

Assumptions, Causal Inference, and the Goals of QCA

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Charles Ragin's contribution to this symposium provides a useful review of the fundamental ideas of his methodology, Qualitative Comparative Analysis (QCA). He emphasizes the importance of case-based knowledge, which in fact became a standard term in comparative research in important measure due to his own scholarly contributions.

My article has the goal of comparing QCA and regression analysis from the standpoint of statistical theory, which I understand to be a broad set of tools for evaluating evidence and inference. While this comparison reveals problems with QCA, I would note that my article implicitly points to parallel problems with how regression-based causal inference deals with the demanding assumptions on which it relies. Hence, Ragin's claim that I present "an analysis of QCA through the lens of regression" (2005: 33) is incorrect. I am in fact a committed methodological pluralist, and I am strongly invested in case-based knowledge. Indeed, I am currently conducting a small-*N*, in-depth analysis of party systems in Latin America.¹

My discussion of QCA focuses on three of the assumptions of this method: (1) that the form of the relationship has been correctly specified, (2) that no relevant variables have been omitted, and (3) that the relationships studied with QCA are causal. In his statement in this symposium, Ragin in fact agrees that the first two assumptions are necessary in QCA, although he relegates them to "tangential" status. He deals with the third assumption by arguing that QCA is not a tool for causal inference, but rather for causal interpretation. Let me respond to these points.

Core versus Tangential Assumptions

Ragin views the assumptions I discuss in my article as relatively unimportant within QCA, i.e., as tangential. He maintains that these assumptions are less important than what he sees as the three "core" assumptions of QCA: specifically, that the goal is causal interpretation, rather than causal inference, that the researcher has detailed knowledge of cases, and that causation is complex and not merely additive and linear.

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However, even if Ragin's advice is followed on these supposedly core issues, problems with the assumptions on which I have focused can still create grave difficulties for QCA. Even investigators with a great deal of case knowledge and an exclusive focus on causal interpretation can be led astray if they misspecify the form of the relationship, omit relevant variables, or give causal interpretations to relationships that are not, in fact, causal. Since the issues I discuss can undermine research even when Ragin's advice on his core issues is followed, it is unclear why we should consider any of these assumptions to be tangential.

Inference versus Interpretation

Ragin's comments above posit the existence of a fundamental divide between what I refer to as causal "inference" and what he labels causal "interpretation." Yet Ragin (1997: 29) has previously argued that the idea of inference is in fact quite compatible with basic practices of qualitative researchers. I agree with his earlier position.

Furthermore, in his current remarks, Ragin states that "QCA seeks to discern the different combinations of causally relevant conditions linked to an outcome." It is somewhat difficult to understand how researchers are supposed to discern that a given combination of independent variables is causally relevant to a particular dependent variable without, in effect, making a causal inference about that relationship.² Hence, it seems correct to claim, as I do, that QCA is indeed a tool for causal inference.

Consequently, QCA and applied regression analysis (and related techniques, such as logit and probit analysis) are in fact competitors in the intellectual market of the social sciences. Choices between the two broad approaches should obviously be made based on a realistic assessment of their relative strengths and weaknesses. A concern with advancing this assessment motivated me to write my article in the current symposium. Correspondingly, I believe Ragin makes a mistake in questioning the value of comparing QCA and regression analysis. Indeed, Ragin's past publications have repeatedly compared QCA and regression, specifically arguing that QCA requires fewer restrictive assumptions than variable-oriented techniques, including regression (for different variants of this assertion, see Ragin 1987: x, xii, 32–33, 61–64, 103, 105, 166; 2000: 23, 120, 332–33).³ As just noted, my article agrees that such comparison is valuable, but disagrees that QCA requires fewer assumptions.

Where Do We Go From Here?

As Achen emphasizes in his comment (2005), writings on QCA have served a valuable purpose in focusing attention on several shortcomings of much applied regression analysis. Furthermore, Ragin's methodological writings in particular have done a great deal to raise the visibility of qualitative methods in the social sciences, and to emphasize the distinctive contributions of those methods. Notably, his writings make this contribution not only vis-à-vis QCA, but with regard to qualitative methods in general. At the same time, as a tool for causal inference, QCA has

fundamental weaknesses of its own—involving assumptions that, as argued in my article, are remarkably similar to those of regression analysis.

Of course, a great deal of intellectual effort has gone into trying to improve quantitative research so as to get past the weaknesses produced by these assumptions. Achen's remarks highlight the quantitative tools that allow careful scholars to capture the very kinds of complex, highly interactive causation that drive interest in QCA (on these quantitative tools, see also Brambor, Clark, and Golder, *forthcoming*). In this and other ways, regression analysis can do far more than simply estimate the net effect of individual variables, as Ragin repeatedly puts it. These efforts are, of course, unfinished, and it cannot be claimed that the weaknesses of regression analysis and other quantitative techniques have been fully resolved. But progress is being made.

Given this progress, let me make the following suggestions. First, I think my article has shown that scholars using QCA are reasonably close to employing a regression framework, and, in some respects, quite far from the case-study tradition. Explicitly embracing more elements of the regression tradition may therefore be compatible with what they are already doing. Second, and relatedly, I feel some concern that further work in QCA may simply duplicate previous efforts by econometricians and statisticians, unless QCA scholars incorporate these previous efforts into their own work. This concern should be on the agenda of discussion. Alternatively, QCA researchers may find it more productive to move in the direction of the non-QCA, case-study tradition, which also offers a wide range of tools for bringing empirical evidence to bear on hypotheses about complex forms of causation.

Regardless of how scholars choose to address the particular assumptions discussed in this symposium, however, I wholeheartedly agree with Ragin's conviction that the social sciences as a whole benefit from debates about how best to manage the analytic assumptions entailed in different research traditions.

Notes

1. Correspondingly, Ragin's claim that the running example of QCA in my article lacks case-based knowledge is incorrect, given that the article builds on this current research and on three additional years spent in Latin America. If this in-depth knowledge is not evident in the running example, it only goes to prove the point that QCA techniques do not inherently incorporate case-based knowledge, any more than statistical techniques do.
2. Ragin's remarks suggest that he sees causal inference as characterized by formal statistical tests. In practice, QCA and regression analysis both often rely on such tests (Ragin, 2000: 109–16, 226–29, 249–52). However, I would suggest that statistical tests have only a loose connection with causal inference. Formal tests are designed to handle error due to randomness, whether the inferences in question are descriptive or causal. Causal inference involves finding ways to answer more fundamental questions about manipulations, counterfactual situations involving different scores on the independent variable(s), and causal mechanisms (Brady and Seawright, 2004). While formal statistical tests may sometimes serve as an aid to causal inference, scholars should be careful to avoid conflating the two ideas.
3. Perhaps even more important than these explicit claims, however, is the neglect, within methodological treatments of QCA, of the assumptions discussed in my article. For example, the index of Ragin's (2000) book introducing the fuzzy-set version of QCA does not include a single reference to any variant of the following three terms: confounder, missing variable, or omitted vari-

able. Failing to introduce the idea of omitted variables as a basic concern for QCA researchers is as misleading as Ragin's statements that QCA involves fewer assumptions than its competitors.

References

- Achen, Christopher H. 2005. "Two Cheers for Charles Ragin." *Studies in Comparative International Development* 40(1): 27–320.
- Brady, Henry E. and Jason Seawright. 2004. "Framing Social Inquiry: From Models of Causation to Statistically Based Causal Inference." Paper presented at the Annual Meeting of the American Political Science Association, Aug. 28, Chicago, Ill.
- Brambor, Thomas, William Roberts Clark, and Matt Golder. 2005, forthcoming. "Understanding Interaction Models: Improving Empirical Analyses." *Political Analysis*.
- Ragin, Charles C. 1987. *The Comparative Method: Moving Beyond Qualitative and Quantitative Strategies*. Berkeley: University of California Press.
- . 1997. "Turning the Tables: How Case-Oriented Research Challenges Variable-Oriented Research." In *Comparative Social Research* (16). Greenwich, Conn.: JAI Press.
- . 2000. *Fuzzy-Set Social Science*. Chicago: University of Chicago Press.
- . 2005. "Core versus Tangential Assumptions in Comparative Research." *Studies in Comparative International Development* 40(1): 33–38.