing that researchers need to focus on explicit as opposed to associational connections. This can be achieved, Ragin argues, by examining cases with the same outcome and then identifying shared causal conditions, or, conversely, by examining cases with similar causal conditions and assessing similarities in the outcome.

# Summary of this Special Issue

The five authors in this issue all are highly recognized scholars in the field of the methodology of comparative research. They all have, although from completely different angles, dedicated (part of) their work to the small-*N* problem (*N* being at least 1). Aware of the risk that we do not do them justice, by ignoring vital details, and only focusing on the main line of argumentation, we briefly discuss their contribution to this special issue.

Charles Ragin summarizes and synthesizes his work on comparative research in a lucid manner. Ragin challenges us to rethink our basic presumptions about causality and the common notion of drawing conclusions from linear statistical associations. Ragin provides a radically different viewpoint to mainstream, largely American, quantitative social science. He urges researchers to deviate from the 'template' of social research that they have inadvertently fallen into. Ragin poses some basic questions that challenge the very foundations of how we do science. Is it true that all social science research is now judged by the standards of quantitative research? Are our competing theories actually too weak and vague to be tested and connected to causal outcomes? Ragin argues that researchers fall back on this trusted approach due to a lack of alternative. But is this the case? Are we really in the doldrums of template-driven research, as Ragin argues? Ragin turns sociology 'on its head' by challenging how we think about the fundamentals of our work including theories, methodological approaches, causality, population and dependent and independent variables. Ragin also provides an innovative contribution by introducing the new notion of taking two fuzzy sets and perceiving them in terms of necessity and sufficiency and then examining their co-variation. In other words, he asks whether one set contains all or most of the cases of another set of sets.

Following Cartwright's (2002) claim that the methodology of the macroquantitative approach is 'crazy', Bernhard Kittel discusses the limits of this approach in the social sciences, and the implications this has for the future of macro-quantitative research. Following Coleman (1990), he claims that in understanding macro-relationships, one should focus on micro-behaviour. This implies that (bridge) assumptions should be specified in order to link (independent) macro-level properties and individual behaviour, but more importantly, and more challenging, to specify the transformation rule (in Kittel's words 'the aggregation rule via the representative agent'). With this he asks: in what way does the combination of individual behaviours describe or lead to the (dependent) macro-level properties? These steps constitute Coleman's 'bathtub' model (sometimes referred to as the 'Coleman boat'). However, Kittel also notices that specification of the transformation rule is often impossible. But why is this the case? As Kittel asserts in his article: 'In the social sciences, neither identity nor independence of behaviour are warranted due to the reflexive nature of the action capacity of individuals.' Phrased differently, Kittel argues that 'the assumption of independence and identity of behaviour are not applicable by definition, since strategic interaction implies that the actors respond to each other's behaviour' (emphasis added). Kittel concludes that in cases in which collective policy decisions form the core of the research question, as is the case in most comparative political economy, Cartwright is right in her verdict: this methodology is indeed crazy.

Benoît Rihoux discusses recent advances in qualitative comparative analysis (QCA), originally introduced by Ragin (1987). According to

Rihoux, QCA not only covers a set of techniques (especially suited for small-*N* and intermediate-*N* research), it can also be characterized as a research strategy, which combines features of the case-oriented, and the variable-oriented approach. However, because of some limitations of OCA (for instance, OCA only allows dichotomous variables), related methods and techniques have been developed such as the direct extension of OCA, namely multi-value OCA (Crongvist, 2005), which overcomes the dichotomy problem, fuzzy sets (Ragin, 2000) (see also Ragin's example in this issue), and third, most similar, different outcome/most different, similar outcome analysis (MSDO/MDSO) (De Meur et al., 2006). Rihoux provides a brief discussion of each method, presents some important developments in recent years, and discusses their pros and cons around five key issues: (1) the selection of cases and model specification; (2) measurement, dichotomization and the relation with theory; (3) contradiction in the data and as a result of the small-N, non-observed cases; (4) the introduction of the time and process dimension; and finally, (5) the confrontation or combination with other methods.

John Gerring outlines the difference between a single-case study and a single-outcome study, presenting the latter as a specific type of case study. He forces us to rethink standard case study research by a detailed dissection of the distinction between nomothetic cases (a narrowly focused study that reflects upon a larger population) and an idiographic or single-outcome study (investigates a bounded unit to elucidate a single outcome). He presents the methodological elements of the single-outcome study from three different angles, namely nested (N is large), most-similar (*N* is two or three cases that only differ in the dimension of interest) and within-case analysis (N is 1). According to Gerring, all three should in principle be used. However, in many cases, this is not possible or viable, but if so, they may even lead to different conclusions. Some, and perhaps most, researchers become worried and simply treat the divergent outcomes of the within-case analysis as 'noise', which Gerring argues is not the aim of within-case analysis. The purpose is to study a particular case, regardless of the outcome and to avoid falling back on the rationalization of 'noise'.

Finally, Lars Mjøset presents a case study of a case study, in which he discusses divergent attitudes about generalization in social research. He maintains that we have been caught in an argument of dualisms between 'explanation vs understanding' and 'general vs specific'. Returning to the causality debate, he argues that those who search for explanation derive their inspiration from the natural sciences by searching for causal regularities that are built upon hypotheses derived from 'idealized' notions of theory, whereas those seeking understanding follow a humanities approach that attempts to gain a holistic impression and treats theory as 'a set of transcendental categories'. He reminds us that this dichotomy

also emerges in the persistent debate between generalizability and case specificity. Building upon US pragmatist (Chicago School) and European critical standpoint theories, Mjøset introduces the 'pragmatist' approach to the social sciences. This is achieved by a detailed analysis of theories (in total 22) concerning the case of the Israeli–Palestinian conflict.

# Conclusion: Promising Solutions and Future Challenges

Although authors such as Kittel argue that the methodology of most macro-quantitative social science research is crazy, Ragin scolds us for falling into the doldrums and Mjøset depicts us as polarized into two camps, the researchers and their colleagues in this special issue also produce enough convincing arguments to encourage and foster promising solutions for comparative research. They not only present us with problems, but also alert us to the challenges to come.

Ragin is positive about building bridges between qualitative and quantitative researchers. He pleads for the integration of qualitative features into quantitative research, and takes the lead in presenting the concept of fuzzy sets (Ragin, 2000; and this issue). Rihoux presents an overview of a mix of old (QCA) and new (multi-value QCA, fuzzy sets and MSDO/ MDSO) techniques in the field of systematic comparative case analysis methods that boast a promising future. By introducing the single-outcome approach, Gerring stimulates us to move beyond merely conventional comparisons between case studies to a focus on the specificities within a case. Mjøset urges us to transcend persistent dichotomies in the social sciences by introducing a pragmatist attitude that takes a different strategy towards generalization and specification.

Although this special issue offers many promising solutions, it likewise alerts us to the fact that there are still many challenges ahead. Ragin shows not only the dangers of constructed populations, with the risk that empirical findings may be the result of the construction itself, but also points to the hazard of using given populations. A data set polluted with many irrelevant cases may just as equally bias the results. Instead of relying on given or taken-for-granted populations for our analyses, Ragin (1997; and this issue), asks us to draw upon theory to define relevant cases, and define sets of cases that are theoretically most relevant. This attention to theory-driven case selection also forces the researcher to more overtly define his or her main constructs.

Kittel returns to the very foundations of social research, by questioning how we view social change and stability via mechanisms between micro- (individual) level and macro-level phenomena. He challenges us to explicate the conditions under which Coleman's bathtub model works and when it does not. In Kittel's words, when can we treat individuals as representative agents? Or, under which circumstances is it a crazy methodology? Through a state-of-the-art review of qualitative comparative methods, Rihoux urges the development of new software and the integration of techniques. By introducing the single-outcome study, Gerring challenges our very understanding of case study research. He breaks open the debate about how we view case studies and forces us not only to write off different outcomes during comparison as 'noise' but to take these differences seriously. Finally, Mjøset takes on one of the most fundamental problems in case study research – the generalizability of results, a debate that promises to continue long into the future. It is our hope that the debate and progress in comparative research will continue in the coming years within the pages of *International Sociology* and beyond.

### Notes

The Editors would like to thank all authors that participated in this special issue and particularly the many expert reviewers who contributed not only their valuable time, but also offered numerous constructive and insightful comments to all of the authors.

- 1. The aim of this article is to only briefly introduce some of the central problems within comparative research. The problems listed here are certainly not exhaustive. For a detailed discussion, see works such as Oyen (1990), Ragin (1991) and van de Vijver and Leung (1997).
- 2. We are aware that in cross-national studies, the small *N* of units (often nations, societies) is a critical problem. As Kittel (this issue) and others such as Ebbinghaus (2005) remind us, the employment of inference statistics in large-*N*, often cross-national studies, is highly problematic due to the lack of random selection and high stratification of the sample. Because this is such an obvious problem and is discussed elsewhere in this issue, we do not go into detail.

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