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Explaining Corruption in the Developed World: The Potential of Sociological Approaches

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Abstract

Corruption, in both the developing and the developed world, has been studied in many disciplines, especially economics and politics, but there is considerable scope for a sociological contribution. There has been a large body of cross-national research using indices of perceived corruption, but the clandestine nature of corruption makes it difficult to validate these indices. More fruitful are recent surveys, similar to crime victimization surveys, of respondents' experiences of being asked for a bribe. This research has found many regularities, but understanding of the causal mechanisms involved remains sketchy. Sociological concepts derived from exchange theory, and sociological variables such as Protestantism, generalized and particularistic trust, and educational level appear to be important predictors of national rates of corruption in the developed world, but the mechanisms are not well understood. We argue that more focused and disaggregated research focusing on different forms and contexts, rather than the current broad-brush approaches, is the best way forward.

INTRODUCTION

Corruption is a major issue in the developing world and is by no means unknown in the developed world (or on the part of corporations based in the developed world). It likely has a wide range of negative implications for economic investment (Mauro 1995, Habib & Zurawicki 2002), economic growth (Glaeser & Saks 2006), the legitimacy of political institutions (Seligson 2002, Anderson & Tverdova 2003, Kääriäinen 2007), the level of social expenditure (Delavallade 2006) and of tax collection (Mungiu-Pippidi 2013), and the level of social inequality (You & Khagram 2005).

Corruption has attracted added interest recently owing to prominent corruption allegations involving high-profile Western actors such as FIFA (Fédération Internationale de Football Association), former German Chancellor Helmut Kohl, former Irish Taoiseach Charlie Haughey, and former Israeli Prime Minister Ehud Olmert. There have also been serious allegations of corporate corruption against Western companies, particularly in the armaments industry (DellaPorta & Vanucci 2012). In the developed world, concerns have been raised that neoliberal programs of privatization and outsourcing may be contributing new opportunities for corporate corruption (Miller 2015; Offer & Söderberg 2016). As anthropologists Shore & Haller (2005) argue, “Europeans and Americans cannot assume that grand corruption is something that belongs primarily to the non-Western ‘Other’ . . . [it] can also be found in the very heart of the regulated world capitalist system” (Shore & Haller 2005, pp. 1–2).

Figure 1 shows recent survey data from the Global Corruption Barometer (GCB) on experiences of paying a bribe in highly developed Western countries. The figure is more than 10% in several European Union countries—Greece, Cyprus and Italy—as well as in some former Communist Bloc countries. In some countries there are major regional differences, especially in Italy but also the United States and Russia (Dininio & Orttung 2005, Glaeser & Saks 2006, Goel & Nelson 2011, Charron et al. 2014, Belousova et al. 2016), so corruption will be higher still in some regions.

Figure 1 corresponds to what is termed petty or street-level corruption, which should be distinguished from the grand corruption involving governments and multinational corporations.

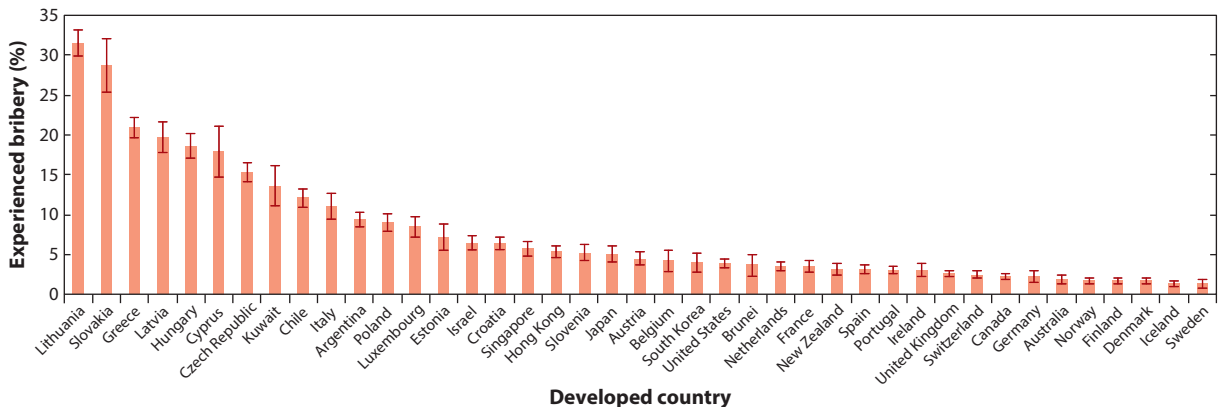


Figure 1

Experience of bribery across developed nations; countries presented have data available in the Global Corruption Barometer and are ranked as having the highest level of development on the 2014 Human Development Index. Error bars show 95% confidence intervals. The graph reflects answers to the question, “In the past 12 months have you or anyone living in your household paid a bribe in any form to each of the following institutions/organizations? [total across all listed institutions].” The results presented rely on data from the Global Corruption Barometer (pooled 2006–2013) provided by Transparency International.

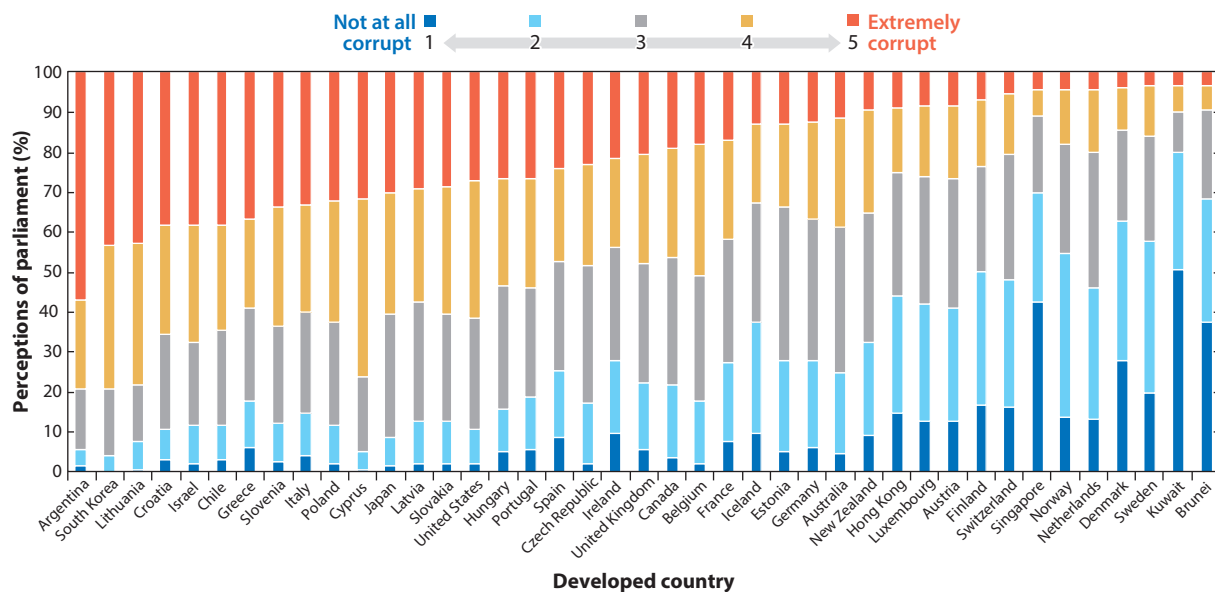


Figure 2

Perceptions of corruption in parliaments across developed nations; $N = 176,154$; countries presented have data available in the Global Corruption Barometer and are ranked as having the “Highest” level of development on the 2014 Human Development Index. The graph reflects answers to the question, “To what extent do you perceive [parliament] in this country to be affected by corruption?” The results presented rely on data from the Global Corruption Barometer (pooled 2004–2013) provided by Transparency International.

Although direct evidence on grand corruption is inevitably hard to come by, Western citizens certainly believe it to be quite widespread. **Figure 2** shows perceived levels of corruption in national parliaments in highly developed countries.

Levels of perceived political corruption are remarkably high (although differences in question wording make strict comparisons between **Figures 1** and **2** unwise). Moreover, although the rank orders of countries in **Figures 1** and **2** are highly correlated, there are interesting discrepancies: Japan, Israel, South Korea, Ireland, and the United Kingdom are all countries where the public—perhaps with good reason—is relatively more pessimistic about their parliament than about the public officials with whom they come into contact.

Corruption has been studied in a variety of social science disciplines, particularly in economics and political science, although also in anthropology and management studies. In contrast, the sociological literature is rather sparse and fragmented. In this review we are particularly interested in the role of sociological ideas rather than in what has been specifically published by sociologists or in sociological journals.

A great deal of the economic and political science literature has involved the cross-national analysis of data sources such as the ratings compiled and published by Transparency International and the World Bank to explain cross-national differences in corruption (see the important reviews in economics, political science and political theory by Svensson 2005, Treisman 2007, Philp & Dávid-Barrett 2015). There has also been micro- and meso-level research asking why some individuals, firms, or sectors of the economy might be more prone to corruption than others, as well as historical research on the evolution of corruption.

There are large literatures on the consequences of corruption for economic growth and on the success (or otherwise) of attempts at reform. In order to limit its scope, our review does not attempt to cover all these literatures. We also largely limit our review to recent literature on developed societies to keep it manageable: The literature on developing countries is vast, and it is not always clear how readily results from developing countries can be generalized to developed ones with longer histories of bureaucratic administration. The issue of corruption in developed countries is of great interest in its own right, and we risk losing focus if we cast our net too wide. We also recognize that, even in developed societies, the study of corruption blurs into literatures on organized crime, good governance, and malfeasance. There is a great deal of scope for cross-fertilization here. But we focus on what we see as the core issue of the cross-national empirical regularities that have been established (or not) and how sociological ideas might be brought to bear in understanding these regularities. The purpose of this review, therefore, is to explore the scope for a distinctively sociological contribution to the study of empirical regularities in corruption in developed countries. We adopt what has been termed an empirical-theoretical approach.

In the next section, we review definitions of corruption before moving on to its measurement in cross-national and survey research. In the third section, we attempt to synthesize the main theoretical ideas in the literature, covering both micro and macro theories as well as the main theoretical approaches from economics, political science, and sociology. In the fourth section, we review empirical research, focusing on cross-national and survey-based research on perceptions and experiences of corruption rather than on qualitative case studies. In the final section, we reflect on the potential future directions and contributions of sociological research to the study of corruption.

DEFINING CORRUPTION

A simple and widely used definition, used by Transparency International, the World Bank, and the US Department of Justice, is that corruption is “the misuse of public position for private gain.” A classic example is a private-sector contractor paying a government official a bribe to induce the official to award a contract. Corruption is thus often thought of as a principal/agent/client (PAC) problem in which the agent, the corrupt official, delivers a suboptimal outcome to the principal as a consequence of collusion with a third party, the client. The focus in much of the literature related to this definition is on the behavior of the corrupt officials.

In addition to bribery, the standard definition also includes other forms of misuse of public position that cannot be so readily fitted within the PAC framework. For example, embezzlement of public funds for private gain fits within the standard definition but does not necessarily involve a third party (cf. Varese 2000, Pellegrini 2011). In ordinary language, we tend to call regimes corrupt if the political leadership embezzles national funds. However, it is not entirely clear that a broad definition like this—which may be entirely appropriate for organizations such as the World Bank that have practical objectives for exposing or remedying abuse of public position—will actually be scientifically useful if it groups together heterogeneous phenomena. There may be a misalignment between the concerns of bodies that are primarily concerned to highlight and remedy bad government, such as Transparency International and the World Bank, and scientific researchers, whose objective is to explain empirical regularities.

Some scholars, therefore, have suggested a narrower definition closer to the PAC model. For example, sociologist David Jancsics (2014) has suggested four key conceptual elements for defining corruption:

- Money, goods, or other resources that belong to an organization are instead exchanged covertly in a way that benefits one or more persons who are not the formal owner.

- At least one of the corrupt parties has formal contractual relations with the organization from which the resources are extracted.
- Corruption happens between two or more corrupt parties. There is one party who sells the resources and another party who compensates that individual for them.
- A corrupt act is always a deviation from social rules or expectations of some kind, though not necessarily legal ones.

Going in the opposite direction, political theorist David Beetham (2015) has sought to broaden the definition to “the distortion and subversion of the public realm in the service of private interests” (p. 41). Beetham (2015) makes the point that various practices in Britain (and by implication in other Western societies, too) “systematically favor a limited set of special interests at the expense of more general ones. These practices make money . . . a major determinant of public policy, even if the money does not directly line the pockets of office holders themselves” (p. 42). Examples include the capture of regulators and public officials by the corporate sector and its consultants, revolving doors between government and business, preferential access to ministers and officials by the wealthy and powerful, and corporate funding of political parties and politicians’ private offices in return for favors. Some of these examples fit within a PAC approach, but it is not clear that they all involve benefits for the nominally corrupt official. A similar extension has been suggested by Lessig (2011, 2013), who defines institutional corruption as occurring “when there is a systemic and strategic influence which is legal, or even currently ethical, that undermines the institution’s effectiveness by diverting it from its purpose or weakening its ability to achieve its purpose . . .” (Lessig 2013, p. 553).

Inevitably there are numerous gray areas with all these definitions. First, exactly what is regarded as misuse may vary from one society or context to another. Granovetter (2007) argues that “because defining behavior as ‘corrupt’ entails a judgment about what behavior is legitimate and appropriate, there is an irreducible sociological component that has been given surprisingly little sociological attention . . .” (p. 166). Some scholars have instead suggested that terms like misuse of public position should be replaced with the notion of impartiality in the implementation of public policies (Rothstein 2011; Uslaner & Rothstein 2012, p. 6). To be sure, this introduces a specific, Weberian view of how public officials should behave (Weber 1922), but this is probably the view that bodies such as the World Bank actually espouse. In support of this approach, some scholars (e.g., Rose & Peiffer 2015) have argued that the great majority of the public in most parts of the world does regard bribery as unacceptable and that issues of cultural relativism have been exaggerated.

A second issue relates to the definition of a public official. Because many government functions are now contracted out to private corporations, an official of a private-sector firm carrying out a public function must be considered a public official. There is also the issue of corruption in public but nongovernmental organizations, such as FIFA. Some, such as the World Bank, define corruption so as to rule out nongovernmental foci, whereas others extend the definition to nongovernmental organizations or bodies delivering public services.

A third issue is what Granovetter (2007) terms the *quid pro quo* issue. Thus, Jancsics’s third criterion explicitly assumes that there is a seller of the public resources who is compensated by a buyer, in other words, that there is a causal relationship between the buying and the selling. This is particularly relevant for Beetham’s (2015) broader conception of corruption. It is not straightforward to determine whether, in the case of revolving doors between government and business, for example, the subsequent job offer to the former public servant actually was contingent on a prior favor. This difficulty in determining cause and effect may be why these *quid pro quo* practices can flourish in the open, in contrast to the typically covert nature of bribery.

Some overlapping distinctions may also be relevant for explanatory purposes. Many scholars make a distinction between grand corruption at the highest levels of society and petty or

street-level corruption. The former would include bribery of public officials or ministers by corporate actors in order to secure major contracts, as in the notorious Bofors gun scandal where bribery pursued by a Swedish arms manufacturer effectively brought down the Indian government when it was exposed (Gill 1998). An example of the latter might include demands by parking attendants for extra payment to allow people to park (Jancsics 2013). Both examples fit within standard definitions of corruption, but the explanations for the two sorts of case are likely to differ because the latter involves extortion rather than bribery.

There is an important distinction between bribery and extortion, where bribery is initiated by the client and extortion by the official (Granovetter 2007). Extortion could be thought of as a coerced exchange (Ellis & Heath 1983). We suspect that petty corruption will typically involve extortion by public officials, whereas grand corruption may often involve bribery initiated by corporate actors. The explanatory focus may need to change accordingly.

In our view, it is not useful to try to adjudicate on a priori grounds between the different definitions and distinctions. What is important from a scientific point of view is to group together phenomena that have similar generative mechanisms: We cannot assume a priori that corruption is a unitary phenomenon. We would be surprised if the causes of embezzlement proved to be the same as those of extortion or capture of regulators by the corporate sector, but determination of the causes is ultimately an empirical, scientific issue.

MEASURING CORRUPTION

Measurement of corruption is inevitably problematic because of the clandestine nature of corruption. The quantitative empirical literature has employed a relatively small number of measurement instruments. There has been some limited use of conviction statistics (e.g., Glaeser & Saks 2006 on federal prosecutions in the United States), audit data monitoring natural experiments (e.g., Ferraz & Finan 2008 on voting out corrupt politicians), and field experiments (e.g., Fried et al. 2010 on traffic violations in Mexico; Winters & Weitz-Shapiro 2012 on willingness to punish corrupt politicians in Brazil). Field experiments represent the gold standard for detecting causation, but the rarity of corruption in Western countries makes them cost-ineffective. Conviction statistics are also problematic in the same way that recorded crime statistics are, as they may reflect the energy of law enforcement agencies rather than the actual incidence of crime (Goel & Nelson 2011). The bulk of the quantitative literature has therefore drawn either on expert-based indices or on survey research on the general public's perceptions and experience.

Perceptions of Corruption: Composite Indices

The best-known quantitative measurement of corruption is the Corruption Perceptions Index (CPI) produced by Transparency International. The CPI rates levels of perceived corruption in the public sector in different countries (for details of its rationale and construction, see Lambsdorff 2006). It was designed for campaigning, not academic purposes. Similar indices are produced by the World Bank (Kaufmann et al. 2004) and by Political Risk Services [the International Country Risk Guide (ICRG), commercially available only].

The CPI is an index based on a range of indicators provided by 12 different data sources (in 2014) produced by other organizations (e.g., the African Development Bank Governance Ratings, the IMD World Competitiveness Yearbook, the ICRG, the World Justice Project Rule of Law Guide). The indicators are predominantly based on expert assessments. At least three indicators are required for a country to be given a ranking, although it is not entirely clear how different indicators are combined to produce a single score with equivalence of meaning between countries and over time.

The relationship between these indices and the definitions of corruption described above is not clear-cut. For example, one of the indicators used (by the African Development Bank) is state capture by narrow vested interests. This corresponds to Beetham's (2015) or Lessig's (2013) definition of institutional corruption rather than to Transparency International's own definition. Another indicator is access of civil society to information on public affairs. Lack of access to information may indeed be a cause of corruption, but it is undesirable from a scientific point of view to include potential causes as indicators of the *explanandum*: there is a risk of circularity when the index is used for explanatory purposes.

Another important issue is whether it makes sense to think of corrupt practices as belonging to a single dimension that can be summarized by a single score. Our comparison of country rankings in **Figures 1** and **2** suggests that there are deviations between rankings on experienced street-level corruption and on perceived political corruption, suggesting that a one-dimensional account may be inadequate.

On the one hand, there has been considerable debate and skepticism about how well measures such as the CPI reflect the actual incidence of corruption (among many others, see Philp 2006, Weber Abramo 2008, Andersson & Heywood 2009, Donchev & Ujhelyi 2014, Heywood & Rose 2014). A particular concern has been the weak relationship between survey-based measures of experience of corruption and the composite indices of perceived corruption. Donchev & Ujhelyi (2014) argue that the perception index is systematically biased away from experience by other predictors.

On the other hand, there have been defendants of the composite indices, on the grounds that they do correlate well enough with measures of experience and with plausible predictors (Lambsdorff 2006, Kaufmann et al. 2007, Uslaner & Rothstein 2012). Furthermore, if we are correct in suspecting that corruption is not a one-dimensional phenomenon, then a weak (or even nonsignificant) correlation between experience of petty corruption and perceptions of grand corruption is not necessarily proof that the composite index is invalid as a measure of grand corruption.

A convincing demonstration of the criterion validity of the composite indices is virtually impossible to achieve, given the clandestine nature of corruption. Hence this debate is unlikely ever to be resolved. It might be more productive to explore the dimensionality of the various sorts of corruption, and whether this dimensionality varies across countries. Researchers could usefully employ standard sociological techniques for investigating cross-national equivalence of meaning (Davidov et al. 2014).

Perceptions of Corruption: Surveys of the General Public

In addition to these expert-based indices, there are survey measures of the public's perceptions of corruption. These have been included in cross-national survey programs such as the GCB, the International Social Survey Program (ISSP), and the World Values Survey (WVS). For example, the WVS asks, how widespread do you think bribe taking and corruption are in this country? (WVS 2009). (The potential responses are: almost no public officials, a few public officials, most public officials, or almost all public officials are engaged in it.)

These survey-based measures of the general public have the advantages that their construction is transparent and that the basic survey data are available for reanalysis. For sociological research, they are likely to be more promising than the (opaque) composite indices such as the CPI. However, a major limitation is that we cannot know how respondents themselves interpret the meaning of the question asked. There is the risk that equivalence of meaning may not hold across countries.

These survey-based measures have, therefore, been the subject of convincing critiques similar to those of the expert-based indices. Weber Abramo (2008), for example, analyzing responses to the GCB, found that

Perceptions are not good predictions for experiences. On the other hand, perceptions are mostly good predictors . . . of other perceptions, not only related to corruption but also to other, apparently unrelated, matters. It seems that opinions operate in a coherent world. The problem is that such imaginary world of opinions and guesses seems not to hold a close relationship with the world of reality, at least in what regards corruption. (Weber Abramo 2008, p. 4)

However, there have been some interesting attempts to validate individuals' perceptions. Olken (2009) examined the accuracy of corruption perceptions by comparing Indonesian villagers' reported perceptions about corruption in a road-building project in their village with a more objective measure of missing expenditures in the project. He concluded that villagers' reported perceptions did contain real information, but that there were biases and underestimates: "The findings illustrate the limitations of relying solely on corruption perceptions, whether in designing anticorruption policies or in conducting empirical research on corruption" (Olken 2009, p. 950). In the absence of convincing attempts at validation, we conclude that the survey-based measures suffer from much the same problems as the expert-based indices.

Victim Surveys

Perhaps the most promising development in the past decade has been the conduct of surveys, on the lines of crime victim surveys, asking respondents if they have been victimized by corruption. In his review, Treisman (2007) concluded that scholarly efforts should be redirected from perception indices to victim surveys, writing that "such a focus would invigorate the empirical study of corruption for the next ten years" (p. 242). For example, the GCB contained the following question in 2006, 2007, 2009, 2010, 2011 and 2013: "In the past twelve months, have you or anyone living in your household paid a bribe in any form to each of the following institutions/organizations?" The named services were police, judiciary, registry, land, medical, education, tax, and utilities (Transparency International 2013).

Questions have also been asked regularly in the International Crime Victim Survey, the Eurobarometer, and single rounds of the ISSP and the European Social Survey (ESS). Such questions on experience identify petty or street-level corruption. There are also surveys of firms, such as the World Bank Enterprise Surveys, that may identify grand corruption.

With victim studies, validity is still an issue, although not as major an issue as it is with perception measures. Moreover, the record of general crime victimization surveys is reassuring to scholars using victim studies of corruption. It is likely that victimization measures are the least problematic of the currently available measures, although all the usual, generally neglected, issues of the cross-national comparability of surveys will still be present because of differing response rates, response biases, and modes of data collection (Heath et al. 2009, te Grotenhuis et al. 2015). Nevertheless, the availability of these measures has breathed new life into the study of corruption.

THEORETICAL APPROACHES

In this section we attempt to distill the core theoretical ideas lying behind the empirical research on corruption. In particular we attempt to identify where sociological ideas are important theoretically, over and above the standard approaches of economists and political scientists.

Micro Foundations

An essential starting point is the economists' PAC model, in which corruption is viewed as resulting from cost/benefit analyses of individual actors (Rose-Ackerman 1975, 1978). We can think of the principal as being the government (representing the people or the public interest), the agent as the public official who is responsible for implementing government policy, and the client (or victim) as the private corporation or individual who seeks a service from the public official. The public official's choice of behavior can be formulated in standard expected utility maximization terms, but with the key addition that the illegality of corrupt behavior involves the risk of detection and punishment (often formulated as transaction costs). Following Fried et al. (2010), we could formulate this as

$$E(\text{corrupt behavior}) = ((1 - p) \times B) - (p \times C), \quad 1.$$

where E is the expected value of the corrupt behavior, B represents the value of the bribe, C is the value of the penalty, and p is the probability that the corrupt behavior will be detected and punished by the principal.

A first complication is that this simple formulation is unrealistic because it ignores the role of the client (victim). In cases of extortion, the client may not be willing to pay the bribe but may have no incentive to report the corrupt behavior, which involves time and effort and may be ineffective or worse—as whistleblowers frequently report. Hence, there is no reason to expect the probability of receiving the benefits and the probability of incurring a penalty to sum to one. This asymmetry in the probability of receiving the benefits and that of incurring a penalty can be important both in understanding the likelihood of corruption and in designing reforms. At any rate, let us reformulate as follows:

$$E(\text{corrupt behavior}) = (p^1 \times B) - (p^2 \times C), \quad 2.$$

where p^2 depends on the client's values and incentive structure.

A second complication is the opportunity structure. For a public official to extort payment, he or she first needs to have contact with members of the public. Some official roles have much less opportunity for contact, and conversely, some members of the public will have relatively little contact with officials. Rose & Peiffer (2015) term this a two-step model of corruption. We can formulate it as

$$P(\text{extortion}) = ((p^1 \times B) - (p^2 \times C)) \times O, \quad 3.$$

where O takes the value of one if there is contact between the official and the victim, zero otherwise.

Rational choice provides a flexible framework for modeling corruption. The PAC model has been the basis for development of a range of specific hypotheses about the institutional arrangements that increase the incentives to engage in corrupt behavior. One key idea is that government regulation creates incentives and opportunities for selling preferential treatment such as exceptions from regulations (Ades & Di Tella 1999, Djankov et al. 2002, Svensson 2005). Van Rijckeghem & Weder (2001) have also argued that low salary levels of public officials provide greater incentives to engage in extortion. Hypotheses have also been developed about probabilities of detection: Rose-Ackerman (1975) theorizes that it is easier to detect corruption in a perfect market for a standardized product than in markets where there are fewer suppliers and less standardized products. Political scientists have suggested that democratization and a free press will be associated with reduced levels of corruption because of the increased likelihood of exposing corruption, whereas it has been hypothesized that political decentralization offers more opportunities for corruption. We can formulate these ideas in terms of supplementary equations such as

$$B = f(\text{public officials' salary levels, monopoly power, discretion}), \quad 4.$$

$$O = f(\text{government regulation, political decentralization}), \text{ and} \quad 5.$$

$$p^2 = f(\text{free press, democratization}). \quad 6.$$

A complementary micro foundation is provided by sociological approaches that ultimately derive from exchange theory (Blau 1964, Heath 1976, Cook et al. 2013), which emphasizes the nature of the social relationships between the actors. A first feature of social exchange is that it often involves regular relationships between the actors. To be sure, many cases of bribery will be one-offs in which there is no prior (or subsequent) relationship between the actors, and so the sociological approach will not add anything to the standard PAC model. However, in many other cases, there will be regular relationships between the actors. If these involve mutual trust, then they will serve to reduce the risk of detection. A second feature of enduring social relationships that is emphasized in exchange theory is the norm of reciprocity, namely the expectation that favors will be reciprocated in due course. Close personal ties and obligations between the public official and clients thus increase the likelihood that the official's prescribed duties will be trumped by his or her social obligations toward exchange partners (Sardan 1999, Granovetter 2007, de Sousa 2008). These accounts may apply more to preferential treatment by public officials on the basis of particularistic ties and less to extortion. In the developed world, these ideas might have particular relevance in the former communist countries of Eastern Europe where informal exchange networks and ties developed to circumvent the failings of the communist command economic system (Ledeneva 1998, Scheppele 1999, Mungiu-Pippidi 2011).

One general way of thinking about this is that the extent of a personal tie (and the associated trust and reciprocal obligations) between the official (i) and the client (j) reduces the transaction costs. Let us represent the personal tie between official i and client j by w_{ij} . Hence,

$$E(\text{corrupt behavior}) = (p^1 \times B) - (p^2 \times C)/w_{ij}. \quad 7.$$

Equivalently, we could say that p^2 declines as the relationship between the official and the client becomes stronger. Sociological ideas of this sort lie behind hypotheses advanced by economists and political scientists about the way in which ethnic diversity may increase the likelihood of corruption. Glaeser & Saks (2006), for example, propose that ethnic fragmentation impacts corruption by reducing the popular will to oppose corrupt politicians, that is, that ethnic in-group loyalty overrides a desire for clean politics. In-group loyalty may thus inhibit whistle-blowing or denunciation by third parties (cf. Gino et al. 2009).

Another important element of exchange theory is power and status inequality between the actors. A key idea is that a public official is in a more powerful position to engage in extortion if the client has lower social standing (and hence may not be believed or taken seriously if he or she makes a complaint). In contrast, high-status clients may be able to make life difficult for the corrupt official (for example, by using their social connections to complain to the official's superiors).

As with particularistic ties, what the exchange theoretical approach adds to the rational choice one is a focus on the nature of the relationship between the actors. We can formulate the power differential argument as

$$p^2 = f(S_i/S_j), \quad 8.$$

where S_i/S_j is a measure of the imbalance in social standing between official i and client j . Substituting into Equation 2,

$$P(\text{extortion}) = (p^1 \times B) - b(S_i/S_j \times C), \quad 9.$$

where b is a parameter to be estimated. We do not suggest that these sociological ideas are incompatible with the PAC approach, but rather that they are complementary. Indeed, sociological ideas about the importance of social identities and particularistic ties have been explicitly adopted by influential economists in theories of the economics of identity (see, e.g., Akerlof & Kranton 2000, Darity et al. 2006).

Taken together, the rational choice and social exchange approaches provide us with the micro foundations for understanding corrupt behavior and, through the supplementary equations, with a way to include macro-level predictors.

Macro Contexts

Scholars have also suggested a range of macro theoretical arguments. On the rational choice side, there is the classic collective action/free rider issue (Olson 1965). Persson et al. (2013) argue that, in systemically corrupt environments, the assumption of a principal who is being defrauded by the agent does not hold. The assumption that the principal is unable to monitor the actions of the agent misses the point: Sometimes the principal has no interest in monitoring the agent. Where corruption is widespread among the principals themselves (whether the principals are senior members of the government or members of the public at large), no individual official or member of the public, even if they morally oppose corruption themselves, has any incentive to play by the rules: The agent is better off taking the bribe because there is low expectation of being penalized, and the client has no expectation that a complaint would be effective nor that the service would be secured without the bribe. Noncorrupt behavior becomes irrational in a setting where corruption is widespread and those who engage in corruption are not penalized (Uslaner & Rothstein 2012).

Uslaner and Rothstein (and other scholars) therefore focus on the absence of generalized trust (as opposed to the presence of particularistic trust referred to above) as an explanation for high rates of corruption. In this account, the implication is that generalized trust needs to be a property of the collectivity as a whole if there is to be a stable noncorrupt equilibrium. A trusting individual in a collectivity of nontrusting agents will have his or her trust rapidly undermined by experience. Hence, we need to consider the properties of the collectivity as well as individual motivations, implying a multilevel approach. We can formalize the basic idea as

$$p^2 = f(T_k), \quad 10.$$

where T_k represents the mean level of trust in collectivity k , the assumption being that the probability of detection and punishment is proportional to the level of trust. Substituting in Equation 2, we have

$$P(\text{extortion}) = (p^1 \times B_i) - b(C_i \times T_k). \quad 11.$$

In turn, high levels of generalized trust have been attributed to structural factors such as the societal level of inequality, the societal level of education, and levels of ethnic diversity, suggesting the supplementary equation

$$T_k = f(\text{inequality}_k, \text{ethnic diversity}_k, \text{mean education}_k). \quad 12.$$

Another important sociological idea focuses on the role of culture in the sense of shared norms that prohibit corrupt behavior. Scholars are sometimes vague as to whether they conceptualize culture as an individual or a collective property or both. Individual values may be important, of course, but strictly speaking, culture is a property of a collectivity. And it is quite possible that a strong anticorruption culture, where norms are enforced by bystanders, will have an influence

on individuals who do not actually share those norms themselves. Karklins (2005) sets out how the behavior of the bystander influences outcomes and concludes that an active citizenry (or civic virtue) has concrete benefits. Conversely, a state of anomie or of competing norms in situations where a society is in transition from one set of norms to another may provide the conditions for corruption to flourish (Scheppelle 1999, Obydenkova & Libman 2015).

The potential influence of culture on corrupt behavior suggests that a multilevel approach should be employed. In principle, this would be at least a three-level model incorporating the meso level—such as firms, government departments, or regions—as well as micro and macro levels. There is considerable evidence of sectoral and other differences in rates of experienced corruption (Jancsics 2013, Rose & Peiffer 2015). Some of the predictors noted above (e.g., public officials' wages) may operate at a departmental rather than national level; ethnic diversity varies across regions and is not a constant within a country. Organizations may differ in their cultures and socialization processes (Ashforth & Anand 2003). Other specific meso-level processes include power structures—for example, how much power and discretion is delegated (Della Porta & Vannucci 1999), whether those at the top of organizations have the power to turn off corruption detection controls (Jávora & Jancsics 2013), and how much clarity there is about lines of responsibility (Tavits 2007).

SUBSTANTIVE RESEARCH

Much of the quantitative empirical research on perceptions and experiences of corruption has tested the effect of the variables identified in the supplementary equations above, and only rarely have the micro-level mechanisms identified in Equations 3, 7, and 9 been tested. As a result, we find variable rates in which the variance explained by predictors such as government intervention in the market, democratization, and ethnic fractionalization is assessed and compared. The problem with these variable rates is that it is often possible to postulate alternative mechanisms that could potentially account for any given statistical association.

However, there have been some tests that do investigate the mechanisms. Rose & Peiffer (2015) show from analysis of the GCB that contact with officials is critical in the case of street-level corruption (Equation 3). The field experiment of Fried et al. (2010) on traffic violations in Mexico supports the theory of status differences (Equations 9 and 10), with traffic police more likely to target lower-status individuals for bribes and to let higher-status individuals off with a warning. Fisman & Miguel's (2006) observational study of parking tickets in New York found support for cultural theories, with diplomats from high-corruption countries significantly more likely to have unpaid parking violations than those from low-corruption countries, despite effectively zero enforcement against all diplomats. Adut's (2004) study of the role of investigating magistrates in exposing the corruption of French political elites emphasized the importance of declining status differentials between the corrupt politicians and their denouncers. There is also a considerable literature based on laboratory experiments, although we are inclined to be skeptical of their external validity. (For a review, see Philp & Dávid-Barrett 2015.)

A more thorough understanding of the mechanisms of corruption thus appears to be a priority. Without understanding the mechanisms, social scientific research cannot provide a serious basis for advising policy-makers.

In contrast to the paucity of research on the mechanisms, there has been considerable work on cross-national comparisons, including work using composite indices, survey-based measures of perceptions, and survey-based measures of experience. We summarize the findings of each of these in turn. Nearly all this work is cross-sectional, so issues of causal direction are inevitably present. Another crucial issue is that of the likely heterogeneity of effects across countries: Nieuwbeerta

et al. (2003) and Mocan (2008), in their analyses of experiences of corruption, both show differences between developing and developed countries in the effects of country-level predictors.

Research on Perceptions, Using Composite Indices

Table 1 gives the results for a selection of recent cross-national studies of the composite indices. Different studies have included different sets of predictors, and often the same predictors are measured in different ways, making comparison of results hazardous. There is also the risk of publication bias, with studies reporting significant results for novel predictors possibly having a higher chance of publication than null findings. Lack of statistical power is also likely to result in many false negatives.

In **Table 1**, we group the different predictors according to whether they are, in our judgment, economic, political, or sociological. There is support for all three types of predictor. Consistent results are found for GDP, freedom of the press, histories of democracy and of state socialism, and percentage Protestant, reflecting the role of economic, political, and cultural factors. Conversely, there is little support for the role of public officials' wages, natural resources, decentralized political systems, or ethnic diversity. In between, with mixed evidence, are inequality, trade openness, government intervention, and average levels of education.

Surprisingly little evidence exists for some of the economic predictors, such as economic freedom and the size of the state, that figure prominently in theoretical and policy discussions. There is a growing critical literature suggesting that the failure of attempts to reform corruption may result from the uncertain intellectual foundation on which the reforms have been built (Persson et al. 2013). However, it is also possible that the measures do not capture the theoretical concept well. This could be the case with ethnic diversity, for which theoretically a measure of ethnic polarization could be more appropriate than the usual measure of fractionalization.

A key challenge is understanding the generative mechanisms that lie behind the statistical associations. For example, what is important about Protestantism remains unclear. Is it Weber's (1905) Protestant ethic of duty within one's calling, or is Protestant culture associated with egalitarian social relationships as opposed to the hierarchical social relationships associated with some other religious traditions? The association with freedom of the press is consistent with mechanisms linked to the detection and exposure of corruption, but the association with former socialist societies is not in itself indicative of any particular mechanism. We should regard the association with former socialist societies as a phenomenon to be explained, not an explanation in its own right. Similarly, the association with GDP, although unsurprising, is a puzzle with respect to the generative mechanisms involved. It is clear that richer countries are perceived to have less corruption, but none of the obvious mechanisms in terms of economic freedom or trade openness seem to explain the pattern. The association with GDP is also a regularity in search of an explanation, not an explanation in its own right.

Research on Perceptions, Using Survey Data

We move next to survey data. We have found three studies that investigate perceptions and include both individual and country-level predictors. Arieli & Uslaner (2014) interpret their measure as one of grand corruption, but it is difficult to be sure what respondents actually were thinking of. Donchev & Ujhelyi's (2014) study appears to use a measure weighted toward street-level corruption, whereas You & Khagram (2005) have two measures, one of perceptions of corruption among public officials and one corresponding to Beetham's (2015) broader concept of the power of big interests. We report both. In **Table 2**, we summarize the results from these studies.

Table 1 Aggregate data (country-level) analyses. We describe an association as positive if higher scores on the independent variable are associated with reduced corruption (i.e., are beneficial for the control of corruption)

Dependent variable (corruption index)	Brunetti & Weder 2003	Dollar et al. 2001	Donchev & Ujhelyi 2014	Paldam 2002	Pellegrini 2011	Van Rijk-eghem & Weber 2001	Shen & Williamson 2005	Svensson 2005	Treisman 2000	Treisman 2007	Uslaner 2004	Uslaner & Roth-stein 2012	You & Khagram 2005
	ICRG	ICRG	WB	CPI	WB	ICRG	CPI	CPI, ICRG, WB	CPI	WB	CPI	CPI	WB ^a
N(maximum)	125	259	43	100	103	28	91	91	64	162	23	40	129
Economic factors													
GDP/income per capita	NS	U-shaped	Positive	Positive	Positive	NS	Positive ^b	Positive	Positive	Positive			Positive
Income inequality (Gini index)				NS						NS	Negative		Negative
Civil servant wages					NS	Positive			NS	NS			NS
Trade openness/imports as % of GDP	Positive LDCs ^c	NS			NS			Positive	Positive				
Economic freedom (versus regulation)				NS			Positive						
Natural resource abundance			Negative		Negative								NS
State strength (government expenditure as % of GDP)					NS		Positive						
Inflation				NS						Negative			

Political factors												
Longstanding democracy					Positive	NS			Positive		NS ^d	
Political rights score		NS					NS	Positive			Positive	
Freedom of press	Positive								Positive			
Newspaper circulation												
Decentralized/federal					NS							
Presidential system												
British legal system					Positive					Negative		
Socialist/communist origins						NS				Positive		
											Negative	
Sociological factors												
Mean school years of education	NS	NS						NS		Positive	Positive ^d	
% Protestant					Positive					Positive	Positive	
Share of women in government		Positive								Positive		
Ethnic diversity	NS	NS			NS			NS	NS	Negative		
% Trusting											NS	
										Positive		
Table in the original from which we have summarized the findings												
	Table 1, models 1, 5, and 6	Table 2, models 5-10	Table 1, model 4	Table 7, regression 20 and Table 2, regression 7	Table 1, columns 8 and 9	Table 1, model 4	Table 2, total effects	Tables 2-5	Table 2, all years, model 5	Table 4, model 11, and text	Table 3	Tables 1-3 (final columns)

Abbreviations: CPI, Corruption Perceptions Index; ICRG, International Country Risk Guide; LDC, less-developed country; NS, nonsignificant; WB, World Bank.

Some nonsignificant variables are not listed in the interest of saving space.

^aThey obtain similar results using the CPI.

^bEnergy consumption per capita rather than GDP.

^cDemocratic since 1950.

^dMeasured in 1870 and subsequent change.

^eLess-developed countries only.

Table 2 Individual-level analyses of perceptions of corruption: We describe the effect as pessimistic if higher scores on the independent variable are associated with perceptions of higher corruption

	Ariely & Uslaner 2014	You & Khagram 2005	You & Khagram 2005	Donchev & Ujhelyi 2014
Data	ISSP	WVS	WVS	ICVS
Coverage	Highly/mid-developed countries	Pooled developed and developing countries	Pooled developed and developing countries	Pooled developed and developing countries
Dependent variable	“In your opinion, about how many politicians [public officials] in [country] are involved in corruption” (two items combined)	“Would you say this country is run by a few big interests looking after themselves or that it is run for the benefit of all the people?”	“How widespread do you think bribe taking and corruption are in this country?”	“Is it likely or unlikely . . . offer money . . . to get help from officials, councillors etc.?”
<i>N</i> (maximum)	<i>N</i> 2 = 32 <i>N</i> 1 = 36,692	<i>N</i> 2 = 31 <i>N</i> 1 = 36,530	<i>N</i> 2 = 31 <i>N</i> 1 = 40,005	<i>N</i> 2 = 21 <i>N</i> 1 = 11,248
Individual-level covariates				
Woman		Pessimistic	Pessimistic	NS
High income		Pessimistic	Pessimistic	Pessimistic
High education	Pessimistic	Pessimistic	Optimistic	Pessimistic
Subjective class		Optimistic	Optimistic	
Age		40–59 optimistic	NS	Inverted-U shape
Protestant		Optimistic	NS	
Working				NS
Student				Pessimistic
Urban				Optimistic
Trust	Optimistic			
Fair treatment	Optimistic			
Contact with officials	Pessimistic			
Experience of corruption				Pessimistic
Country-level covariates				
GDP per capita		Optimistic	Optimistic	Optimistic
Income inequality	Negative	Pessimistic	Pessimistic	
Trade openness		Pessimistic	Optimistic	
Political rights		Pessimistic	Optimistic	
Postcommunist	Negative	Pessimistic	Pessimistic	
British legal origins				Optimistic
% Protestant				NS
Ethnic diversity				NS
Fuel				Pessimistic
Table in the original from which we have summarized the findings				
	Table 1, model 2	Table 4, column 3	Table 4, column 4	Table 7, column 2

Abbreviations: ICVS, International Crime Victim Survey; ISSP, International Social Survey Program; NS, nonsignificant; WVS, World Values Survey. Some nonsignificant variables are not listed in the interest of saving space.

Despite the differences in the dependent variables, the overall pattern of country-level predictors is close to that for the composite indices, suggesting that the findings from the composite indices are robust. None of the three studies, surprisingly, includes freedom of the press as a predictor, but the consistent results for inequality strengthen the tentative conclusion from the composite indices. Doubts about the significance of ethnic diversity and trade openness are reinforced. However, You & Khagram's (2005) differing results for their two dependent variables suggest we should not take for granted that the predictors of corruption in Beetham's (2015) broad sense are the same as predictors of corruption in the standard, World Bank, sense.

Turning to the individual-level predictors, there is a reasonably clear picture that men and those with higher income and education have more pessimistic views on the prevalence of corruption, although comparability between studies is limited because of the varying inclusion of mediating variables such as trust and experience of victimization. However, it is hard to know what to make of these individual effects. On the one hand, a possible interpretation is that they reflect the amount of contact one has with public officials; men, people who are employed, and those receiving higher incomes are perhaps more likely to have dealings with officials. On the other hand, it could be that certain groups are more alert to and censorious of corruption, a possible interpretation of a negative effect of education. Again, we need a clearer understanding of the mechanisms.

It is also worth noting that the signs for the individual and national levels of income and education run in opposite directions. Thus, higher-income individuals are more likely to perceive corruption, but higher-income countries are perceived to be less corrupt. Technically, there is nothing inconsistent about this reversal of signs, but the implications for theory are worth reflecting on. For example, when education is theorized to reduce corruption because of its influence on individual values and morality (e.g., Lambsdorff 2010), a correlation at the macro but not micro level may indicate an ecological fallacy.

Research on Experience, Using Survey Data

We next have a growing number of studies using measures of experience of (street-level) corruption. **Table 3** shows the results. Some of these are cross-national and include both individual (Category A) and country-level (Category B) predictors. Lee & Guven (2013), using the ESS, are able to distinguish extortion from offering a bribe, and so we include both. However, the number of studies including country-level predictors is small, and there are some surprising omissions of important predictors. We have therefore included results from our own multilevel analysis of the ESS. (We conducted a three-level model, including region at level two.)

At the individual level, the broad pattern of the results is consistent with the findings on individual perceptions from **Table 2**. This is not surprising because we would expect experience to affect perceptions, at least with regards to street-level corruption. As with perceptions, there is a fairly consistent pattern that men, those receiving higher incomes, or those with higher education are more likely to experience corruption. There is also the new finding, not uniformly supported, that the elderly are less likely, while people resident in large cities are more likely to experience corruption. Most scholars interpret these patterns as reflecting exposure to and contact with public officials. Supportive of this interpretation is Rose & Peiffer's (2015) finding that high income and education are not significant after controlling for contact.

Turning to the country-level predictors in Category B, a striking characteristic is the heterogeneity of effects between developed and developing societies in Mocan's (2008) work (and to a lesser extent in the work of Nieuwbeerta et al. (2003)). It suggests that the level of government

Table 3 Individual data on experience of bribery—association in terms of the risk of being asked for a bribe

Data	Chatterjee & Ray 2012	Goel et al. 2012	Nieuwbeerta et al. 2003	Tavits 2010	Mocan 2008	Lee & Guven 2013	Lee & Guven 2013	Rose & Peiffer 2015	Richards & Heath 2016
Coverage	ICVS 12 countries, not individually identified	UNODC ^b Croatia	ICVS Developing and developed countries (Uganda to Canada) ^c	Survey in Estonia Estonia	ICVS Developing and developed countries (Uganda to Canada)	ESS European countries (Ukraine to Norway)	ESS European countries (Ukraine to Norway)	GCB Developing and developed countries (Sierra Leone to Norway)	ESS European countries (Turkey to Norway)
Dependent variable	As for Nieuwbeerta et al. 2003	Paid a bribe to public sector employee in previous 12 months	"[During the past year] has any government official, for instance a customs officer, police officer or inspector asked you or expected you to pay a bribe for his service?"	Ever paid a bribe ^a	As for Nieuwbeerta et al. 2003	"How often . . . in last five years, has a public official asked you for a favor or a bribe in return for a service?"	"How often . . . in last five years, has a public official asked you for a favor or a bribe in return for a service?"	"In your contact with [service] have you or anyone living in your household paid a bribe in any form in the last 12 months?"	"How often . . . in last five years, has a public official asked you for a favor or a bribe in return for a service?"
N	N1 = 22,509 N2 = 12	N = 2,989	N1 = 27,004 N2 = 40	N = 788	N1 = 54,209 N2 = 30	N1 = 47,000 N2 = 26	N1 = 45,000 ^c N2 = 26	N1 = 82,000 ^c N2 = 76	N1 = 40,000 N2 = 24
Category A—individual-level variables									
Woman	Lower risk	Lower risk	Lower risk	NS	Lower risk	Lower risk	Lower risk		Lower risk
High income	Higher risk		Higher risk	NS	Higher risk (NS)	No effect	Higher risk	NS	Higher risk
High education	Higher risk	NS	Higher risk	Higher risk	Higher risk (NS)	No effect	No effect	NS	Higher risk
Age	Lower risk over 60	NS	Lower risk over 55	NS	Lower risk over 60	Inverted-U shape	Inverted-U shape		Inverted-U shape
Married	NS		Higher risk		Higher risk	Higher risk (women only)	Higher risk (women only)		NS

Table 3 (Continued)

Data	Chatterjee & Ray 2012	Goel et al. 2012	Nieuwbeerta et al. 2003	Tavits 2010 Survey in Estonia	Mocan 2008	Lee & Guven 2013	Lee & Guven 2013	Rose & Peiffer 2015	Richards & Heath 2016
	ICVS	UNODC ^b	ICVS		ICVS	ESS	ESS	GCB	ESS
Category B—country-level variables									
Economic factors									
GDP/GNP per capita			Lower risk (NS)					NS	Lower risk
Income inequality (Gini index)									NS
HDI	Lower risk								
Economic freedom/less regulation			Lower risk (NS)					Lower risk	Lower risk (NS controlling for GDP)
Government salaries			Higher risk (NS)						
Government expenditure									NS
Unemployment rate	NS				Higher risk (NS)				
Supply of public services								Lower risk	
Political factors									
Democratic since 1950			Lower risk (NS)						Lower risk (NS controlling for GDP)
Ex-socialist country									Higher risk (NS controlling for GDP)
British legal origin			Lower risk (NS)						
Political stability			NS						
Expropriation risk/rule of law	Lower risk				Lower risk (NS)				

wages proves to be significant in developing countries in Nieuwbeerta's analysis, but not for the full sample. There are also suggestions of heterogeneity with respect to GDP, the rate of unemployment, economic regulation, rule of law, population size, and Protestantism. This may be because there is less variation in developed societies, or because of lack of statistical power when analyzing subsamples, but we strongly urge scholars in the future to take the issue of heterogeneity seriously.

Our own analysis of developed European countries suggests that economic freedom and freedom of the press are important predictors. We find little support for state expenditure or percentage Protestant. Interestingly, a history of state socialism is not significant within this sample of countries, after controls. These findings reinforce our concerns about heterogeneity of effects between developed and developing countries.

Finally, in **Table 4** we summarize studies undertaken at the level of the firm. Features of organizations have been studied in a variety of ways, for example with qualitative studies of individuals working in firms (e.g., Jávors & Jancsics 2013), but here we focus on studies in which the firm itself is the unit of analysis. The World Business Survey and Executive Opinion Survey both sampled business people who answered questions about their firm, such as, "On average what percent of revenues do firms like yours pay in unofficial payments to public officials?" (Kaufmann & Stone 2015). Responses to such questions are likely to depend upon individual experience and perceptions based on the actions of others within the industry.

The results show that larger firms are less likely to pay bribes (although the relationship is not statistically significant in all studies). This finding is consistent with the theory that greater power reduces vulnerability to extortion (Granovetter 2007, Fried et al. 2010), although it is at variance with the association between income and experience among individuals (**Table 3**, Category A). Other firm-level risk factors are at odds with the country-level predictors shown in **Table 3**; economic freedom and trade openness, for example, are associated with lower risks of individuals experiencing extortion (**Table 3**, Category B), but greater competition brings greater risks to firms. Again, comparing across studies suggests that more work might be needed to unravel the mechanisms that bring about opposite signs at different levels of analysis. Several characteristics do not have consistent results across studies, including foreign ownership and perceived quality of government, suggesting that the sample coverage matters and that more attention is required to region- and/or country-specific effects.

CONCLUSIONS

After the initial excitement of the availability of composite indices of perceived corruption such as the CPI, progress has been patchy and slow. As Persson et al. (2013) point out, the record of interventions based on this kind of research has also been disappointing—if anything, corruption has increased despite the interventions. Although the research using composite indices has many weaknesses from an explanatory point of view, it has nevertheless demonstrated important regularities, such as the high rates of perceived corruption in former socialist societies, that require explanation. These findings thus provide a useful starting point for explanatory endeavors.

There has been extensive debate about the value of measures such as the CPI, but given the clandestine nature of corruption and the difficulty of validating measures, these debates are unlikely to be resolved easily. Our concerns are somewhat different. Definitions of corruption include quite a diverse array of potentially heterogeneous phenomena, ranging from state capture by the wealthy to extortion by parking attendants (see useful typologies of corruption in Karklins 2005, Johnston 2005). Many measures, theories and findings are broad brush and do not sufficiently recognize the

Table 4 Firm-level analyses: outcomes vary

Data	Chatterjee & Ray 2012 ^a	D'Souza & Kaufmann 2013 Executive Opinion Survey	Chen et al. 2008	Wu 2009 ^a	Herrera & Rodriguez 2007 ^a	Donchev & Ujhelyi 2014
	WBES	Developed and developing countries	WBES	WBES	WBES	WBES
Coverage	Unclear but includes countries from Sub-Saharan Africa, Asia, Middle East, North Africa, North America, Europe, and Central Asia	Developed and developing countries	Developed and developing countries	Developed and developing countries in Asia (Myanmar to Singapore)	Developed and developing countries	Mostly Eastern Europe and former Soviet Union
<i>N</i> (maximum)	<i>N</i> 1 = 7,316 <i>N</i> 2 = 12	<i>N</i> 1 = 11,232 <i>N</i> 2 = 125	<i>N</i> 1 = 2,018 <i>N</i> 2 = 55	<i>N</i> 1 = 899 <i>N</i> 2 = 12	<i>N</i> 1 = 720 <i>N</i> 2 = 81	<i>N</i> 1 = 1,734 <i>N</i> 2 = 26
Outcome	Bribery incidence	Bribery incidence (perceived)	Bribery incidence	Bribery incidence	Bribery incidence	“How problematic is corruption for the operation and growth of your business?”
Firm-level characteristics						
Firm size (<i>n</i> employees)	NS	Lower risk	Lower risk	Lower risk	NS	
Foreign ownership	Higher risk	Lower risk	NS		NS	
Joint venture		Lower risk				
Government ownership			NS		NS	NS
Headquarters in OECD country		Lower risk				
Turnover/sales	Lower risk		Lower risk	NS		Lower risk
Competition			Higher risk	Higher risk		Higher risk
Importer/exporter	NS		Higher risk			Lower risk
Reduction in workforce						Higher risk
New plant opened						Higher risk
Dependency public infrastructure			Higher risk			
Consistent regulations (perceived)			NS	Higher risk		
Alternative authority available			Lower risk			

(Continued)

Table 4 (Continued)

	Chatterjee & Ray 2012 ^a	D'Souza & Kaufmann 2013 Executive Opinion Survey	Chen et al. 2008	Wu 2009 ^a	Herrera & Rodriguez 2007 ^a	Donchev & Ujhelyi 2014
Data	WBES		WBES	WBES	WBES	WBES
Financial support from government			NS			
% sales from government			NS			
Education of top manager	Higher risk					
Efficiency/quality of government (perceived)	Lower risk			Lower risk	NS	
Perceived business constraints (several variables)	Higher risk			Higher risk		
Firm age	Lower risk				NS	
Country-level characteristics						
HDI	NS					
Competition		Lower risk				
British legal origin			Lower risk			
Expropriation risk/rule of law	NS					
Free press		Lower risk				
Transparency		Lower risk				
Voice and accountability		Lower risk				
Masculinity cultural index			Higher risk			
Power distance index			NS			
Average education			Lower risk			
Literacy	Lower risk					
Population size	NS		Higher risk			
Average unemployment	Higher risk					
Table in the original from which we have summarized the findings						
	Table 1, column 3 (also includes controls for groups of countries)	Tables 4 and 5	Table 2	Table 8, columns 1 and 2	Table 6, column 1	Table 8, column 3 (includes fixed effects for country)

Abbreviations: HDI, Human Development Index; NS, nonsignificant; WBES, World Business Environment Survey. Some nonsignificant variables are not listed in the interest of saving space.

diversity of the phenomena to be explained. It is not obvious that the different types of corruption form a single dimension that can be neatly captured by a single national number.

From a causal point of view, targeted and specific findings are likely to be more convincing than broad-brush ones. For example, the causal link between smoking and lung cancer (found initially from cross-sectional correlations) was much more convincing because the correlation was stronger with lung cancer than with other cancers. We should therefore focus more on the specificity of the correlation than on its size. A high correlation between GDP and corruption, broadly defined and measured, may not be especially informative, because GDP also correlates equally highly with various other apparently unrelated phenomena (ranging from life expectancy to educational standards). GDP is as likely to be a confounding variable as an explanatory one.

We would therefore argue for a more disaggregated approach to corruption, distinguishing, for example, between extortion by public officials in dealings with members of the public, extortion in contracted-out functions, bribery by smaller enterprises and by multinationals, revolving doors between public and private sector elites, and state capture by the wealthy. It would be remarkable if similar mechanisms applied across these categories, and our tentative conclusion from the evidence summarized above is that mechanisms do indeed differ.

Given the evidence on major regional differences in levels of corruption, it would be sensible to move away from the current predominantly national focus. There is also evidence that different sectors (police, education, healthcare, licensing) and different sorts of firms vary in rates of corruption. Understanding such sectoral, regional, or firm variation within a country might be considerably easier than understanding national differences, given the small *N* problem in cross-national research.

More effort is required in thinking about and testing mechanisms. There needs to be a clearer understanding of exactly what it is about high GDP, or a long history of democracy, or a high proportion of Protestants in the population that might curb corruption (or particular types of corruption). More specific predictors with intuitive links to plausible mechanisms, such as public officials' wages, freedom of the press, or clarity of responsibility, are likely to be more informative than broad-brush variables such as GDP or democracy.

In addition to differentiated measures, differentiated theories, and differentiated levels of analysis, we feel that targeted samples also would be a useful way forward. There is clear evidence of heteroscedasticity, with much greater variance in national levels of corruption at lower levels of GDP than at higher levels, which will tend to bias confidence intervals and tests of significance. There is also accumulating evidence that patterns of relationships differ between more and less advanced economies. The generalizability of findings from pooled analyses to specific subsets, such as former socialist societies, is thus unclear.

Although we do not wish to minimize the relevance of economic and political science concepts and theories to understanding corruption, sociological contributions can also play a major methodological and substantive role. Methodologically, there needs to be much more attention to issues such as data quality, validity, and equivalence of meaning. Substantive theories advancing ideas about power differentials, particularistic loyalties, and collective properties such as culture or trust might be helpful. There is also an onus on sociologists to understand exactly what it is about social variables such as Protestantism, ethnic diversity, or national educational levels, that encourages or inhibits corruption. What are the generative mechanisms? Until we have a better understanding of the mechanisms, we are unlikely to have much that is useful to policy-makers fighting corruption.

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