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Configurations of corruption: A cross-national qualitative comparative analysis of levels of perceived corruption

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Abstract
This article advances our understanding of the potential causes of national levels of corruption. It develops a new institutionalist criminological theoretical framework. It then applies fuzzy set qualitative comparative analysis (fsQCA) to a sample of 77 countries. The outcome is perceived corruption. Potentially causal conditions are levels of democracy, human development, income inequality, and two value orientations: traditional/rational-secular and survival/self-expression. The analysis supports the new institutionalist expectation that the effects of each of these conditions are configurational and dependent upon the presence or absence of other conditions, including value orientations. This can help to explain why previous findings on the independent effect of democracy on corruption have been mixed. It may also help to explain why corruption is such an intractable phenomenon in many countries.

Keywords
Comparison, corruption, criminology, democracy, development, inequality, QCA, values

Introduction

Corruption is a complex and apparently intractable phenomenon in countries around the world (Cole, 2015; United Nations Office on Drugs and Crime (UNODC), 2012). Despite advances in human development and democratization, the citizens of many countries have reported increasing concern regarding corruption (Hardoon and Heinrich, 2013). Does this mean that becoming more democratic or more developed is not enough to achieve low levels of corruption? These levels appear to vary widely between countries (Lambsdorff, 2007), which enables the study of the conditions that may cause this variation.

While previous research consistently suggests that corruption tends to be lower in countries with higher levels of human development (De Graaf et al., 2010), the literature on the link with

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democracy is mixed. La Porta et al. (1999) found a statistically significant linear association between low levels of democracy and high levels of perceived corruption, while Ades and Di Tella (1999) found an association between lower levels of democracy and *lower* perceived corruption. One of the most highly cited articles that specifically addresses the causes of corruption (Treisman, 2000) did not find a link between contemporary levels of democracy and perceived corruption. Other studies found a non-linear relationship between democracy and corruption (Bäck and Hadenius, 2008; Montinola and Jackman, 2002; Rock, 2009; Sung, 2004), suggesting that corruption is highest in countries with medium levels of democracy. Some researchers suggest that it is important to examine the role of values in the causes of corruption (Bussmann, 2015; Karstedt, 2004; Seleim and Bontis, 2009; Yeganeh, 2014). The influences of these potential causes are likely to be affected by socio-economic contexts, including income inequality (Akbar and Vujić, 2014; De Graaf et al., 2010; Uslaner, 2006; You and Khagram, 2005; Zhang et al., 2009).

This article uses a new approach, fuzzy set qualitative comparative analysis (fsQCA; Ragin, 2000, 2008), which has not been previously applied to the study of corruption. This analysis is used to assess a theoretical framework that builds on the 'new institutionalist' approach in criminology (Karstedt, 2010). It examines the interplay of institutions and values with socio-economic contexts. This analysis uses data for a sample of 77 countries from Transparency International's (2015) Corruption Perception Index (CPI) for 2014, alongside data for theoretically relevant social conditions including countries' levels of formal democracy, value orientations (traditional/secular-rational and survival/self-expression), human development, and income inequality. It follows the recommendations of Schneider and Wagemann (2010) on good practice in carrying out and presenting qualitative comparative analysis (QCA). Therefore, it discusses the application of the fsQCA findings to particular cases and types of cases. It also discusses limitations of the analysis before concluding with a summary of its main findings. The aim is to contribute to the collective task of answering the following question: why do some countries have high levels of corruption, while others have low levels?

New institutionalism in the comparative criminology of corruption

A focus on the configurational interplay of political institutions and socially shared values is a defining feature of 'new' institutionalism (March and Olsen, 2006; Nee and Ingrams, 1998). However, the tradition of institutionalist analysis in comparative, sociological criminology dates back at least to 1902, when Durkheim drew the link between the level of homicide in a country and its general orientation toward collectivist values (Durkheim, 2003 [1902]; Eisner, 2012). Durkheim's approach to the impact of such values was already configurational. He argued that the effects of value and political institutions are contingent upon each other and on the country's level of social development (DiCristina, 2004). Durkheim thereby anticipated the arguments of new institutionalist sociologists, who also emphasize the mutually interdependent effects of formally and informally instituted rules and procedures in varying socio-economic contexts (Powell, 2007; Scott, 2001).

Criminological institutionalism subsequently took several forms (e.g. Messner and Rosenfeld, 1997; Rusche and Kircheimer, 1939), although not always under the institutionalist label (Karstedt, 2010). Karstedt noted a revived interest in new institutionalism in criminology which echoes the emphasis of Durkheim and of the neo-institutionalist thinking in sociology, political science, and economics on the role of values in social action (Lambsdorff et al., 2005; Nee and Ingrams, 1998). Institutions are defined as 'the established aspects of society' (Scott and Marshall, 2009: 358). According to Karstedt (2010), 'new institutionalist approaches conceptualize crime and justice as institutional outcomes of specific arrangements and clusters of institutions that exist in society' (p.

355). Karstedt drew on North's (1990) conceptualization of institutions as the 'rules of the game'. New institutionalists argue that explanations of human behavior must take into account culturally shared norms as well as formal economic and political institutions (Koelble, 1995; Nee and Ingrams, 1998). Formal institutions include governments, courts, laws, and corporations. But new institutionalism also 'acknowledg[es] the role of norms, morality and fairness' (Karstedt, 2010: 340). Such 'strong, semi-permanent, underlying' normative dispositions (Scott and Marshall, 2009: 788) are socially shared value orientations. They influence social action and are also influenced by the social environment (Van Deth, 1995). The values that individuals hold tend to be learned from the general orientations that are commonly held in their society. Thus, value orientations play an important role – alongside formal institutions and socio-economic conditions – in producing patterns of social action (Acemoglu and Robinson, 2012; Inglehart and Welzel, 2005; Karstedt, 2010, 2015b), although these authors place different emphases on each of these three sets of causal conditions.

The formal institutions that are most likely to be involved in the causes of corruption include the institutions of democracy. Corruption is used to gain access to power and resources. In more democratic societies, the formal institutions of democracy – including both the political rights of free elections and the civil liberties of non-discrimination, equality before the law, and a free press – enable more open competition for such resources. This should also increase the legitimacy of decisions regarding the distribution of resources. Both the wider access to opportunities to gain resources and the legitimacy of their distribution will reduce the attraction and effectiveness of corruption. Democracy may also affect the ability of officials to engage in corruption. It makes them more accountable and their actions more transparent. Governing elites that have the strength to impose decisions and control resources without challenge may use this capacity to extract resources for themselves (Karstedt, 2014). They may do so by supporting 'extractive institutions': institutional arrangements (including undemocratic forms of government, monopolistic or oligopolistic economies, and nepotism) that exclude their populations from access to resources (Acemoglu and Robinson, 2012). A higher level of democracy supports the development of 'inclusive institutions' (e.g. open markets, democratic governance, meritocracy, and the rule of law) which enable more of the population to develop their living standards (Acemoglu and Robinson, 2012). The institutions of democracy will influence both the ability of governments to engage in corruption and the ability of their populations to take action against it.

The new institutionalist framework suggests that it is not just formal institutions but also culturally shared value orientations that affect human behavior (Karstedt, 2010, 2011b, 2015b; North, 1990; Van Deth, 1995). We do not act solely on the basis of instrumentally rational, self-interested calculation, as suggested by the rational choice theory adopted by some economic institutionalist analysts of corruption (Rose-Ackerman, 2010). Our choices are influenced by the normative dispositions which we learn from our societies. This means that the values that prevail in a given society will form part of the configurations that affect societies' levels of a variety of outcomes, including economic prosperity, security, homicide, and corruption (Acemoglu and Robinson, 2012; Bussmann, 2015; Karstedt, 2000, 2001, 2004, 2015b; Van Deth, 1995; Yeganeh, 2014).

The World Values Survey (WVS) identifies two distinct value orientations that are both variable between countries and theoretically relevant for the study of corruption (Inglehart, 1997). These value orientations are closely linked with both socio-economic conditions and processes of democratization (Inglehart and Welzel, 2005). Yeganeh (2014) found that both were associated with national levels of perceived corruption.[1] They are the traditional/secular-rational and the survival/self-expression orientations. The traditional/secular-rational orientation concerns how people relate to traditional forms of authority (Inglehart and Welzel, 2005). People at the traditional pole of this orientation are more accepting of traditional, hierarchical forms of authority.

Those adhering to the secular-rational pole tend to be more challenging of arbitrary authority. They expect decisions to be rationally justified. This orientation may be linked with corruption, as it implies that the populations of some countries are more likely to defer to demands from people who occupy superior positions in the social hierarchy, whether or not such demands are rationally or democratically justified.

The second principal orientation in the WVS is survival/self-expression. The survival pole of this orientation occurs as 'people in societies shaped by existential insecurity and rigid intellectual and social constraints on human autonomy tend to emphasize economic and physical security above all' (Inglehart and Welzel, 2005: 52). People with survival orientation are also more likely to distrust out-group members, are less likely to see themselves as interdependent with a wider group of peers, and have lower levels of generalized trust. The self-expression pole of this orientation 'taps a syndrome of tolerance, trust, emphasis on subjective well-being, civic activism, and self-expression' (Inglehart and Welzel, 2005: 52). It is linked with higher levels of generalized trust. Other studies suggest that higher levels of generalized trust are associated with lower levels of perceived corruption (Graeff, 2005; Uslaner, 2006). The importance of self-expression and social interdependence is also emphasized by the 'modernization perspective' in new institutionalist criminology (LaFree et al., 2015). In a similar way to Inglehart and Welzel's (2005) 'modernization theory', this draws inspiration from Durkheim's ideas on social transformation. As traditional societies develop into modernity, established values are challenged, leading to social disorganization and anomie, which increase the rates of some crimes. But as these societies become increasingly sophisticated, higher levels of social interdependence produce new forms of informal social control. This includes increased trust of out-groups and less reliance on in-groups. This should usually reduce corruption; with increased levels of generalized trust, people rely more on impartial, open procedures for the distribution of resources than on closed networks of families, friendships, and favors. Self-expression value orientations are also conducive to people using democratic institutions to challenge and reduce corruption.

Importantly, these value orientations do not merely reflect individual characteristics and preferences. Rather, they tend to vary systematically between countries (Inglehart and Welzel, 2005). The socially embedded actions of individuals in these countries will be influenced by these commonly held value orientations. Some orientations may be more conducive to a higher national level of corruption than others. In keeping with the 'modernization perspective' (LaFree et al., 2015), corruption is theoretically expected to be higher in counties where the population tends towards the traditional and survival poles of these orientations, compared to those at the other poles: secular-rational and self-expression orientations. However, the effect of value orientations is unlikely to be independent or universal. Under some circumstances, it may even be the case that traditional or survival orientations combine with other conditions to reduce, rather than increase, levels of corruption. For example, in particularly authoritarian countries where traditional leaders prohibit corruption, then a higher level of deference to traditional authority, as expressed in a greater level of traditional value orientation, may reduce levels of corruption. The effect of these value orientations on corruption will therefore be contingent upon the contexts in which they operate.

Most previous studies, including those by Yeganeh (2014) and Treisman (2000), found that perceived corruption tends to be lower in countries with higher levels of human development (De Graaf et al., 2010). Others suggest that income inequality is also important (e.g. Akbar and Vujić, 2014; Uslaner, 2006; You and Khagram, 2005; Zhang et al., 2009). In highly developed countries which are both wealthy and well educated, there may be less widespread motivation to bend or break laws or procedures in order to access relatively scarce resources. A literate population may be more capable of scrutinizing and contesting corrupt actions, especially where formally

democratic institutions enable them to do so. Income inequality is itself the product of institutional configurations (Tilly, 1998). It may increase the share of people living in poverty, who are particularly vulnerable to corrupt demands (Fried et al., 2010). It may also exacerbate the lack of open access to resources which may be caused by the absence of democratic, open, rationally justified formal institutions and the hierarchical, closed nature of social in-groups in countries with traditional and survival orientations.

The new institutionalist approach highlights the interplay between formal institutions, value orientations, and socio-economic contexts. Therefore, it is expected that effects on corruption will come from configurations of conditions. The existing literature on corruption does not usually test this expectation. Multivariate regression is the predominant analytical method in the studies referred to above among others (e.g. Dollar et al., 2001; Maeda and Ziegfeld, 2015; Mazar and Aggarwal, 2011; Musila, 2013; Park, 2003; Sandholtz and Gray, 2003; Seleim and Bontis, 2009; Swamy et al., 2001). Regression analysis attempts to isolate the independent, additive effect of each predictor variable on the response variable. The new institutionalist framework suggests, in contrast, that causal effects will be configurational rather than independent and combinatorial rather than additive. The effect of any particular condition on an outcome will be contingent on the presence or absence of other relevant conditions. And there may be more than one 'causal pathway' to the same outcome (Byrne, 2011; Ragin, 1994). Regression analysis can use interaction terms to examine combined effects, but previous studies of perceived corruption rarely test interactions. Regression analysis is also limited since it identifies only one causal pathway, in the form of a single regression equation. It is not well suited, therefore, to the analysis of complex, multiple causation. In her development of new institutionalist criminology, Karstedt (2000) moved from using multivariate regression, through bivariate analysis within sub-groups of countries (Karstedt, 2011a, 2011b, 2014), to an explicitly configurational form of comparative analysis which 'transcend[s] the particular, local, exceptional and idiosyncratic, but do[es] not make it invisible in sweeping macro-level analyses' (Karstedt, 2015a: 377).

Therefore, this article uses QCA rather than regression to analyze the application of a new institutionalist framework to the available data. QCA is a configurational approach that examines set relations between cases, rather than correlations between variables (Ragin, 2000). Cases are described in terms of their degree of membership in the set of cases that has a specified condition. QCA then identifies whether specified configurations of conditions (including conditions that are linked by the Boolean operators, AND and OR) can be considered as being consistently necessary or sufficient for a specified outcome to occur.

This article uses the fsQCA approach (Ragin, 2000, 2008). Cases' membership in a fuzzy set can be anywhere in the range from a score of 0 (fully out of the set) to 1 (fully in the set). The principle of 'set negation' can also be used to calculate scores for the opposite pole of each condition (e.g. its degree of membership in the set of cases that has a low rather than a high level for that condition) by subtracting its score for that condition from 1. Raw data on cases can be calibrated into fuzzy set scores for the conditions that the cases have, including the outcomes and the potential causes. Fuzzy set scores can then be calculated for cases' membership of configurations of conditions. A case's score for a configuration of conditions linked by AND is the case's lowest score for any of the conditions in the configuration. Its score for a configuration of conditions linked by OR is the highest of its set scores for any of these conditions. So if a case has a fuzzy set score for the condition of democracy of 1 and a score for human development of 0.4, its score for the configuration of democracy AND human development would be 0.4 (the minimum of the two scores). Its score for the configuration of democracy OR human development would be 1 (the maximum of the two scores). Its score for the negation of the set of human development (in this article, this would indicate a low level of development) would be 0.6 (1 minus 0.4).

Each case in the sample can be given a fuzzy set score for the outcome condition, for each potentially causal condition, for the opposites (set negations) of these conditions, and for each logically possible configuration of these potentially causal conditions. This enables us to test whether there is a relationship of necessity or sufficiency between a potentially causal condition (or configuration of conditions) and the outcome in a sample of cases. This is done in fsQCA software by comparing the fuzzy set scores of each of the cases for the conditions/configurations against their score for the outcome condition. If the cases' scores for a condition/configuration are consistently equal to or higher than their scores for the outcome, then this suggests a relationship of necessity; the outcome *only* occurs in cases where the condition/configuration is present. The condition/configuration may also be present in cases that do not have the outcome, if the condition/configuration is not a sufficient cause of the outcome.

If the cases' scores for a condition/configuration are consistently equal to or lower than their scores for the outcome, then this suggests a relationship of sufficiency; the outcome *always* occurs in cases if the condition/configuration is present. The outcome may also be present in cases that do not have this condition or configuration, if the condition/configuration is not a necessary cause of the outcome.

If cases' scores for a condition/configuration are consistently equal to their score for the outcome, then this suggests that the condition/configuration is both necessary and sufficient for the outcome to occur. If there is no consistent relationship between cases' scores for a condition/configuration and their scores for the outcome, then this suggests that this condition or configuration is neither a necessary nor a sufficient cause of the outcome.

The fsQCA process can identify more than one condition/configuration that is necessary or sufficient to cause an outcome, in line with the assumption that there may be multiple causal pathways to the same outcome. See Ragin (2008) for a full explanation of the logic and practice of fsQCA.

Methods

Data

The outcome of interest for this article is perceived levels of corruption at the national level. Corruption is defined as 'the abuse of entrusted power for private gain' (Transparency International, 2015). This is a broad definition that includes both petty forms of corruption, such as the taking of bribes by low-level officials, and grand corruption, such as the trade in influence at high levels of government. Data on levels of perceived corruption are available from Transparency International's CPI for 2014. The CPI is collated from a variety of surveys of business executives and experts both outside and inside the 174 countries that it covers. There is no direct measure of corruption itself, but there is a strong correlation between the CPI and different indicators of national levels of corruption, including the International Crime Victimization Survey (Lambsdorff, 2007) and others (e.g. Barr and Serra, 2010; DeBacker et al., 2015; Escresa and Picci, 2014; Fisman and Miguel, 2007). The score given in the CPI is higher for low levels of perceived corruption. This article follows others (e.g. DeBacker et al., 2015; Sandholtz and Gray, 2003) in reversing this score so that high scores indicate high levels of perceived corruption.

Conditions included in potentially causal configurations in the analysis presented here were selected on theoretical grounds. Measures of democracy were taken from the Polity IV Project (Marshall et al., 2015). This uses a wide range of sources to provide a score (called 'Polity') for the level of democracy in 167 countries. This score ranges from −10 to 10. Marshall et al. categorized countries with a Polity score above 5 as 'democracies'. They categorized countries with scores between 5 and −5 as 'anocracies', and countries with scores below −5 as 'autocracies'.

Data on national value orientations were taken from the WVS (2015). The WVS is a cross-national survey of values held by the populations of 90 countries. It repeatedly surveys a random sample of over 1000 people in each country, using a standardized questionnaire. The data used here were taken from the factorial variables that measure the underlying value orientations of traditional/rational-secular and survival/self-expression that are discussed above. These are each calculated from factor analysis of five individual items in the WVS, although they capture variation across a much wider range of questions (Inglehart and Welzel, 2005). A score for these orientations was calculated for each country by taking the average of all the individual respondents' scores in each country, including respondents from all the WVS waves between 1981 and 2014 (as enlarging the sample size for each country increases the accuracy of the estimates). National average value orientations are relatively stable over time, in that variation between countries is much larger than variation within countries over time (Inglehart and Welzel, 2005). Of course, the national average does not mean that every individual in the country has these orientations; rather, it gives a measurement of the general tendency for orientations in each country. It is the effect of these commonly held orientations at the level of countries – rather than individuals – that is of interest in this article.

Data on human development were retrieved from the United Nations' Human Development Index (HDI) for 2014 (United Nations Development Programme (UNDP), 2015). The HDI is a composite index calculated from measurements of a country's national income (gross domestic product (GDP) per head), life expectancy, and levels of education. It indicates the extent to which essential human needs are likely to be satisfied in the country while also reflecting – through its inclusion of measures of education – the capacity of the population to become aware of, and thus to take action against, corruption. The HDI dataset also includes separate measures of income inequality, including both the Atkinson measure and the Gini coefficient.[2] The Atkinson measure was chosen for this analysis because it provides a better measure than the Gini coefficient of inequality among people at the lower end of the income scale, and it is available for more countries.

All countries are prone to corruption. Even those that have a reputation for very low corruption have some experience of it (Crouch, 2015; Mulcahy, 2012). The aim of this study is to help answer the question of why some countries have high levels of corruption, and some have low levels. It is therefore important to include countries in the sample that have both low and high levels of perceived corruption, as measured by the CPI. As the causes of corruption may be different in highly developed countries compared to less developed countries, it is also important to include an indicator of development in the analysis. An advantage of QCA is that it enables the identification of different causal pathways at different levels of each of the conditions that it examines. It can suggest whether different configurations cause levels of perceived corruption in countries with high compared to low levels of human development.

It is also useful to maximize the number of the logically possible configurations of the conditions that are actually present in cases in the sample. This number will tend to increase with sample size. Therefore, the sample included all the countries for which complete data were available. As previous studies found, data were not available for all the conditions of interest in every country. There were 77 countries for which data were available from all the sources listed above. This is a larger sample than for many fsQCA studies, but Ragin (2000) suggests that medium-sized samples are appropriate in 'diversity-oriented' QCA, as shown in other articles (e.g. Aguilera-Caracuel et al., 2014; Glaesser, 2008; Stevens, 2016).

The main limit to the available sample was that there are many – often relatively small and less developed – countries which are not covered by the WVS. Only a minority of countries in the African region (9 out of 46), Middle East (including North Africa, 7/19), Asia Pacific (11/28), and the Americas (14/31) were present in the sample for analysis. A majority of Eastern European

Table 1. Description of raw data for conditions.

	n	Minimum	Median	Maximum
Perceived corruption	174	1	55	85
Income inequality	141	4.5	21.1	68.3
Human development	168	0.34	0.72	0.94
Democracy	166	−10	7	10
Traditional/rational-secular orientation	90	−0.559	0.014	1.145
Survival/self-expression orientation	90	−0.374	0.034	1.488

Table 2. Fuzzy set calibration thresholds.

Condition set	Calibration threshold		
	Fully out	Maximum ambiguity	Fully in
High perceived corruption	30.0	50.5	65.0
Low perceived corruption	65.0	50.5	30.0
Income inequality	14	22.4	33
Human development	0.550	0.709	0.800
High democracy	0.5	5.5	9.5
Rational-secular orientation	−0.37	0.05	0.55
Self-expression orientation	−0.17	0.03	0.40

(including Central Asia, 14/19) and European Union (including European Free Trade Area, 22/31) countries were in the sample.[3] Data on either income inequality or value orientations were not available for any of the Arab states of the Gulf.

Data calibration

Fuzzy set calibration and analysis of the data were carried out using the QCA package in the R statistical software environment (Duşa and Thiem, 2014). Calibration enables the cases to be assigned fuzzy set scores based on whether they are considered to have qualitatively high or low levels of each condition. The 'direct method' for calibration transforms the value of the raw data into a fuzzy set score for each condition (Ragin, 2008: 86). This process involves a calculation of the log odds that a case is a member of a specified set, based on the researcher's specification of three thresholds: the values of the raw data that indicate full membership of the set, full exclusion from the set, and the crossover point of maximum ambiguity as to whether a case is in or out of the set of cases with that condition. Using the raw data, a case that has a value that is higher than that chosen as the threshold for full inclusion would have a fuzzy set score of 1 for that condition. A case with a value that is just below this threshold would have a fuzzy set score just below 1. A case with a value that is below the chosen threshold for full exclusion from the set would have a fuzzy set score of 0. A case with a value that is near the chosen crossover point of maximum ambiguity would have a fuzzy set score near 0.5.

The three thresholds for calibration of each condition were determined by inspecting the distribution of the raw data across all the cases for which data were available. These distributions were compared to existing knowledge on qualitative differences in these conditions. Inspecting the data for all available countries (not just the 77 countries which had complete data) enabled better

informed judgments on which quantitative thresholds represent qualitative differences between cases; using a larger sample to make these judgments reduces the likelihood of error in identifying these thresholds (Krogslund et al., 2014). Information on the raw data (including the minimum, maximum, and median values of the data distribution) and on the sample size (n) of the countries for which data were available for each condition is given in Table 1.

The conditions were calibrated so that fuzzy set scores above 0.5 can be interpreted as a relatively high level of the condition. Fuzzy set scores below 0.5 can be interpreted as a relatively low level of that condition. It should be noted that a fuzzy set score of less than 0.5 for the rational-secular condition indicates that a country is relatively close to the traditional pole of this orientation. Similarly, a low set score for the self-expression condition would indicate that it is relatively close to the survival pole of this orientation.

Calibration of the Polity IV Project data on democracy was guided by the project's thresholds for classifying countries in order to create a set for 'high democracy'. Countries with the highest possible level of democracy (polity score = 10) were calibrated as a full member of this set (with a fuzzy set score of 1). Other 'democracies' (i.e. countries with polity scores between 6 and 9) were calibrated as more in than out of this set (a fuzzy set score between 0.5 and 1). 'Anocracies' with polity scores between 1 and 5 were calibrated as more out than in this set (a fuzzy set score between 0 and 0.5). Anocracies with polity scores between 0 and −5 and 'autocracies' (polity < −5) were calibrated as fully out of this set (a fuzzy set score of 0).

This choice for thresholds was informed by preliminary analysis which suggested that it is particularly high levels of democracy that seem to make a difference for perceived corruption. Different calibrations were also tried for the democracy condition in preliminary analysis, in line with previous studies that suggest different relationships between democracy and perceived corruption. This included a calibration that placed all countries with a polity score above 5 as full members of the set of democratic countries. It also included a calibration for 'medium' democracy, which calibrated countries with a polity score between 0 and 5 as full members of the set of medium democracy. However, these preliminary analyses did not produce superior explanations to those reported below.

For the set of countries that have high human development, the full inclusion threshold (fuzzy set score = 1) was taken from the threshold used by UNDP (2015) to classify countries in the very high development categories of the HDI country list. Countries classified by the UN as low development groups were calibrated as fully out of the set of high development (score = 0). The crossover point of maximum ambiguity as to inclusion or exclusion from this set (score = 0.5) was set near the mid-point of the range of the HDI.

For the calibration of democracy and human development, qualitative thresholds were available from the data sources themselves. They were not available in the data sources for income inequality or the two value orientations, or for the outcome of perceived corruption. The calibration of these conditions relied on the everyday, relative meanings of 'high' and 'low'. Therefore, the procedure for calibration of fuzzy set scores for these conditions was to examine the distribution of the data. A break point in the distribution (a value with no observations) that was near the median was chosen as the point of maximum ambiguity (fuzzy set score = 0.5). The threshold for full set inclusion (score = 1) and exclusion (score = 0) was set at break points near a value that would place approximately 20 percent of the countries above or below these thresholds at each end of the distribution.

The chosen calibration thresholds are shown in Table 2. From left to right, this table displays the name of the condition, the threshold value of the raw data below which cases were calibrated as fully excluded from the set of countries with a high level of that condition (fuzzy set score = 0), the crossover point of maximum ambiguity as to whether a case is or is not a member of that set

(score = 0.5), and the threshold value above which cases were calibrated as being full members of that set (score = 1). The calibrated dataset, showing the fuzzy set scores for each condition for each country in the sample, is provided in Appendix 1.

Results

The calibrated data were analyzed following the process suggested by Thiem and Duşa (2013), with separate analyses for each of the two different outcomes: low and high levels of perceived corruption. The first step in each of these analyses was to identify whether there were conditions that were consistent with being necessary to cause the outcome. No individual conditions were found to be necessary for either high or low levels of perceived corruption.

Comparison of cases in truth tables

The next step was to identify those conditions or configurations that were consistent with being sufficient to cause the outcomes of either high or low perceived corruption. This step began with the construction of two truth tables: one for the outcome of high perceived corruption, the other for the outcome of low perceived corruption. These truth tables are combined in Table 3. This table includes a row for each of the configurations of conditions that were present in the cases in the sample. In the columns for the conditions, a 0 means that the configuration in that row included a relatively low level (fuzzy set score <0.5) for the condition. A 1 means that the configuration in that row included a relatively high level (fuzzy set score >0.5) for the condition in that column. For example, the configuration in row 20 of Table 3 includes high democracy AND rational-secular orientation AND self-expression orientation AND high human development AND low income inequality.

Table 3 also displays the extent to which each configuration is consistent with being sufficient to cause each outcome (i.e. the configuration's score for consistency[4]). In order to distinguish which configurations are considered to be consistently sufficient for the outcome, a threshold for the value of the consistency score was chosen. Ragin (2008) recommended choosing a break point that marks a qualitative difference between configurations high in the range of consistency scores. Thiem and Duşa (2013) recommended that this threshold should be set to at least 0.9. Configurations that exceeded this consistency threshold for the outcome of high perceived corruption are shown in bold text in Table 3. Configurations that exceeded the consistency threshold for the outcome of low perceived corruption are shown in italics.[5] Each row also includes a list of the countries that had fuzzy set scores above 0.5 for that configuration: a score which meant that the country was more in than out of the fuzzy set of countries that had that configuration.

With five conditions, there were 32 logically possible configurations. Table 3 shows that 20 of these configurations were actually present in cases in the sample. The rows in the table are numbered for ease of reference in the discussion below.

Intermediate solutions of the truth table

The fsQCA software uses Boolean minimization to simplify the expression of those configurations that are considered to be consistent with being sufficient for the outcomes. This process compares all the configurations that are considered to be consistently sufficient for the outcome. It eliminates any conditions that are logically redundant, that is, those conditions that are at both high and low levels in otherwise identical consistent configurations. Using just the 20 configurations that were

Table 3. Results of fuzzy set truth tables for outcomes of high and low perceived corruption.

Row	Configuration of fuzzy set memberships					Consistency for …		Countries with each configuration
	High democracy	Rational-secular orientation	Self-expression orientation	Human development	Income inequality	… high perceived corruption	… low perceived corruption	
1	**0**	**0**	**1**	**0**	**0**	**1.000**	0.559	Ethiopia, Vietnam
2	**0**	**0**	**1**	**1**	**1**	**1.000**	0.650	Ecuador, Thailand, Venezuela
3	**1**	**1**	**0**	**0**	**0**	**1.000**	0.627	Moldova
4	**0**	**0**	**0**	**0**	**0**	**0.995**	0.440	Egypt, Iraq, Tanzania, Yemen
5	**1**	**0**	**0**	**0**	**0**	**0.993**	0.601	Indonesia, Pakistan
6	**1**	**0**	**1**	**0**	**1**	**0.990**	0.604	Dominican Republic, Guatemala, Philippines
7	**0**	**1**	**0**	**1**	**0**	**0.986**	0.454	Armenia, Belarus, Ukraine
8	**0**	**1**	**0**	**1**	**1**	**0.986**	0.630	China, Russia
9	**1**	**0**	**1**	**0**	**0**	**0.980**	0.802	India
10	**0**	**0**	**0**	**1**	**0**	**0.951**	0.575	Azerbaijan, Jordan, Kazakhstan
11	**1**	**0**	**0**	**0**	**1**	**0.944**	0.597	Ghana, Kyrgyzstan, Zambia
12	**0**	**0**	**0**	**0**	**1**	**0.929**	0.469	Bangladesh, Burkina Faso, Morocco, Nigeria, Rwanda, Uganda, Zimbabwe
13	1	0	0	1	0	0.870	0.787	Turkey
14	1	0	0	1	1	0.849	0.760	Georgia
15	1	1	0	1	1	0.836	0.758	Lebanon
16	1	0	1	1	1	0.728	0.711	Argentina, Brazil, Chile, Colombia, Mexico, Peru
17	1	1	0	1	0	0.727	0.763	Albania, Bosnia and Herzegovina, Bulgaria, Estonia, S. Korea, Latvia, Macedonia, Montenegro, Romania
18	*1*	*0*	*1*	*1*	*0*	0.583	*0.919*	Cyprus, Poland, Trinidad and Tobago
19	*1*	*1*	*1*	*1*	*1*	0.513	*0.938*	United States, Uruguay
20	*1*	*1*	*1*	*1*	*0*	0.233	*0.960*	Australia, Canada, Croatia, Czech Republic, Finland, France, Germany, Hungary, Israel, Italy, Japan, Netherlands, Norway, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom

Table 4. Intermediate solution for low perceived corruption.

Configuration	Consistency	Coverage
HIGH DEMOCRACT AND SELF-EXPRESSION AND HUMAN DEVELOPMENT AND RATIONAL-SECULAR; OR HIGH DEMOCRACY AND SELF-EXPRESSION AND HUMAN DEVELOPMENT AND income inequality	0.934	0.639

Upper case indicates a high level of that condition. Lower case indicates a low level.

Table 5. Intermediate solution for high perceived corruption.

Configuration	Consistency	Coverage
human development AND rational-secular; OR human development AND self-expression: OR democracy AND self-expression; OR democracy AND rational-secular AND INCOME INEQUALITY	0.891	0.739

Upper case indicates a high level of that condition. Lower case indicates a low level.

actually present in the sampled countries produces the 'complex solution'. The 'parsimonious solution' is produced by the incorporation in Boolean minimization of 'logical remainder' configurations. These are logically possible configurations that have no actual cases due to limited diversity in the social world being studied (Ragin, 2000). For the parsimonious solution, these logical remainder configurations are treated as if they could affect the outcome either way, depending on which way produces the least complex configuration. For the 'intermediate solution', logical remainder configurations are treated as if they would affect the outcome as they would be expected to on the basis of previous empirical research (thus enabling the use of previously generated knowledge in the analysis). In line with the suggestion of Schneider and Wagemann (2010), the full formulas for the complex, parsimonious, and intermediate solutions for each of the two fsQCA analyses are displayed in Appendices 2 and 3.

In the interpretation of fsQCA, the intermediate solutions are the most likely to provide valid information for the potential causes of the outcome (Ragin, 2008). The intermediate solutions are displayed in Tables 4 and 5. These tables follow the QCA convention of using capitals for conditions that are present at a high level in a configuration and lower case to indicate a low level of the condition. In addition to the score for the consistency of the intermediate solution, these tables also display the score for its coverage.[6]

The intermediate solution in Table 4 suggests that the causes of low perceived corruption are indeed configurational. It shows that two configurations – each containing four of the five potentially causal conditions included in the analysis – are consistent with usually being sufficient to cause low levels of perceived corruption. As expected by the new institutionalist framework, it is the combinations of high democracy, rational-secular orientations, self-expression orientations, high human development, and low income inequality that appear to be sufficient to cause low perceived corruption in countries in this sample.

None of the individual conditions seem to be sufficient on their own to cause low perceived corruption. Table 3 shows that there are configurations and countries that have at least one of these conditions (including both democracy and human development) but do not consistently have low levels of perceived corruption (see rows 13–16 of Table 3). Indeed, there are several configurations

that include one or more of these conditions but have consistently high levels of perceived corruption (rows 1–11 of Table 3). For example, countries that have relatively high levels of democracy but also have relatively high levels of perceived corruption include Moldova, Indonesia, Pakistan, Dominican Republic, Guatemala, the Philippines, India, Kyrgyzstan, and Zambia.

The intermediate solution in Table 5 suggests that four configurations – each containing either low democracy or low human development – are usually sufficient to cause high perceived corruption. These are the configurations of low human development AND low rational-secular orientation; OR low human development AND low self-expression orientation; OR low democracy AND low self-expression orientation; OR low democracy AND low rational-secular orientation AND high income inequality. Table 3 shows that there are no configurations of low democracy or low human development that have consistently high perceived corruption without also having at least one of either low self-expression or low rational-secular value orientations. Several consistently sufficient configurations have both traditional and survival value orientations (see rows 4, 5, 10–12 of Table 3). However, when traditional and survival orientations are present in cases that have both high democracy and high human development (see rows 13–18 of Table 3), these configurations are not consistently sufficient for the outcome of high perceived corruption. Therefore, the intermediate solution in Table 5 suggests a key but contingent role for these two value orientations in producing high levels of perceived corruption.

QCA can be sensitive to the specification of the analysis, and especially to the calibration of the crossover point of maximum ambiguity as to cases' membership of the sets for the conditions (i.e. the point in the raw data where the fuzzy set score would be 0.5; Krogslund et al., 2014). This sensitivity may be greater when this point is calibrated near the median of the raw data (Hino, 2009). Tests for the robustness of the analysis were therefore carried out. These used both the 45th percentile and the 55th percentile of the raw data as the crossover point in new calibrations of each condition in 48 new analyses of necessity and sufficiency. The results presented above were robust to these different specifications.

Overall, the fsQCA analysis provides strong empirical support for the new institutionalist theoretical framework in explaining the occurrence of perceived corruption across the countries included in this analysis. Several previous studies tried to identify the independent effect of individual variables on corruption. The current analysis suggests that such approaches may miss the configurational nature of the causes of corruption. The effects identified in this analysis are not independent but contingent on the level of other conditions. This may, for example, be why Treisman's (2000) regression analysis did not find a significant association between contemporary levels of democracy and perceived corruption.

Discussion

Application of fsQCA findings to cases

The current analysis helps us to explain differences in perceived corruption between some countries and types of countries, but highlights others for further analysis. For example, we can look at countries that Inglehart and Welzel (2015) placed in the 'Latin American' category of their 'cultural map'. If we wish to understand why it is that Uruguay has lower levels of perceived corruption than other Latin American countries, then the fsQCA highlights the potential impact of high rational-secular orientation, relative to the more traditional orientation of the Latin American democracies that appear in row 16 of Table 3 (Argentina, Colombia, Mexico, and Peru), as well as higher human development than Guatemala (row 4) and higher levels of democracy than Ecuador and Venezuela (row 1). However, this does not help to explain why Brazil and, in particular, Chile

(both in row 16) have relatively low levels of perceived corruption. These cases and others may require more detailed, sole case studies to identify more case-specific explanations of their levels of perceived corruption (Karstedt, 2001). The fact that there are countries whose levels of perceived corruption are not explained by the intermediate solutions produced above is in line with QCA's expectation that there are multiple causal pathways to the same outcome. Some of them may not be captured by a particular analysis (Ragin, 2000).

For Africa, the contingency of the effect of democracy on value orientations may help to explain why progress in achieving low levels of perceived corruption is slower than the process of democratization (Musila, 2013). In the WVS data, African countries do not have the relatively high rational-secular or self-expression orientations on which the effect of democracy on perceived corruption appears to depend.

Another geographical pattern that emerges from the analysis is that most of the countries that were once members of the Soviet Bloc but were not part of the Union of Soviet Socialist Republics (USSR) itself now have low levels of perceived corruption, while countries formed out of the break-up of the USSR (except the Baltic states) have high levels of perceived corruption. A full explanation of this pattern requires more detailed analysis of how these countries have dealt with the legacy of the Soviet era (e.g. Karstedt, 2003, 2014; Kupatadze, 2015; Levay, 2013; Scheinost, 2014). But such studies can be informed by the suggestion from this analysis that the explanation may include the combination of high democracy and high human development with high self-expression orientation, which is absent in many of the former (or current) communist countries that have high levels of perceived corruption.

The Baltic states of Latvia and Estonia, along with several other post-communist countries, display a configuration that is not consistently sufficient for either high or low perceived corruption. But Latvia and Estonia have relatively low levels of perceived corruption. Thus, it would be interesting to study what other conditions may help to explain this difference between them and some other post-communist states which share their configuration (Albania, Bosnia and Herzegovina, and Montenegro). The relative lack of conflict in the Baltic compared to the Western Balkan region could be highlighted for examination. This line of inquiry could also be applied – for a different region of warfare – to the anomalous case of Lebanon. It could build on the idea that violent conflict leaves populations more vulnerable to predation by powerful groups who capture the state (Tilly, 1985).

Another interesting place to look for explanation of the differences between countries that are not explained by the configurations identified here is the relative success of the regimes and policies adopted for the control of corruption. Countries with similar configurations of the conditions included in this analysis may have governments who place a different level of priority on tackling corruption. For example, Latvia is only just in the set of countries with low perceived corruption, while Estonia is a full member of this set. This difference may be explained partly by differences in the particular economic institutions and policy approaches taken to reduce corruption in these countries (Urdze, 2012). Hollyer and Wantchekon (2015) suggest that autocratic governments may prioritize anti-corruption efforts primarily when their base of political support is narrow and their own supporters are motivated by ideology, rather than financial reward. Anti-corruption efforts then enable the regime to avoid allowing opponents into positions of power. Hollyer and Wantchekon gave the examples of the Kagame regime in Rwanda, and South Korea under the autocratic rule of Park Chung-Hee.

Georgia is another country for which a case-specific explanation may be needed. Detailed case analysis suggests that the relative success of Georgia's anti-corruption efforts depended on their 'resonance … with local cultural norms' (Börzel and Van Hüllen, 2014: 625), as indicated by a high level of public protest against corruption. Such anomalous cases show the complexity of the

interplay between the conditions identified in this analysis and other potential causes; 'given elites, institutions and situation-specific factors play crucial roles' (Inglehart and Welzel, 2005: 42). The operation of the configurations identified here will itself be contingent on the specific circumstances of each country. Nevertheless, the intermediate solutions in Tables 4 and 5 do cover reasonably high proportions of the occurrence of the outcomes of low and high levels of perceived corruption. Therefore, they may help us move toward a comparative understanding of the complex, multiple causes of high and low levels of corruption.

Limitations

The preceding paragraphs show how examination of the fuzzy set truth table alongside their intermediate solutions can provide interesting insights and avenues for further research. As fsQCA is a case-oriented method, these can be directly applied to particular countries or types of countries. But fsQCA also has its limitations. Some of these are shared with the mainstream, regression approaches used in this field, such as the possibilities of measurement error, ambiguity over causation, sampling bias, and sensitivity to omitted condition/variable bias.

The generalizability of any study is reduced if it omits cases which differ systematically from those that are included in the sample. For this study, this is the case for the Arab states of the Gulf. They tend to have very low levels of democracy but also have relatively low levels of perceived corruption in the CPI. They do not appear in the sample for the fsQCA analysis because there were missing values for value orientations or income inequality. It is unlikely that they share the value orientations that are present in the countries with low levels of perceived corruption that are included in the analysis; Islamic countries tend to have relatively low levels of rational-secular and self-expression orientations (Inglehart and Welzel, 2015). This suggests that these countries may follow a causal pathway to low perceived corruption that is not identified in this analysis. Previous regression studies of the links between corruption, democracy, and value orientations obscure the occurrence of low levels of perceived corruption in the autocratic Arab states of the Gulf, since they discuss variables rather than cases (e.g. La Porta et al., 1999; Seleim and Bontis, 2009; Treisman, 2000; Yeganeh, 2014). Another important missing case for further exploration, since it has a low level of perceived corruption with relatively low levels of democracy, is Singapore. If these countries were included, it would strengthen the possibility of finding that low levels of democracy (compared to medium levels) can be part of configurations with low perceived corruption, in combination with traditional and survival values.

QCA analysis shows which configurations are empirically consistent with being necessary or sufficient to cause the outcome. This does not prove that they are causes of the outcome. The possibility of spurious conjunction of configurations and outcomes remains. This and the cross-sectional nature of the analysis are reasons why this article does not claim that it definitively demonstrates the causes of perceived corruption. The possibility of reverse causation also persists. Indeed, it is likely that high corruption forms part of the configurations of conditions that impede reductions in inequality, and hinders increases in human development and democracy and thus the transition toward self-expression and rational-secular orientations. Previous work suggests that perceived corruption does tend to reduce economic growth (Mauro, 1995; Treisman, 2000), increase inequality (Uslaner, 2006), and damage the institutions of democracy (UNODC, 2012). Supplementary analysis was carried out to test whether levels of perceived corruption are present in configurations that are consistent with being sufficient to cause levels of democracy. This was the case for the outcome of high democracy, but not for lower levels.[7] This suggestion of reverse, contingent causation of high democracy by low perceived corruption does not rule out that the configurations identified in this article are causes of perceived corruption. Rather, it emphasizes

the importance of thinking about corruption in terms of mutually reinforcing configurations of conditions, instead of unidirectional, independent effects. This process of cyclical reinforcement of the conditions of corruption was observed in detail, for example, in the case of Nigeria (Adebanwi and Obadare, 2011).

Other studies use a wider range of variables than the conditions analyzed in this article, including gender inequality (e.g. Dollar et al., 2001; Swamy et al., 2001), ethnic diversity (e.g. Musila, 2013; Treisman, 2000; Uslaner, 2006), and – as a measure of international integration – openness to trade (Sandholtz and Gray, 2003; Treisman, 2000; Uslaner, 2006). The conditions chosen for this analysis were those considered to be most relevant to the new institutionalist theoretical framework. Supplementary analyses were carried out which added conditions for gender inequality (calibrated from raw data from the UN Human Development Report), ethnic fractionalization (calibrated from data provided in the Quality of Governance dataset; Kumlin et al., 2015), or openness to trade (calibrated from data provided by the World Bank on the proportion of GDP that was made up of trade in 2013). Adding these conditions to the analysis did not provide more than minimal increases in either consistency or coverage compared to the analyses presented above. It did reduce the sample sizes and add to the complexity of the solutions. For low perceived corruption, the combination of high democracy, development, and self-expression orientation always formed part of the consistently sufficient intermediate solutions. For high perceived corruption, consistently sufficient intermediate solutions always included low democracy or low human development (or both) and at least one of traditional or survival orientations.

Conclusion

This article empirically supports a new institutionalist explanation of diversity between countries in their levels of perceived corruption. Specifically, it demonstrates the configurational nature of this phenomenon through the novel application of the fsQCA approach. It suggests an explanation for why corruption seems to be so intractable. It emphasizes the role of values in causing corruption. Through examination of specific countries and regions, it suggests interesting geographical patterns in the causes of corruption. Furthermore, it provides suggestions for cases and conditions to include in further research.

The fsQCA truth tables and their intermediate solutions provide empirical support for the new institutionalist expectations that the causation of perceived corruption is configurational. It involves the interplay of democratic institutions and value orientations with socio-economic contexts. The analyses presented here suggest that the search for independent effects on perceived corruption may be misleading. For example, increases in levels of democracy that are not accompanied by changes in value orientations and human development may not produce low levels of perceived corruption. This may help explain the mixed findings of previous studies on the influence of democracy, which have searched for its independent effect.

These analyses may also help to explain the apparent intractability of corruption. This may be due to the difficulty and delay involved in changing all of the conditions that apparently combine in its causation. For example, in order to secure a low level of perceived corruption by creating the conditions that appear to be sufficient to cause this outcome, a country would need to reach a high level of at least four of the five conditions in this analysis (high democracy, human development, and self-expression orientation, along with either rational-secular orientation or low income inequality). This may be a lengthy process for countries that currently display several of the conditions at the poles that are supportive of high perceived corruption.

Another contribution is the article's confirmation of the presence of value orientations in configurations that may cause low or high perceived corruption. Many previous studies do not take

such conditions into account. This article supports the few studies (e.g. Bussmann, 2015; Karstedt, 2004; Seleim and Bontis, 2009; Yeganeh, 2014) that highlight their importance. For high levels of perceived corruption, it seems that democracy or development usually combines with traditional or survival orientations in sufficient causal configurations. The combination of self-expression orientation with both high democracy and development seems particularly central to the explanation of low levels of perceived corruption, as it appears in both configurational elements of the intermediate solution for this outcome.

Finally, this article identifies interesting patterns in the geographic distribution of levels of perceived corruption and highlights particular cases and concepts for further study. A provisional explanation – the relative absence of rational-secular and/or self-expression orientations – is offered for thinking about corruption in some countries that are categorized by Inglehart and Welzel (2015) as 'African-Islamic' or 'Latin American', and why they may have achieved development and/or democracy but do not yet have low levels of perceived corruption. The anomalous cases of Lebanon and the countries of the Western Balkan region point toward the need for more detailed analysis of the configurational effect of conflict on levels of perceived corruption.

In line with the assumptions of QCA, these inevitably provisional findings are not presented as the end of a line of inquiry, but rather as a contribution to its ongoing development. This article demonstrates that, in the pursuit of such knowledge, it will be useful to adopt a configurational, new institutionalist approach which considers the complex interplay of democratic institutions and value orientations with socio-economic contexts to explore the causes of corruption.

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Notes

1. Some other studies use Hofstede's (1980) cultural dimensions – including collectivism, power distance, masculinity, and uncertainty avoidance – as predictors of perceived corruption. In Yeganeh's (2014) integrative analysis, the inclusion of these four dimensions in a regression model for perceived corruption produced a slightly higher value for adjusted R^2 than a model with Inglehart's (1997) two value orientations did, but with higher variance inflation factors and lower T values for the individual variables. The highest T ratios in these models were for Hofstede's collectivism and Inglehart's survival/self-expression. Inglehart and Welzek (2005) argued that both these variables tap into the same underlying dimension. Inglehart's orientations also have the advantages of being more recently measured among more representative samples for a wider range of countries than Hofstede's cultural dimensions.
2. The Gini coefficient measures the distance of the distribution of income in a country from perfect equality. It is particularly sensitive to differences around the mode in the income distribution. The Atkinson measure indicates the proportion of a country's total income that would be required to produce an equal level of social welfare as at present if all income were distributed equally (De Maio, 2007). It includes a parameter that can be adjusted to reflect the level of aversion to inequality. As used in the UN Human Development Index, it is more sensitive than the Gini coefficient to inequality at the lower end of the income distribution.

3. This allocation of countries to regions follows the categorization by Transparency International in the Corruption Perception Index (CPI) report.
4. The score for consistency measures the strength of the relationship between the potentially causal configuration and the outcome (Ragin, 2008). Consistency ranges from 1 (perfect consistent) to 0 (no consistency). It is calculated by dividing the total of those parts of cases' fuzzy set scores for the configuration that are equal to or less than their score for the outcome by the total of the cases' scores for the configuration. If the value for consistency falls far below 1, then this suggests that a non-trivial proportion of the occurrence of the configuration has failed to cause the outcome in cases in the sample.
5. The values for the proportional reduction in inconsistency (PRI) were calculated for each configuration, as well as the raw consistency values. There were large gaps in the ranges of PRI values around the conventional PRI cut-off threshold of 0.8. Using this cut-off threshold produced the same lists of configurations that were considered sufficient for the outcomes as are shown in bold and italic text in Table 3.
6. The score for coverage measures the proportion of the occurrence of the outcome that may be explained by the presence of the sufficient configuration (Ragin, 2008). Coverage ranges from 1 (perfect coverage) to 0 (no coverage). It is calculated by dividing the total of the minima of all the cases' scores for either the outcome or the sufficient configuration by the total of all cases' fuzzy set scores for the outcome. If there are many cases for which the score for the outcome substantially exceeds their score for the configuration, then the score for coverage would be low. This would suggest that the configuration does not explain much of the occurrence of the outcome in sampled cases.
7. Using the same conditions, raw data and calibrations as reported above, the intermediate, sufficient solution for the outcome of high democracy was self-expression AND high human development AND low perceived corruption; OR rational-secular AND high human development AND low income inequality AND low perceived corruption; OR rational-secular AND self-expression AND high human development AND low income inequality (consistency = 0.959, coverage = 0.617).

References

Acemoglu D and Robinson J (2012) *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*. New York: Crown Business.

Adebanwi W and Obadare E (2011) When corruption fights back: Democracy and elite interest in Nigeria's anti-corruption war. *The Journal of Modern African Studies* 49(02): 185–213.

Ades A and Di Tella R (1999) Rents, competition, and corruption. *American Economic Review* 89(4): 982–993.

Aguilera-Caracuel J, Fedriani EM and Delgado-Márquez BL (2014) Institutional distance among country influences and environmental performance standardization in multinational enterprises. *Journal of Business Research* 67(11): 2385–2392.

Akbar YH and Vujić V (2014) Explaining corruption. *Cross Cultural Management: An International Journal* 21: 191–218.

Bäck H and Hadenius A (2008) Democracy and state capacity: Exploring a J-shaped relationship. *Governance* 21(1): 1–24.

Barr A and Serra D (2010) Corruption and culture: An experimental analysis. *Journal of Public Economics* 94(11–12): 862–869.

Börzel TA and Van Hüllen V (2014) State-building and the European Union's fight against corruption in the southern Caucasus: Why legitimacy matters. *Governance* 27(4): 613–634.

Bussmann K (2015) The impact of personality and company culture on company anti-corruption programmes. In: Van Erp J, Huisman W and Vande Walle G (eds) *The Routledge Handbook of White-Collar and Corporate Crime in Europe*. Abingdon: Routledge, pp. 435–452.

Byrne D (2011) *Applying Social Science: The Role of Social Research in Politics, Policy and Practice*. Bristol: Policy Press.

Cole WM (2015) Institutionalizing a global anti-corruption regime: Perverse effects on country outcomes, 1984–2012. *International Journal of Comparative Sociology* 56(1): 53–80.

Crouch D (2015) Norwegian businesses warned of 'wake-up call' on corruption. *Financial Times*, 2 January 2015. Available at: http://www.ft.com/cms/s/0/b2adaa86-8a85-11e4-be0e-00144feabdc0.html#axzz4K257eXr3 (accessed 25 March 2016).

De Graaf G, von Maravić P and Wagenaar P (eds) (2010) *The Good Cause: Theoretical Perspectives on Corruption*. Opladen & Farmington Hills, MI: Barbara Budrich Publishers.

De Maio FG (2007) Income inequality measures. *Journal of Epidemiology and Community Health* 61(10): 849–852.

DeBacker J, Heim BT and Tran A (2015) Importing corruption culture from overseas: Evidence from corporate tax evasion in the United States. *Journal of Financial Economics* 117(1): 122–138.

DiCristina B (2004) Durkheim's theory of homicide and the confusion of the empirical literature. *Theoretical Criminology* 8(1): 57–91.

Dollar D, Fisman R and Gatti R (2001) Are women really the 'fairer' sex? Corruption and women in government. *Journal of Economic Behavior and Organization* 46: 423–429.

Durkheim E (2003 [1902]) Duties in general, independent of any social grouping – Homicide. In: Durkheim E (ed) *Professional Ethics and Civic Morals*, 2nd edn. London: Taylor & Francis, pp. 110–120.

Duşa A and Thiem A (2014) *Qualitative Comparative Analysis: R Package*, version 1.1-4. Available at: http://cran.r-project.org/package=QCA (accessed 23 June 2015).

Eisner M (2012) *What Causes Large-scale Variation in Homicide Rates?* (Working Paper) Cambridge: University of Cambridge.

Escresa L and Picci L (2014) *A New Cross-National Measure of Corruption* (World Bank policy research working paper 7371). Washington, DC: World Bank Operations and Strategy Team, Development Economics Vice Presidency.

Fisman R and Miguel E (2007) Corruption, norms, and legal enforcement: Evidence from diplomatic parking tickets. *Journal of Political Economy* 115(6): 1020–1048.

Fried BJ, Lagunes P and Venkataramani A (2010) Corruption and inequality at the crossroad: A multimethod study of bribery and discrimination in Latin America. *Latin American Research Review* 45(1): 76–97.

Glaesser J (2008) Just how flexible is the German selective secondary school system? A configurational analysis. *International Journal of Research & Method in Education* 31(2): 193–209.

Graeff P (2005) Why should one trust in corruption? The linkage between corruption, norms and social capital. In: Lambsdorff JG, Taube M and Schramm M (eds) *The New Institutional Economics of Corruption*. Abingdon: Routledge, pp. 40–58.

Hardoon D and Heinrich F (2013) *Global Corruption Barometer 2013*. Berlin: Transparency International.

Hino A (2009) Time-series QCA. Studying temporal change through Boolean Analysis. *Sociological Theory and Methods* 24(2): 247–265.

Hofstede G (1980) *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*. Newbury Park, CA: SAGE.

Hollyer JR and Wantchekon L (2015) Corruption and Ideology in Autocracies. *Journal of Law, Economics, and Organization* 31(3): 499–533.

Inglehart R (1997) *Modernization and Post Modernization: Cultural, Economic and Political Change in 43 Societies*. Princeton, NJ: Princeton University Press.

Inglehart R and Welzel C (2005) *Modernization, Cultural Change, and Democracy The Human Development Sequence*. Cambridge: Cambridge University Press.

Inglehart R and Welzel C (2015) Cultural map – WVS wave 6 (2010–2014). Available at: http://www.worldvaluessurvey.org/WVSContents.jsp (accessed 16 October 2015).

Karstedt S (2000) The culture of inequality and corruption: A cross-national study of corruption. Paper presented at conference of the American Society of Criminology, San Francisco, CA, 15 November 2000.

Karstedt S (2001) Comparing cultures, comparing crime: Challenges, prospects and problems for a global criminology. *Crime, Law and Social Change* 36: 285–308.

Karstedt S (2003) Legacies of a culture of inequality: The Janus face of crime in post-communist countries. *Crime, Law and Social Change* 40(2–3): 295–320.

Karstedt S (2004) Macht, Ungleichheit und Korruption: Strukturelle und kulturelle Determinanten im internationalen Vergleich. In: Oberwittler D and Karstedt S (eds) *Soziologie der Kriminalität*. Berlin: Springer, pp. 384–412.

Karstedt S (2010) New institutionalism in criminology: Approaches, theories and themes. In: McLaughlin E and Newburn T (eds) *The SAGE Handbook of Criminology*. London: SAGE, pp. 337–359.

Karstedt S (2011a) Exit: The state. Globalisation, state failure and crime. In: Nelken D (ed.) *Comparative Criminal Justice and Globalization*. Farnham: Ashgate, pp. 107–124.

Karstedt S (2011b) Liberty, equality and justice: Democratic culture and punishment. In: Crawford A (ed.) *International and Comparative Criminal Justice and Urban Governance*. Cambridge: Cambridge University Press, pp. 356–386.

Karstedt S (2014) State crime: The European experience. In: Body-Gendrot S, Hough M, Kerezsi K, et al. (eds) *The Routledge Handbook of European Criminology*. Oxford: Routledge, pp. 125–153.

Karstedt S (2015a) Cultural peers and penal policies: A configurational approach toward mapping penal landscapes. *Punishment & Society* 17(3): 374–396.

Karstedt S (2015b) Does democracy matter? Comparative perspectives on violence and democratic institutions. *European Journal of Criminology* 12(4): 457–481.

Koelble TA (1995) Review: The new institutionalism in political science and sociology. *Comparative Politics* 27(2): 231–243.

Krogslund C, Choi DD and Poertner M (2014) Fuzzy sets on shaky ground: Parameter sensitivity and confirmation bias in fsQCA. *Political Analysis* 23(1): 21–41.

Kumlin S, Dahlberg S, Holmberg S, et al. (2015) The Quality of Governance dataset 2015. Available at: http://qog.pol.gu.se/data/datadownloads/qogstandarddata (accessed 16 October 2015).

Kupatadze A (2015) Political corruption in Eurasia: Understanding collusion between states, organized crime and business. *Theoretical Criminology* 19(2): 198–215.

La Porta R, Lopez-de-Silanes F, Shleifer A, et al. (1999) The quality of government. *Journal of Law, Economics, and Organization* 15(1): 222–279.

LaFree G, Curtis K and McDowall D (2015) How effective are our 'better angels'? Assessing country-level declines in homicide since 1950. *European Journal of Criminology* 12(4): 482–504.

Lambsdorff JG (2007) *The Institutional Economics of Corruption and Reform: Theory, Evidence and Policy*. Cambridge: Cambridge University Press.

Lambsdorff JG, Taube M and Schramm M (2005) Corrupt contracting: Exploring the analytical capacity of new institutional economics and new economic sociology. In: Lambsdorff JG, Taube M and Schramm M (eds) *The New Institutional Economics of Corruption*. Abingdon: Routledge, pp. 1–15.

Levay M (2013) Social change and rising crime rates: The case of Central and Eastern Europe. In: Albrecht H-J and Klip A (eds) *Crime, Criminal Law and Criminal Justice in Europe: A Collection in Honour of Prof. Em.dr.dr.h.c. Cyrille Fijnaut*. Leideben: Martinus Nijhoff Publishers, pp. 69–86.

Maeda K and Ziegfeld A (2015) Socioeconomic status and corruption perceptions around the world. *Research & Politics* 2(2): 1–9.

March JG and Olsen JP (2006) Elaborating the 'New Institutionalism'. In: Rhodes RA, Binder S and Rockman B (eds) *The Oxford Handbook of Political Institutions*. Oxford: Oxford University Press, pp. 3–22.

Marshall MG, Robert T and Jagger K (2015) *Polity IV Project: Political Regime Characteristics and Transitions, 1800–2013*. Vienna, VA: Centre for Systemic Peace.

Mauro P (1995) Corruption and growth. *The Quarterly Journal of Economics* 110(3): 681–712.

Mazar N and Aggarwal P (2011) Greasing the palm: Can collectivism promote bribery? *Psychological science: a journal of the American Psychological Society* 22(7): 843–848.

Messner SF and Rosenfeld R (1997) *Crime and the American Dream*, 2nd edn. London: Wadsworth.

Montinola GR and Jackman RW (2002) Sources of corruption: A cross-country study. *British Journal of Political Science* 32(1): 147–170.

Mulcahy S (2012) *Money, Politics, Power: Corruption Risks in Europe*. London: Transparency International.

Musila JW (2013) Does democracy have a different impact on corruption in Africa? *Journal of African Business* 14(3): 162–170.

Nee V and Ingrams P (1998) Embeddedness and beyond: Institutions, exchanges, and social structure. In: Burnett MC and Nee V (eds) *The New Institutionalism in Sociology*. New York: Russell Sage Foundation, pp. 19–45.

North DC (1990) *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.

Park H (2003) Determinants of corruption: A cross-national analysis. *Multinational Business Review* 11(2): 29–48.

Powell WW (2007) The new institutionalism. In: Clegg S and Bailey JR (eds) *The International Encyclopedia of Organization Studies*. Thousand Oaks, CA: SAGE, pp. 973–978.

Ragin CC (1994) *Constructing Social Research: The Unity and Diversity of Method*. Thousand Oaks, CA: Pine Forge Press.
Ragin CC (2000) *Fuzzy Set Social Science*. Chicago, IL: University of Chicago Press.
Ragin CC (2008) *Redesigning Social Inquiry: Fuzzy Sets and Beyond*. Chicago, IL: University of Chicago Press.
Rock MT (2009) Corruption and democracy. *Journal of Development Studies* 45(1): 55–75.
Rose-Ackerman S (2010) The institutional economics of corruption. In: De Graaf G, Maravić P von and Wagenaar P (eds) *The Good Cause: Theoretical Perspectives on Corruption*. Opladen & Farmington Hills, MI: Barbara Budrich Publishers, pp. 47–63.
Rusche G and Kircheimer O (1939) *Punishment and Social Structure*. New York: Russell and Russell.
Sandholtz W and Gray MM (2003) International integration and national corruption. *International Organization* 57(4): 761–800.
Scheinost M (2014) Shadows of corruption and bribery – Can we see through? In: Van Duyne PC, Harvey J, Antonopoulos GA, et al. (eds) *Corruption, Greed and Crime Money. Sleaze and Shady Economy in Europe and Beyond*. Oisterwijk: Wolf Legal Publishers, pp. 73–92.
Schneider CQ and Wagemann C (2010) Standards of good practice in qualitative comparative analysis (QCA) and fuzzy-sets. *Comparative Sociology* 9(3): 397–418.
Scott J and Marshall G (2009) *A Dictionary of Sociology*. 3rd edn. Oxford: Oxford University Press.
Scott RW (2001) *Institutions and Organizations*. Thousand Oaks, CA: SAGE.
Seleim A and Bontis N (2009) The relationship between culture and corruption: A cross-national study. *Journal of Intellectual Capital* 10(1): 165–184.
Stevens A (2016) Inequality and adolescent cannabis use: A qualitative comparative analysis of the link at national level. *Drugs: Education, Prevention and Policy*. Epub ahead of print 12 February. DOI: 10.3109/09687637.2015.1136266.
Sung HE (2004) Democracy and political corruption: A cross-national comparison. *Crime, Law and Social Change* 41(2): 179–194.
Swamy A, Knack S, Lee Y, et al. (2001) Gender and corruption. *Journal of Development Economics* 64: 25–55.
Thiem A and Duşa A (2013) *Qualitative Comparative Analysis with R – A User's Guide*. Berlin: Springer.
Tilly C (1985) War making and state making as organized crime. In: Evans P, Rueschemeyer D and Skocpol T (eds) *Bringing the State Back In*. Cambridge: Cambridge University Press, pp. 169–187.
Tilly C (1998) *Durable Inequality*. Berkeley, CA: University of California Press.
Transparency International (2015) Corruption Perceptions Index – 2014. Available at: http://www.transparency.org/cpi2014 (accessed 23 September 2015).
Treisman D (2000) The causes of corruption: A cross-national study. *Journal of Public Economics* 76(3): 399–457.
United Nations Development Programme (UNDP) (2015) Human Development Index (HDI). United Nations Development Programme. Available at: http://hdr.undp.org/en/content/human-development-index-hdi (accessed 23 September 2015).
United Nations Office on Drugs and Crime (UNODC) (2012) *Action Against Corruption, Economic and Identity-Related Crime (2012–2015)*. Vienna: UNODC.
Urdze S (2012) Explaining corruption levels in the Baltic states. Paper presented at Association for the Advancement of Baltic Studies. Chicago, IL, 26 April 2012.
Uslaner EM (2006) The bulging pocket and the rule of law: Corruption, inequality, and trust. Paper presented at: European Consortium for Political Research Joint Sessions of Workshops, Workshop 2: The International Anti-Corruption Movement, Nicosia, 25 April 2006.
Van Deth JW (1995) Introduction: The impact of values. In: Van Deth JW and Scarbrugh E (eds) *The Impact of Values*. Oxford: Oxford University Press, pp. 1–18.
World Values Survey (WVS) (2015) *World Values Survey 1981–2015 Longitudinal Aggregate v.20150418*. Madrid: World Values Survey Association, Available at: http://www.worldvaluessurvey.org/WVSDocumentationWVL.jsp (accessed 23 September 2015).
Yeganeh H (2014) Culture and corruption. *International Journal of Development Issues* 13(1): 2–24.
You J and Khagram S (2005) A comparative study of inequality and corruption. *American Sociological Review* 70(3): 136–157.
Zhang Y, Cao L and Vaughn MS (2009) Social support and corruption: Structural determinants of corruption in the world. *Australian and New Zealand Journal of Criminology* 42(2): 204–217.

Appendix 1. Calibrated fuzzy set scores.

Country	Potentially causal conditions					Outcome conditions	
	High democracy	Rational-secular orientation	Self-expression orientation	High human development	High income inequality	High perceived corruption	Low perceived corruption
	D	R	S	H	I	C	c
Albania	0.938	0.726	0.000	0.538	0.256	0.828	0.172
Argentina	0.813	0.498	0.898	1.000	0.769	0.793	0.207
Armenia	0.450	0.681	0.000	0.615	0.018	0.690	0.310
Australia	1.000	0.801	1.000	1.000	0.155	0.000	1.000
Azerbaijan	0.000	0.315	0.000	0.709	0.000	0.966	0.034
Bangladesh	0.050	0.000	0.000	0.025	0.778	1.000	0.000
Belarus	0.000	1.000	0.000	0.923	0.000	0.897	0.103
Bosnia and Herzegovina	0.688	0.863	0.196	0.621	0.310	0.621	0.379
Brazil	0.813	0.245	0.693	0.692	1.000	0.488	0.512
Bulgaria	0.938	1.000	0.473	0.874	0.286	0.488	0.512
Burkina Faso	0.000	0.000	0.182	0.000	0.584	0.655	0.345
Canada	1.000	0.594	1.000	1.000	0.000	0.000	1.000
Chile	1.000	0.322	0.676	1.000	1.000	0.000	1.000
China	0.000	0.971	0.174	0.555	0.835	0.724	0.276
Colombia	0.688	0.000	0.961	0.511	1.000	0.690	0.310
Croatia	0.938	1.000	0.859	1.000	0.214	0.366	0.634
Cyprus	1.000	0.443	0.626	1.000	0.054	0.000	1.000
Czech Republic	0.938	1.000	1.000	1.000	0.000	0.293	0.707
Dominican Republic	0.813	0.258	0.761	0.472	0.825	0.862	0.138
Ecuador	0.450	0.000	0.648	0.511	0.958	0.828	0.172
Egypt	0.000	0.000	0.248	0.415	0.012	0.690	0.310
Estonia	0.938	1.000	0.415	1.000	0.202	0.000	1.000
Ethiopia	0.000	0.217	0.545	0.000	0.000	0.828	0.172
Finland	1.000	1.000	1.000	1.000	0.000	0.000	1.000
France	0.938	1.000	1.000	1.000	0.012	0.000	1.000
Georgia	0.688	0.262	0.000	0.692	0.665	0.268	0.732
Germany	1.000	1.000	1.000	1.000	0.048	0.000	1.000
Ghana	0.813	0.000	0.269	0.072	0.726	0.366	0.634
Guatemala	0.813	0.000	0.601	0.245	1.000	0.862	0.138
Hungary	1.000	1.000	0.554	1.000	0.000	0.220	0.780
India	0.938	0.466	0.661	0.113	0.125	0.655	0.345
Indonesia	0.938	0.148	0.000	0.421	0.220	0.793	0.207
Iraq	0.250	0.088	0.000	0.289	0.125	1.000	0.000
Israel	1.000	0.913	1.000	1.000	0.333	0.073	0.927
Italy	1.000	0.625	1.000	1.000	0.345	0.488	0.512
Japan	1.000	1.000	0.976	1.000	0.000	0.000	1.000
Jordan	0.000	0.000	0.000	0.698	0.423	0.341	0.659
Kazakhstan	0.000	0.402	0.099	0.764	0.000	0.966	0.034
Korea (South)	0.813	1.000	0.335	1.000	0.262	0.195	0.805
Kyrgyzstan	0.688	0.423	0.000	0.245	0.580	1.000	0.000
Latvia	0.813	1.000	0.346	1.000	0.345	0.195	0.805
Lebanon	0.563	0.574	0.000	0.808	0.858	1.000	0.000
Macedonia	0.938	0.780	0.163	0.626	0.464	0.439	0.561
Mexico	0.813	0.252	0.954	0.758	1.000	0.759	0.241
Moldova	0.938	0.929	0.000	0.355	0.292	0.759	0.241
Montenegro	0.938	0.913	0.162	0.940	0.000	0.517	0.483

Appendix 1. (Continued)

Country	Potentially causal conditions					Outcome conditions	
	High democracy	Rational-secular orientation	Self-expression orientation	High human development	High income inequality	High perceived corruption	Low perceived corruption
	D	R	S	H	I	C	c
Morocco	0.000	0.006	0.000	0.211	0.528	0.621	0.379
Netherlands	1.000	1.000	1.000	1.000	0.000	0.000	1.000
Nigeria	0.350	0.013	0.364	0.000	1.000	1.000	0.000
Norway	1.000	1.000	1.000	1.000	0.000	0.000	1.000
Pakistan	0.688	0.000	0.137	0.000	0.000	0.966	0.034
Peru	0.938	0.107	0.586	0.654	0.887	0.655	0.345
Philippines	0.813	0.000	0.574	0.346	0.632	0.655	0.345
Poland	1.000	0.347	0.723	1.000	0.232	0.049	0.951
Romania	0.938	0.552	0.000	0.918	0.196	0.488	0.512
Russia	0.350	1.000	0.000	0.879	0.524	1.000	0.000
Rwanda	0.000	0.000	0.000	0.000	1.000	0.341	0.659
Serbia	0.813	0.886	0.524	0.698	0.000	0.552	0.448
Slovakia	1.000	0.934	0.745	1.000	0.000	0.317	0.683
Slovenia	1.000	1.000	1.000	1.000	0.000	0.122	0.878
Spain	1.000	0.836	1.000	1.000	0.482	0.073	0.927
Sweden	1.000	1.000	1.000	1.000	0.000	0.000	1.000
Switzerland	1.000	1.000	1.000	1.000	0.000	0.000	1.000
Tanzania	0.000	0.000	0.281	0.000	0.411	0.897	0.103
Thailand	0.000	0.287	0.562	0.571	1.000	0.655	0.345
Trinidad and Tobago	1.000	0.000	0.613	0.813	0.470	0.655	0.345
Turkey	0.938	0.189	0.364	0.775	0.464	0.439	0.561
Uganda	0.000	0.000	0.119	0.000	0.731	1.000	0.000
Ukraine	0.350	0.963	0.000	0.637	0.000	1.000	0.000
United Kingdom	1.000	0.756	1.000	1.000	0.286	0.000	1.000
United States	1.000	0.543	1.000	1.000	1.000	0.000	1.000
Uruguay	1.000	0.622	1.000	0.945	0.722	0.000	1.000
Venezuela	0.350	0.000	0.853	0.802	0.782	1.000	0.000
Vietnam	0.000	0.233	0.630	0.277	0.034	0.897	0.103
Yemen	0.000	0.000	0.000	0.000	0.214	1.000	0.000
Zambia	0.688	0.388	0.037	0.035	1.000	0.655	0.345
Zimbabwe	0.350	0.000	0.007	0.000	1.000	1.000	0.000

Appendix 2. fsQCA solution formulas for low perceived corruption.

	Consistency	Raw coverage	Unique coverage
Complex solution			
D*R*S*H + D*S*H*i	0.934	0.639	
Elements of complex solution			
D*R*S*H	0.946	0.585	0.064
D*S*H*i	0.945	0.575	0.053
Parsimonious solution			
R*S + S*H*i	0.921	0.674	
Elements of parsimonious solution			
R*S	0.932	0.614	0.083
S*H*i	0.934	0.591	0.060
Intermediate solution			
D*R*S*H + D*S*H*i	0.934	0.639	
Elements of intermediate solution			
D*R*S*H	0.946	0.585	0.064
D*S*H*i	0.945	0.575	0.053

D: high democracy; R: rational secular orientation; S: self-expression orientation; H: human development; I: income inequality. Upper case: relatively high level (>0.5); Lower case: relatively low level (<0.5).
* means AND; + means OR.

Appendix 3. fsQCA solution formulas for high perceived corruption.

	Consistency	Raw coverage	Unique coverage
Complex solutions			
r*h*i + r*s*h + D*r*h + d*R*s*H + D*s*h*i + d*r*S*H*I + (d*r*s*i)	0.934	0.695	
r*h*i + r*s*h + D*r*h + d*R*s*H + D*s*h*i + d*r*S*H*I + (d*s*H*i)	0.936	0.696	
Elements of complex solution			
r*s*h	0.928	0.455	0.085
r*h*i	0.990	0.308	0.020
D*r*h	0.951	0.265	0.028
d*r*s*i	0.966	0.245	0.004
d*s*H*i	0.959	0.220	0.005
d*R*s*H	0.989	0.194	0.020
D*s*h*i	0.995	0.191	0.029
d*r*S*H*I	1.000	0.094	0.018
Parsimonious solution			
h + d	0.859	0.751	
Elements of parsimonious solution			
h	0.901	0.612	0.186
d	0.859	0.566	0.139
Intermediate solution			
r*h + s*h + d*s + d*r*I	0.891	0.739	
Elements of intermediate solution			
r*h	0.916	0.540	0.069
s*h	0.924	0.524	0.035
d*s	0.897	0.496	0.101
d*r*I	0.928	0.275	0.021

D: high democracy; R: rational secular orientation; S: self-expression orientation; H: human development; I: income inequality. Upper case: relatively high level (>0.5); Lower case: relatively low level (<0.5).
* means AND; + means OR.