

THE CASE-ORIENTEDNESS OF QUALITATIVE COMPARATIVE ANALYSIS (QCA): GLASS HALF-EMPTY OR HALF-FULL?

Abstract. *This article addresses the development of Qualitative Comparative Analysis (QCA) from its launching in 1987 until present. We surveyed from the perspective of QCA's proclaimed 'case-orientedness'. We started by examining the foundations of QCA and the way those foundations have evolved over three decennia, in particular in terms of the connection with case-oriented work. Furthermore, we demonstrate that this was and is still an important facet of QCA both as an approach and as a set of techniques. Additionally, in more concrete terms, we go through all the practical QCA operations and demonstrate that virtually in every step of the QCA procedure; there is a potential dialogue with the individual cases, whether they are defined at the macro-, meso- or micro levels. Finally, we analyze the current state of affairs which seems to run against the articulation between 'deep' (in particular ethnographic) case-oriented work and QCA, and propose avenues to engage more thoroughly in deeper case-informed QCA work.*

Keywords: *comparative qualitative analysis, QCA, case, case-oriented research, comparative methods*

Introduction

The whole dynamics of Qualitative Comparative Analysis (QCA) was launched through an agenda-setting volume by Charles Ragin: *The Comparative Method* (Charles C. Ragin, 1987). Ragin started off with relatively simple ideas and selling points, building his argument on a few binary oppositions or tensions - e.g. case-oriented v/s variable-oriented approaches, or complexity v/s parsimony. He also grounded his technical operations in straightforward logic (Boolean logic) to achieve reduction of complexity.

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His empirical examples involved especially macro-level cases (e.g. ethnic political mobilization, peasant revolts, new parties, working-class social movements) across an intermediate-N of countries.

The foundations of QCA have been discussed in various contributions (Berg-Schlosser, De Meur, Rihoux & Ragin, 2009; Rihoux & Marx, 2013) and can be synthesized in the eight following points (see also Rihoux, 2013): (1) QCA is both a research approach and a technique; (2) QCA is comparative in that it seeks to establish similarities and differences across comparable cases by comparing configurations and pooling similar cases together; (3) QCA requires iterations, bringing in case and theoretical knowledge, in order to obtain the appropriate explanatory model (i.e. to lift the contradictory configurations); (4) as QCA allows for the assessment of multiple conjunctural causation, it is expected that different, context-specific causal paths may lead to the same outcome. The identification of necessary and/or sufficient (combinations of) conditions is a core tool in this perspective; (5) QCA is a complexity reduction tool. One may determine the degree to which one wants to privilege complexity vis-à-vis parsimony. Boolean logic, in particular Boolean minimization algorithms, is a tool to obtain the shortest possible expression (the minimal formula) that displays the causal regularities in the data; (6) QCA is particularly well-suited to address intermediate-N research situations, for which neither pure case-oriented methods nor mainstream variable-oriented methods (statistics-based) are well-equipped. It also enables different forms of 'modest' or 'limited historical' generalization; (7) QCA's over-arching ambition is to "*integrate the best features of the case-oriented approach with the best features of the variable-oriented approach*" (Charles C. Ragin, 1987: 84); (8) QCA is case-based. Each case is considered as a whole (holistic approach), and the effects of variables are assessed in the context of the case. These Cases are therefore represented as configurations of variables (analytic approach): some causally relevant conditions and an outcome.

It can be noted that several of these statements - refer to QCA's 'case-orientedness' (Rihoux & Lobe, 2009). The aim of this article is an attempt to answer the following question, spanning almost 30 years of development of QCA: To what extent is it actually possible to apply QCA in a full-fledged case-oriented way? Hence, the goal of this article is not to provide a review on the state of progress of QCA, on its technical features or on the numerous debates around QCA's strengths and limitations. Such broader discussions and reviews have already been developed in numerous recent publications (among many others: Fiss, Marx & Rihoux, 2014; Marx, Rihoux & Ragin, 2013; Rihoux, 2013; Rihoux, Álamos-Concha, Bol, Marx & Rezsöhazy, 2013; Rihoux & Marx, 2013; Rihoux, Marx & Álamos-Concha, 2014; Thiem & Dusa, 2012). Rather, this article attempts to employ a more focused,

‘agenda-setting’ approach, aiming to encourage the broader community of researchers who are geared towards case-oriented analysis to better exploit this particular potential of QCA.

How we approached it?

In order to elaborate this agenda-setting approach, we have taken as a starting point four sets of authoritative references in the field: first, two previous key contributions whose main points are taken up and further developed (Rihoux, 2013; Rihoux & Lobe, 2009); secondly, the reference textbooks up to this day, with a particular emphasis on the QCA core features and ‘best practices’ in terms of case-orientedness (Rihoux & Ragin, 2009b; Schneider & Wagemann, 2012; Thiem & Dusa, 2012); thirdly, Ragin’s foundational volume which marks the starting point of QCA and also set most of its core features (Ragin, 1987); and fourth, the most up-to-date authoritative pieces around the articulation between cases and QCA (Blatter & Haverland, 2012; Rohlfing & Schneider, 2013). In terms of methodology to process these references, we have especially considered those sections concentrating on the specific issue of the connection between QCA and cases, in line with the more focused nature of our question.

Consequently, in this article, we first re-examine the foundations of QCA as they were first laid out by Ragin *and its present day* development after almost 30 years, in particular in terms of the connection with case-oriented work. Furthermore, in more concrete terms, we go through all the practical QCA operations and discuss the extent to which every step of the QCA procedure would enable, in principle and in practice, a dialogue with the individual cases. Finally, we analyze the current situation which seems to run against the articulation between ‘deep’ (in particular ethnographic) case-oriented work and QCA, and propose avenues to engage more thoroughly in deeper case-informed QCA work.

The main QCA foundations revisited – and questioned

Up until around 2003, the use of QCA remained confined to a relatively narrow niche in social science and political science research; since then, it has grown rapidly, especially from 2008 onwards (Rihoux et al., 2013; Thiem & Dusa, 2012: 1–3). In the meantime, in technical terms, the QCA toolbox has expanded beyond the basic, dichotomous QCA (crisp-set QCA – csQCA), with the development of multi-value QCA (mvQCA) and fuzzy-set QCA (fsQCA) as well as attached software programs (see textbooks discussed below). This also corresponds to increasing disciplinary diversification beyond political science and sociology, towards management research in particular. A

significant part of this growth is also due to the increasing use of fsQCA – even though the latter has not superseded csQCA. Thus, the current context is a particular one: a quick expansion and possibly a transition period in a mainstreaming process (Rihoux et al., 2013). To what extent are the foundations of QCA as initially designed by Ragin (see above) still valid, in particular in terms of the connection with ‘cases’?

Overall, with regards to the first foundation (*QCA is both a research approach and a technique*), there is still a broad consensus on the fact that QCA cannot be simply used as a set of techniques, and that informed QCA use first requires serious consideration of its specific assumptions and goals. That being said, there have been changes in the framing of both the techniques and the approach, following various innovations. On the techniques’ side, following the development of mvQCA and fsQCA (as well as tQCA, see below), QCA has now obviously become a ‘family’ of techniques. On the broader approach side, different labels are now used. Rihoux and Ragin (2009: xix) opt for the ‘*configurational comparative*’ label, to stress the fact that the transformation of complex cases into configurations is the core operation that enables systematic (i.e. formal and replicable) cross-case comparison. On the contrary, Schneider and Wagemann (2012) prefer the over-arching ‘*set-theoretic*’ label (see also below). However, the two labels share the effort to avoid misunderstandings that arose from the ‘*qualitative*’ part of the ‘QCA’ label. Therefore, the current consensus is that the QCA approach is both case-oriented (this being Ragin’s initial purpose of using the ‘*qualitative*’ label) and formalized, including the use of numerical coding and mathematical treatment (it is ‘*quantitative*’ in that sense).

Regarding the second foundation (*QCA is comparative in that it seeks to establish similarities and differences across comparable cases (cross-case perspective) by comparing configurations and pooling similar cases together (through the truth table)*) in general terms, there is also still a broad consensus among authors, both on the logic of similarities and differences and on the fact that the ‘truth table’ (table of configurations) remains a fundamental stage/tool in the analysis. Ragin, however, did not initially discuss in great detail the issue of case selection in QCA and what exactly ‘comparable’ cases should be. Besides a number of later contributions by Ragin himself (Charles C. Ragin & Becker, 1992), several of the recent volumes now treat this extensively (Berg-Schlosser & De Meur, 2009). Gerring, in contrast, still frames the issue in terms of choosing a ‘sample’ in a population (2012: 353–354). Another post-1987 development has been the fine-tuning of a tool that proves to be complementary with QCA in the enterprise of systematically establishing cross-case similarities and differences: MSDO-MDSO, which can be used, upstream of QCA proper (the minimization procedure), so as to match and contrast cases (Berg-Schlosser, 2012: 111–159; De Meur & Berg-Schlosser, 1994).

As a result, considering the third foundation (*QCA requires iterations, bringing in case and theoretical knowledge, in order to obtain the appropriate explanatory model (i.e. to lift the contradictory configurations)*), on the whole, there is still a broad agreement on the iterative nature of QCA, and on the importance of bringing researcher's input in the analysis (no 'push-button' logic). However, recent developments have led to more elaborate (and diverse) views on the issues of models of contradictions. First and foremost, along with the development of fsQCA especially, but this being also extended to csQCA: the thinking in terms of 'pure' contradictions (i.e. the existence of contradictory configurations in the truth table) has been replaced to a large extent by the 'consistency' measure (Schneider & Wagemann, 2012: 119 ff). This gives a bit of a probabilistic face to QCA. Others, such as Rihoux and De Meur (2009) would argue that framing the issue in terms of pure contradictory configurations is still a powerful heuristic tool. The practical implication is that, with fsQCA, not all inconsistent cases are also full logical contradictions – hence, in a way, bringing in fuzzy sets has 'softened' the issue of contradictions.

Furthermore, with regards to Ragin's reference to models, Blatter (quoted in Rihoux, 2013) calls for a clearer positioning of QCA vis-à-vis models and theories. In particular: should QCA be used to test comprehensive 'theories', as seems to be implied by Ragin, or should it follow a more open logic by envisaging multiple causal models. On another note, with regards to single case knowledge, Berg-Schlosser (Berg-Schlosser, 2012: 22–54) aptly demonstrates that in fact constitutes a prerequisite for a full QCA analysis. One of his core points is that by focusing on a particularly dense case – e.g. a country that could have eventually tipped either towards the "1" or the "0" outcome – one gets much richer insights for the interpretation of the QCA solutions. We'll come back to this core point in the next section.

The fourth foundation (*QCA allows for the assessment of 'multiple conjunctural causation'. Therefore it is expected that different, context-specific causal paths may lead to the same outcome. The identification of necessary and/or sufficient (combinations of) conditions is a core tool in this perspective.*) has by now been somewhat revised. On the one hand, the core elements of this foundation are still considered as valid by the current authors, in particular Ragin's whole development on necessary and sufficient conditions as well as his initial emphasis on causal heterogeneity. On the other hand, these two linked elements are however now being framed in more elaborate ways. A clear example is that of necessity and sufficiency, that has now been refined in terms of SUIN and INUS conditions¹ (Schneider &

¹ An INUS condition is an Insufficient but Necessary part of a combination of conditions which is itself Unnecessary but Sufficient for the outcome. A SUIN condition is a Sufficient but Unnecessary part of a combination of conditions that is Insufficient but Necessary for the outcome.

Wagemann, 2012: 79 ff). Likewise, the whole development of fsQCA and the turn to the set-theoretic framing has enriched the perspective in different ways: for instance the assessment of ‘almost’ necessary or sufficient conditions, or specific procedures with a focus on the analysis of necessity (Bol & Luppi, 2013; Schneider & Wagemann, 2012) – whereas the 1987 book laid more emphasis on sufficiency. Another notable recent trend is that the logical concepts of necessary and sufficient conditions have become somewhat disembedded from Boolean Algebra and set theory and cross-case comparative analysis – i.e. from the core of QCA – and have made inroads into within-case analytical techniques, in particular through causal process-tracing and through the definitions of causal mechanisms (Blatter & Haverland, 2012: 95–97).

Subsequently, we turn to Ragin’s fifth foundation (*QCA is a tool that enables one to reduce complexity and one may determine the degree to which one wants to privilege complexity vis-à-vis parsimony. Boolean logic, in particular Boolean minimization algorithms, is a tool to obtain the shortest possible expression (the minimal formula) that displays the causal regularities in the data.*). What is still considered as valid by most current authors is Ragin’s clear initial formulation of the ‘limited diversity’ problem (‘few cases, many variables’) and the attached issue of ‘logical remainders’ (non-observed cases).

However, as with our previous statement, the ways to address this issue have been refined, especially in terms of fine-tuning the treatment of ‘logical remainders’, with more theory-informed approaches to the exploitation of these, so as to reach theoretically plausible (and thus not over-parsimonious) QCA solutions (Charles C. Ragin & Sonnett, 2004; Yamasaki & Rihoux, 2009: 135–136). The most elaborate strategy so far is Schneider and Wagemann’s “Enhanced Standard Analysis” that enables one to distinguish between different types of ‘logical remainders’, and then to circumscribe the sub-group of “good counterfactuals” that can be kept for the full minimization (Schneider & Wagemann, 2012: 198 ff).

With regards to the sixth foundation (*QCA is particularly well-suited to address intermediate-N research situations, for which neither pure case-oriented methods nor mainstream variable-oriented methods (statistics-based) are well-equipped. It also enables forms of ‘modest’ or ‘limited historical’ generalization.*), the focus on intermediate-N designs remains the predominant perspective in terms of empirical applications (Rihoux et al., 2013; Rihoux, Rezsóhazy & Bol, 2011), mainly because of the need to maintain sufficient case-based knowledge (Rihoux & Lobe, 2009). Note, however, that Schneider and Wagemann, by contrast, stress that QCA is also suited for larger-N designs, as the set-theoretic logic also applies regardless of the number of cases (Schneider & Wagemann, 2012: 12), and because it is also possible

to gain sufficient knowledge of different categories of cases. Indeed the proportion of larger-N QCA applications has grown over the last few years (Rihoux et al., 2013).

In addition, with regards to generalization: Blatter and Haverland (2012) propose to revise the labeling, rather in terms of ‘contingent’ generalization which takes different forms depending on the case study approach use. one engages in. In the causal process-tracing (CPT) approach, this typically leads one to hand-pick other cases in order to perform a QCA after a single CPT case study (see also Blatter & Blume, 2008).

Finally, we examine the seventh and eighth foundations together (*QCA’s over-arching ambition is to “integrate the best features of the case-oriented approach with the best features of the variable-oriented approach”; and QCA is case-based. Each case is considered as a whole (holistic approach), and the effects of variables are assessed in the context of the case. Cases are therefore represented as configurations of variables (analytic approach): some causally relevant conditions and an outcome.*), as they constitute two aspects of the same issue, i.e. the articulation between cases and variables. With regards to these, several changes of perspective have taken place. On the whole, most current authors do not stand by the “third way” statement anymore. There is now a broad agreement that QCA belongs more to the ‘case-oriented’ tradition (Byrne & Ragin, 2009; Rihoux & Lobe, 2009). Ragin himself, ten years after his seminal book, had already begun to move towards that position (1997). In fact, reasoning in terms of variables (conditions and outcome) is compatible with a case-oriented approach and with case studies (Rohlfing, 2012).

This whole argument on the case-orientedness of QCA has also been refined in different ways. Some innovations in the use of QCA have given more flesh to the hitherto rather general statement that QCA should rest on case knowledge. In particular, some procedures have been developed to identify the specific cases to focus on after a QCA has been performed (Rohlfing & Schneider, 2013). Schneider and Wagemann (2012: 295–305) have also formalized a procedure to intersect theories, terms of QCA minimal formulas and types of cases, in order to gain a better evaluate theories following a set-theoretical logic – this basic idea of intersection (Boolean, thus more simple) had already been suggested by Ragin in his seminal book.

More fundamentally, Blatter and Haverland (2012) argue that Ragin’s “case-oriented” or “case-based” header is too broad – therefore their distinction between three case-based approaches: co-variational analysis, causal-process tracing and congruence analysis. Blatter suggests that QCA should be rather labelled more precisely as “*configuration-oriented*” (quoted in Rihoux, 2013). Blatter and Haverland (2012: 80–81) expand the argument as they demonstrate that the ‘causal-process tracing’ approach (in a single

case) is also inherently outcome-driven and configurational. According to Blatter, stressing more the configuration- and outcome-orientedness of QCA would enable to distinguish QCA more precisely from variable-oriented (in particular: statistical) approaches. Indeed this would be a useful clarification, as some still consider that QCA is not fundamentally different from other “*analytic*” techniques (Gerring, 2012: 355). However, precisely QCA is not ‘analytic’ even though it resorts to variables.

The predominant picture, thus, is that quite a lot of current QCA developments still follow Ragin’s initial principles, but with some level of refinement and reframing, and that the “case-orientedness” of QCA is still subject for further elaborations and debates as well.

QCA and case-oriented research work in practice

At the more operational and ‘hands-on’ level, when Ragin launched QCA, it was clear that case-based knowledge was meant to be a crucial companion to QCA in the practical procedures. Indeed QCA was conceived as an “*aid to [the] interpretive analysis*” of cases (1987: 120). Thus, before engaging in QCA proper – the formal, computer-run part of it –, “*it is necessary to gain familiarity with the relevant theories, the relevant research literature, and, most important of all, the relevant cases*” (1987: 121).

In concrete terms, is it thus possible to engage into a full “dialogue with the cases” during the successive stages of a QCA procedure? There have already been almost 500 published full-fledged QCA applications in peer-reviewed journals, in many different fields and disciplines such as political science and international relations (Pinfari, 2011), welfare state studies (Emmenegger, 2011), sociology (Jackson, 2005), criminology (Miethe & Drass, 1999), human geography (Srinivasan, Lambin, Gorelick, Thompson & Rozelle, 2012) and management studies (Freitas, Gonçalves, Cheng & Muniz, 2011). However, only a small minority of researchers using QCA actually engage in ‘deep’ case analyses.

However, virtually every step of the QCA procedure, as a set of techniques, there is a *potential* dialogue with the individual cases, whether they are defined at the macro-, meso- or micro levels. The successive steps of a QCA can be considered as being part of three main stages, as suggested by Rihoux & Lobe (2009). In the first “upstream” phase, i.e. case selection and case description, the complexity is maximal as the user must, for each case considered, produce a case description (or case report). By definition, this case description contains (or should contain) at least some amount of ‘thick’, historical information on the case, also relating to some of its specificities (cultural, etc.), etc. However by producing standardized case descriptions, and thus by entering a comparative template, one already diminishes the

level of complexity – one begins to synthesize the ‘thick’ case information. In the second phase, through the various technical steps of QCA proper – the “analytic moment” as defined by Ragin –, one further diminishes the level of complexity. Selecting conditions variables, summarizing the information in numerical scores, then performing all the steps to finally obtain the minimal formulas: at each one of these steps, one gains further parsimony. The maximal level of parsimony is therefore obtained at the end of the analytic, computer-aided part of QCA. Finally, in the third “downstream” phase, the different ‘causal paths’ obtained through the minimal formulas are interpreted, which necessitates a ‘return to the cases’ and to their narratives, and thus a move back to more complexity.

Relative merits of this ‘back and forth’ dynamic within a research design were already recognized by other scholars beyond QCA (Eckert, 1987; Fielding & Fielding, 1986; Greene & Caracelli, 1997; Greene, Caracelli & Graham, 1989; Phelan, 1987). This was further refined with the formalization of a “feedback loop” logic (Lobe, 2006, 2008), in a mixed methods research design which is easily applied in connection with QCA. Considering QCA beyond simple analysis and looking at its multi-cycled dialogue with each case, we can clearly see that the whole process is actually a thorough combination of qualitative and quantitative sources about the case.

It is possible to distinguish a sequence of 15 well-identified practical operations in a full QCA protocol, i.e. five operations in each one of the three main phases outlined above. What we’ll demonstrate below is that it’s possible, at each one of the 15 operations, to actually engage in a dialogue with cases.

The first of the five operations ‘upstream’ of QCA itself is *comparative research design and case selection*. Obviously, case selection in QCA does not equate with a statistics-style “sampling” procedure, as every case must be selected purposefully (Berg-Schlosser & De Meur, 2009) In most QCA designs, one selects cases which display some common background features and which display some variation on some aspects – those that will be the variables (conditions and outcome) in the model. This already necessitates at least *some* ‘thick’ within-case knowledge. In a small- or intermediate-N design, the delineation of the ‘population’ of comparable cases is often not so straightforward, as one has to tackle “borderline cases” and include them or not in the empirical cases, which requests some level of within-case knowledge.

The second operation, *gaining within-case knowledge*, is challenging: how to acquire enough ‘intimacy’ with each case if one works on, say, 20 or 30 cases? In fact there is always a certain trade-off between the number of cases considered (breadth) and the degree of intimacy gained with each individual case (depth). This operation is even more difficult if one studies

cases in different cultural contexts (e.g. cross-national comparison), with sources in different languages and of different quality. One option is then to rely on case experts, with a different expert for each case, but even in such a strategy, the person(s) who will perform QCA proper should become really well-acquainted with each individual case. Many different methods, qualitative and quantitative, can be exploited at this stage – we cannot discuss them here in detail.

Third is the “upstream” operation, *defining the outcome of interest*, does not only stem from theory and the research question. Indeed the cases also play a key role. For instance, Scouvarth builds upon her on-site observation of the cases, sub-regions with settlers in the Amazon basin, to define and operationalize the speed of deforestation (her outcome of interest), moving away from a simple, quantitative measure (Scouvarth et al., 2007).

The fourth operation, *model specification and the selection of conditions*, typically depends more on theory if one uses QCA mostly for theory-testing. However, so as to decide whether the theory to be tested is applicable to the cases under scrutiny, one must also rely on case knowledge. Furthermore, if QCA is mostly used for exploratory purposes, simple synthesis, and theory-building (or conjecture-building), the cases play a central role. Note also that, whatever the use of QCA, if there are too many conditions for few cases, if one wants to reduce the number of conditions by aggregating them, one can also proceed in a case-driven way, as Rihoux (2001) did when aggregate different conditions pertaining to variation of organizational size of political parties into one single condition.

As for the fifth “upstream” step, just prior to QCA proper, i.e. *visualizing/synthesizing cases and the models* so as to get a better, global view of each one of the cases, one typically needs to exploit case-based knowledge. One way to do this is to elaborate graph-like “synthetic case descriptions” (SCDs). In their basic form, SCDs consist in a time line, and a graphical display, along this time line, of the key trends and changes on the outcome *and* on all the individual conditions for the whole period considered (one line for each variable). This proves to be a really useful “semi-simplification”, as a form of visual summary which still portrays complexity, but in which only the key elements, changes and trends are made visible. Compiling and observing the SCDs, the user can already, intuitively, grasp some cross-case commonalities, some core differences, as well as some puzzling case profiles.

The following five steps during the ‘analytic phase’ of QCA synthesis and minimization also have a lot to gain from case knowledge. The sixth operation of *dichotomization, calibration and threshold-setting*, in particular, should often rely on informed judgment, and therefore within-case knowledge also plays a crucial role here, especially because purely theory-informed cut-off points are seldom undisputed. It is also the case for the

seventh operation of *truth table exploration and contradiction-solving*, during which specific case narratives can be examined in a comparative way, in a more descriptive use of QCA. More crucially, in order to solve the so-called “contradictory configurations”, a ‘thick’, historical re-examination of the cases involved in the contradictions is often a very efficient strategy. In this process, one might also discover some factor that had not been taken into account, or discover that a given case really lies at the margin of the considered population of cases. Thus contradiction-solving is actually a very useful heuristic device in the dialogue between QCA and ‘thick’ case knowledge – in this example, it also helps the user to loop back to the phase of case selection.

During the eighth operation of *minimization and treatment of logical remainders*, the choice of adequate strategy also requires case-based knowledge, especially if one opts for the “intermediate solution”, i.e. a minimal formula derived with the aid of only those logical remainders that are consistent with the researcher’s theoretical and substantive knowledge. One must hence go back to the cases and, on that basis, decide which logical remainders will be used by the software. Similarly, during the ninth operation of *solving contradictory simplifying assumptions (CSAs)*, one recommended strategy is to orientate, in terms of outcome value, the problematic logical remainders, based on case knowledge (Vanderborgh & Yamasaki, 2004).

Finally, towards the end of the minimization procedures and during the tenth operation of *arbitrating between different (terms of) minimal formulas*, one must again intervene, and select those solution terms which ‘make more sense’. This can be a theory-driven process, but most often one must crucially rely on ‘thick’ case expertise – especially since those terms to be arbitrated between usually concerns a particular sub-group of cases. Thus: during the successive steps of this second main phase, one can cycle back and forth either all the way back to the previous main phase (e.g. gaining case knowledge, or reconsidering some of the conditions and the QCA model), or cycle within this phase – for example: when solving CSAs, one can cycle back and forth to the truth table, excluding or fine-tuning some problematic conditions).

The final stage of the operations ‘downstream’ of QCA proper, for example the different interpretation operation, ‘returning to the cases’ also plays a key role. The eleventh operation of *factoring out conditions in the minimal formulas* often entails case-based criteria, so as to decide on which condition(s) to single out. A case-informed strategy to factor out conditions often proves very strong. Beyond this, the core twelfth operation of *case-by-case interpretation* is, by definition, case-oriented, because QCA is precisely conceived as a lever to better understand purposefully selected cases

(Curchod, 2004). In this process, one re-examines some ‘thick’, individual case narratives, using the core conditions indicated by the QCA minimal formula. One thereby often discovers that the same combination of conditions should be translated into different narratives (e.g. different sequences of these conditions) for the different cases.

The same goes for the next step of interpretation, i.e. the thirteenth operation of *interpreting cross-case patterns*: the researcher strives to identify similarities or contrasts across the ‘thick’ case narratives, building upon the terms of the QCA minimal formula. Thus: with QCA (the technical part of it) as a heuristic help, we are able to make sense out of “multiple-case narratives” – i.e. to identify common (bits of) narratives across several cases. By engaging in these cross-cases, focused comparative interpretations, we not only discover common (bits of) narratives across cases, but also some other, unsuspected elements which were not comprised in the QCA model.

At the next, fourteenth operation of performing *‘limited historical’ generalizations*, one can formulate propositions that can then be applied, with appropriate caution, to other cases which are sufficiently close to the initial “homogeneity space” of the observed cases. The question to be asked is: which other cases could be a case for the same ‘demonstration’ as the cases included in the QCA? This is typically, again, a case-based or case-informed operation.

The final (too seldom conducted!) and fifteenth operation of *cumulation* should also entail case-based work. In concrete terms: it is possible for other researchers, taking a given QCA analysis as a starting point, to revisit this analysis, for instance taking a few cases out or bringing a few cases in, adding one or two conditions, changing the way some conditions have been operationalized, etc. In doing so, those other researchers might dwell upon their own knowledge of some specific cases. To sum up: towards the end of this third and last phase of interpretations, one can cycle between the steps within that phase, looping between case-to-case interpretation and interpretation of cross-case patterns. More importantly, one once again loops back (or should loop back) to the initial case knowledge in order to make meaningful and case-based interpretations of the minimal formulas. The bottom line is that the best QCA work entails a rich ‘dialogue with the cases’ at virtually every step.

Conclusion

Considering the deep case-oriented nature of QCA, as amply demonstrated above, one cannot help but notice that only a minority of published QCA applications really take on board this case-orientedness. Indeed, many researchers use QCA too quickly and technically, thereby losing

some 'configurational knowledge' (Nomiya, 2004). Surprisingly, very few researchers have actually informed QCA work with a 'deep', case-oriented research. One of the rare exceptions is a recent article by Trujillo & Woulfin (2014), exploiting rich ethnographic work in school settings.

At the level of the technical implementation, quite the contrary, one of the most striking recent trends within the family of QCA techniques, especially since the development of fsQCA, is its quick technical refinement, bringing along with a form of sophistication and 'technicization'. One possible caveat of this trend is that this could overshadow some of Ragin's more qualitative initial prescriptions, such as the importance of qualitative/historical, case-based interpretation. Some would argue that, on the contrary, QCA work should invest more in a 'fully qualitative' approach. Anyhow, QCA users should at least not lose sight of 'thick' within-case knowledge even if the technical tools are becoming more elaborate (Rihoux and Lobe, 2009).

Probably one promising avenue to engage more thoroughly in deeper case-informed QCA work is to conduct QCA analyses where cases are individual (i.e. micro-level). So far there is only a limited number of such applications, some exceptions being Lobe (2006) and Scherrer (2006). Micro-level cases, namely individuals who possess a certain set of characteristics relevant for a given research, provide an extensive amount of primary information, gathered through multiple sources, qualitative and quantitative. In particular, the data about such micro-level cases can be gathered through direct ethnographic interaction with each specific case. Further, in-depth interviews about, say, their personal history, can be conducted. A quantitative survey on their demographic characteristics can also be run, followed by a focus group with a group of such cases, in order to study their interaction and dynamics. Throughout this direct and intensive day-by-day interaction with individual cases, a researcher is able to acquire in-depth knowledge about each one of them. This 'intimate' case knowledge (in Ragin's original sense) about each case enables one to make the interpretations from a relatively privileged position in comparison to most macro- and meso-level QCA applications.

Researchers with a qualitative background who focus on individuals as cases might doubt of the usefulness of QCA, as there is already a broad range of qualitative methods to analyze individuals. The point is that deep qualitative (in particular: ethnographic) approaches, which are often most appropriate to study individuals, can be supplemented by QCA for two main reasons. On the one hand, QCA can be used to achieve a systematic comparison across a smaller number of individual cases (e.g. a selection of between 10–30 cases) in order to preserve complexity, and yet being as parsimonious as possible and illuminating otherwise often hidden causal paths on a micro-level. On the other hand, QCA can complement qualitative

interpretive analysis, by offering a certain degree of 'reduction' of rich qualitative data. With QCA, cases can be systematically compared only through a small number of variables (conditions and outcome; see above). The final interpretation can then be a combination of long, narrative-like interpretive accounts, supplemented by a few causal models that were discovered (via QCA) among comparable individual cases.

Besides, QCA's foundational assumptions of complexity and diversity are also valid – even more so, possibly – for micro-level cases. Individuals are indeed inherently complex, as every case displays its own physical, psychological, social, economic and political characteristics, each of which intertwines with the others. Further, distinct attitudes, beliefs, behavior of individual cases add to the initial complexity in macro- and meso-level cases. In other words: what is specific about micro-level cases is that they are not only bounded systems (as meso- or macro-level cases; see above): they are bounded systems with a self. Unless one makes very strong assumptions about human behavior (e.g. assumption of rationality etc.), each individual in essence is a system of its own. Because one must, for the purpose of systematic comparison, select individuals which are comparable – but each one of them being unique in his/her way –, one should also take on board the assumption of cross-case diversity.

Taking a few steps back: this discussion on the merits of articulating deep case-oriented work with QCA leads us, more generally, to encourage the implementation of QCA within a mixed methods design. A few authors have already encouraged this (Berg-Schlosser, 2012; Blatter & Haverland, 2012; Rohlfing, 2012) or implemented this in practice (Winand, Rihoux, Qualizza & Zintz, 2011), but there is still a lot to do in this direction and it seems to be an obvious path for further QCA development.

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