Reducing Complexity in Qualitative Comparative Analysis (QCA): Remote and Proximate Factors and the Consolidation of Democracy*

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CARSTEN Q. SCHNEIDER
Department of Political Science
Central European University (CEU), Budapest
Nador utca 9
1051 Budapest, Hungary
Email: schneiderc@ceu.hu
Tel: (+36-1) 327 3086
Fax: (+36-1) 327 3087
&
CLAUDIUS WAGEMANN
Department of Political and Social Sciences
European University Institute (EUI), Florence
Via dei Roccettini 9
50016 San Domenico di Fiesole, Italy
Email: claudius.wagemann@iue.it

Abstract:

Comparative methods based on set theoretic relationships, such as 'fuzzy set Qualitative Comparative Analysis' (fs/QCA) represent an useful tool for dealing with complex causal hypotheses in terms of necessary and sufficient conditions under the constraint of a medium-sized number of cases. However, real world research situations might make the application of fs/QCA difficult in two respects, namely, with regard to the complexity of the results and the phenomenon of limited diversity. We suggest a two-step approach as one possibility to mitigate these problems. After introducing the difference between remote and proximate factors, the application of a two-step fs/QCA approach is demonstrated analysing the causes of the consolidation of democracy. We find that different paths lead to consolidation but all of them are characterised by a fit of the institutional mix chosen to the societal context in terms of power dispersion. Hence, we demonstrate that the application of fs/QCA in a two-step manner helps to formulate and test equifinal and conjunctural hypotheses in medium-size N comparative analyses and, thus, to contribute to an enhanced understanding of social phenomena.

INTRODUCTION: QCA – AN ADDITIONAL LOGIC OF SOCIAL INQUIRY

Comparative social scientists frequently encounter a dilemma. On the one hand, the number of relevant cases they are interested in is limited to a medium-size N (around 25 – 50), and, on the other, the hypotheses developed at the theoretical level postulate a rather complex interplay of (not necessarily many) variables producing the phenomenon they are seeking to explain. As an example, just think of those who study the causes for democratisation in the late 20th century. Even if a wide definition of democratisation is used, the universe of relevant cases will barely exceed 50. At the same time, the literature has produced a long list of possible and plausible hypotheses on what promotes democratisation. Another case in place are questions related to phenomena that take place in the European Union. Even after the most recent enlargement the universe is fixed to 25 (maybe soon 27) cases. This article is about some methodological implications of this common dilemma in (macro-) comparative social research. The novel methodological approach we offer should be useful for a wide range of comparative social scientists with interests as different as, for instance, regime change, European integration, ethnic conflicts, or interest associations, just to mention a few.

A potentially useful method for treating hypotheses entailing complex causal patterns was proposed by the American social scientist Charles C. Ragin. His work on 'Qualitative Comparative Analysis '(QCA) (Ragin 1987 and 2000) can be seen as an extension of Mill's well-known methods into a systematic (computer-based) comparative approach (see e.g. Mahoney 2000b: 401, Skocpol 1984: 379). At the centre of this method is the identification of necessary and sufficient conditions that are linked to the outcome.[1]

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[1] The development of QCA is closely related to the discussion between more qualitatively and more quantitatively oriented scholars which has gained new momentum since the early 1990s (see King, Keohane & Verba 1994, Mahoney & Rueschemeyer 2003, and Brady & Collier 2004).

There are different versions of QCA: the older variant (Ragin 1987) requires a dichotomization of the variables and is based on Boolean algebra. In addition to this, the more recent variant (Ragin 2000) also allows for values between the extremes of '0' and '1'.[2] These so-called 'fuzzy values' describe the degree of membership of a given case in the category that is formed by the variable. These scores are assigned on the basis of theoretical knowledge and empirical evidence (Ragin 2000: 150-170, Verkuilen 2005). Technically speaking, fuzzy set QCA (fs/QCA) builds on a combination of the original Boolean variant and fuzzy set theory (Klir, Clair & Yuan 1997: 73ff., Zadeh 1965 and 1968).

Many of the most prominent hypotheses not only in the sub-field of studying the Consolidation of Democracy (CoD) studies, but also in most others, make rather complex statements about causal patterns that go well beyond simple linearity, additivity, and unifinality. As a consequence of this, more attention must be paid to the methodological implications of the concept of complex causality in order to overcome the misfit between ontology and methodology (Hall 2003).

The aim of this paper is to propose a two-step approach as a tool for dealing with complex causality in mid-size N studies and as a partial solution to some of the problems inherent in the use of fs/QCA[3]. In order to develop our argument, we will first present a set-theoretic approach to the concepts of necessity and sufficiency. Then we will discuss the phenomenon of limited diversity and its impact on drawing inference in comparative research. The major point here is that limited diversity is ubiquitous in comparative research and it has strong impacts on inferences drawn. However, it is commonly overlooked and neglected, especially

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[2] There is also a third version, namely, Multi-Value QCA (MVQCA), which extends the range of possible values to discrete figures other than 0 and 1 (for details, see Cronqvist 2003).

[3] We use fs/QCA as an acronym, as the dichotomies – which are central to the older variant of QCA – are in fact no more than a special case of a fuzzy set.

in correlation-based statistical techniques. Third, we will show that the distinction between remote and proximate causal conditions for an outcome can be found in many social scientific research areas and that making use of this distinction helps to mitigate the problem of limited diversity. Fourth, we will propose a two-step fs/QCA module designed for dealing with complex causal patterns based on the distinction between remote and proximate factors. We will argue that this new approach is useful for all those who try to verify complex causal hypotheses examining the interplay of sufficient and necessary conditions for a given outcome. In a final section, we will demonstrate that the application of the two-step fs/QCA approach to the analysis of 32 (neo-) democracies generates novel insights on the complex equifinal and conjunctural patterns leading to CoD. More specifically, we will show that different types of democracy consolidate in different societal contexts: what is decisive for CoD is that institutions and context fit in terms of power dispersion.

FRAMING NECESSITY AND SUFFICIENCY IN TERMS OF SET RELATIONS

The issue of causal complexity and how to deal with it in comparative research has received growing attention in recent years (e.g. Bennett 1999, Braumoeller 1999, 2003, Braumoeller & Goertz 2000, Braumoeller 2003, Dion 1998, Goertz 2003, Mahoney 2000b, Ragin 1987, 2000, or Western 2001). In the following, we will briefly present a set theoretical approach to it. It is far from easy to formulate a precise definition of the concept of complex causality because scholars often only refer to certain aspects of it rather than dealing with the generic phenomenon. Terms like 'substitutability' (Cioffi-Revilla 1981), 'multiple conjunctural

causation' (Ragin 1987), 'contextualisation', or 'multiple paths' all describe special cases of complex causality (Braumoeller 2003: 210). We follow Ragin (2000) and hold that one efficient way to approach the issue of causal complexity, both in conceptual and empirical-analytical terms, and to unravel the commonalties of all the above mentioned special forms of complex causality, is to make use of the notions of necessity and sufficiency.[4]

Commonly, "a cause is defined as necessary if it must be present for a certain outcome to occur. A cause is defined as sufficient if by itself it can produce a certain outcome" (Ragin 1987: 99). Hence, necessity is present if, whenever we see the outcome, then we also see the cause, although we might see the necessary cause also without the outcome. In contrast, sufficiency is present if, whenever we see the cause, then we also see the outcome. However, we might see the outcome also without the sufficient cause. Following this, necessity and sufficiency statements lead to the use of set theoretic relations, as indicated by the "if…then" structure. It is thus possible to represent and think about necessity and sufficiency by making use of notation systems, operations, and forms of representation as set up by set theoretic approaches, such as Boolean algebra and fuzzy sets.

The main advantage of set theoretic relationships is that Boolean and fuzzy set algebra also allow the consideration of those factors as causally relevant that alone are not sufficient or necessary. To take an (invented) example of three conditions: economic development (D), ethnic homogeneity (E), and democratic experience (X) which are all hypothesised to account for the outcome Consolidation of Democracy (CoD). It can be imagined that D could be both necessary and sufficient for CoD (the equation would be CoD = D); necessary, but not

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[4] It is important to notice that other types of causal complexity exist. Path dependency approaches, critical juncture arguments, or accounts based on contingent events are not (necessarily) based on set relations and, thus, fs/QCA may not be the appropriate method for testing such hypotheses (see Bennett & George 1997 or Mahoney 2000a and 2003: 363ff).

sufficient (one possible equation would be CoD = D · E);[5] sufficient, but not necessary (one possible equation would be CoD = D + E). However, D could also be neither sufficient nor necessary, for example, if CoD were either produced by ethnic homogeneity or a simultaneous presence of democratic experience and economic development (CoD = E + (X · D)). The latter two examples in particular show that an adequate causal statement may be highly complex, entailing not only conjunctural causation, but also equifinality.[6] This may be further complicated. For example, economic development could have a positive effect on CoD if it is combined with democratic experience, but in ethnically homogeneous societies, economic development could be considered counter-productive for the consolidation of democracy (the equation of this thought experiment would be CoD = (E · d) + (X · D)).[7] This means that Boolean and fuzzy algebra also allow for factors which have a different effect in different settings, and thus notions, such as contextualisation, conjunctural causation or chemical causation (Mill 1970), are represented by these equations. In the mainstream in the social sciences the concepts of necessity and sufficiency have long been judged as irrelevant for theorising in the social sciences. It is believed that hardly any relevant theories use these notions, and that they imply a deterministic causal pattern since any deviant case must lead to the rejection of necessity and sufficiency. However, Braumoeller & Goertz (2000), along

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[5] A "·" is a logical AND which indicates that both factors must be simultaneously present; one factor alone would not produce the outcome. A "+" is a logical OR which indicates that either of the two factors (or both) would lead to the outcome.

[6] "In systems theory, this topic goes by the name of 'equifinality', a property present in any system in which similar ends can be achieved via different means. In the social science literature, this term is sometimes used [...], though 'causal complexity' is more common. The philosophy of science literature refers to 'causal chains' or 'causal ropes', both of which have a prominent and well-established lineage dating back at least to Venn [...]" (Braumoeller 2003: 210, Fn. 3).

[7] Capital letters indicate the presence of a factor and small letters its negation.

with others, convincingly demonstrate that hypotheses which use the concepts of necessity and sufficiency abound (Goertz & Starr 2003).[8]

Complex causal hypotheses in terms of necessity and sufficiency pose serious problems for many comparativists simply because the standard data analysis techniques, i.e. "[a]dditive linear models are an inherently inadequate way of modelling multiple causal path processes" (Braumoeller 1999: 7). Using non-additive specification (i.e. interaction terms) offers no practical solution to the problem, especially if the N is medium to low (say, 20-40), as is often the case in macro-comparative social research (Braumoeller 1999: 9f.). Causal complexity is the exact opposite of the assumptions of linear and additive regression analysis, not to mention the unifinal character of regression. Whereas large N statistical techniques have led to a remarkable increase in terms of rigor and breadth of comparative analyses, there is no doubt that this has come at the expense of theoretical subtlety (Braumoeller 1999: 3).

If the aim of a study is to make simple but broad generalisations, these features of regression analysis are not a problem but a strength. If, however, more subtle statements of complex causation are tested, it seems to be more appropriate to use other methods.[9] "If we assume a

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[8] Furthermore, it has been argued that statements about necessity and sufficiency imply deterministic relations between variables and are thus impracticable for empirical social research based on observational data. One important issue to bear in mind when talking about determinism is that the meaning of deterministic causation differs between research traditions. In qualitative comparative research, deterministic causation indicates the presence of necessary and sufficient conditions, while in quantitative statistical parlance, determinism refers to models in which the error term is specified to be zero (Seawright 2002: 179, Fn. 3). In addition to this, and as will become clear in the subsequent empirical analysis, recent developments in the application of fuzzy set theory based algorithms for analyzing data allow for deviations from fully deterministic patterns and, thus, measurement error and omitted variables can be accounted for to a certain degree (Braumoeller & Goertz 2000, Goertz 2003, Ragin 2000: 223, Ragin 2003).

[9] The exclusive application of regression is likely to lead to a vicious circle in which the use of simplifying methods leads to theorizing with a bias towards simple causal statements. This, in turn, is then used as a

more complex model than the reality requires, the data may allow us to reduce our model back to a simpler form, but if we assume a simple model for a complex phenomenon, we may be less likely to recognise our mistake" (Bennett 1999: 8). Hence, starting out with the assumption of complex causality is a better strategy than assuming simple causality.

From what has been said so far about the features of set theoretical approaches in comparative social science, it has already become clear that these hold the potential to deal more adequately with causal complexity in terms of necessity and sufficiency. Fs/QCA is one such method which "demonstrates the premium on explanatory completeness by attaching causal inferences to all unique combinations of causes" (Western 2001: 357). We strongly agree with this claim.

The key to understanding why fs/QCA is useful for dealing with some forms of complex causality is to note that statements of necessity and sufficiency denote different subset relations between causal conditions and outcome. "Whenever a causal condition is necessary but not sufficient for an outcome, instances of the outcome will form a subset of instances of the causal condition" (Ragin 2000: 213). Following set theory, this implies that for each case the scores for the necessary condition are equal to or higher than the scores for the outcome. Inversely, instances of a sufficient cause are a subset of instances of the outcome. Thus, the scores in the sufficient condition of each case are equal to or higher than its score in the outcome.

Displaying the conditions on the x axis and the outcome on the y axis, this means the following: if all cases fall below the main diagonal (see Figure 1), the scores on the outcome

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justification for the application of those methods that can only deal with simple causation. Braumoeller puts it aptly: "[T]he premise of parsimony becomes a conclusion. [...] The primary danger inherent in such a situation is that theoretical complexity in statistical studies will dwindle until theories are no more nuanced than the techniques that are brought to bear in testing them" (Braumoeller 1999: 3).

are higher than in the cause; consequently, the cases of the outcome are a subset of the cases of the cause and, thus, the cause is necessary for producing the outcome (Ragin 2000: 215).

Figure 1 about here

Respectively, if all cases fall above the main diagonal (see Figure 2), the scores on the cause are higher than on the outcome; the cases of the cause are a subset of the cases of the outcome and, thus, the cause is sufficient for producing the outcome (Ragin 2000: 235f. Goertz 2003).[10]

Figure 2 about here

In a nutshell, the search for meaningful patterns in a data set using fs/QCA is based on the straightforward idea of subset relations between the (combinations of) causal conditions and the outcome. Looked at it from this angle, the inadequacy of regression for dealing with complex causality in terms of necessity and sufficiency is the fact that this method is based on covariation whereas necessity and sufficiency denote set relations.[11]

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[10] Quantitatively oriented scholars might call this heteroskedasticity and see it as an obstacle; however, it is seen as desirable in context sensitive case analyses (Mahoney 2000b: 397).

[11] For an early discussion of the methodological problems involved when dealing with complex causality within the framework of statistical techniques, see Alker (1966). For more recent interesting attempts to overcome these problems within the framework of statistical techniques, see Braumoeller (1999 and 2003). His suggestions all seem to depart from the precondition that a high number of cases can be included in the analysis, which is often not the case for many of the most interesting comparative research questions.

SOME PROBLEMS IN THE APPLICATION OF FS/QCA

As with any method, fs/QCA is not free from problems when applied to 'real' data. By and large, these problems depend on the number of variables that go into the analysis and on the number of cases examined. Fs/QCA is, thus, not exempted from addressing the well-known problem of 'too many variables, too few cases'. More specifically, we discuss the issue of overtly complex results that are often generated with fs/QCA and the phenomenon of limited diversity.

First, considering the number of variables, it immediately becomes clear that what we have presented so far as an advantage of using fs/QCA – namely, the possibility of formulating causally complex statements – contains the potential for turning into a disadvantage. If too many variables are introduced into a model, the results can become overly complex. If we imagine a (still considerably low) number of six independent variables, the resulting equation might be composed by one or more paths, which include all six initial conditions. In such a case, some components by the equation (that is, some of the paths which lead to the outcome) may capture only one case, suggesting that they are analytically different from the rest.[12] Even if there are paths towards the outcome that do not combine all causal conditions, the result may still prove impossible to interpret in a theoretically meaningfully way.

Second, a related, but technically much more sensitive issue, is connected to the low number of cases. The key concept here is *limited diversity*, a crucial issue for causal inference, which, however, is usually overlooked both in case studies and statistical techniques. Diversity is

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[12] Notice that 'special (or deviant) cases' in fs/QCA are both conceptually and empirically different from outliers in regression analysis. This observation has important implications on how to use findings generated with these two methods in subsequent in-depth case analysis.

limited when logically possible configurations of relevant conditions do not appear empirically. For example, if four conditions have been identified, 16 (= 2^4) combinations of these dichotomously coded conditions are possible. However, it might well be that not all of these 16 possible combinations are empirically observable. In fact, a set of 16 cases does not guarantee that they will cover all 16 possible combinations, as several cases might share the same combination of conditions. Unfortunately, the effect is exponential. For a (not unusual) set of 8 factors, all of which have potentially made some contribution to the outcome, 256 (= 2^8) possible combinations exist, and a much higher number than 256 cases would be required in order to avoid limited diversity. Thus, in research reality, the presence of so-called logical remainders, i.e. logically possible but empirically not observed configurations is the rule rather than the exception (Ragin 2000: 107, 198).

As mentioned above, limited diversity is regularly overlooked in statistical analyses as the following simple example demonstrates. Imagine a researcher wishes to explain the presence of welfare state institutions with the presence of a strong left party and the presence of trade unions as independent variables. The data shows the following situation:

Table 1 about here

Notice that the 300 cases are distributed among only three of the four logically possible combinations. A simple inspection of the table already shows that 'Strong Unions' is perfectly correlated with the dependent variable 'Welfare State'. The bivariate correlation coefficient between these two variables is 1, whereas it is only 0.5 between 'Strong Left Party' and 'Welfare State'. Running multiple regression, the beta coefficient for 'Strong Unions' becomes 1 and for 'Strong Left Party' 0. The conclusion most likely drawn from this

regression result is that strong unions make welfare states emerge. Left parties, in turn, would be considered irrelevant.

However, this conclusion is based on a simplifying assumption. There are no empirical instances of countries *without* left parties *but with* strong unions. Thus, we do not know whether such countries would exhibit a welfare state (row #4 in Table 1). Yet, in regression analysis the computer simulates an outcome value for this fictitious case. In the example presented here, the regression equation assumes that if countries without left parties *but with* strong unions existed, they would have a welfare state. This purely computer-guided assumption is necessary in order to produce the most parsimonious solution. Simplifying assumptions are highly influential on the results obtained and the inferences drawn. The major problem then is that these simplifying assumptions are, by and large, hidden from the researcher – often even for those well trained in statistics.[13] Furthermore, it cannot be denied that the issue of limited diversity soon gets out of hand, especially with the common practice of including many control variables in multiple regression. This leads to a high level of limited diversity and, thus, to numerous simplifying assumptions that are implicitly made without the explicit consent or dissent of the researcher.

Fs/QCA forces the researcher to make explicit decisions on the logical remainders. In general, this approach offers three ways to handle limited diversity. First, all logical remainders are treated as if the outcome showed the value of '0' ('blanket assumptions'). Second, for all logical remainders the outcome values are chosen such that the most parsimonious solution is obtained. And third, theory is used as a guide for assigning the

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[13] Introducing an interaction term would allow for the detection of the fact that diversity is limited in the data set. In fact, the model could not be estimated. However, neither is the use of interaction effects as a diagnostic means a common practice, nor is it a viable option if the N is low (and the situation less extreme than in the stylized example presented here).

outcome values of logical remainders. The first two strategies are somewhat constricted in their use: 'blanket assumptions' is the most conservative approach to limited diversity since it takes only the empirically observable information into account. It may work for a small number of variables because the effects of this coding procedure can still be controlled. Yet, if the number of variables (and with it, the likelihood of limited diversity) increases, too many blanket assumptions would have to be made and the result would be strongly manipulated. By contrast, the parsimony strategy may over-simplify and, thus, creates problems for drawing inference. As already mentioned, it is the computer that decides which outcome is assigned to each logically possible but empirically non-existing combination of causes without informing the researcher about these crucial decisions. Thus, theory has to play a prominent role in order to cope with limited diversity.

Unfortunately, frequently social scientific theories do not generate expectations that are strong enough to guide decisions in the light of limited diversity. Ragin & Sonnett (2004) propose a fourth strategy and suggest to only engage in 'easy counterfactuals', i.e. to assign outcome values only for those logical remainders for which strong theoretical expectations exist. Hence, rather than reflecting on all logically possible combinations, only those on which strong expectations exist are used. This approach to dealing with limited diversity leads to results that are located in-between the less complex solutions when computer-performed assumptions (strategy 2) are allowed for and the more complex solutions when no such assumptions are made (strategy 1).

In sum, "given limited diversity, no matter which conclusion the researcher presents, it involves statements (and thus assumptions) about conditions that have <u>not</u> been observed" (Ragin 2000: 106, emphasis in the original). While we perceive it as a major strength of fs/QCA to explicitly force scholars to think about non-existent cases, there is no straightforward solution to this problem in standard statistical techniques.

In the following, we propose a complementary strategy for tackling the problem of how to draw inferences in the presence of limited diversity. We will first present the strategy's main component, namely, the distinction between remote and proximate causal conditions. We will then show how this contributes to remedying the problems of limited diversity and to achieve digestible but, nevertheless, theoretically subtle results.

THE DISTINCTION BETWEEN REMOTE AND PROXIMATE CONDITIONS

In this section, we argue that many social scientific theories (implicitly) base their arguments on a list of conditions that can be divided into two groups, which can be labelled as remote and proximate factors.

Take the example of the research on CoD. Over the last decades, the literature has produced a long list of potential explanatory factors, including characteristics of *countries*, such as the level of socio-economic development, the degree of ethno-linguistic heterogeneity, or the geo-strategic location. At the same time, characteristics of the *democratic system* are also cited as potential factors for CoD, such as the governmental format, the electoral system, the territorial division of competencies, or the party system. At an intuitive level, it seems obvious that country characteristics exert their impact on CoD at a different level than democratic regime type factors. Claiming that high socio-economic development sustains

democracy simply requires different assumptions than claiming that parliamentary democratic arrangements foster CoD.[14]

We believe that the difference between remote and proximate factors can be generalised in the following terms. The two terms 'remote' and 'proximate' delineate a continuum in which causally relevant factors can be situated. Factors close to the two extremes differ in various respects. First, remote factors are relatively stable over time. This is why they are also often referred to as *structural* factors, or simply the *context*. Second, their origin is often also remote on the time and/or space dimension from the outcome to be explained in most of the cases. Third, as a consequence, remote factors are (almost) completely outside the reach of the conscious influence of present actors, and, thus, contexts and historical legacies are treated as exogenously given to the actors. Thus, the idea of 'remoteness' is not only related to space and time, but, first and foremost, to the causal impact that is assumed.

In contrast, *proximate* factors vary over time and are subject to changes introduced by actors. Proximate factors do not originate far in the past, but they are the products of (more or less conscious and purposeful) actions of human agency, if not human action itself. Proximate factors are also temporarily and spatially closer to the outcome to be explained and, as a consequence of this, more closely linked to it.

It is important to note that the precise conceptualisation of remote and proximate conditions depends on various factors, such as the research question, the research design, or the way the dependent variable is framed. Hence, it is possible that in one study institutions are seen as remote factors, while they are perceived as proximate factors in another study. Note that the remote-proximate dichotomy is not a synonym for the micro-macro divide. In the empirical

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[14] For instance, socio-economic development is believed to change the societal structure in a democracy fostering way, whereas (certain types of) parliamentary systems are believed to organize the political processes within the governmental system more adequately for democratic survival – regardless of the societal structure.

example below, both remote and proximate factors are measured at the macro level. In a different research setting, however, proximate factors could be perceived as actor-based and process-oriented events located at the micro-level, as is common in structure-agency approaches (e.g. Mahoney & Snyder 1999, Mayntz & Scharpf 1995).[15]

Theorising the effect of different combinations of remote and proximate factors is fundamental to many, if not most approaches in empirical research.[16] The institutionalist literature has worked out a number of factors which set the frame for economic actors and policy processes in political economy (Crouch 2003, Hall & Soskice 2001, Streeck 1992 and 1997; political sociology models the arena(s) within which political parties and interest groups interact (Lehmbruch 1979); and the cleavage approach presents the institutional contexts which lead to the (notably divergent) evolution of party systems (Rokkan & Lipset 1967), to mention but a few.[17]

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[15] Furthermore, our approach does not privilege any of the possible links between remote and proximate factors as they are spelled out in Goertz and Mahoney's (2005) idea of two-level theories. Our suggestion is rather methodological, and it depends on the theory that is tested with our approach whether remote and proximate factors are in a causal, ontological, or substitutable relation; either of the three is possible.

[16] The numerous variants of neo institutionalism (see Hall & Taylor 1996, for a categorization of the 'historical', 'rational choice' and 'sociological' variants) differ in many respects. However, they hold in common the fact that they are responses to pure behaviouralist views of policy making, and that they all emphasize some kind of institutions within which social action is embedded (DiMaggio & Powell 1991: 2, 5, Hall & Taylor 1996: 937, Hollingsworth 2000: 615, Kato 1996: 556, Shepsle 1989: 133, Thelen & Steinmo 1992: 1). Indeed, this basic idea of social action (proximate factors) occurring in institutionally constrained arenas (remote conditions) seems to be confirmed by all kinds of empirical research. Social actors are exposed both to conditions that they have the capacity (power, resources, and knowledge) to change and to other conditions, which cannot be influenced by the actors.

[17] More specifically, possible examples of remote factors in terms of historical legacies are previous democratic experiences in the case of consolidation of democracy; a long presence in government in the case of political

The distinction between remote and proximate factors has also been discussed in social science methodology. Following Kitschelt (1999), explanations that rely exclusively on remote (structural) factors provide for causal depth but fall short of demonstrating the causal mechanisms that link deep, distant causes with an outcome. In contrast, explanations based on proximate factors display causal mechanisms, often, but not necessarily, at the micro-level. Most of the time, the latter type of explanation is too shallow because it runs the risk of leading to tautological statements in regarding part of what should belong to the *explanandum* as the *explanans*. Consequently, a good causal statement consists in finding the right balance between the two core features: causal depth and causal mechanisms: "Too much depth may deprive explanations of causal mechanism, but some proposed mechanisms may lack any causal depth." (Kitschelt 1999: 10).

Arguing that "there is nothing to be gained from pitting deeper and more distant (i.e. temporally prior) structural or cultural variables against proximate causes in the same equation" (Kitschelt 1999: 24), Kitschelt suggests a two-step approach to analysing causal patterns. We fully agree with this basic idea. However, rather than using standard statistical techniques, we suggest the use of fs/QCA in the form of a two-step fs/QCA approach. This should lead to a result that is composed of several remote (structural) conditions within which proximate causal factors work. The basic feature of fs/QCA results as causally complex statements is maintained, if not strengthened: certain proximate causal conditions may

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parties; lengthy participation in a corporatist agreement in the case of interest groups; experiences with war in the case of participation in peace missions, etc. Remote factors which are not directly historically shaped are ethnic cleavages and socio-demographic parameters in the case of country studies; the decision space accorded to political parties by the constitution; the general role of interest groups in a given democracy, etc. Examples of proximate factors include currently discussed political issues in the case of research on the positioning of political parties; interest domains and membership affiliations in the case of interest groups; opinion leadership in the case of social movements, etc.

produce the outcome in a given context, but not in others. At the same time, however – and this is crucial – overly complex results are avoided because theoretical reasoning is employed in order to exclude some logically possible configurations from the outset. More precisely, it is the theoretically driven division of causal factors into proximate and remote conditions that is decisive for reducing the problem of limited diversity.

Briefly, the basic logic of the two-step fs/QCA module is the following. In a first step, only the remote structural factors are analysed with fs/QCA. The result of this first step will be different (combinations of) contextual factors that make the outcome possible. Notice that this does not mean that these contexts are necessary conditions. Necessity implies that whenever the outcome is present, the cause is also present. Following the logic of equifinality, there are, however, different contexts in which the outcome is possible. Thus, these contexts are labelled as outcome-enabling conditions. The aim of the second fs/QCA analytic step consists of finding the combinations of proximate factors *within* the different structurally defined contexts that jointly lead to the outcome.

In sum, we argue that the distinction between remote and proximate factors reflects the (implicit) structure of most social scientific theories and it opens up the possibility for a two-step fs/QCA approach. The first step examines the contextual conditional combinations, under which a given outcome is more likely to occur than in other contexts. The second step leads to the precise formulation of causal paths which have provoked the outcome.

Before detailing the empirical analysis, we now briefly demonstrate how the distinction of causal conditions between remote and proximate factors is helpful with regard to dealing with the problem of 'limited diversity' in that it reduces the number of logically possible combinations through theoretical reasoning.

REMOTE AND PROXIMATE FACTORS AND THE REDUCTION OF
LOGICAL REMAINDERS

It goes without saying that the decomposition of the analysis into two steps (first only remote, then remote and proximate together) leads to a number of different sets of simplifying assumptions for each step. This can be easily shown by referring to the highest possible number of logical remainders (z), requiring consideration by the researcher. Generally, these can be computed as $z_{max} = 2^k - 1$, with k being equal to the number of causal conditions.[18] This maximum number of logical remainders increases exponentially with the number of causal conditions. Consequently, z_{max} will be considerably lower, if the parameter k can be split into k_1 and k_2 (with $k_1 + k_2 = k$). Ideally, k_1 and k_2 should be as equal as possible, that is both k_1 and k_2 should be k/2.

If, for example, k = 8 (a common scenario in comparative research), the maximum number of logical remainders is $2^8 - 1 = 255$. If the two analytical steps can be ideally modelled into two sub-sets containing four variables each ($k_1 = k_2 = 4$), then the maximum number of logical remainders becomes $2^4 - 1 + 2^4 - 1 = 30$ – in this case almost 90% less. Even in the worst case scenario of organising the eight variables (namely, into two and six), the maximum number of logical remainders becomes $2^2 - 1 + 2^6 - 1 = 66$, still about three-quarters less.

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[18] In general, 2^k logically possible combinations exist. However, since at least one of these combinations has to be present in any case, the maximum number of logical remainders is $2^k - 1$. This formula merely helps us to illustrate our argument. In reality, the number of maximum assumptions will be (much) lower than $2^k - 1$, mainly depending on the number of cases analyzed.

Figure 3 shows the effect of a two-step analysis on limited diversity.[19] The upper line represents the maximum number of logical remainders in a one-step approach (2^k - 1). The middle line represents the maximum number of logical remainders in a two-step approach, if one category consists only of two variables and the other contains the rest (the 'worst case scenario', with 2^2 - 1 + 2^{k-2} - 1 = 2 + 2^{k-2}). The lower line represents the maximum number of logical remainders in a two-step approach, where the set of variables is equally distributed among the categories (the 'best case scenario', with $2^{k/2}$ - 1 + $2^{k/2}$ - 1 = 2·$2^{k/2}$ - 2 in the case of an even number of variables, and $2^{k/2 - 0.5}$ - 1 + $2^{k/2 + 0.5}$ - 1 = $2^{k/2 - 0.5}$ + $2^{k/2 + 0.5}$ - 2 in the case of an odd number of variables).[20]

Figure 3 about here

In sum, Figure 3 provides a straightforward graphical representation of how useful our two-step approach for the solution of the problem of limited diversity is; it limits the number of logical remainders and, thus, increases the researcher's capacities of drawing solid inferences from her findings.

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[19] The graph displays the situation from k = 4 onwards, as any division of a number of variables lower than 4 into two separate groups does not make sense.

[20] Recalculating this to answer the question of just how many simplifying assumptions can actually be saved by applying a two-step approach, the results are the following: at least 2^k - 1 - (2 + 2^{k-2}) = 2^k - 2^{k-2} - 3 maximum simplifying assumptions can be saved ('worst case scenario'), with a saving of 2^k - 1 - (2·$2^{k/2}$ - 2) = 2^k - 2·$2^{k/2}$ + 1 with an even number of variables, and 2^k - 1 - ($2^{k/2 - 0.5}$ + $2^{k/2 + 0.5}$ - 2) = 2^k - $2^{k/2 - 0.5}$ - $2^{k/2 + 0.5}$ + 1 with an uneven number of variables.

AN EMPIRICAL APPLICATION OF THE TWO-STEP FS/QCA APPROACH: ANALYZING THE CAUSES OF COD

In this section, we demonstrate the practical applicability of the two-step approach with the example of 'Consolidation of Democracy' (CoD). In particular, we present an example of how to organise causally relevant conditions in remote and proximate factors; how the two-step-approach technically facilitates a QCA analysis; and how the result becomes theoretically easier interpretable.

The outcome CoD and its remote and proximate conditions

Bypassing the extensive discussions on definition and conceptualisation (e.g. Linz & Stepan 1996, Schedler 1998), in this paper we define CoD as the 'expected persistence of a liberal democracy' and conceptualise it in terms of the 'rule confirming behaviour of relevant political actors' (see Schneider 2004). The degree of CoD is measured with a new data set on more than 30 countries from six world regions that underwent a regime transition at some point during the last three decades. Based on the data gathered for the period 1974-2000, membership scores in the fuzzy set 'Consolidated Democracies' are assigned.

Table 2 about here

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As Table 2 shows, 20 out of 32 cases are more in than out of the set of consolidated democracies (scores higher than 0.5). Among the cases with high membership, we find the Southern European cases Spain, Greece, and Portugal, some countries from Central Europe, most importantly Slovenia, and Uruguay and Argentina. Most of these cases are the usual suspects. Notice, though, that also such an unlikely candidate like Mongolia is more in than out of the set of consolidated democracies. Among the cases with barely any fuzzy membership in CoD are the former Soviet republics Georgia, Russia, and Belarus the same as the Central American case Guatemala. For more detailed information on the structure of the data set and additional descriptive findings, see Schneider (2004) and Schneider & Schmitter (2004).

Going from the outcome to the conditions, the following *remote* factors are used in the analysis: level of economic development, level of education, degree of ethno-linguistic homogeneity, distance to the West, degree of previous democratic experiences, and extent of communist past. These six conditions summarise socio-cultural, economic, and historical features of the countries. The *proximate* factors for CoD, in turn, are the executive format, the type of electoral law, and the degree of party fragmentation. These institutional features represent the core based on which different types of democracies are defined.[21]

As the purpose of the following empirical analysis is to demonstrate a methodological argument, we will not elaborate all steps of the research process.[22]

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[21] Future analysis could include the territorial division of competencies (federal vs. unitary states) and the system of interest representation (corporatist vs. pluralist systems) as additional features to describe democracy types.

[22] Contrary to the standards of good practices (see Ragin & Rihoux 2004), we do not dwell on the (re-) selection of cases. Hence, no cases are dropped or added throughout the analysis, nor do we explain and recalibrate the fuzzy set membership scores assigned to cases (for more detailed information on this, see Schneider 2004).

The hypothesis: the match between institutions and contexts

We expect relevant actors to follow democratic norms implemented in their country (and thus consolidate their democracy) if the degree of political power dispersion established by their type of democracy meets the needs for a certain degree of power dispersion created by the societal context. Hence, the following analysis is guided by the general expectation that democracies consolidate if the type of institutional configuration chosen fits the socio-structural contexts in which it is embedded. One way of theoretically framing the fit of democracy types to societal contexts is to look at the degree to which both – institutions and contexts - disperse political power.

Within the literature on *remote* societal factors, the issue of power dispersion is frequently encountered (e.g. Huntington 1968, Lijphart 1999, Vanhanen 1997). For instance, it is now almost common knowledge that ethno-linguistically divided societies create the need for a certain dispersion of political power among a relatively large set of different politically relevant actors in order to prevent conflict and, thus, to consolidate democracy. Other authors focus on different stages in economic development or on specific historical experiences when they argue that effective government and political stability can best be achieved through the concentration of power (Huntington 1968, Evans 1992, Haggard & Kaufman 1995, for a sceptical view see Przeworski 1993).

The idea of conceptualising different *proximate* institutional configurations along a dimension of power dispersion can be found, for example, in Colomer (2001), Mainwaring and Shugart (1997), or Sartori (1994). The debate triggered by Juan Linz' (Linz 1990a and 1990b) statement that "parliamentarism provides a more flexible and adaptable institutional

context for the establishment and consolidation of democracy" (Linz 1990a: 68) has led scholars, such as Mainwaring (1993), Mainwaring and Shugart (1997), or Sartori (1994), to overcome the crude dichotomy and to differentiate types of presidential and parliamentarian systems and to claim that these differences matter for their impact on CoD (Mainwaring & Shugart 1997: 463). Part of this argument rests on the observation that the effect of the governmental format depends on the presence of other features of the political system that do not directly belong to the governmental format. In the context of CoD, apart from the executive-legislative relation, two other features are considered as critical institutional choices: the design of the electoral system and the party system (e.g. Gasiorowski & Power 1998 or Sartori 1994). Different mixes of these three central democratic institutions define different types of democracy, with each type having potentially different impacts on CoD.[23]

The gist of our argument is that the consolidating effect of each type of democracy (proximate condition) depends on the non-institutional, societal context in which it is implemented. Thus, whether CoD is fostered by a two-party or a multiparty system, by presidential or parliamentary forms of government, by proportional representation (PR) or

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[23] To some extent, the discussion of the vices and virtues of presidentialism vs. parliamentarism suffers from the fact that it constitutes only an imperfect representation of this dimension of power dispersion. Depending on the institutional configuration in which presidential or parliamentary systems are embedded, both systems can be power dispersing or power concentrating (see e.g. Tsebelis 2002). One simple illustration of this is the case of the British prime minister Tony Blair, backed by an almighty parliamentary majority consisting of his own party, with, say, the former Brazilian president, Henrique Fernando Cardoso, who frequently had to confront a majority of opposition forces in both chambers, and who was supported only by an undisciplined (and over time vanishing) faction of his own party coalition.

Of course, the power dispersing characteristics of institutional configurations, or types of democracy, can be refined (most likely *ad infinitum*). The president's veto powers, the extent of the Prime Minister's rights in appointing a cabinet, immunity for the president and the prime minister etc. all make a difference in how powerful these institutional roles are (Mainwaring & Shugart 1997: 463-469).

majoritarian electoral formulas, or by any combination of these features ultimately depends on the presence and absence of characteristics such as ethnic composition, past democratic experience, and levels of economic development. Hence, what matters for CoD is neither the specific *institutional configuration* in isolation, nor the *societal context*, but their fit in terms of power dispersion. It follows from this that one and the same institutional mix can have opposite effects on CoD. It may contribute to CoD when it fits the societal context, but if not, it may be detrimental to CoD.[24]

Our expectation about which combination of institutions and societal contexts are sufficient paths[25] towards CoD can be graphically summarised as shown in Figure 4. This is, no doubt, a complex causal statement, as it is typical for QCA. The same variable (e.g. type of governmental system) is expected to have opposite effects on CoD, depending on the presence of other factors. At the same time, different (combinations of) variables can have identical effects on CoD. Hence, our expectation that CoD occurs if the type of democracy fits the context in terms of power dispersion is related to issues such as equifinality and conjunctural causation in the sense that different combinations lead to the same outcome.

Figure 4 about here

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[24] The implementation of a parliamentary system with a majoritarian electoral system and low party fragmentation in an ethnically, religiously, and/or linguistically divided society is likely to do more harm to the chances for CoD than a presidential system would. Structural minorities are doomed to eternal electoral defeat with no chance to counterbalance the power of the omnipotent prime minister via a directly elected president or a reasonably effective opposition in parliament. In short, there is no single best type of democracy and the fate of democracy in unfavorable contexts depends on skillful institutional choices and adaptations.

[25] The term 'path' is used in order to refer to the causal conjunctions that combine remote and proximate factors; it is not related to any sequence of events in the sense used in path dependence models.

Within the field of CoD studies, various scholars have expressed the need to make theoretical progress by formulating and empirically testing hypotheses that are both subtle and generalisable (Coppedge 1999, Munck 2000, 2001). Without doubt, the idea of contextualising the effect of institutions can be seen as a response to this. This can be placed somewhere along a dimension with, at one end, highly parsimonious, nomothetic theories that are aimed at making law-like statements (i.e. without clearly denoted temporal and/or spatial scope conditions) and, at the other end, highly complex, idiosyncratic explanations aimed at understanding single cases that are clearly situated in time and space. In the literature, the term 'middle-range theories'[26] is used for the kind of approach we are suggesting here.

Furthermore, summarising different combinations of factors under the same concept – power dispersion – is an example of a useful, though often neglected, practice in comparative social sciences: in Sartori's (1984 and 1991) terms, we move up the ladder of abstraction and seek to establish the 'basic' rather than 'superficial' causes (Lieberson 1985: 185ff.). In

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[26] The concept of middle-range theories (Merton 1957; Esser 2002) not only offers a suggestive label for the type of hypothesis we propose, but it is also an appropriate conceptual framework for thinking about the task of how to formulate and test them. Middle-range theories denote the relations between causes and outcome that are bound in time and space. These scope conditions have to be explicitly integrated into the hypothesis and are thus not simply variables that are controlled for. The concept of middle-range theories is also appealing because it is characterized by the combination of a simple idea (in our case the fit of institutions to contexts in terms of power dispersion) with the capacity to integrate otherwise dispersed hypotheses and empirical regularities (e.g. the frequently found correlations between parliamentarism and CoD or economic development and CoD). Due to their clearly stated limitations in time and space, middle-range theories lend themselves as building blocks for the development of more general theories in further research. The scope of middle-range theories is not necessarily limited to certain regions (area studies), but this can also refer to policy studies or to research in political economy where national economies were recently grouped according to their institutional specificity (Hall & Soskice 2001).

operational terms, in order to achieve the 'higher order construct' (Ragin 2000: 321-328) power dispersion, we create 'master variables' (Rokkan 1999) or 'macro-variables' (Berg-Schlosser & De Meur 1997).

Step one: searching for CoD-enhancing remote conditions

Following the logic of the two-step fs/QCA module, the first step consists of an analysis of remote context conditions only. The model for the sufficiency test in Step 1 is the following:

ECON * EDUC * ETHLIN * CLOSE * DEMEX * NOCOM ≤ COD,

where ≤ indicates that the expression to the left denotes a subset of the expression to the right. No doubt, this is a highly over-determined, complex[27] model since it claims that cases that display *all* fostering factors should also be consolidated democracies. The general aim of the following fuzzy set analysis – like that of all other data processing techniques – is to reduce the complexity of this initial statement. The question now is which different combinations of conditions represent the information that is contained in the data.

Recently, Ragin (2004) developed the fuzzy truth table algorithm. It produces a table that displays three important pieces of information for each of the logically possible combinations of the six remote conditions (see Table 3). First, the consistency value running from 0 to 1 in

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[27] In statistical terms, this model is a 6th-order interaction term, a model that is not practically estimable.

column 'Consistency'[28], and second, the number of cases that have a membership in the respective causal combination higher than 0.5 in column 'N'.[29]

Table 3 about here

Third, the column 'CoD indicates for each causal combination (a) whether it passes the test criteria for 'very often sufficient'[30] and (b) whether it contains enough cases.[31] If these two conditions are fulfilled, the conjunction passes the test, meaning that it is a sufficient condition for CoD. In essence, the column 'CoD' indicates which of the causal combinations produce the outcome (1, rows #1-18, 26 cases), and which ones do not (0, rows #19-20, six cases), as well as which combinations have no empirical instances (rows #21-64).[32] Finally, the last column 'Country' indicates which cases are described by the respective row (i.e. combination of conditions).

As Table 3 shows, the 32 cases can be organised into 20 out of 64 logically possible combinations (rows in the truth table). This implies that there are 44 logical remainders, i.e. combinations for which empirical evidence is lacking (rows #21-64). This is a normal situation of limited diversity, common in comparative social science. The treatment of these

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[28] The consistency value expresses the degree to which the fuzzy set membership scores of all cases in a combination are consistent with the statement that this combination of conditions is sufficient for the outcome.

[29] It is a fuzzy set theoretical rule that each element holds a membership score higher than 0.5 in only one causal combination (for exceptions to this rule, see Ragin 2000: 184ff.).

[30] We use a cut-off value of 0.7 for consistency. This means that 70 % of the cases' fuzzy membership scores in a causal combination must be consistent, that is, they must lie above the main diagonal in the x-y plot.

[31] We use the threshold of at least one case with a membership in the causal combination higher than 0.5 as indicated in column 'N'.

[32] These rows are collapsed in Table 3.

logical remainders, i.e. the simplifying assumptions made, will influence the results obtained. As previously mentioned, contrary to most correlational based techniques, in fs/QCA the researcher is forced to make conscious decisions with regard to missing empirical instances.

The commonalties of the more consolidated democracies (CoD = 1) are complex. Simple eye-balling reveals that the group of consolidated democracies comprises both socio-economic developed but also less developed cases (column 'ECON'), former Communist and non-Communist countries (column 'NOCOM'), the same as ethno-linguistically homogeneous and heterogeneous countries (column 'ETHLIN'). Clearly, it is necessary to apply a formalised procedure for the logical reduction of complexity that goes beyond a quick first glance approach in order to make sense of the results. Notice that Table 3 can be perceived as a representation of fuzzy sets in a dichotomous (crisp set) truth table. Despite its dichotomous appearance, the more fine-grained fuzzy information on the 32 cases is not lost and will be used in the subsequent analytical steps.[33] Thus, in order to reduce the complexity of the remote causal combinations fostering CoD, we will use the Quine-McClusky algorithm for dichotomous data (Ragin 1987).

For the analysis, the rows with the outcome value 1 are set to 'true' and the 0-outcomes are set to 'false' and the logical remainders are set to 'don't care'. Plainly speaking, we are minimising the logical combinations on the 1-outcome, i.e. the presence of CoD, because we are interested in those combinations that lead to CoD.[34]

Setting all logical remainders to 'don't care' leads to the most parsimonious solution. Allowing for more parsimonious solutions in the first step logically implies that *less precise*

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[33] See Ragin (2004) for the reason why the fuzzy truth table algorithm leads to different results and is preferable to the strategy of recoding fuzzy membership scores into crisp sets at the beginning of the analysis.

[34] One of the most analytically fruitful features of fs/QCA is that one can also specify the non-occurrence of the outcome as a dependent variable. Social scientific theories are not always symmetric, i.e. the explanation of the occurrence of the outcome does not directly lead to the explanation for its non-occurrence (Lieberson 1985).

accounts of the outcome will be produced. However, this is in line with our approach which assumes that neither remote nor proximate factors alone provide a satisfactory account for why the outcome occurs. The main thrust of our argument is that a dimension of consistency is parallel to the dimension of precision or complexity of a solution term. Indeed, complexity and consistency of solution terms are directly linked to one another: the less complex and the less precise a solution term is, the more likely it is that it is also *less consistent*.[35] Since the aim of the first step of the two-step fs/QCA approach is moderate inconsistency, the model is deliberately under-specified after the first step, and is therefore not expected to show a (close to) perfect fit to the data. This is why we speak of CoD-enhancing contexts at this point. Only when proximate factors are added to the analysis in the second step, should the solution terms be found that combine remote and proximate factors and lead to an (almost always) consistently sufficient result. In this sense, proximate factors increase the consistency of the solution terms by making the conjunctural solution terms more specific, theoretically complex and thus empirically consistent.

The analysis of the remote conditions leads to the following solution:

$$ECON + ETHLIN + NOCOM \quad \rightarrow \quad CoD$$

where '$\rightarrow$' indicates an 'explicit connection' (Ragin & Rihoux 2004) between the conditions to the left and the outcome to the right. As we see, there are three different remote contexts in which the consolidation of democracies is more likely than in others. First, as already stated, no single remote condition is necessary for the consolidation of democracy. And second, three of the six remote factors used in the initial model are logically redundant for

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[35] The fuzzy set theoretical reason for this is straightforward. In order to calculate the membership of a case in the conjunction ABC, the minimum of its membership over A, B, and C is taken (Klir, Clair & Yuan 1997). Hence, the membership in ABC over all cases will always be lower than (or in one case equal to) the membership over all cases in A, B, C, or any bivariate combination of these. Generally speaking, adding conditions to a conjunctural solution term lowers the membership of cases in the conjunctural solution.

representing the underlying structure of the data using the test parameters for sufficiency outlined above.[36] The consistency value of the context 'economically developed' is 0.93, for 'ethno-linguistically homogeneous' 0.82, and for 'non-former communist country' 0.24.[37] As explained above, the design of the two-step fs/QCA approach explicitly relies on the fact that the first step yields inconclusive results. The three remote context terms, thus, represent the underlying data in a logically minimised way, allowing for a certain level of deviation from the statement of sufficiency.

While this inconsistency might disturb those researchers who seek a perfect fit of the model to the data, it is justified in the framework of the two-step approach to partially 'mis-specify' the model in the first step. In addition to this more technical justification for accepting the results achieved after the first fs/QCA step, all three CoD-fostering contexts make theoretical sense, since the literature has claimed that economic development, ethno-linguistic homogeneity, and a non-communist past matter.

Step two: searching for proximate factors for CoD within different contexts

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[36] Here a note of caution is apt. Like all data processing methods, QCA and fs/QCA present a complexity reduced version, a particular perspective on the data, so to speak. The perspective, and, thus, the representation of the data, changes with the test parameters chosen. Had we chosen to set the non-existing cases to 'false' (the blanket assumption, see above) and, thus, had not allowed the computer to simulate outcome values for these non-existing cases, then, of course, the result would be different.

[37] The recalculation of consistency is necessary because the simplification of the causal combinations that pass the first test of consistency, shown inTable 3, changes the consistency values. In general, reducing the complexity of consistent causal combination is likely to introduce inconsistency.

Having determined the different contexts in which CoD seems to be more likely, the task in the second analytical step is to find the different *combinations* of institutional features of the neo-democracies *within* the three different contexts that lead to CoD. In general, CoD, as conceptualised here, is the compliance of relevant actors to democratic rules. It is assumed that actors will behave in a rule-affirming way if the rules of the democratic game reflect the distribution of power in a society. Since societies differ in their configuration of relevant social forces and, thus, their need for power dispersion, it follows that different configurations of democratic institutions should satisfy the expectations of the most relevant political actors.

Each analysis of proximate institutional factors within remote contexts contains four variables (one remote context condition in turn, plus the three institutional conditions). The benchmark criteria for passing the sufficiency test are the same as those employed for remote conditions.[38]

However, we now treat the logical remainders in a different way. They are set to 'false', which means that no simplifying assumptions are allowed on any of the logical remainders. As explained previously, this is the most conservative set-up of the logical reduction process and leads to the most complex results. Because of the relation between consistency and complexity, this also implies higher consistency values for the solution terms. Whereas it was precisely the inconsistency and incompleteness of the context solution terms which formed an integral part of the first step, the aim of the *second* step is to obtain consistent solutions that illustrate the interplay between different institutional features and the context in which they

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[38] This means that for each of the 2^4 conjunctions the threshold is a consistency value of 0.7 and at least one case has to have a membership higher than 0.5 in this conjunction. Conjunctions passing the criteria for consistency and empirical existence are seen as sufficient causes for CoD and, thus, the outcome value assigned to them is 1. Inconsistent but existing conjunctions are seen as insufficient conjunctions for CoD and thus, their outcome value is 0. Combinations with no case having a membership higher than 0.5 are treated as logical remainders.

are embedded. Hence, in the second fs/QCA step, we do not allow for any computer-induced simplifying assumptions and, instead, reduce the complexity of the causal configurations based only on the empirical information at hand.[39]

Table 4 provides a summary of all sufficient conjunctions between remote contexts and proximate institutional configurations (paths) that lead to CoD. All ten paths display a consistency value higher than 0.7 and in all of them at least one case has a membership higher than 0.5. Thus, the results obtained fulfil the sufficiency criteria that we established at the outset of the analysis.

Table 4 about here

The outcome of the fs/QCA analysis corresponds to the widely shared common view that CoD (and many other phenomena, for that matter) is characterised by conjunctural causation. This means that combinations of factors jointly produce CoD, not single variables in isolation; this leads to equifinality, that is, different conjunctions lead to the same outcome (not one single path in all cases).

Let us now confront the two-step procedure with the simpler and more common strategy of analysing all six remote and three proximate conditions in only one analytic step with nine conditions. This creates severe analytic problems. First, the amount of limited diversity increases dramatically: out of the $2^9 = 512$ logically possible combinations, a total of 485 lack empirical evidence. Hence, many more theoretically questionable assumptions about these logical remainders influence the final result. Second, if we use the same parameters, variables and cases, for this conventional one-step procedure and use the most conservative strategy for

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[39] Notice that instead of excluding all simplifying assumptions, it is also possible to make use of 'easy counterfactuals' (see above and Ragin & Sonnett 2004).

dealing with the logical remainders (i.e. all are assumed to have the outcome value of 0), no less than 16 causal paths appear[40], some of which are composed of up to nine components. Even the most parsimonious strategy in which the computer a-theoretically simulates outcome values for logical remainders still produces eight different[41] paths. Without any doubt, this kind of result is highly complex, making theoretically meaningful interpretations difficult. In sum, a one-step fs/QCA analysis even increases the problem of limited diversity and leads to results whose substantive value is questionable.

Interpretation of the results

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[40] LITERA*ethlin*SMALPOP*demex*noncom*PARLIA*EFPAHI*PR   +

econ*LITERA*ETHLIN*SMALPOP*demex*noncom*PARLIA*EFPAHI   +

econ*ETHLIN*SMALPOP*demex*noncom*PARLIA*EFPAHI*PR   +

ECON*LITERA*ETHLIN*SMALPOP*noncom*PARLIA*EFPAHI*PR   +

ECON*LITERA*ETHLIN*SMALPOP*DEMEX*NONCOM*EFPAHI*PR   +

ECON*LITERA*ETHLIN*SMALPOP*DEMEX*NONCOM*PARLIA*PR   +

econ*LITERA*ethlin*SMALPOP*demex*NONCOM*parlia*EFPAHI*pr   +

econ*litera*ETHLIN*smalpop*demex*noncom*PARLIA*EFPAHI*PR   +

ECON*LITERA*ETHLIN*smalpop*demex*NONCOM*parlia*EFPAHI*pr   +

ECON*LITERA*ETHLIN*smalpop*demex*noncom*parlia*EFPAHI*PR   +

ECON*LITERA*ethlin*smalpop*demex*NONCOM*parlia*EFPAHI*PR   +

econ*LITERA*ethlin*SMALPOP*demex*noncom*parlia*EFPAHI*PR   +

econ*LITERA*ETHLIN*smalpop*DEMEX*NONCOM*parlia*EFPAHI*PR +

econ*litera*ETHLIN*smalpop*demex*NONCOM*PARLIA*EFPAHI*PR   +

ECON*LITERA*ethlin*smalpop*DEMEX*NONCOM*PARLIA*EFPAHI*PR+

econ*litera*ETHLIN*SMALPOP*DEMEX*NONCOM*parlia*EFPAHI*PR   → COD

Earlier, we introduced the notion of power dispersion and formulated the general expectation that different contexts require different degrees of power dispersion, and that institutions are capable of registering such dispersion. We now come back to the interpretation of the empirical results in the light of the expectations generated by the power dispersion approach. In terms of context conditions, we claim - together with many scholars (e.g. Horowitz 1985, Lijphart 1977) - that ethno-linguistic heterogeneity (ethlin) requires power dispersion. Furthermore, modernisation theory claims that economic development (ECON) also induces a need for power dispersion through an increasing differentiation of society. In contrast, from the literature one can derive the claim that the lack of high levels of economic development (econ) and a long former communist past (nocom) both require the implementation of a more power concentrating type of democracy.[42]

For the institutional configuration, the following categorisation can be put forward. First, in the category of power *dispersing* institutional configurations, we find the combination of a (semi-) presidential system with a high number of parties in parliament (parlia·EFPAHI). In addition to this, we find the combination parlia·EFPAHI·pr, a subset of the former, which simply adds the criterion of having a majoritarian electoral system. Latin American countries, such as Argentina, Mexico, or Brazil, but also Poland fall into this category. Second, in the category of power-dispersing *neutral* institutional configurations, we find (a) the combination of a presidential system with few parties and a proportional electoral system (parlia·efpahi·PR), (b) parliamentary systems with a proportional electoral system with or without many parties (PARLIA·PR + PARLIA·EFPAHI·PR), and (c) few parties and a

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[41] ECON + DEMEC + PARLIA + LITERA*NOCOM + efpahi (nocom + ethlin + LITERA + CLOSE) → COD

[42] Ethno-linguistic homogeneity (ETHLIN) and no former communist past (NOCOM), instead, do not generate per se the need for either the concentration or the dispersion of political power.

proportional representation electoral system (efpahi·PR).[43] Third, the category of power *concentrating* institutional configurations contains only the combination of a parliamentary system with a low number of parties (PARLIA·efpahi). Countries such as Bulgaria, Lithuania, or Mongolia, but also Greece fall into this category.

Figure 5 displays the result of the fs/QCA analysis based on the power distribution scheme introduced above. The columns in the nine-fold cross-tabulation separate the CoD enhancing contexts according to the degree of power dispersion they establish, ranging from power dispersion on the left to power concentration on the right. Similarly, the three rows differentiate the different institutional configurations, or democracy types, according to their power dispersion capacity.

Figure 5 about here

Figure 5 follows the same logic as Figure 4. This time, the cell entries (p_1-p_{10}) indicate the different sufficient causal conjunctions for CoD that have been calculated by the two-step fs/QCA analysis and which are also displayed in Table 4. The general expectation was that democracy consolidates if the type of democracy implemented matches the degree of power dispersion required by the societal context. The analysis should not display any sufficient path towards CoD that combines either a context that requires power distribution with power concentrating institutional configurations, or a context that requires power concentration with

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[43] It is always important to remember that the classification of institutional configurations in terms of their power distributing effect applies to the conjunction as a whole. The effect of single elements of the conjunction, such as the system of government or the party system type, cannot be directly inferred from the effect of the conjunction. Interpreting single elements of a conjunction in isolation is a mistake in interpreting fs/QCA results because it clearly violates the fundamental conjunctural logic of this approach.

power dispersing institutions. And, in fact, the respective cells – the lower left and upper right cells – are empty. None of the consolidated democracies in our data has implemented either a power concentrating type of democracy in an ethno-linguistically heterogeneous or socio-economically developed context. Nor is there any case of CoD with a power dispersing democracy in a socio-economically less developed context or in former Soviet republics. None of the causal conjunctions that were identified as sufficient conditions for CoD contradict the theoretical expectations.

In sum, the fs/QCA-based two-step analysis contributed to the formulation and the testing of more subtle and complex hypotheses on the causes of CoD. This result has several theoretical implications. In contrast to many modernisation theory based claims, we find that there are no preconditions for CoD. Instead, some democracies consolidate in unfavourable conditions while others fail to consolidate in favourable contexts. The reason for this seems to be the choice of an (in)appropriate configuration of institutions. This also implies that there is no type of democracy – and much less a single institutional feature - that is *a priori* better for CoD. What matters, instead, is the fit with the context.

CONCLUSION

In this article we started out with the argument put forward by Charles Ragin (2000) that complex causal statements in terms of necessary and sufficient conditions can be appropriately framed using set relations between causes and the outcome. In principle, we see QCA techniques as one appropriate methodological tool for assessing complex causal theories – especially in mid-size N designs - and thus for enabling the researcher to bring

together methodology and ontology (Hall 2003). We argued that QCA techniques are not always free from problems though: overly complex results and limited diversity are common (although not QCA-specific) phenomena in real world research situations. In response to these problems, we proposed an analysis in two steps, organised in remote factors on the one hand, and proximate factors on the other.

In our understanding such an approach has several advantages. First, it offers a practical solution to the general need to contextualise causal statements and, thus, to formulate middle-range theories. Second, it reduces the problem of limited diversity, thus enabling the researcher to follow a conscious and theory-guided approach to the phenomenon of logical remainders, i.e. those ubiquitous logically possible combinations of condition variables for which comparative social scientists do not have empirical evidence at hand. And third, it more adequately reflects the (often implicit) structure of many social scientific hypotheses, i.e. theories which distinguish between contextual causal factors and more directly operating conditions. Compared to a standard one-step fs/QCA analysis, we claimed that the results from the two-step procedure are not only more likely to better correspond to the basic structures of typical hypotheses in macro-social research, but that they are also less complex and, thus, easier to embed in the scientific discourse. In fact, more often than one would wish, a one-step fs/QCA approach leads to hyper-complex and close-to-unintelligible results. In short, a two-step approach is a methodological tool that allows formulating and testing theoretically more insightful and convincing causal statements based on a more conscious treatment of logical remainders.

For the empirical application of the two-step fs/QCA approach, we analysed the causes for CoD in 32 (neo-)democracies. We designed the first step in a possibilistic way in order to discover the contexts that *enable* the occurrence of the outcome. In this first step, some analytical criteria were relaxed in order to obtain parsimonious statements on outcome-

fostering contexts, leaving room for further specification of the causal argument when introducing the proximate factors. The second step then combined proximate factors with the specific remote contexts, applying stricter parameters. The result of our analysis showed that new insights about the causes of CoD can be achieved with the two-step approach: new democracies consolidate if the specific combination of political institutions chosen fit the societal context in terms of power dispersion. We believe that this is a far from trivial finding since this straightforward-sounding basic cause (Lieberson 1985) – fit of institutions and contexts - can empirically manifest itself in different forms. Put differently, even under adverse conditions, there exists a chance to consolidate democracies through skilful institutional choice and adaptation. This implies that there are neither strong societal preconditions, nor generally superior types of democracy for CoD.

The fact that there are different paths leading to CoD (i.e. conjunctural and equifinal causation) creates severe methodological challenges to which a two-step fs/QCA approach offers a partial solution. Consequently, without applying a context-sensitive two-step module of fs/QCA, which corresponds to the way in which our hypotheses were built, we would have been less likely to detect this specific interplay between remote contextual and proximate institutional variables.

In sum, this article offered a novel perspective on a familiar methodological problem in comparative social science, namely, how to test complex causal hypotheses in mid-size N studies. As there are clear and well-known limits of standard statistical techniques in such a research situation, we showed the potential of fs/QCA and its two-step module for overcoming some of the shortcomings. While we demonstrated the application of this approach with an example from the regime consolidation literature, we think that virtually all major fields of comparative social research can make use of the two-step procedure as well. Future research will show that the field of applicability is very broad. Without doubt, the two-

step fs/QCA approach is but one possibility to develop the potential usefulness of fs/QCA as

an additional methodological tool in comparative social sciences.

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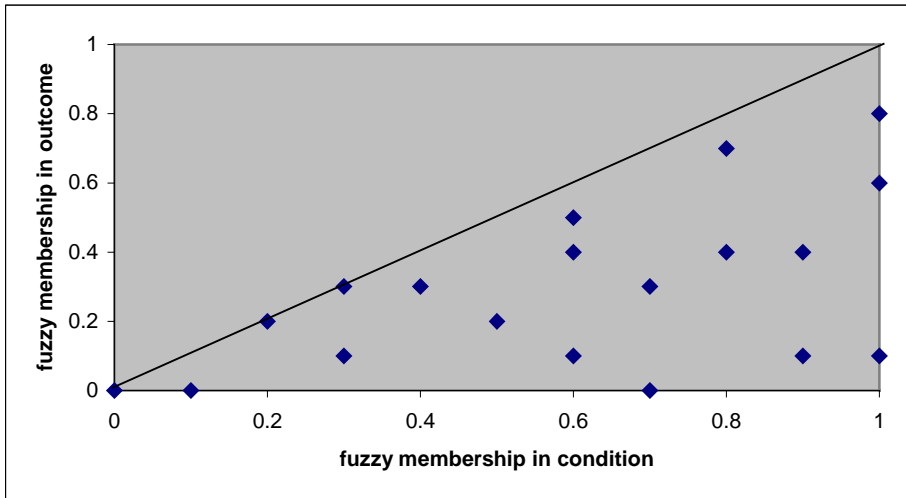
Figure 1: X-Y plot for necessary condition

Figure 2: X-Y plot for sufficient condition

Table 1: Limited diversity in correlational techniques
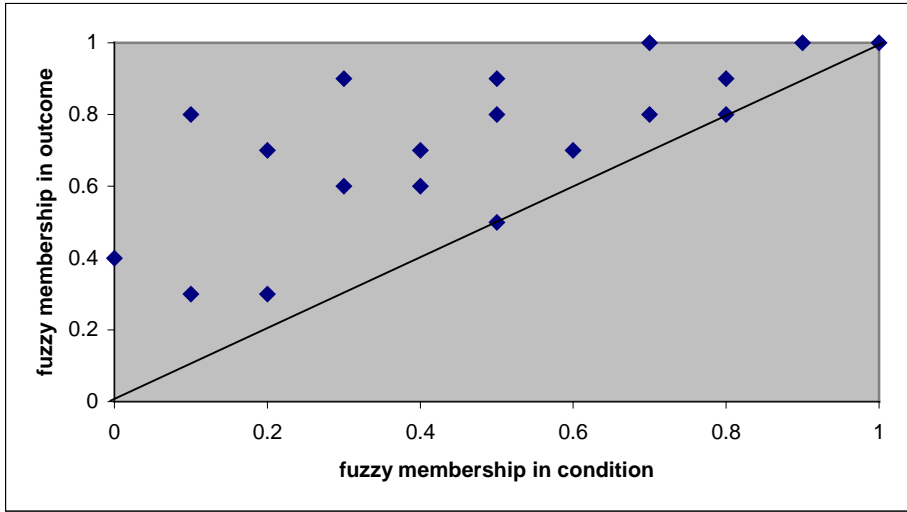
Row #	Strong Left Party	Strong Unions	Welfare State	N
1	1	1	1	100
2	1	0	0	100
3	0	0	0	100
4	0	1	?	0

Figure 3: Number of logical remainders
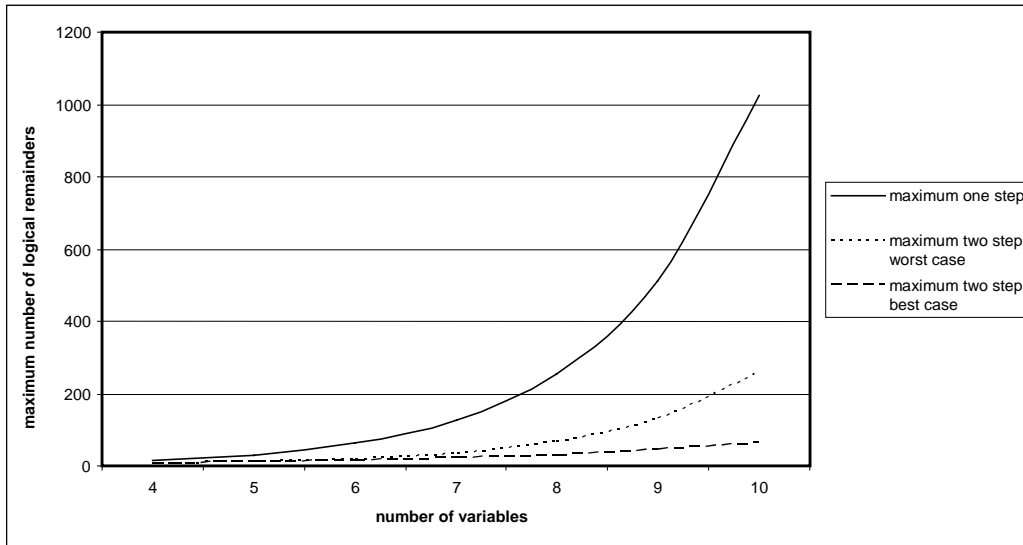
Table 2: Membership in fuzzy set 'Consolidated Democracy'

COUNTRY (acronym)	Fuzzy Membership in CoD
Spain (SP)	1
Uruguay (UR)	1
Greece (GR)	0.9
Portugal (PO)	0.9
Slovenia (SL)	0.9
Argentina (AR)	0.8
Czech Rep. (CR)	0.8
Poland (PL)	0.8
Brazil (BR)	0.6
Bulgaria (BU)	0.6
Chile (CH)	0.6
Hungary (HU)	0.6
Mexico (MX)	0.6
Mongolia (MO)	0.6
Romania (RO)	0.6
Slovakia (SK)	0.6
Ecuador (EC)	0.6
Estonia (EST)	0.6
Latvia (LAT)	0.6
Lithuania (LIT)	0.6
Bolivia (BO)	0.4
Nicaragua (NI)	0.4
Peru (PE)	0.4
Turkey (TU)	0.4
Ukraine (UK)	0.4
Albania (AL)	0.4
Honduras (HO)	0.4
Georgia (GE)	0.2
Guatemala (GUA)	0.2
Russia (RU)	0.2
Belarus (BE)	0.1

Figure 4: Fit of power dispersion between remote contexts and proximate democracy type and its impact on CoD: theoretical expectations

		Remote Context Creates Need For:		
		Power Dispersion	*Neutral*	*Power Concentration*
Proximate Type of Democracy is:	*Power Dispersing*	Sufficient combination for CoD		NOT sufficient combination for CoD
	Neutral			
	Power Concentrating	NOT sufficient combination for CoD		Sufficient combination for CoD

Table 3: Consistency test of remote conditions for CoD

Config uration #	Conditions						Out-come			Country
	ECON	EDUC	ETHLIN	CLOSE	DEMEX	NOCOM	CoD	Consis-tency	N*	
1	0	1	1	0	1	1	1	1.00	1	BR
2	1	1	1	1	1	0	1	1.00	2	CR, SK
3	1	1	1	1	1	1	1	1.00	2	GR, PO
4	1	1	0	0	0	1	1	1.00	1	AR
5	1	1	0	1	1	1	1	1.00	1	SP
6	1	1	1	0	0	1	1	1.00	1	MX
7	1	1	1	0	1	1	1	1.00	2	CH, UR
8	0	1	0	0	0	1	1	0.90	1	EC
9	0	0	1	1	0	1	1	0.89	1	TU
10	1	1	1	1	0	0	1	0.88	3	HU, PL, SL
11	0	1	1	1	0	0	1	0.86	1	BU
12	0	0	1	1	0	0	1	0.84	2	RO, AL
13	0	0	1	0	1	1	1	0.84	1	HO
14	0	1	0	0	1	1	1	0.79	1	PE
15	0	1	1	0	0	0	1	0.78	1	MO
16	1	1	0	1	0	0	1	0.74	1	EST
17	0	0	1	0	0	1	1	0.73	2	NI, PA
18	0	0	0	0	0	1	1	0.71	2	BO, GUA
19	0	1	0	0	0	0	0	0.53	1	GE
20	0	1	0	1	0	0	0	0.49	5	BE, RU, UK, LAT, LIT
…							?		0	
64							?		0	

* N = number of cases with fuzzy membership score higher than 0.5

Table 4: sufficient paths towards CoD

		Remote Context	Proximate Institutional Configurations	Consis-tency	N	Country
	(p1)	ECON •	parlia • EFPAHI	.86	4	AR, MX, PL, UR
	(p2)	econ •	PARLIA • efpahi	.80	3	BU, AL, MO
	(p3)	ETHLIN •	parlia • EFPAHI	.74	4	BR, MX, PL, UR
	(p4)	ETHLIN •	PARLIA • efpahi	.83	4	BU, GR, MO, AL
	(p5)	ethlin •	parlia • efpahi • PR	1	1	LT
COD =	*(p6)*	NOCOM •	parlia • EFPAHI • pr	.86	2	MX, EC
	(p7)	nocom •	efpahi • PR	.85	3	BU, MO, Al
	(p8)	nocom •	PARLIA • efpahi	.75	3	BU, AL, LT
	(p9)	-	PARLIA • PR	.70	13	BU, CZ, GR, HU, PO, RO, SK, SL, SP, TU, AL, EST, LAT
	(p10)	-	PARLIA • EFPAHI • PR	.78	10	CZ, GR, HU, PO, RO, SK, SL, SP, TU, EST, LAT

Figure 5: Fit of power dispersion between remote contexts and proximate democracy type and its impact on CoD: empirical findings

			Context Creates Need For:		
			Power Dispersion	*Neutral*	*Power Concentration*
		Type of Democracy	ECON / ethlin	ETHLIN / NOCOM / *no con*	econ / nocom
Institutional Configuration is	*Power Dispersing*	parlia·EFPAHI parlia·EFPAHI·pr	p1	p3 p6	
	Neutral	PARLIA·[EFPAHI]·PR parlia·efpahi·PR efpahi·PR	p5	[p10] p9	p7
	Power Concentrating	PARLIA·efpahi		p4	p2 p8

Cell entries (p1-p10) indicate the different combinations of contexts and institutional configurations that form sufficient paths towards CoD from Table 4.