Models of Causality in Qualitative Political Science Research

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Abstract: *This contribution aims to introduce three models of causal inference in qualitative research in comparative political science. This paper seeks to establish a basic framework for understanding three distinct ways of causal reasoning, to draw attention to some of their relative advantages and disadvantages and outline how to use them in practical research. The three models include the causal effects model, the configurative model of causality which investigates the combinations of conditions leading to the specific outcomes, and a model based on an analysis of causal mechanisms. These models are applied to specific research problems and methods of empirical testing of political science theories.*

Causality is a central methodological concept, which is often underestimated in the practical aspects of political research. However, reasoning about the causes of specific phenomena should generally be one of the main tasks of any (social) scientific research. It is therefore important to specify what researchers mean by causality in diverse research settings and how these understandings influence their eventual conclusions. Recent developments in qualitative methods in political science have revealed a broad diversity in approaches to causal inference. It remains to be seen, however, whether or to what extent are these conceptions compatible with each other and what their implications for practical research are. It is not possible here to cover the full discussion about causality and its relationship to studying social phenomena. This contribution thus only has modest aims in clarifying the major concepts as used by both methodologists and practicing social scientists. The goal of this paper

is to identify major themes in the existing debate. Further research related to these issues is necessary.

Model based on causal effects

The model based on estimating causal effects of specified variables is derived from classic experimental method. Although the use of 'clean' experiments in the social sciences is usually impossible, a number of comparative political studies explicitly or implicitly uses (pseudo)experimental logic. The basic principle of experimental methods is comparison. Neil Smelser, for example, emphasized that the comparison is a central element of the classical laboratory experiments (Smelser 2003: 644). Put simply, two groups, experimental and control groups, are created in this framework which share basic characteristics. One of them is exposed to the stimulus (independent variable), while the other is not. The aim is an attempt to compare the resulting values in both groups to determine whether this single difference leads to a common variation in the dependent variable. This in turn allows confirming or rejecting the existence of a causal relationship between the two variables. Ideally, the experiment provides the most appropriate way of verification of hypotheses and in the social sciences. In the vast majority of political research (perhaps with the exception of political psychology) the implementation of experiments in laboratory conditions is for practical and ethical reasons impossible.

This mode of causal inference refers to a set of methodological assumptions and recommendations that are based on statistical and experimental methods, but which were amended to fit the needs of qualitative research. The direct relationship to statistical methods could be understood by specific denominations of this style of research used by different authors, such as "pre-statistical methods" (McKeown 1999: 165)., "intuitive regression" (Bennett and Elman 2006: 461) or "ordinal comparison" (Mahoney 2000: 399). The clearest articulations of this method are the works by A. Lijphart (1971) and the classic methodological book *Designing Social Inquiry* by King, Keohane and Verba (1994). This model is comparable to both the statistical and experimental methods for two main reasons: (1) in terms of the ontological understanding of causality and (2) in terms of the selection of cases. It is based on the same definition of causality as the majority of statistical models. Causality is here defined by counterfactual reasoning. As in the experimental method, the values of the dependent variables are compared with the values of dependent variable in empirical cases. The causal effect is then estimated on this basis. This model is in the statistics referred to as "Rubin-Holland" model of causality (Holland 1986). A key feature of such an approach is the correlational nature of this method. The causal conclusions are drawn based on the covariation between the dependent variable and a small number of independent variables. Cases are considered analogically to statistical observations and the examination is based on detecting the presence of values of study variables (Hall 2003: 380). The main research objective is thus an assessment of the relative importance of independent variables selected

from rival theories. The importance of these causal relationships is estimated by means of partial correlations.

King, Keohane and Verb explain the principle of causal effects with the help of a hypothetical example from electoral studies (King et al. 1994: 76–82). They estimate the causal effect of the incumbency status of a candidate (independent variable) on his or her electoral victory (dependent variable). The independent variable can have two values: either the candidate is a new candidate or is and incumbent. Dependent variable is expressed at the interval level in the percentage of votes. It is theoretically possible to justify the hypothesis that a candidate who in the previous term had held the mandate, is more likely to win than a completely new candidate. The main reasons for this include greater media visibility, public knowledge of the candidate or his ability to influence the flow of funds to his constituency. Here, the difference between the observed value of the dependent variable after the elections and the value of the same variable in case the value of the independent variable changed, represents the estimated causal effect. In other words, for knowing this value, it is necessary to go back in time and ensure that all the circumstances remain the same except that the candidate is a non-incumbent. The basis for this definition of causality is a counterfactual condition: a situation that actually did not happen, but which could have resulted, if the value of the original independent variables changed.

Clearly a problem (which Paul Holland called the *Fundamental problem of causal inference*) is that we can empirically observe only either the former value or the latter value, but never both at the same time (Holland 1986: 947). In relation to this example, it is not possible in one election in one electoral district to observe both the electoral result of both incumbent and non-incumbent. Emphasis here is placed on the possibility of observation: the fact that both values cannot be observed at the same time does not mean that we cannot have any knowledge about the two values. This knowledge can be gained on the basis of comparison with other similar cases. Consequently, if two assumptions are fulfilled, it is possible to estimate the value of dependent variable in the counterfactual case. These two assumptions are unit homogeneity and conditional independence. The accuracy of causal inferences identified by the causal effects will vary depending on the extent to which these assumptions are justified in a particular research environment.

The impossibility of experimentation in social sciences is a consequence of the impossibility of artificially manipulating the independent variable and observing the value of dependent variable in the counterfactual case. Despite this problem, many research applications of the comparative method in political science use counterfactual reasoning. Within this variety, various methods of controlled comparison stand out: natural experiments, quasi-experiments and counterfactual studies.

Configurative model of causality

The basis for using the configurative model of causality in political science research was provided by Charles Ragin who distinguished two comparative methodological approaches: *variable based* and *case based* (Ragin 1981). While the first type corresponds to a statistical approach, which seeks to explain the values of variables on the basis of examination of a large number of cases, the second type, by contrast, seeks to explain the specific cases. The main difference between the two is the way to deal with complex problems of causality. While the former approach advocated by King, Keohane and Verba uses causal effects, the latter views cases as holistic *configurations* of conditions.

The case-based approach allows the cases to be examined holistically as a whole, rather than as aggregations of individual parts (abstract variables). Relations between parts of a whole are interpreted within this context, not in relation to general patterns covariation between variables that can be generalized to the entire population of cases (Ragin 1987: 52). It allows for the interpretation of different combinations of conditions leading to the specified outcome. This stands in sharp contrast with the variable-based approach, which in turn emphasizes the importance of the same combination of causes for the outcome variable and where the relations between parts (variables) in one case determined on the basis of patterns derived from the entire population. The configurative model takes seriously the many patterns of causal complexity, which include the problems of asymmetrical causation, equifinality, multifinality or endogeneity. The process of establishing causal relationships is not viewed in the simple statistical terms.

Methodological antecedents that embody the configurative model of causality include the so called methods of agreement and difference devised by John Stuart Mill (for a discussion, see Kouba 2008a). A newer application is the Qualitative Comparative Analysis (QCA), a relatively new method, which was originally formalized by Charles Ragin in 1987 (Ragin 1987). Its main principles are based on the basic operations of Boolean algebra, invented mid-19th century by George Boole. These operations are used to determine whether the specified conditions or combinations of conditions are necessary and/or sufficient for the outcome (Kouba 2008b). The main purpose of QCA is to find different combinations of conditions leading to the same result. Its aim is to find solutions to methodological problems caused by complex causality. In terms of deterministic causality QCA is based on the assumption that no single cause may be either necessary or sufficient for the outcome. Because of the complexity of the calculations in cases with large number of conditions it is necessary to use a special computer program in order to perform the calculations. The configurative model which is contained in QCA and related techniques (especially fuzzy set QCA) is based on the concept of causality through INUS conditions originally devised by John Mackie (1966). This view defines cause as an insufficient but necessary part of a set of conditions which are together unnecessary but sufficient for the outcome.

Causal mechanisms

Causal mechanisms are an essential part of any causal inference that connects the perceived cause and outcome, and therefore attention should be given to them in comparative research. Causal mechanisms can be simply defined as processes and intervening variables, through which the independent variable performs causal effect on the dependent variable (Mahoney 2000: 412, George and Bennett 2004: 207). Research strategies that apply this principle are generally called *process-tracing*, but other techniques can also be derived from this model of causality, including historical narrative or within-case analysis. This style of research is clearly based on the qualitative research tradition, and is closest to the ideal type of case studies. Its central element is not the analysis of variables across several cases, but the emphasis on finding a theoretical justification for a causal chain in a single case. On the other hand, the reason for using within-case analysis is not an in-depth analysis of a single case, but should either be viewed as a type of the comparative method. Furthermore, within-case analysis determines causality differently from both configurative and causal effects models.

The importance of causal mechanisms for political research can be viewed in two ways which in turn affect the way they are identified. The first of these understands causal mechanisms as an infinite regression of intervening variables between causes and outcomes. In the causal relationship it is possible to identify an infinite number of steps (variables), linking the cause with the outcome. In order to determine their causal status, it would be necessary to establish a causal effect of all of them. For each pair of variables in this causal chain, therefore it would be necessary to determine the influence exercised on the next variable. In this perspective it is crucial to estimate partial causal effects for each pair of intervening variables. In this sense, therefore, causal effects are logically prior to causal mechanisms (King et al. 1994: 85–86). Identification of the causal mechanisms may be used, according to this view, to support or refine a theory, but is not an essential part of research.

The second solution is offered by more interpretivist methodological approaches. The main problem for the model based of causal effects is the impossibility to empirically demonstrate causality. Empirical evaluation can determine whether correlations or other regularities exist between certain phenomena, but discovering causal relationships must be based on existing theory. Causality therefore has to be interpreted based on existing theories (Jackman 1985: 172). Often the assumed link between cause and consequence is understandable only on the basis of interpreting the intentions and motivations of political actors. Understanding their goals (intentionality) and motivation thus has to become an integral and essential part of any causal analysis (Gerring 2004: 348). In a sense, the positivistic belief in the central role of causal effects (see also Lin 1998: 162–180) for an explanation of causal relationships should be complemented by principles of interpretivist research strategies.

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