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On the Interpretation and Comparison of Parameter Estimates in Quantitative Sociology

by Gary N. Marks
g.marks@unimelb.edu.au

In the 1960s and 1970s a typical journal article using quantitative methods would include univariate statistics, a correlation matrix, and standardized regression coefficients. A keen researcher, usually a student, could reanalyse the data with the correlation matrix together with the univariate statistics. Nowadays it is rare to find a correlation matrix or standardised coefficients in a quantitative article in a sociological journal. Admittedly, it is just plain silly to speak about the effect of a one standard deviation change in gender or in some other qualitative variable. But the criticisms of standardised coefficients, correlations and R square values for quantitative variables are widely accepted in sociology (but less so in psychology). The well rehearsed criticisms are that the size of a standardized coefficient is dependent on the distributions of the X variable and the example given is that when adding a single case to a data set of only 3 cases the standardized effects change greatly. A more conceptual criticism is that regression equations include variables of different things – the apples and oranges argument – so it makes no sense to compare the magnitude of effects.

I think that they have thrown the baby out with the bathwater. Yes standardised effects are, among other things, dependent on the distribution of the X variable; R square is a measure of the spread of the distribution of points in n dimensional space around the line (or plane) of best fit and is not an estimate of a useful population parameter. And all the criticisms that apply to standardized coefficients can equally be applied to the humble correlation coefficient. But standardised effects, correlations and R square values can be useful in their place.

Some factors do have stronger effects than other factors on a given dependent variable and the magnitude of effects is theoretically important. I give a few examples. In the stratification literature education has a much stronger effect on occupational outcomes – however measured – than socioeconomic or occupational background but this important and simple fact is lost in complex mobility or multinominal regression models that may or may not include education as covariate. In mobility models the reader is advised to focus on the likelihood ratio or some related measure of model fit (such as BIC) to be convinced of the theoretically correct model. The parameter estimates are not so important and there are too many of them to report anyway. Similarly in almost all developed countries, student achievement or test scores has strong effects on a range of educational outcomes, dropping out, GPA, college entrance etc. but when regression analyses include test scores in the model, its effect is just denoted as statistically significant with a triple asterisk and discussed as no more important (sometimes seen as less important) than other variables in the model which have much weaker effects. Another example is political partisanship where parents' party (in most countries) has much stronger effects on partisanship than some of the more theoretically 'richer' socio-structural variables such as class.

A major gripe that I have is since authors are reluctant to talk about the size of coefficients they have become overly reliant on statistical significance. Given that statistical significance is essentially arbitrary (and sensitive to host of factors), statistical significance doesn't say much about the theoretical importance of variable. For more complex procedures such as logistic regression the effects can be converted into odds ratios (or marginal effects as economists tend to do) and compared but it is easier just to conclude that a factor is or is not statistically significant. It's even worse with models for polytomous dependent variables where the interpretation of coefficients is more difficult and contentious. I am not saying let's go back to the 1970s and analyse everything with OLS using standardized coefficients; but I saying that if variable X1 has a correlation of 0.5 with variable Y and X2 has a correlation (with Y) of 0.2

that it is likely that variable X1 has more theoretical importance and X2 less so, no mater what statistical procedure is employed. There are ways of comparing the magnitude of estimates, for example odds ratios, marginal effects (and all have pros and cons) but let's not shy away from concluding that one factor is more important than another, if it clearly is.

Using Arts-Based Research in Research Methods and Elective Courses as a Pedagogical Tool

by Patricia Leavy
pleavy7@aol.com

I have spent the past several years exploring innovative approaches to research methodology. During this time I began working with arts-based research practices (ABR). These methodological tools, useful for data collection, analysis and representation, adapt the tenets of the creative arts in order to address social research questions in engaged ways. In qualitative research, ABR offers the following possibilities: unsettling stereotypes, building coalitions across difference, promoting dialogue, cutting through jargon and other prohibitive barriers, extending public sociology, building critical consciousness, raising awareness, and expressing feeling-based dimensions of social life (such as love, loss, and grief). I strongly urge methodologists unfamiliar with ABR to read an introductory text on the subject as it can enhance our thinking about methodological decision-making generally (as well as offering a host of new methodological tools for those so inclined).

In recent years there has been a sharp increase in doctoral dissertations that draw on "emergent methods" (see Hesse-Biber and Leavy 2006, 2008) including arts-based approaches (see Leavy 2009; Sinner et al. 2006). As a sociology professor at an undergraduate college I wondered if ABR could benefit my students. In the interest of disclosure I should note that I had considerable reservations about taking this on. I wondered if it would be worth the trouble to try and fit new material into my courses—like many professors, I can barely

adequately cover the necessary course material. Despite these concerns, I decided to take a risk. I incorporated ABR into three courses, two methods courses (one 200-level required survey of research methods course and one 400-level elective qualitative research seminar) and a sociology elective on popular culture. I decided to use ABR differently in these courses in order to evaluate the contexts in which ABR was beneficial to my students. Happily, in all three instances the use of ABR added enormously to student learning without diminishing other course content. I would go so far as to say that this transformed student learning in these courses.

In research methods, I spent one class period covering ABR after students read about two-thirds of an ABR book. This was towards the end of the semester after traditional quantitative, qualitative and mixed-methods approaches were reviewed. The students' final course project required them to conduct a small-scale content analysis, either quantitatively or qualitatively. In addition to their conventional research paper they were required to represent their findings using an arts-based approach (collage, poem, script) with a brief artist-researcher statement explaining their project. The resulting work was *outstanding*. Significantly, although some were initially apprehensive about doing something "arty", the result was a much higher performance level *on the traditional paper*. I believe this is because students became more invested in their projects and immersed themselves more fully in their data. I can envision creating a similar component to survey or interview projects.

I had similar results incorporating ABR into my pop culture course. Students read about four chapters on ABR, completed for one class meeting in which the material was reviewed. Integrating this whole new subject area only required me to omit one short film from the class. In essence, I substituted passive learning for *active learning*. Students added an ABR component to their final mass media research paper. The results were again astounding. After teaching this course for about a decade I can say without hesitation that this produced the strongest group of traditional research papers that I have received.

I spent the most time on ABR in my advanced weekly qualitative seminar. Students read an intro level ABR book in its entirety and one seminar meeting was devoted to reviewing it. I "found the time" by fiddling with the syllabus a bit without removing any content—pairing down the time spent on some in-class activities. The results were again impressive. Students enjoyed the ABR unit and found that studying ABR helped them to better understand the core assumptions of traditional qualitative practice without a meaningful reduction in other course content (I suggest this can too be true for researchers whether or not they ultimately use ABR). Students also added an ABR component to their final in-depth interview project. Once again, the quality of the traditional papers improved markedly as students "got to know their data" on a more meaningful level.

With minimal effort on my part, and virtually no reduction in standard course content, the addition of ABR greatly increased student learning and engagement in all three courses. I was delighted that students both learned "more" but also that they learned the regular material *better*. I suggest arts-based research can be a powerful teaching tool in a wide range of research methods and elective courses.
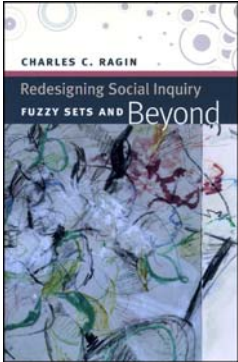
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Sinner, A., Leggo, C., Irwin, R., Gouzouasis, P., and Grauer, K, (2006). Arts-Based Education Research Dissertations: Reviewing the Practices of New Scholars. *Canadian Journal of Education*. 29 (4), (pp. 1223-1270).

Publication Announcements

Books

Redesigning Social Inquiry: Fuzzy Sets and Beyond by Charles C. Ragin (University of Chicago Press, 2008) provides a substantive critique of the standard approach to social research—namely, assessing the relative importance of causal variables drawn from competing theories. Instead, Ragin proposes the use of set-theoretic methods to find a middle path between quantitative and qualitative research. Through a series of contrasts between fuzzy-set analysis and conventional quantitative research, Ragin demonstrates the capacity for set-theoretic methods to strengthen connections between qualitative researchers' deep knowledge of their cases and quantitative researchers' elaboration of cross-case patterns. Packed with useful examples, Redesigning Social Inquiry will be indispensable to experienced professionals and to budding scholars about to embark on their first project.

"*Redesigning Social Inquiry* is aimed at social scientists looking to escape the banality of everyday quantitative research, and here they'll find a sophisticated way out of all the by-the-numbers work. But this book also speaks to those of us who have a profound knowledge of cases and want to explore the implications of this understanding. With this rigorous yet accessible book, Charles Ragin has completed his mission to reorient social science."
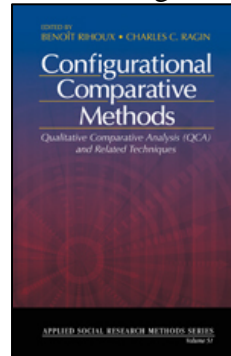
-Edwin Amenta, University of California, Irvine

"Once upon a time, historically oriented social scientists had to choose between the empirical richness of the case study method and the inferential appeal of 'large n' statistical studies. Charles Ragin has worked tirelessly for twenty years to create and refine a 'third way;' one that reconciles the general appeal of these two approaches. In *Redesigning Social Inquiry* Ragin has brought new sophistication to his 'comparative case method,' while rendering it even more accessible than before. On behalf of comparative historical researchers everywhere, I can only say 'thanks.'"

-Doug McAdam, Stanford University

"Charles Ragin's *Redesigning Social Inquiry* offers social scientists, both qualitative and quantitative, and their readers new ways to analyze social phenomena clearly, honestly, and effectively. Readers prepared to invest a few hours will find a new world of analytic possibilities and understanding open to them. Imagine having techniques, easy to understand and implement, whose results really speak to questions we all care about!"

-Howard S. Becker, author of *Writing for Social Scientists*

Configurational Comparative Methods: Qualitative Comparative Analysis (QCA) and Related Techniques, edited by Benoît Rihoux and Charles C. Ragin (Sage Publications 2008), paves the way for an innovative approach to empirical scientific work through a strategy that integrates key strengths of both qualitative (case-oriented) and quantitative (variable-oriented) approaches. This first-of-its-kind text is ideally suited for "small-N" or "intermediate-N" research situations, which both mainstream qualitative and quantitative methods find difficult to address. Benoît Rihoux and Charles C. Ragin, along with their contributing authors, offer both a basic, comparative research design overview and a technical and hands-on review of Crisp-Set QCA (csQCA), Multi-Value QCA (mvQCA), and Fuzzy-Set QCA (fsQCA).

"This is a readable and useful book . . . an extended essay on one particular method, which is easy to understand, easy to apply, and generally useful. The method itself is implemented in a computer technique. . . This method will systematize the analysis and produce an elegant statement of the combination of conditions which lead to a divided working class—provided there are no contradictions in the data. Where there are contradictions, Ragin's method will identify these combinations of conditions that lead to an ambiguous result."

-William Miller

Articles

Raffalovich, Lawrence E., Glenn D. Deane, David Armstrong, and Hui-shien Tsao, "Model Selection Procedures in Social Research: Monte-Carlo Simulation Results." *Journal of Applied Statistics* 35: 1093-1114

Congratulations from the Chair

Adrian Raftery and Yu Xie, both members of the American Sociological Association Section on Methodology were recently elected to the National Academy of Sciences. Please join me in congratulating them on this recent recognition of their achievements.

- Rafe

From the Editor

As I put my inaugural issue of *The Sociological Methodologist* to bed, I would like to take the opportunity to thank Rafe Stolzenberg for inviting me to serve in this editorial capacity, and Larry Raffalovich for his advice and encouragement. Thanks also to Gary Marks, Patricia Leavy, and Charles Ragin for their contributions.

On that note, I need more stuff! Please send me any and all manner of contributions, including short articles, opinion pieces, book and article announcements, retirements, job changes, and other newsworthy events.

I hope to produce two newsletters per year, but I can do that only if I have the content. So by all means, keep those cards and letters coming to jeffrey.timberlake@uc.edu. Thanks much,

- Jeff

Jeffrey M. Timberlake
University of Cincinnati
Department of Sociology
PO Box 210378
Cincinnati, OH 45221-0378