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Experiments in Culture and Corruption

A Review

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Abstract

Two decades of empirical evaluation have shown that corruption has a negative impact on economic growth, political stability, judicial effectiveness, democratization, educational attainment, and equality of income. However, corruption exists, persists, and varies significantly by culture. Lab studies have recently come to the forefront in identifying both the incentives and disincentives for corrupt behavior. However, lab studies on culture and corruption have led to some puzzling, contradictory results. This paper begins with a discussion of non-experimental work in this area, and evaluates the experimental findings in the context of earlier research.

The authors sketch out the channels through which culture interacts with corruption (through institutions and social norms), and argue that discrepancies in experimental results may be due to differences in design (including repetition or unobserved variation in beliefs) or to differences in the response to punishment across societies. In addition to exploring design-based reasons for previous contradictory findings, avenues for future research include: behavioral responses to different types of externalities; replicating results in different countries; and utilizing the lab to formulate effective anti-corruption measures.

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Experiments in Culture and Corruption: A Review

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Introduction

Many researchers have made the point that culture and corruption are interrelated (Husted 1999; Barr and Serra 2010; Serra 2006; Cameron et al. 2009; La Porta et al. 1997; Fisman and Miguel 2007; Uslaner 2004; Lipset and Lenz 2000; Banuri and Eckel 2012a; Treisman 2000; Lambsdorff 2006; among many others). In these studies, culture sometimes is used to refer to concrete factors such as trust, religiosity, or institutional arrangements, and sometimes to less tangible elements such as values, norms, or morals. The term also is used as a kind of residual explanation, brought into play for differences that are not explained by other factors. This paper explores the relationship between corruption and specific aspects of culture, as seen in a series of lab experiments, and outlines how culture impacts individual corrupt behavior in the lab.

Experimental research on corruption is still in its infancy; most of the growth in the field has occurred since 2000. At the same time, over the last thirty years, non-experimental empirical research in this area has grown substantially (see Treisman 2007 for a review), so much so that we have begun to gauge the wide-ranging effects that corruption has on economic development (Mauro 1995, Svensson 2003, Treisman 2000, Burki 1999, Shleifer and Vishny 1993, Jong-Sung and Khagram 2005, among others). At its core, corruption can be represented as a social dilemma; that is, a corrupt transaction is individually beneficial but imposes significant costs on other members of a society. This insight informs many of the lab experiments discussed below.

Neild (2002) argues that clean (uncorrupt) governments are in the minority, and must be studied in contrast with their more corrupt counterparts. One avenue for making these comparisons is to utilize a cross-country framework.² These are not straightforward comparisons, however, since there can be any number of observed and unobservable factors that vary across countries (Treisman 2000).³ Culture influences institutions and social norms, dictates the interactions of agents within a society, and affects the type of corruption that becomes prevalent.

² As a reviewer correctly points out, an alternative solution is to study different governments / regimes within the same country (see, for example, Di Tella and Schargrodsky, 2003). We focus on the cross-country framework, as it is the more common approach in the literature.

³ Spector (2005) argues that corruption across countries varies by the sector in which it occurs. For example, Pepys (2005) argues that corruption in the justice system takes the form of bribery and patronage, Vian (2005) states that corruption in the health sector is typified by bribery, embezzlement, and graft (for further examples of corruption by sector, see Spector 2005). These differences by sector highlight different types of corruption, which in turn constitute different types of behavior. The strength of each sector, and thus the prevalence each type of corruption also varies by country.

Corruption incorporates a broad range of actions and behaviors, where the main common factor is a negative externality. Corruption can be seen in both the public and private sectors, occurs at any institutional level, and can constitute a number of behaviors in a variety of organizational settings.⁴ Identical policies fail in one institutional context but succeed in another (Dininio 2005). Cross-cultural studies are necessary to determine causal factors that contribute to policy success or failure, and lab experiments play an important role in identifying causal relationships.

The major benefits of experimental studies (and lab experiments in particular) are as follows. First, the experimental setting ensures that corrupt behavior can be observed. Because corruption is a clandestine activity, it is often hidden from view, making empirical data in this area particularly difficult to observe. Second, the control afforded by the lab allows institutions and context to be isolated, as in cross-cultural studies, or manipulated directly by the experimenters, so as to identify causal effects. This enables a better understanding of motivating factors for corrupt behavior, and allows the researcher to begin formulating policies that are specifically designed to reduce the incentives for engaging in such behavior. Third, lab studies facilitate testing of various anti-corruption policies and solutions in environments free of other contaminating factors (Roth 2002). The lab provides a low-cost environment where various policies can be pre-tested in order to identify those with the greatest probability of success, and the behavioral mechanisms that they employ to achieve success. Fourth, the lab facilitates replication, allowing the robustness of results to be explored. Experimental research constitutes an exciting avenue for policy making in general, and for scientific study of corruption in particular.

The most common criticism of lab studies concerns the issue of external validity. Corruption research comes from a tradition of macro-level studies with large country-level data sets, where ‘internal validity’ – the causal relationships among variables – can be questioned. However, the contribution of these studies is not to demonstrate causality (though quite a number of them attempt it), but rather to document various institutional factors that contribute to, or discourage, corruption. The cost to external validity looms even larger when dealing with inferences from country-level experimental studies. A number of studies covered in this paper describe results that are very specific to a particular culture; whether lab results from Karachi or

⁴ For the purposes of this paper, we focus exclusively on corruption in the public sector.

London (for example) are generalizable to the country, the province, or even the city, is unknown.

In this paper we review results from lab studies on culture and corruption, attempt to reconcile the findings, and suggest avenues of future research. The rest of this paper proceeds as follows. In the next section we briefly review theory and empirical evidence on corruption. Section III reviews theory and empirical evidence on culture. Section IV focuses on the intersection of corruption and culture, and provides an overview of the non-experimental studies, and an in-depth analysis of lab experiments on corruption and culture. Section V provides some concluding remarks and areas for future research.

Corruption: Theory and Empirics

The general definition of corruption is given as “the use of public office for private gain” (Jain 2001).⁵ Under this very general definition, corruption comprises a number of actions,⁶ at various levels of government.⁷ This naturally leads to measurement difficulties, since, (1) there is little precision in the term, and (2) all actions covered by the definitions are clandestine. The most comprehensive measure for corruption perceptions comes from Transparency International, known as the Corruption Perceptions Index (CPI).⁸ The issue with using CPI data is that it is not a perfect instrument for actual levels of corruption, since it assesses perceptions rather than behavior. Since the data is subjective in nature, it is prone to bias, making inference difficult. Olken (2009) demonstrates this by comparing perceptions-based measures of corruption (through villager survey responses on a road-building project) to an objective corruption measure (missing expenditures on the same project). He finds that corruption perceptions and the objective measures are only weakly correlated, with documented biases related to ethnicity and social

⁵ For the interested reader, a richer discussion of definitions of can be found in Johnston (1996).

⁶ The most common form of corruption is *bribery*: the taking and/or paying of bribes by a government official at any level of government. *Extortion* relates to the procurement of property under an unlawful threat. *Graft* is compensation received under threat of inaction, i.e., an official exploits his or her position in order to collect rents. *Embezzlement* is the unlawful conversion of property entrusted to the official, for private gain. *Nepotism/Cronyism* refers to the appointment of members of the officials’ primary group to public positions. *Patronage* relates to the provision of benefits (including appointments) based on political ties.

⁷ Jain (2001) discusses three types of corruption, Grand, Bureaucratic, and Legislative. Grand corruption relates to political leaders making decisions motivated by self-interest. Bureaucratic corruption refers to activities of bureaucrats with either their political leaders or the citizenry. The most common example of this activity is known as “petty corruption,” relating to bribery. Legislative corruption is an action which influences the voting behavior of legislators.

⁸ The CPI compiles data from various secondary sources, to create a “poll of polls” in order to generate the perceived level of corruption within a given nation, and is the most widely used indicator in the literature.

participation. In addition, Treisman (2007) finds that perceptions data often do not correlate well with experience-based measures of corruption. Thus, results from the CPI should be interpreted with caution. More recently, experience-based measures have come to replace perceptions-based measures in the literature.

The above is not to belittle CPI-based research, which has produced many important insights into the correlates of corruption. Among the many studies in this area are those showing a relationship between corruption and judicial effectiveness (Treisman 2000), fairness in the rule of law (Uslaner 2005), political institutions (Lederman et al. 2005), economic liberalization (Goldsmith 1999), education (Shleifer and Vishny 1993), economic growth and openness to trade (Svensson 2005; Mauro 1995; Ades and Di Tella 1999), inequality (Jong-Sung and Khagram 2005).

On close examination, the term ‘corruption’ is somewhat nebulous, in part because it incorporates a variety of actions at different levels of public office. The extent to which corruption is pervasive varies by both the level of government at which it occurs, and the type of corruption which occurs. Furthermore, measures of corruption are flawed in that they contain systematic biases, and do not disentangle the different forms that corrupt acts can take.

Culture: Theory and Empirics

Defining culture is a challenge in its own right.⁹ Economists narrow the definition down to shared values and beliefs governing interaction among individuals (Huntington 2000; Greif 2004; Fernandez 2008; Barr and Serra 2010). In all definitions, culture is “shared” among group members, and indeed, the group may be defined by these shared values. We can further distinguish two channels through which culture operates: social norms and formal institutions (Elster 1989). Social norms are informal rules, driven by values and beliefs that govern interaction, and are both shared and sustained by group members.¹⁰ Institutions are formal rules

⁹ Some examples of (non-exclusive) definitions: Geertz (1973) defines culture as a “historically transmitted pattern of meaning embodied in symbols... by means of which men communicate, perpetuate, and develop their knowledge about and attitudes toward life.” Ross (1997) states that “culture is a framework for organizing the world... for making sense of the actions and interpreting motives of others.” Hofstede (1980) defined culture as “the collective programming of the mind which distinguishes the members of one category of people from those of another.” Hofstede (1997) argues that culture has five dimensions: power distance, individualism, masculinity, uncertainty avoidance, and long term orientation (also called “Confucian dynamism”).

¹⁰ Bicchieri (2010) discusses social norms as informal rules of behavior arising spontaneously, and from decentralized actions of individuals. Posner (2000) views social norms as “nonlegal mechanisms of cooperation.” Drobak (2006) argues that norms influence individuals toward conformity.

governing individual interaction, and are also influenced by values and beliefs; for example, Harrison and Huntington (2000) discuss the link between formal institutions and culture. In the long run, culture influences the evolution of institutions (North 1990). However, political actions also can influence culture through institutions, making culture and institutions difficult to disentangle. Formal institutions are readily observable, and provide some insight into culture, while informal rules are more difficult to observe. Indeed, social norms and institutions can be in harmony, or in direct conflict with each other.

Fernandez (2008) outlines three different empirical approaches to the study of the role of culture in economic outcomes. The first of these is survey-based, and uses country-level economic indicators to examine their correlation with beliefs and values (from, e.g., the World Values Survey). The difficulty with this approach has to do with reverse causality, which is mitigated by using an instrumental variables technique (see also Guiso et al. 2003; 2005; 2006; Tabellini 2005). The second approach is what she terms the “epidemiological” approach, where outcomes of immigrants are compared to natives in a host country. The major strength of such an approach is that it holds institutional factors constant and only allows norms and values of the country of origin to vary, which then allows causal relationships between culture and behavior to be isolated and identified. The major drawback of such an approach is that the intrinsic factors are not perfectly transmitted. That is, (1) immigrants may not be a representative sample of their population, and (2) intrinsic factors may change as a result of the migration. The third approach utilizes historical case studies as ‘natural experiments’ (e.g., Greif 1994; Nunn and Wantchekon 2011). The drawback of these studies is their limited generalizability.

Experiments help address the limitations of the methods used above. To reiterate the discussion above, the primary benefits of experiments are isolation of variables, identification of causal mechanisms, test-bedding alternative policy proposals, and replication. For the study of corruption, the unique benefit of experimentation is that formal institutions can be implemented in the lab, with the informal aspects of culture left to vary independently. The major drawback is that results in the lab environment and with lab-created institutions may not fully translate into field settings.

The relationship between cultural attributes and behavior in simple experimental games has been explored in several studies. In one series of studies, adult subjects are recruited in villages in a number of small-scale societies, and typically play several games designed to gauge

aspects of cooperative behavior. The protocols are common across societies. For example, Marlowe et al. (2008) use data from such a large-scale, multi-country experimental study to show that larger and more complex societies engage in greater levels of third-party punishment of uncooperative or unfair behavior in order to enforce social norms. Heinrich et al. (2010) use data from the same experiment to show that market integration and fair behavior in the games are correlated, indicating the importance of institutions for individual behavior and social norms. In an earlier study, Heinrich et al. (2006) also find that altruistic behavior and costly punishment are correlated, again reflecting differences in social norms across societies. In a different study using more developed countries, Hermann et al. (2008) find that a weak rule of law and norms of civic engagement yield greater levels of anti-social punishment.

When we refer to culture, we employ a composite term which may include both formal and informal institutions. However, at the very least, it includes the informal rules of behavior; formal rules may, or may not be included. For example, to say that a society has a patriarchal culture is to say that *at least* the informal rules have a male as the primary authority figure. Formal rules may reinforce males as authority figures (such as laws prohibiting women to work in Saudi Arabia), or may not weigh in on the matter at all. In some cases, formal rules may be in the opposite direction (for example, quotas in India for female representation in parliament) and may even exist to overturn informal rules of behavior. In addition, the extent to which norms and/or institutions govern behavior is yet another aspect of culture. Experimental methods allow us to unpack the influence of various aspects of culture on corruption.

Culture and Corruption: Theory and Empirics

Culture interacts with corruption through formal institutions and social norms, both of which can differ across countries. For a government that seeks to inhibit corruption, the goal is to devise formal institutions that can reinforce existing social norms. Formal and informal rules may not be in congruence with each other. As an illustration of this, Wade (1982) found that Indian villagers defined a corrupt act as one where the official demanded a bribe that was higher than the market level of a bribe, conflicting with formal rules that prohibited bribes of any size. In other countries, such as the US, any demand for a bribe would be considered corrupt.

Researchers have identified four main informal enforcement mechanisms that reinforce adherence to informal contracts: trust, reputation, hostage-taking, and reciprocity (Rose-

Ackerman 1999; Cramton and Dees 1993; Williamson 1975, 1979). These social norms facilitate not only legitimate but also corrupt transactions, and vary by culture. To illustrate the relationship between trust and corruption, *ceteris paribus*, societies with greater levels of interpersonal trust should exhibit greater levels of “both corrupt and donative transfers” (Rose-Ackerman 1999, p. 97). This is because trust relationships reduce the risk of disclosure in corrupt transactions. Individuals from societies where reliance on informal contracts (which may or may not be corrupt) are common are more likely to rely on (and engage in) informal contracts in the future. This argues for a cultural transmission of corruption (Hauk and Saez-Marti 2002; Barr and Serra 2010): individuals from societies where corrupt transactions are common, are more likely to engage in, and expect others to engage in, corruption.¹¹ Corruption norms, then, are a specific form of social norms, and dictate the extent to which individuals engage in, and expect others to engage in corruption, regardless of institutions.

Theoretical work suggests that, in addition to institutional history affecting economic performance (North 1990), institutional history affects the level of corruption in a society. For example, Andvig and Moene (1990) and Tirole (1996) use game-theoretic frameworks to show that corruption may be the outcome of a coordination problem in a setting with multiple equilibria, and thus history determines the effectiveness of an intervention. Case studies in Bolivia and Venezuela suggest that institutional history can have strong consequences for the emergence of corruption (Dininio 2005). Hauk and Saez-Marti (2002) use an overlapping-generations model to show how values are transferred across generations. They argue that attempts to change norms may be more successful than sanctions: policies focusing on educating children on the evils of corruption are likely to be much more cost effective than expenditures on monitoring and punishment.

Non-Experimental Studies of Culture and Corruption

This section focuses on empirical studies that explicitly examine the role of culture in shaping corruption, noting in passing the large number of empirical macro-level studies on corruption, which are outside our purview.¹² Since culture manifests itself both through the social norms

¹¹ Fisman and Miguel (2007) argue that in societies with high levels of corruption, individuals have greater expectations (higher estimated probability) that a given public official will engage in a corrupt act.

¹² For a more comprehensive review of the non-experimental literature on corruption, see Treisman (2007) or Lambsdorff (2006). The complex relationship among trust, social capital, income inequality, corruption and

and formal institutions, non-experimental empirical studies are, for the most part, unable to disentangle the effects of each on behavior. Many are purely descriptive, cataloging the features (or correlates) of corrupt countries.

Husted (1999) outlines how four dimensions of culture are related to corruption, and conducts empirical tests of each on the CPI.¹³ He argues that cultures with *high power-distance* (i.e. the degree to which power is unequally distributed between members) are more likely to engage in corruption due to paternalism. Furthermore, countries that are *highly collectivist* are more susceptible to corruption because individuals are more likely to violate laws if said laws run counter to moral codes. *Masculine* cultures are more likely to be competitive, and value material gains over “quality of life” (Hofstede, 1997, pg. 82), which would yield higher corruption. Finally, he argues that corruption reduces uncertainty in transactions, and thus cultures that are *averse to uncertainty* are also more likely to be corrupt. He finds that power distance, uncertainty avoidance, and masculinity are positively related to corruption (uncertainty avoidance has a theoretical relationship but is not supported by the data). Indeed, this suggests that in addition to the institutional factors outlined by Treisman (2007) (democracy, free press, female representation, openness to trade, and growth), cultural factors are an important part of the puzzle.

Other empirical work considers similar aspects of the dimensions of culture. For example, La Porta et al. (1997) argue that a high degree of power distance reduces trust among individuals, and that this reduced trust yields higher levels of corruption. They further argue that this asymmetric power distribution is particularly prevalent in hierarchical and strongly centralized religions, and influences countries with a strong organized religion (they classify Catholic, Eastern Orthodox, and Muslim religions to be hierarchical). Uslaner (2004) finds a negative relationship between trust and corruption, and again argues in favor of cultural explanations for corruption. Furthermore, Treisman (2000) finds that countries with a higher percentage of Protestants are likely to be less corrupt. Serra (2006) finds results similar to Treisman (2000) with countries with a higher percentage of Protestants exhibiting lower levels of corruption. Lipset and Lenz (2000) argue for two competing cultural explanations for greater

economic growth is explored in Rothstein and Uslaner (2005), who provide a review and synthesis of research in this area.

¹³ Hofstede identifies five dimensions of culture (power distance, individualism-collectivism, masculinity-femininity, uncertainty avoidance, and Confucian dynamism), of which Husted explores four.

corruption. The first is the degree to which culture impacts expectations of achievement (what Hofstede terms the masculinity dimension), and secondly, amoral familialism (which Hofstede terms as power distance), and finds empirical support from the World Values Survey and the CPI. Additionally, Swamy et al. (2001) find that female representation in the labor force and in political institutions has a negative effect on corruption.

Fisman and Miguel (2007) exploit a unique dataset on parking tickets issued to diplomats in New York to find a positive relationship between CPI and corrupt behavior. They observe the number of unpaid parking tickets for diplomats under two enforcement regimes, with zero enforcement (1997 – 2002), and with legal enforcement (2002 – 2005). In the zero-enforcement period, vehicles with a diplomatic status could be ticketed (and indeed, were ticketed quite frequently), but were not punished for non-compliance and non-payment. By the end of 2002, however, the “State Department gave permission to New York City to revoke the diplomatic plates of vehicles with three or more parking tickets” (Fisman and Miguel 2007). Exploiting this natural experiment, the authors show that the number of unpaid tickets by diplomats is strongly correlated with the CPI in their home countries. The authors argued that cultural norms are persistent, and that individuals carry their norms to new environments. This provides the first unambiguous evidence for the persistence of corruption norms.

In each of the studies above, culture is used to refer to multiple underlying elements (such as paternalism, familialism, uncertainty avoidance, etc.), which tend to overlap. These elements influence, and are influenced by both norms and institutions. Due to the superior control of lab experiments, institutions can be held constant, while norms are allowed to vary so as to capture behavior independent of the institutional channel. Alternatively, institutions can be created in the lab to test out the influence of differing social norms on behavior when reacting to the institutional arrangements.

Experimental Studies on Culture and Corruption

Experimental research on corruption has grown considerably in recent years. Early studies (Frank and Schulze 2000, Abbink et al. 2002, Abbink and Hennig-Schmidt 2006, Schulze and Frank 2003) set about using the lab to study corruption and the effects of various anti-corruption policies on behavior. Abbink (2006) provides a useful summary of experimental work on

corruption to date on a variety of sub-topics, which we will not revisit here, focusing instead on those studies with a significant cultural component.

Cameron et al. (2009) conduct a bribery experiment in four countries that vary in their degree of overall corruption. For their low corruption settings, the authors chose Australia (ranked the 8th-least corrupt country in the world, alongside Norway and Switzerland, by CPI in 2003) and Singapore (ranked 5th by CPI in 2003). For their high corruption setting, India (ranked 83rd alongside Malawi and Romania) and Indonesia (ranked 122nd alongside Kenya) were selected.

Their three-person, sequential, one-shot game begins with a firm choosing whether or not to offer a (costly) bribe to a government official. The firm also chooses the level of the bribe. The government official next observes the action by the firm, and then makes a binary choice of accepting or rejecting the bribe. Rejecting the bribe yields a refund to the firm (excluding the cost of initiating the bribe), and no effect on the citizen. Accepting a bribe, however, provides both the firm and the official with additional payoffs, and imposes an external cost on the third player. Once the official has made his decision, the third player (citizen) observes the decisions of the firm and official, and chooses a punishment level. Punishment is costly for the citizen, and imposes a fine on both the firm and the official equally. The instructions for the game uses loaded language (meaning that the terms “Bribe” and “Punishment” are utilized). Since the game is one-shot, the authors are able to measure the propensity for individuals to engage in corrupt behavior, as well as to punish such behavior.¹⁴ The authors conduct two treatments, one where the bribe is welfare-enhancing (i.e., the positive benefits of bribing outweigh the negative externalities on the citizen), and another where the bribe is welfare-reducing (i.e., the negative externality is higher than the combined benefit to the firm and official). Using this framework, the authors seek to answer two central questions: (1) Whether greater levels of societal corruption are associated with more bribery and less punishment, and (2) whether the increased negative welfare impact has any effect on bribery and punishment.

The results of this study highlight the complexity inherent in studying culture and corruption. Their results show that Indian subjects are more likely to offer a bribe, and less likely to punish bribes, compared to all three other countries. Furthermore, Indian and

¹⁴ One-shot interaction games are inherently different from repeated games because one-shot games allow us to study individual behavior based on expectations of others. Repeated games allow strategic interaction and belief-updating, which changes the interpretation of interaction.

Singaporean subjects were just as likely to accept bribes, and were significantly more likely to accept than Australian and Indonesian subjects. This is a puzzling result: Despite their low-corruption CPI ranking, Singaporeans were much more tolerant of corruption, while high-CPI Indonesians were much less tolerant. Their results are able to rule out ethnicity as a driver of corrupt behavior, and underline the importance of values transmitted through institutions. The authors argue that this tolerance of corrupt behavior in Singapore (and the intolerance of corrupt behavior in Indonesia) is due to recent institutional changes implemented in these countries.

The authors also examine the relationship between the prevalence of bribery and its impact on welfare by systematically varying the welfare effect of bribery. They find no significant treatment effects in Indonesia, or Singapore, but find that Australians are significantly less likely to punish when bribes are welfare-reducing. Furthermore, subjects were also more likely to offer and accept more bribes in anticipation of the reduced propensity to punish. While the results are not as clear as one might wish, they are illuminating of two major concerns in corruption research. First, they cast doubt on the generalizability of lab results to other cultures and settings. That is, culture and context are important factors to consider when using the lab as venues to test anti-corruption policies. Secondly, (assuming the results are generalizable) if the results found by Cameron et al. (2009) are indeed reflective of recent institutional changes, then lab based corruption measures can be used to gauge the impact of such changes on corrupt behavior in societies. That is, while perceptions-based measures may be sticky and therefore unresponsive to large shifts in public policy, behavior-based measures may respond more quickly. For example, the rankings for each of the countries in the sample have remained relatively unchanged in the CPI since 2003 (Australia: 8th in 2003 and 2010; Singapore: 5th in 2003, 1st in 2010; India: 83rd in 2003, 87th in 2010; Indonesia: 122nd in 2003, 110th in 2010). However, what is more likely is that the lab measures are capturing one particular type of corruption, whereas the perceptions measures capture perceptions more generally. For example, the Bribe Payers Index by transparency international focuses on petty corruption and bribery in particular. For both 2006 and 2008, Australia ranked above Singapore; with India close to the bottom of the rankings (Indonesia was not measured).

Barr and Serra (2010) conduct a lab study to test the robustness of the results found by Fisman and Miguel (2007) in a lab setting. Using undergraduate students at Oxford University, the authors correlate subject behavior in a simple bribery game with their country of origin.

Since Oxford has a very diverse student body, Barr and Serra were able to capture behavior of students from a large cross section of societies, all in an identical environment (as in Fisman and Miguel 2007). Their bribery game is similar to Cameron et al. (2009) in that it is one-shot and sequential, and carries a similar structure (with three players and negative externalities). It differs from the earlier study in two ways. First, the negative impact of bribes affects five experimental participants (referred to as “other members of society”) rather than a single player. Second, the “other members of society” have a passive role in the game, i.e. they cannot engage in bribery themselves, and cannot punish those acting corruptly. In their first study (data collected in 2005), the authors find partial support for the hypothesis that individuals carry corruption norms across borders. They find that the country of origin predicts corrupt behavior, but only among undergraduate students. This suggests that Fisman and Miguel’s findings may not be generalizable to entire populations, and that some form of selection may be taking place. In 2007, the authors ran a second study consisting of a modified version of the original experiment, which resembles extortion, rather than bribery. In this game, the public official moves first and demands a bribe, while the private citizen decides whether or not to pay it. Other than this modification, the game (including parameters) remains the same as before. In order to test the socialization hypothesis – that the more an individual spends time in a new environment, the more he conforms to said environment – they collected data on the amount of time spent in the UK by each subject. They find that, while country of origin is still a strong predictor, time spent in the UK is also important, suggesting that some socialization is taking place. Furthermore, their prior result for graduate students is replicated. Thus, they show that some (but not all) individuals carry the norms prevalent in their home countries across environments, and the propensity to conform to such norms declines over time.

The puzzle that these two experiments raise is that, while the findings of Barr and Serra (2010) line up with the CPI, those of Cameron et al. (2009) do not. Barr and Serra’s argument is intuitive and simple: individuals from corrupt countries carry their social norms (i.e. expectations of corruption) across borders, and conform to them. Over time, these individuals update their values through socialization to conform to the new norms. This argument assumes that corruption norms are different across cultures, and are portable. This would imply that, if the same bribery game is conducted in countries with different cultures, the same pattern of results will be found as with immigrants to the UK. However, Cameron et al. (2009) do not find this to

be the case. Assuming the CPI is an accurate reflection of corruption, we would have expected the following country ordering (going to highest to lowest on bribe offers and acceptances): Singapore, Australia, India, and Indonesia.

An important difference between the studies is that Cameron et al. (2009) have punishment in their design, while Barr and Serra (2010) do not.¹⁵ Other work based on trust games has shown that the presence of punishment changes subjects' beliefs and willingness to trust; i.e., it fundamentally changes the decision (Arai 2006; Berg et al. 1995; Bohnet and Baytelman 2007). Unless the punishment is severe enough to change the fundamental incentive structure of the game, the use of punishment has an overall negative effect on trust and reciprocity. The extent to which individual expectations are influenced by the presence of punishment is not examined in the studies, and so is unknown. Therefore, it is plausible that running a no-punishment treatment across countries might align the results to the CPI.

We might hypothesize that individuals from corrupt countries expect the discovery that bribery has taken place to be met with low levels of punishment (when engaging in bribery) while individuals from clean countries expect high levels of punishment. Therefore, the expected payoff from bribing is higher in corrupt countries relative to clean countries when punishment is available (all else equal). Hence, Cameron et al.'s differences in bribing between country samples should be even starker. However this was clearly not found by Cameron et al. (2009), indicating that the relationship between punishment and expectations is more complex. One further point to note is how punishment was implemented in their game. Citizens could spend punishment points to reduce payoffs of firms and officials by equal amounts. Thus, subjects in both roles had to consider the extent to which either party was going to be punished as a result of bribery before making their decisions. This makes inference about the effect of punishment difficult, as subjects may be reacting to expectations of punishment for their

¹⁵ While punishment is the most important difference, there are other design differences between the two studies that are unlikely to drive the disparity in results. First is location of the experiments. Barr and Serra use what Fernandez (2008) terms the "epidemiological approach." Here subjects share a common institutional context within the host country, which permits an isolation of the effect of differences in culture from any effect of differences in institutional context. Disadvantages of this approach include the possibility of selection bias, since subjects may differ in many respects from the "average" citizen of their home countries, including a possible weakened intrinsic preference for corruption. However, in contrast to the outcome of the experiments, this should weaken the effect of culture, making results less likely to line up with the CPI. Second, the design of externalities is different: in Cameron et al. there is a single target of the externality, while Barr and Serra utilize a group externality. The effect of this difference has not been tested separately, and its effect on the results is unclear. Third are differences in framing and use of language. Abbink and Hennig-Schmidt (2006) test the effect of loaded framing and find no significant effects, while Barr and Serra (2009) see that individuals offer fewer bribes with a loaded frame.

counterparts as well as themselves. Since expectations are not recorded, it is difficult to infer what the results mean for the impact of punishment institutions on the prevalence of corruption in the society.

Banuri and Eckel (2012a) conduct a bribery experiment in two countries with different levels of corruption: US (ranked 20th in the 2007 CPI) and Pakistan (ranked 138th in the 2007 CPI). They use a variation on the Abbink et al. (2002) repeated sequential game. In their version of the bribery game, there are three players (firm, official, citizen) and two treatments. The firm has the first move, and chooses whether or not to initiate a bribe. The official observes this action and chooses whether or not to provide a favor. Both of these decisions are binary, i.e., the level of the bribe is fixed. Citizen earnings are impacted if the official provides a favor, and bribery is welfare-reducing. The officials are also allowed to solicit bribes (can provide favors even though a bribe has not been offered, in the hope of securing future bribes). In one treatment (called “No Punishment”) citizens passively observe the actions of the firms and officials, while in the other treatment (“Punishment”) subjects can engage in costly punishment. Two important differences between this and prior studies is that (1) citizens can choose both the target and level of punishment, and so can discriminate between firms and officials; and (2) the game is repeated whereas both Barr and Serra (2010) and Cameron et al (2009) were single-shot. The treatments are run in both the US and Pakistan, and are designed to gauge the impact of a simple anticorruption policy. For this experiment, the authors used a hybrid form of instructions which provided context, but avoided value-loaded terms such as “bribe” and “punishment.”

The authors find that proportions of bribes and favors in the US and Pakistan are statistically indistinguishable when punishment is not available. This is similar to results found by Cameron et al. (2009) in Indonesia, Australia, and Singapore (but not India). However, it is different from results by Barr and Serra (2010). Furthermore, they find that social norms affect how individuals punish. Pakistani subjects report significantly more distrust in governmental institutions, and thus granting of favors constitutes a greater violation of social norms in the US than it does in Pakistan. The greater violation of norms yields greater sanctions for US officials providing favors (as compared to Pakistani subjects). This ultimately culminates in different impacts of identical punishment regimes on corrupt behavior. The authors find that the same punishment regime reduces both bribes and favors in the US, but has no impact on bribes in Pakistan. In a follow up paper, Banuri and Eckel (2012b) observe the impact of a short term

punishment regime on behavior in the US and Pakistan. Utilizing a within-groups ABA design, they focus on the long term impact of short-run punishment. They find that temporary punishment regimes have no lasting impact on individual behavior, either in the US, or in Pakistan.

Before returning to the discussion of differences in behavior and looking at these results in light of Cameron et al.'s (2009) findings, we need to highlight the major design differences here. First, the game is repeated following Abbink et al. (2002) rather than the other two studies. The reason for this is that the study is designed to observe strategic punishment – punishment that is designed to change the behavior of the other players – rather than altruistic punishment – which is only punitive. Secondly, punishment can be allocated differentially between the two agents of bribery (rather than a single punishment allocation that affects both parties). This was designed to test the hypothesis that subjects punish government officials differently due to different norms of behavior. The repeated structure of the experiment (with stable groups) allows reputation formation, and thus allows accuracy in expectations.

Taking the punishment treatments first, we find that punishment has an impact: bribery is higher in Pakistan than the US, in line with the CPI. One could argue that the presence of differential allocation of punishment itself produces behavior consistent with CPI, since bribing behavior is now conditional on the expectation that the briber will be punished. Alternatively, one could also argue that the repeated structure with reputations allows expectations to be observed and reacted to, and thus what is left over is simply the impact of differences in values, rather than incorrect expectations. Uncertainty between firm and official (as to the probability of a bribe being reciprocated) is removed.

We can also conduct a similar thought experiment with the results in the no-punishment treatment. We find identical behavior between the US and Pakistan when punishment is not available.¹⁶ Taking these results in light of Barr and Serra's (2010) findings, a key design difference between these two studies (outside of the location) is repetition. As mentioned above, repetition allows actions to be observed and reacted to, and thus any biases in beliefs can be corrected and uncertainty removed. In Barr and Serra (2010) individuals formulate an expectation of whether a bribe will be reciprocated, and use both their values and their

¹⁶ This result is replicated in Banuri and Eckel (2012b) where subjects engaged in an ABA game design with the first 10 rounds with no punishment, the second 10 with punishment, and the final 10 with no punishment.

expectations to formulate their decision. Since subjects do not know the nationality of their counterparts, their expectations of others is dependent upon the information they have about their current institution. Individuals from corrupt countries may assign a higher subjective probability to the issuance/acceptance of a bribe by their counterpart. In Banuri and Eckel (2012b) this probability becomes known (through repeating the game), the only factor which can differ is the values (or what Rose-Ackerman terms the “moral costs” of bribing). Hence, if values differ across cultures, then we can expect differences in behavior when a game is repeated in different settings.

In an experiment related to the one carried out by Cameron et al. (2009), Alatas et al. (2009) use the data from their four-nation study to investigate the effect of gender and culture on corruption. Their results are striking in that they find the expected result of females being less corrupt to hold only in Australia. Behavior of both males and females in India, Indonesia, and Singapore was statistically indistinguishable. This is a particularly worrisome result, since it points to the difficulty of generalizing lab studies carried out in western cultures on corruption. It casts doubt on the policy recommendation of female participation in order to reduce corruption: of course one can still argue that participation should increase to reduce discrimination rather than an anti-corruption tool. This suggests that the importance of gender for corruption also varies by culture. They further extend the analysis by implementing a neutral frame with Australian subjects, and find that the gender differences hold when instructions are loaded, but not when instructions are neutral.¹⁷ The one thing we do note is that of the four countries studied, Australia ranks the highest on Hofstede’s (1980) masculinity index, suggesting that differences between genders would be starker in those cultures. Indeed, Gneezy et al. (2009) show that gender differences are subject to cultural forces.

Banuri and Eckel (2012b) implement an ABA design using the same game as above in the US and Pakistan. The study the long-term impacts of a short term policy shock on bribing behavior by conducting 10 rounds with no punishment, 10 rounds with punishment, and then 10 rounds without punishment. As in their previous experiment, subjects are matched once at the beginning of the session, and then keep their roles throughout the session. Their punishment between-subjects results are largely replicated. They show, however, that bribing behavior

¹⁷ This is not true for bribe acceptances, however. They find that a significantly lower percentage of women accept bribes in the neutral frame, but not in the loaded frame.

rebounds once the punishment institution is removed in both countries. This suggests that crackdowns and policies using moral arguments and values may not be effective in combating corruption. That is, culture and norms may not play a role in repeated bribing behavior even after a crackdown designed to signal a new norm. Finally, Li et al. (2011) conduct a variant of the repeated bribery game in Germany and China to identify the impact of gender, and individual vs. group-based decision-making in a two-person bribery game (with an externality affecting payment to a charity). Their individual treatments replicate the no-difference in behavior result of the no punishment treatment of Banuri and Eckel (2012a, 2012b).¹⁸ They find that group decisions lead to a higher level of corruption in both countries, and that all male groups are the most corrupt in Germany, while mixed groups are the most corrupt in China.

In our attempt to reconcile findings between the cross-cultural bribery studies, we find a few consistent patterns. First, norms do make a difference in the lab and can be studied as to how they impact corruption. Second, repeated games reduce the impact of norms on individual behavior, by reducing uncertainty among players in such interactive settings. Third, bribery games should also follow the trust literature and elicit expectations of corrupt behavior within the game. Fourth, since subjects become socialized to their new environment over time, policy interventions should be tested within the country itself. That is, policy recommendations (such as the one for gender) do not seem to be generalizable across cultures. Secondly, differences in externality designs need to be tested. It is entirely plausible that behavior in one culture differs when the externality is for a charity, while in another the externality affects peers. What is clear is that we are just beginning to scratch the surface of experiments in bribery.

Yet another aspect of corruption that is garnering interest in the lab is nepotism. This form of corruption refers to favoritism shown toward one's family or group, and is most often used with respect to favoritism in the public sector. A number of studies have found a relationship between the cultural prevalence of in-group favoritism and corruption (Hooper 1995; Banfield 1958; LaPalombara 1994; Gambetta 1993). Although Husted (1999) finds little empirical support for this relationship, he states that this is likely due the high correlation between individualism and GNP per capita (Hofstede 1997). While experimental research on nepotism has not directly addressed public service corruption in the same way as research on

¹⁸ The percentage of individuals offering a bribe is the same in Germany and China, though the bribe levels (conditional on offering a bribe) are higher in China. Since the US and Pakistan experiment was discrete choice, this result is replicated for China and Germany.

bribery, several studies examine nepotism as a form of discrimination in hiring decisions. Brandts and Sola (2007) implement the trust game between friends and others (in Spain), and show that friends are more likely to send each other higher amounts, even under the presence of social inefficiencies. Slonim and Garbarino (2008) study the impact of partner selection with US student subjects, and show that partner selection increases trust. Belot and Van de Ven (2009) show that children are more likely to select their friends at younger ages, but are more likely to select high performers when they are older, and friends are more likely to increase performance when selected by their friends.

Fershtman et al. (2005) experimentally make the distinction between discrimination and nepotism using naturally occurring groups in two different cultural contexts: university students in Belgium (Flemish versus Walloon); and adults in Israel (ultraorthodox Jews v. others). They conduct the Berg et al. (1995) trust game with students at two Flemish and two Walloon universities, with subject matched across universities.¹⁹ Their results show that both the Flemish and Walloon ethnic groups discriminated against the out-group (i.e., trusted the different ethnic group less than they would trust a stranger). In a parallel experiment, the authors conduct the trust game with undergraduate students at a secular and an ultraorthodox college in Israel.²⁰ They find that when ultraorthodox first-movers are told they will be matched with second-movers from the ultraorthodox college, subjects sent significantly higher amounts. The authors interpret this result as evidence for nepotism, i.e., individuals trusted their group member more than they would trust a stranger.

Banuri and Eckel (2012c) explicitly address the role of culture in nepotism by conducting a modified version of the trust game in the US and Pakistan. The two countries differ on their collectivist orientation: the US is characterized as highly individualistic, while Pakistan is characterized as highly collectivist (Hofstede, 1980). Furthermore, in societies with a weak rule of law, individuals may engage in nepotism so as to reduce the likelihood of betrayal when the

¹⁹ The treatments varied the information available about the recipient. In one treatment subjects were told they would be matched with students from a (different) Flemish university, while in a second treatment they were told they would be matched with students from a (different) Walloon university. A third treatment simply told the students they would be matched with students from a different university.

²⁰ All subjects in the trusting role belonged to an ultraorthodox group, while trustees belonged to either the ultraorthodox group or an unidentified group. The treatments varied the amount of information available about the responder. In one treatment, students were told that the responder was from the ultraorthodox college, while in another they were told the responder was from the secular college. They ran two additional treatments, one where the subjects were told that there was a 50% chance the responder was from either college, and finally, a treatment where subjects were told the student was from a different college.

outcome of a transaction depends on trust. The game is set up as follows. The individual in the trustor role is asked to select his counterpart in the trust game. The counterpart can be from his own primary group, or an anonymous player from the population. Individuals choosing a member from their own primary group do so at a cost to efficiency. The study uses naturally-occurring groups: In the US, the groups are based on Rice University's residential college system; in Pakistan the groups are based on undergraduate cohorts. In this study, nepotism is inefficient by design. That is, selecting an in-group member is costly for the dyad.²¹ The authors found that approximately 44% of subjects in the US (individualist) were willing to bear the costs to efficiency in order to be matched with a counterpart from their own group, whereas in Pakistan (collectivist), a significantly higher percentage (65%) of subjects were willing to bear the same costs. In the US, this decision is motivated by two factors, beliefs regarding trustworthiness, and risk preferences (to avoid betrayal). In Pakistan, however, beliefs regarding trustworthiness do not play a role. That is, Pakistani's are purely motivated by risk aversion when selecting their partners. US "nepotists"²² compensate for the costs to efficiency through higher levels of trust. Pakistani nepotists, however, do not compensate for these costs. Thus, costly nepotism is efficiency-neutral in the US, but reduces efficiency in Pakistan.

The studies cited above are different in their approach to nepotism. Fershtman et al. (2005) are interested in empirically establishing the difference between nepotism and discrimination, and manipulate information about the partner across treatments, while Banuri and Eckel (2012c) are interested in the level of nepotism across cultures. However, since the basis of the groups differs in both studies, they cannot be perfect comparisons. Nevertheless, we can draw a few insights from each of these studies. First, Fershtman et al. (2005) demonstrate the importance of groups at the micro-level when studying nepotism. Since both Belgium and Israeli societies are fairly individualistic at the aggregate level, group size or religiosity may be the driving factors behind their results. Furthermore, the US and Pakistan are farther apart on Hofstede's individualist-collectivist rankings, and on rule of law indices. The results (greater levels of nepotism in Pakistan driven by risk aversion) in light of this makes sense. Future

²¹ Selecting a non-in-group member as partner in this game means that the trust amount sent is multiplied by 3. Selecting an in-group member as partner means that the trust amount sent is multiplied by 2.5. Thus, there is a 0.5X cost of selecting an in-group member as partner.

²² By "nepotist" we mean subjects choosing to partner with their group members.

research would focus on the importance of group size and group strength on nepotistic preferences.

Conclusion

In this paper we have sketched out the channels through which culture interacts with corruption. We have argued that culture manifests itself through institutions and social norms. Experiments allow us to hold institutions constant in order to observe the impact of norms on behavior. A review of experimental studies on culture and corruption reveal several patterns. Barr and Serra (2010) find that bribery is related to country of origin in a one-shot game. Cameron et al. (2009) find evidence of variation in the propensity to engage in and punish bribery in the lab. Banuri and Eckel (2012a) also find that punishment of government officials varies due to norms of behavior, such that identical punishment institutions yield different corruption outcomes. The relationship between gender and corruption is also seemingly modified by culture, with western countries displaying a greater gender effect. We also observe nepotism in Israel, as opposed to discrimination in Belgium (Fershtman et al. 2005), and the propensity of Pakistanis to engage in costly nepotism as driven by risk preferences.

We have attempted to reconcile the findings of various lab studies. The discrepancy in results between the lab and the CPI may be due to unobserved variation in beliefs, or to uncontrolled differences in the effect of punishment across societies. Furthermore, the differences between one-shot and repeated bribery games are also open to further study. We hypothesize that the importance of norms for bribe offers and acceptances is reduced with repeated interactions. Finally, the extent to which individuals in different countries respond to externalities (and the type of externality they respond to) are also questions worthy of exploration.

Caution is advised in using corruption as a general term when conducting micro-level analyses. It is important to recognize different classes of corruption separately, and identify and prescribe remedies appropriately. In addition, it is important to standardize corruption games across different settings and cultures in order to parse the reasons for the discrepancies. The papers discussed above utilize slightly different experimental protocols, making comparisons across studies difficult. Each paper has a valid reason for conducting their specific games with their modifications, but future research should strive to facilitate comparisons.

Future research would also do well to start a dialogue with policy-makers by addressing different types of corruption, and combating each of those in a systematic way. We are starting to see efforts in this vein, with studies designed around different aspects of corruption, and remedies targeted for each type of corruption separately. In this manner, if we can utilize the differences in culture effectively, we can start using these methods to create effective anti-corruption measures. Formulating policies around social norms would be an effective avenue of future inquiry.

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