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Corruption, Complexity and Governance

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ABSTRACT

Improvements in anticorruption have mostly stagnated. We suggest a methodological failure as the main cause: the analysis of corruption as a complex phenomenon has been neglected. We draw on the available literature on corruption to show its complex and systemic character, which includes heterogeneous elements, nontrivial relationships, unpredictable evolution and changing dynamics. We conclude that governance instruments are vital elements of whichever anticorruption strategy is incorporated.

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INTRODUCTION

Anticorruption has become a central theme for society. The devastating effects of corruption on economic and social development have finally led both academic and policy-oriented agents to an "anti-corruption eruption" (Doig and Riley, 1998). Led by the World Bank Group (WBG), national governments, mass media, NGOs, the main international institutions and also the private sector now include the anti-corruption fight as a standing item on their agendas.

In recent years, this movement has produced an increasing amount of initiatives, funds and projects. However, evidence shows that initiatives put into place have fallen short of expectations. The World Bank Group itself has recognized that, on average, improvements in anticorruption have mostly stagnated (WBG, 2006, p. ii).

The failure of anticorruption efforts has propitiated an intense debate. Hypotheses, principles and instruments have been intensively re-visited. One of the main conclusions of the debate has been "the recognition that governments alone cannot contain corruption" (United Nations (UN), 2004, p. 17). In the new millennium, government regulation appears imperfect, incomplete and ineffective in curving corruption (Jordan et al, 2003). Thus, although much of the focus remains on public administration, and therefore on command-and-control instruments, it is now understood that other institutions of governance

from the private sector and the civil society are "key pillars of integrity" (UN, 2004, p. 84; WBG, 2006, p. i).

Embedded in the winds of change, the term governance has began to emerge in reports and conventions linked with anticorruption. Unfortunately, the theoretical discourse has not produced policy changes. Academics and politicians seem unwilling and unenthusiastic. This paper attempts to eliminate preventions against governance by analyzing the essence of both corruption and governance.

We suggest that, in curving corruption, the adoption of governance instruments, especially business ethical self-regulation, is not an option but a requirement. This argument is not theoretically new. The prevailing theory has linked corruption and poor governance so that strategies for strengthening good governance are proposed (Verón et al, 2006; Globerman and Shapiro, 2003). This paper's novelty has its roots on the explanation of why and how the success of anticorruption depends on the inclusion of governance.

Our central argument is built on corruption's nature. After drawing largely on the existing literature —which explains the big amount of bibliographical references—, we must conclude that corruption has been viewed as a complicated puzzle, whose pieces could be analyzed as independent elements and whose crisis could be resolved with traditional regulatory models from public administration science.

We argue that this framework is severely flawed. Corruption is not simply a complicated problem but rather an extremely complex phenomenon. This

theoretical call has a direct and important practical implication because *complex phenomena largely resists regulatory models, claiming for governance and specifically for ethics*.

The remainder of this article is structured as follows. After briefly summarizing the background of the "demand for governance", the next section describes corruption as a complex phenomenon. Once we distinguish between complicated problems and complex phenomena, with theoretical and practical arguments, we detail the complex nature of corruption as stemming from heterogeneous elements connected through non-trivial relationships, which form a system with its own evolution and dynamics. We conclude by underlining the bounded capacity of current regulatory strategies to handle such complexity in an effective way.

Any effective anti-corruption strategy must explicitly tackle that complexity. In this way, the last part of the article argues for the potential benefits of new governance instruments. After differentiating between horizontal and vertical instruments, we suggest that ethics may be the principal element in a successful vaccine for corruption Voluntary codes of conduct and corporate social responsibility programs could be good references and antecedents.

GOVERNANCE AND GOVERNMENT INSTRUMENTS

Governance is a broader concept than government. It refers to a "new method by which society is governed" (Rhodes, 1996, p. 653). Its popularity is derived "from its capacity —unlike that of the narrower term 'government'— to cover

the whole range of institutions and relationships involved in the process of governing" (Pierre and Peters, 2000, p. 1).

Governance is an essentially self-organizing and coordinating network of societal actors (Jordan et al, 2005). Thus, the essence of the transition from government to governance is the involvement of both private and public actors (Stoker, 1998). In a governance strategy, traditional government instruments —regulatory activity based on legal rules, procedures and administrative and judiciary sanctions—, which undoubtedly keep their importance, are complemented by other instruments of private actors, like soft law, co-regulation, self-regulation or voluntary agreements. In the root of this approach we find the hypothesis that voluntary principles and standards of conduct may be economically viable, operationally feasible (Sethi, 2005) and socially profitable.

New governance instruments are extending their presence in some realms, sectors and countries[1]. For instance, they are already popular in environmental policy, in which the regulatory activity has been shifted from traditional command-and-control orientation toward market instruments and private self-regulation (Howlett and Rayner, 2006; Pierre, 2000). In other many areas, like anticorruption, governance is also gaining supporters.

While in the past traditional interventionist policy instruments occupied a monopolistic place, it is now admitted that in order to curb corruption "a free media, vibrant civil society, engaged local communities and an independent middle class are crucial components for good governance… (Moreover), wider

engagement with the domestic private sector and multinationals is required" (WBG, 2006, pp. 12-13).

A large body of evidence shows positive correlation between good governance and poverty alleviation, as well as between corruption and poor governance (Buscaglia, 2001; Kaufmann, 1997; Bardhan, 1997; Lambsdorff, 1998b; Mauro, 1995). Over the last decade, there has been an increasing consensus that poor governance and corruption are inextricably linked. Consequently, international and multilateral institutions now promote programs to increase the quality of governance as a strategy to reduce the level of corruption. Thus, governance is always theoretically present but with diffuse and weak implementation or conviction. Analytical instruments for such engagement remain obstruce and anticorruption strategies retain regulations and traditional controls as their key pieces.

A few examples will shed some light. In relation with the private sector, the governance and anti-corruption report of the World Bank explicitly recommends the introduction of traditional "public sanctions to raise the cost to businesses to engage in corruption" (WBG, 2006, p. 13), forgetting other new softer-instruments, such as voluntary agreements or self-regulations, that the World Bank itself has presented in certain forums[2]. Recognizing "the adverse impact of poor governance (and the resulting corruption) on economic efficiency and growth, the International Monetary Found has turned its attention to a broader range of institutions reforms and governance issues in the reform programs it supports" (Wolf and Gürgen, 1996, p. 2-3). Despite this declaration, measures in this area (such as lifting price controls, opening up the trade system,

elimination of exchange controls or privatisation of public enterprises) have been mostly related to the reduction of the government's size, without the engagement of the private sector.

The creation of positive interactions among implicated agents, especially private actors, in order to design a new process of governing where government and private instruments work together is still a declaration of goodwill which needs much further development. In fact, this new demand presents three main problems: (1) how to involve private actors in the anticorruption policy formulation; (2) how to obtain the involvement of both public and private actors in the implementation of policy; and, finally, (3) how to engage national states if old principles of regulatory government and new modes of governance could compete and conflict with each other (Eberlein and Kerwer, 2004). The first two difficulties require careful analysis in order to choose effective and efficient instruments (Howlett and Rayner, 2006) for formulation and implementation (WBG, 2006). And the third one is not simpler.

To the question "has governance eclipsed government?", some authors (Jordan et al., 2005) suggest an *inertia* which comes from both a certain resilience of regulation — regulation is often very hard to eliminate— and some risk in the alternatives —the design of the "next generation strategies" is often left uncompleted (Coleman and Perl, 1999)-.

Corporate scandals, like Enron and WorldCom in the United States or Parmalat in Europe, have been dealt with from the traditional government perspective (that is, new regulations) and not from the governance paradigm. We suggest that this is an strategic error since the complex nature of corruption eludes simplistic solutions.

THE SITUATION IN THE ACADEMIC ARENA

The situation in the academic arena is similar; that is, governance gains theoretical relevance but most attention is still devoted to government instruments.

Fortunately, scholars have not remained oblivious to the theoretical and practical interest of corruption. During the last years, the topic has been visited and revisited from political science, economics, sociology, ethics and law, producing a growing body of research, which has greatly enhanced the general knowledge about corruption and its relationships with governance. However, as it has been underlined, "the growing field of empirical investigation into causes, consequences and 'cures' to corruption is still in its infancy" (Kaufmann, 1998, p. 141-142), and the abundant amount of investigations have not provided a true comprehension of the phenomenon (Goudie and Stavage, 1997). After two decades of deregulation and economic liberalization, levels of corruption do not seem to have dissipated (Véron et al., 2006). At the same time, many donor agencies continue promoting an agenda of "good governance" that seeks to address issues of accountability and transparency on a broader front. Academics continue arguing that "corruption ought to be seen as a symptom of the *state*'s fundamental weaknesses, not some basic or single determinant of society's ills" (Dhareswar et al., 2000, p. 136, our emphasis).

The literature (Michael, 2004; Ades and Di Tella, 1997) imputes the lack of performance to the absence of integrated approaches, ("systematic and

integrated way", in the World Bank's expression) putting into question even the very definition of corruption (Jain, 2001; Argandoña, 2003). We share this opinion, but we must go far beyond. An integrated approach is lacking because of a methodological failure: most of the approaches to curbing corruption are based on the definition of corruption as a complicated problem. But corruption is an '*extremely complex phenomenon*'. This is particularly important because complexity resists regulation and requires governance.

CORRUPTION AND COMPLEXITY

Most of scholars and experts have both repeatedly recognized that corruption is far from simple. Moreover, in international institutions and national governments, the mention of corruption as a complex phenomenon turns out to be more and more frequent. For instance, in his two interventions on corruption at the 2006 IMF/World Bank Group Annual Meeting, president Wolfowitz expressly indicated that the phenomenon is *extremely complex* and as such it must be fought. Like president Wolfowitz, academia has unanimously certified that corruption is a very difficult construct, born and developed in complexity (TI, 2004; Batty and Torrens, 2005; Collier, 2002; Rose-Ackerman, 1999; Klitgaard, 1988).

Complexity has been signaled as a main impediment to offering a compact and systematic framework for corruption. (Davis and Ruhe, 2003; Argandoña, 2001; Aidt, 2003; Bac, 1998; Rinaldi et al., 1998). It could explain differences in anticorruption results across countries (Gaviria, 2002); the difficulty to struggle

with money-laundering (Buchanan, 2004); the intricacy of legal enforcement of international contracts (Lambsdorff, 2002); or even the lack of a precise and comprehensive definition (Johnston, 2000), which is far from being just a semantic issue, since a concept's definition determines what gets modeled and what is empirically tested (Aidt, 2003).

Complexity seems to rear its head in all corruption-related issues. Some authors qualify the effect of corruption on cross-border investment as a very complex one (Rose-Ackerman, 1999). Complexity is included as a key factor on the individual decisions to engage in corruption (Guerrero and Rodríguez-Oreggia, 2005). The relationships between corruption and the effectiveness of a country's legal system are defined as affected by complexity (Jain, 2001). The complex connections between corruption and the rule of law are also pointed out in the literature (Herzfeld and Weiss, 2003). Even the inner complexity of bureaucratic processes is highlighted (Buscaglia, 2001) .

Although complexity is itself signaled as a factor that favors corruption (Lambert-Mogiliansky; 2002), its nature has been rarely examined. Many scholars recognize the necessity for a better understanding of the complexities that underpin the existence and persistence of corruption (Campos et al., 1999). Indeed, in order to adopt a "systematic and consistent treatment of governance issue across countries", the mere affirmation that corruption exhibits a high degree of complexity is not enough. Science must also be able to comprehend the nature of that complexity. The success in dealing with that challenge has been marginal.

Complexity has not always functioned as a spur for wide and interdisciplinary efforts. On occasions, the effect of integrating complexity into anti-corruption programs has been the "despair and resignation on the part of those who are concerned about it" (Bardhan, 1997, p.1321). In other instances, different procedures have been applied trying to reduce complexity. Too frequently, the procedure has consisted in increasing mathematical sophistication and reducing the systemic view, producing stylized studies without practical applications (Vromen, 2001). Unfortunately, in most attempts to understand, predict and develop courses of anticorruption action, strategies applied by international organizations and countries participate in this mainstream.

We suggest that those procedures do not exhibit an adequate understanding of the theoretical framework of complex systems. Concretely, they have implicitly confused complex and complicated problems. Corruption, which is *a extremely complex problem*, has been treated as a complicated one.

FROM COMPLICATED PROBLEMS TO COMPLEX PHENOMENA

The essential difference between complicated and complex problems is that the former can be reduced to a set of simple cause-effect problems, so that its complicated nature often rests on the scale. Its reduction to *a set of problems* would permit to successfully combat corruption with *a set of regulations* focused on the *set of single causes*.

On the opposite, complex problems cannot be reduced to an assembly of simple components (Goodwin, 1994) since some special features are present,

like the need of understanding unique local conditions (Stacey, 1995), interdependency (Holland, 1995) non-linearity or non-triviality (Lorenz, 1993), capacity to adaptation and novelty as conditions change (Kauffman, 1995). Even if uncertainty is associated with both complicated and complex problems, the former, whose major difficulty is coordination, can be approached with greater degree of optimism than complex problems.

The literature on corruption has reduced the issue to an assembly of simple political (Caselli and Morelli, 2004), commercial (Rose-Ackerman, 1999; Elliot, 1997) or behavioral relationships, susceptible of aggregation (Transparency International, 2000; Kaufman, 1998) and solvable through regulations and control-and-command instruments. Solutions that are wedded to trivial and static approaches have been consequently applied.

For instance, in a large number of occasions, the director of the World Bank Institute has suggested that "corruption = poor governance" (Kaufmann, 2001), identifying corruption as a complicated problem of governance weakness, which can be fought with the adoption of a host of independent policies such as enforcement of property rights (Dollar and Levin, 2006), accountability and transparency requirements (Everett et al, 2006; Deininger and Mpuga, 2005; Rock and Bonnett, 2004) or quality regulatory proceedings (Huang and Wei, 2006).

We suggest that this view is incorrect. If corruption was a complicated problem of governance weakness, the current knowledge of simple and independent cause-effect relationships would be enough to solve it (Rodriguez et al, 2005). We argue that corruption often takes forms more complex and

subtle than simple transactions and as a result the complexity perspective —
which discards the aggregation methodology— is needed (Michael, 2004; Aidt,
2003).

The nature of corruption as an 'extremely complex phenomenon' must be
understood, internalized and added to models and strategies, in order to ensure
the systematic, integrated and consistent treatment of governance and
anticorruption measures demanded by the World Bank.

The Incorporation of Complexity

In spite of its intricate nature, the interest in complexity —traditionally
circumscribed to natural sciences— has largely extended across other academic
disciplines since 1996[3]. The profound recognition that the world is complex has
led both economics and management science to accept that "economic
organization is formidably complex and economic agents are subject to very
real cognitive limits" (Williamson, 1996, p.311).

In recent years, the description of the firm as a 'complex adaptative system'
(Foster, 2005; Boisot and Child, 1999) with dynamic efficiency (Loasby, 1998;
Nelson and Winter, 1982) or the view of economics as 'self-organization'
(Foster, 1997) have received considerable attention.

In the context of literature on economics and politics, implications of
complexity have affected certain academic topics, such as the law and
economics of contracts (Eggleston et al., 2000), international negotiation

strategies (Kumar et al., 2005), business cycles (Grandmont, 1985), asymmetric information models or choice theory (Brock and Durlauf, 1995).

The literature on corruption has not incorporated complexity. Theories and models were dominated by the view that we could simplify and distil the essence of things by decomposition and aggregation (Batty and Torrens, 2005).

More oriented to forecasting than to understanding, this dominant framework[4] has tested hypothetical linear connections between a specific cause, usually located in the environment, and a specific effect, usually in a part of the system (Stacey, 1995). Thus, corruption is tackled as an aggregation or set of linear problems which operate in a state of stable equilibrium: i.e., corruption and state intervention; corruption and democracy; corruption and growth, etc.

This dominant approach has been successful in offering many and important advances in the knowledge of the simple cause-effect relationships between corruption and other variables running from political, economical, institutional and social elements. Using mathematical and statistical analysis, it has derived the basic properties of each linear connection and has tested its hypotheses using cross-sectional data obtained from statistics or interviews. Moreover, experts believe their conclusions are enough to identify —not totally but largely— the environmental changes that must be carried out and therefore have restructured the available strategies in these theoretically predictable ways (Zajac and Kraatz, 1993). In consequence, anticorruption strategies can be described as a natural reaction to an increasing amount of theoretical evidence.

However, those theoretical linear relationships —stable and significant under strict conditions— have turned out to be ambiguous, weak and contradictory in their empirical applications. Finally, applied strategies —such as the reduction of a state's size, privatizations or decentralization (Caselli and Morelli, 2004)— have failed to provide a cross-national satisfactory reduction in corruption levels. Evidence has been weak (Hopkin, 2002) and conclusions are hard to draw (Lambsdorff, 2002).

The recent evolution of transition economies expresses the confusion (see e.g. Boycko et al., 1995, Jones et al., 2000; Black et al., 2000). As Li (2004) successfully shows, theories cannot explained why China, ranking the lowest of all 48 countries on the climate environment index, attracts approximately $50 billion foreign direct investment whereas India, which ranks at 31st, attracts only one-tenth of this amount.

We suggest that for corruption, the knowledge of simple and independent cause-effect relationships is not enough (Aidt, 2003). Corruption is not a complicated chain of independent events, which may be aggregated around a set of linear cause-effect relationships. Corruption is a phenomenon. If we expect to develop efficient anticorruption systems, the lens of complexity science are needed.

Generators of Complexity

When referring to governance and anticorruption, few researchers (Michael, 2004) explicitly advocate for applying the complexity perspective. Of course,

both agreeing on what complexity means (Rosser, 1999) and incorporating complexity into theoretical models are difficult challenges.

The quality of being complex is not easily described. It is a special attribute that refers to many diverse aspects and its whole analysis largely exceeds the goals of this article[5]. However, in the vast number of interdisciplinary studies and proposals referred to the complex reality, scholars have identified some 'generators' of complexity (Richardson, 2005), whose presence increases the uncertainty and, therefore, the difficulty of decision-making.

In the realm of economics and organizational science (Brian et al, 1997), authors suggest that complexity presents at least four main "generators":

(a) The number of heterogeneous elements in the system (MacLeod and Pingle, 2005; Cilliers, 2005). A greater number of elements and a higher level of heterogeneity among them increase the complexity.

(b) The non-trivial interaction among heterogeneous elements (Marengo and Dosi, 2005; Boisot and Child, 1999). Trivial relationships are simpler than non-linear or multi-causal relationships.

(c) Continual adaptation to environmental changes by learning and evolving elements (Simon, 2002[6]). Evolution produces surprising behavior of the system, which increases the complexity (Michael, 2004).

(d) Perpetual novelty (Day, 1994; Batty and Torrens, 2005, Kaufmann, 1995), which creates new complex structures.

The verification of the presence or absence of the above complexity generators in corruption should permit us to bring out its nature. With this

perspective, we have carried out an exhaustive interdisciplinary revision of the available literature. Economic, political, legal, ethical and sociological sources have been analyzed in order to detect the relevant complexity generators. We conclude that the four factors above are present in corruption. This alignment between corruption and complexity leads to our set of hypotheses:

H1: *The phenomenon of corruption presents a systemic structure formed by a high number of heterogeneous elements*

H2: *Relationships among elements are essentially non-trivial interactions.*

H3: *Corrupt agents keep on changing in an adaptive process in order to survive in an evolving environment.*

H4: *Because its hierarchical structure, corruption is capable of novelty, by emerging into states that are not apparent from its constituents.*

Elements that Define Corruption

Literature has unanimously recognized that corruption is

(a) A *many-faceted* (Aidt, 2003) and *multidimensional* (Von Alemann, 2004) phenomenon. Focusing on both causes and consequences (Treisman, 2000; Mauro, 1998; Kaufman, 1997), analyses suggest that corruption depends upon (and has effects on) a host of factors.

(b) Differences among factors support the heterogeneity hypothesis, so that corruption must be tackled as a *multidisciplinary* phenomenon (Jain,

2001; Michael, 2004) related with many different features coming from politics, economics or law and depending on countries' culture, sociology or ethics. This is a new and very important step that explicitly recognizes that those heterogeneous dimensions interact in various and complex ways (Gaviria, 2002).

Because of (a) we have a large juxtaposition of elements, which may present complicated links, but not necessarily complexity. Because of (b) we have a system, that is, many forces working behind the scenes which interact forming a whole phenomenon called corruption (Backlund, 2000). The whole —corruption— cannot be divided into independent parts —i.e. poor governance, market distortion, dishonesty, bureaucratic malpractice, etc.— and its dynamics cannot be described through the dynamics of its elements.

Our suggestion is that corruption is a system and, therefore, systemic descriptions represent the only way to a correct understanding. This is expressed as:

H1: *The phenomenon of corruption presents a systemic structure formed by a high number of heterogeneous elements*

The analysis of a systemic structure habitually includes two main phases: the description of the structure—in which the insider heterogeneous elements are listed— and the description of its dynamics.

System's structure. The description of what elements get modeled and measured depends on the adopted definition. This is a problem because one of

the more important objectives of the anticorruption effort has been to offer a definition of corruption (Tanzi, 1998; Vishny, 1993; Senturia 1931) which convinces each implicated science.

From the seminal definition (Senturia, 1931) in the *Encyclopaedia of the Social Science* —"the misuse of public office for private gain"—, most authors confess that there are many problems in the common use of terms (Bardhan, 1997). Problems are so hard that it results difficult "to define (corruption) in terms that are clear and universally valid" (Argandoña, 2003, p.255). Indeed, "everyone that writes about (corruption) first tries to define it" (Jain, 2001, p.104).

In order to avoid this problematic question, we will not employ a definition but exclusively a list of the necessary elements. Literature on corruption across disciplines (Schneider and Enste, 2000; Bardhan, 1996) accepts[7] that three key features are present in every corrupt transaction (Jain, 2001; Klitgaard, 1988; Argandoña, 1999):

(1) the opportunity: a discretionary power over the allocation of resources;

(2) the profit: higher rents associated with its misuse and

(3) the risk: high probability of evading regulations/penalties associated with the wrongdoing

Following this view, we can make a qualitative picture of corruption's elements.

(1) Opportunity: the discretionary power

In modern societies, delegation of some power is assumed as a needed element for performance and efficiency. Both economic organizations and public institutions —government is commonly assigned the role of the principal

in agency theory— are complex team-productions (Alchian and Demsetz, 1972). By essence and structure, they are obligated to delegate to some persons specific tasks, including the power over the allocation of resources (Foss and Laursen, 2005). Because in complex societies both knowledge and information are distributed in an asymmetric way (Kunz and Pfa, 2002), some autonomy — a discretionary power— over the allocation of the resources is on the agent's hands (Giddens, 1983).

Under the often reasonable assumptions that, in complex organizations, contractual designs of monitoring (Guth et al, 1998) and compensation systems (Pendergast, 1999) are not totally efficient, the discretionary power creates a *potential space of opacity*. Under the equally reasonable assumptions that differences of interests may exist (Williamson, 1999; Jensen and Meckling, 1976) and honesty may often be low (Casdelli and Morelli, 2004), the agent's autonomy may create a *potentially risky space of opacity*. And corruption flourishes behind opacity.

The literature suggests that this space of opacity and its consequences may be more or less damaging for the general welfare depending on the design of the power delegation systems in both the container —weak institutions— and the content —weak policies— (Johnson et al, 2000).

1.1.- Weak institutions

Researchers have described corruption as one of the negative effects of weak institutional designs (Rose-Ackerman, 1999, Shleifer and Vishny, 1993, Mauro, 1995, Wei, 2000 and 2001, Huang and Wei; 2006). The weaknesses

come from both political processes and rules of the socioeconomic game, which are united to the form and method of delegation (Banfield, 1975; Kitgaard, 1988).

In general terms, the general literature has mostly shown that a stable democratic system has a lower risk of corruption than a dictatorship or an unstable democracy (Sung, 2004; Sandholtz and Koetzle, 2000; Goldsmith, 1999).

In relation with *political processes*, competition and participation (Mendez and Sepulveda, 2006; Ades and Di Tella, 1999; Bliss and Di Tella, 1997), stability (Fredriksson and Svensson, 2003), high education (Hauk and Sáez-Martí, 2002), political rights (Ades and Di Tella, 1997), free press (Brunetti and Weder, 2003), high levels of civil monitoring (Kaufmann, 1997), etc. appear as contributing to a democracy's success and, thereby, their absence represents an opportunity for corruption. Although caution is suggested because, given a legal system, this factor itself can not explain the difference in corruption levels between regions, some studies find empirical evidence that more long-standing democracies are less corrupt (Treisman, 2000).

In relation with the *rules of the game*, no property rights (Acemoglu and Verdier, 2000), no contract enforcement (Polinsky and Shavell, 2001; Vishny, 1995) and the absence of efficient, politically and financially independent anti-corruption agencies (Doig, 1995) tend to be related with higher levels of corruption.

1.2.- Weak policies

Certain designs of public services could also provide rich opportunities for corruption to prosper. Corruption can be seen as the most prominent example of an illegal and opaque exchange between the political/administrative market and the economic/social market intended for personal gain (Ades and Di Tella, 1997).

On the political/administrative hand, efficient designs of regulations, which include performance and efficiency, have been investigated in order to address reforms that seek the rationalization of public service —including the simplification and reduction of bureaucratic power by promoting greater accountability (Rock and Bonett, 2004), transparency (Bac, 2001), competition (Laffont and N´Guessan, 1999; Ades and Di Tella, 1999) and incentives (Van Rijckeghem and Weder, 2001; Besley and McLaren, 1993); the desire to replace economic state powers with market mechanisms (Clarke and Xu, 2002) or decentralization (Fisman and Gatti, 2002; Prud'homme, 1995; Tanzi, 1995).

On the economic/social hand, the weak design has been analyzed in relation with the functioning of economic forces in an environment in which a large amount of resources are administered by the state (Tanzi, 1994). There is evidence that corruption is associated with more unofficial activity and weak market rules (Friedman et al., 2000). Its performance has been studied in certain states of "corruption's development", related with the number and size of players —'market' and 'parochial' corruption[8]—, their mutual relationships —collusion or non-collusion systems (Foellmi and Oechslin, 2007, Rose-Ackerman, 1999; Bardhan, 1997)—, the behavioral attitudes of both parties of corrupt

contract (Guerrero and Rodríguez-Oreggia, 2006), the asymmetry among the players or the source of the rent, etc.

(2) Profit: the extraction of the rents.

A weak and inefficient public sector may offer some discretionary and opaque power, which itself is an opportunity for corruption. However, corruption is a calculative crime, not a crime of passion (Klitgaard, 1988). The opportunity is not sufficient. If the corrupt agent is a rational one, in the decision to bribe or to accept being bribed, both the profit —rent-seeking behavior (Grossman and Helpman, 1994)— and the cost play a principal role.

Corruption is associated with scenarios where the extraction of economic rents for private gain (Nitzan, 1994; Krueguer, 1990) is available (Friedman et al, 2000). In those scenarios, rent-seeking bureaucrats who distribute commodities may take bribes; and governments who allocate commodities at low prices diverting public funds may extort firms (Fisman and Svensson, 2006) or may be extorted by corporations looking for government benefits and/or costs avoidance (Wu, 2005).

Several studies have found cross-country evidence on the connection between corruption and higher rents coming from active industrial policy and low degrees of openness (Wei, 2000; Ades and Di Tella, 1997, 1999). Trade restrictions (Mauro, 1998), favoritism in industrial policy (Anechiaricio and Jacobs, 1998) such as subsidies and tax deductions (Auriol and Warlters 2005; Sanyal et al., 2000) price control and government - controlled provision of credits (Gupta and Chaudhuri, 1997) are some of the underlined factors which permit the capture and extortíon in public purchases (Auriol, 2006).

(3) Low risk: penalties and sanctions

As a rational agent, the corrupter must calculate both costs and profits. Corruption takes place in a double spectrum of costs: firstly, as an often illegal activity, corruption exposes the agent to the legal penalty system (Johnson et al., 1998); secondly, as an unethical activity, corruption is open to social sanctions. Both are very different across countries, and this difference could be stressed as a source of variation in corruption levels across countries.

In relation with the legal penalty system, a poorly-functioning judiciary could be considered as an incentive for corrupt acts. Where the system has no monetary (Goroupa and Klerman, 2004) or non-monetary penalties; where it presents leniency (Buccirossi and Spagnolo, 2006) because the law is not applied or has not effect at all, the cost of crime will be low, so that opportunities for the rational corrupter increase.

In that sense, two policies have been extensively considered: the rationalization of sanctions (Hindriks et al., 1999; Bowles and Garoupa, 1997; Chander and Wilde, 1992) and the rationalization of incentives for enforcers, such as paying rewards (Polinsky and Shavell, 2001; Mookherjee and Png, 1995; Becker and Stigler, 1974).

In relation with social penalties, sociology and comparative economics suggest that institutional efforts against corruption are always incomplete strategies (Banerjee, 1997) if socio-cultural factors are not included. Socio-cultural factors have to do with attitudes toward corruption.

In this line of reasoning, religious tradition (Treisman, 2000; La Porta et al, 1997); civil vs. common law systems (Treisman, 2000); or individualism vs. collectivism (Husted, 1999) have been directly examined. Moreover, high corruption levels have also been related with inequality (You and Khagram, 2004) and low economic growth, but there appears to be a vicious circle because poor countries tolerate corruption better than rich countries.

The behavior of corruption's system: In the previous section, we have shown corruption as depending upon a host of very different factors. A systemic structure formed by a high number of heterogeneous elements would be complicated but possible to cope with if interactions among those elements were trivial.

If that was the case with corruption, once the systemic elements had been identified, the parochial re-design of the environment where economic, political and social opportunities, profits and risks emerge —and flourish—should be trivial.

Even though a large number of corruption models have accepted the triviality hypothesis, it does not seem to be the most appropriate. There is evidence suggesting that relationships between corruption and economic, institutional, political and cultural factors which theoretically create profitable and low-risk opportunities for corruption tend to be non-trivial.

This is expressed in our second hypothesis:

H2: Relationships among elements are essentially non-trivial interactions

Those who model corruption must know that they face several serious complications due to the fact that relationships among the system's elements are non-trivial. Circular causality, endogeneity, data problems and difficulties with the measure of errors must be noted.

a) Causal connections

Firstly, there is evidence enough to suggest that some of the important relationships described around corruption are two-way causal connections. Some examples of mutual interactions will illustrate this point. From the seminal work on the subject (Mauro, 1995), a large number of empirical cross-country studies has appeared to prove a negative relationship between corruption and income. Corruption would harm growth by reducing the incentives to invest. This distorts the allocation of resources, leading to underinvestment and poor growth rates.

However, others have shown that corruption seems to be itself a function of income. There is a reverse causal relation so that environments of poverty are likely to generate corruption (Mendez and Sepulveda, 2006). Its incidence is directly affected by economic wealth because of the greater anticorruption budget of rich countries[9]. The impact of income on corruption is visible in other ways. For example, corruption seems an important impediment for FDI in developed economies, but not that much in developing countries (Egger and Winner, 2006).

Bureaucratic malpractice influences but is also influenced by the level of development (Blackburn et al., 2006; Haque and Kneller, 2004). The same circular effect occurs in relation with reforms (Costa, 2006). It is not clear

whether it is the institutional lack of quality that favors corruption or the people's action that weakens institutions (Guerrero and Rodriguez-Oreggia, 2006). Two-way causality has been also detected between corruption and poverty (Chetwynd et al., 2003), foreign aid (Tavares, 2003) and inequality (You and Khagram, 2004).

b) Endogeneity

The existence of problems at the moment of identifying the causal direction and deciding what variables will be utilized as instruments is obviously crucial for anti-corruption strategies. If those problems are not controlled, results can not be trusted. If the dependence between explanatory variables and the explained variable creates a circular causality relationship, which is difficult to disentangle, a problem of endogeneity for any econometric approach to the issue emerges.

In fact, many of the corruption models suffer from potential endogeneity. Endogeneity has been signaled, for instance, between red tape and corruption (Guriev, 2004); corruption and income (Cole, 2006; Carkovic and Levine, 2005); corruption and competition (Emerson, 2006) and corruption and centralization (Glaecer and Saks, 2006).

Some techniques allow one to partially overcome this problem, but they are not sufficient. For instance, in the analysis of the effects of corruption on economic growth, it has been suggested to control for endogeneity by using an index of ethno-linguistic fractionalization as an instrument (Mauro, 1995) -or other similar econometric methods (Arellano et al., 1991, 1995)[10]-, but this

instrument might be directly or indirectly correlated with economic growth (Easterly and Levine, 1997) and in consequence, it is not a valid instrumental variable. Therefore, both could respond simultaneously to an omitted cultural, legal or historical factor, such as the cultural dispositions toward leisure or morality (Mendez and Sepulveda, 2006).

In a widely cited paper on the causes of corruption (Treisman, 2000), instrumental variables are used to correct for endogeneity. That technique only works for one of the explanatory variables, so that the author acknowledges that, because of endogeneity problems "a large question mark, therefore, remains over the impact of some of the other key variables". (Treisman, 2000, p.408)

The same problem of circular causality arises among factors that are thought to explain corruption. For instance, democracy and openness to trade are included as explanatory variables in the equation (Treisman, 2000). But any of both variables can be (and almost certainly is) a cause and an effect of the other (Rigobon and Rodrik, 2005). That is, democracy can foster openness and openness can fuel demands for more political liberties.[11].

It is reasonable to think there will be problems of collinearity between many of the right-hand side variables in corruption models. Explanatory variables like culture, religion and legal tradition are likely to be correlated —mainly because they are measuring similar things or because they depend on common explanatory variables—. It then becomes difficult to distinguish their individual influences on the corruption variable. At a more general level, this happens as the available theories propose an enormous number of independent variables

that, in turn, can be mutually dependent or simultaneously driven by other variables.

The resulting problems of model specification are obvious and serious. Since there is not a unique specific theory available for the determinants of corruption, researchers can only experiment by using alternative variables in their econometric models. This situation increases the risk of model misspecification: finding the correct model is not guaranteed at all.

c) Data

Problems go even further when testing any chosen model since results may largely depend on data (Glaeser and Sacks, 2006). Data regarding the level of corruption are often taken from the Corruption Perception Index (CPI) compiled by Transparency International. This indicator has become the most popular measure in cross-national statistical analyses over the last several years. CPI measures levels of perceived corruption in different countries on a scale from 0 to 10, based on various sources of survey data. Literature suggests that CPI results are imprecise because of both the CPI's definition and its accuracy (Johnston; 2001). In relation with the definition, Transparency International (TI, 2000) admits that CPI components often do not measure the same thing, so that data vary widely from one year to the next.

The accuracy of CPI is also problematic because of its dependency on the accuracy of the components in a particular year (averaging over several numbers tends to improve accuracy). The CPI accuracy is also compromised by

the fact that the index combines component measures that cover different set of countries.

Researchers and practitioners should be aware of measurement errors and omitted-variables bias (You and Khagram, 2004). And, since data on corruption are based on perception indices, typically constructed from experts' assessments of overall corruption in a country, there is an additional concern on perception biases (Fisman and Svensson, 2006). The CPI itself suffers from an endogeneity problem because the observers' perceptions about corruption change with their perceptions about other variables, like macroeconomic performance (Seligson, 2006). Therefore, and although the CPI is probably the best measure currently available for a worldwide ranking, its ratings should be interpreted with some reservation.

Corruption as a dynamic phenomenon. The non-trivial systemic character is the key first ingredient for complexity, but not the only one. The key division between complicated and complex systems depends critically upon how the system changes and is transformed (Richardson, 2005).

In that sense, two types of changes (Lo Presti, 1996; Richardson, 2005) can be distinguished: evolution and novelty.

1. Changes that are responses to exogenous perturbations –the *evolution* of the system-. There are two categories depending on how the system evolves:

a. Systems with observable logic links between their past and future events. Past evidence can be used to make reasonably accurate forecasts.

b. Systems where the future cannot be predicted in any reliable way. The system can respond in more than one way to environmental perturbations. The system can surprise the observers, displaying a wide-range of different qualitative behaviors. We suggest that corruption presents surprising behavior, which is summarized in our third hypothesis

H3: *the corruption system is capable of surprising behaviors, by responding in more than one way to any change in its environment.*

2. Endogenous changes emerging without exogenous stimuli —the *novelty* of the system—-. This dimension describes the self-transformation of the system, which responds creatively to any new internal behavior, changes in preferences or new knowledge (Allen and Torrens, 2005).

We suggest that due to the hierarchical character of the corruption, the phenomenon presents 'novelty', as expressed in the next hypothesis:

H4: *The corruption system is capable of 'novelty', by evolving into states that are not apparent from its constituents.*

Corruption's evolution. The description of corruption as an *evolutionary phenomenon* is generally accepted. Some authors (Bardhan, 1997) portray corruption as a tenacious problem whose structure evolves over times and

places. Others (Ades and Di Tella, 1997) reach an identical conclusion for political corruption. It has been suggested that, since corruption takes place in frameworks formed by legal, economic, cultural and political elements, the phenomenon is necessarily open to institutional dynamism (Andvig and Moene, 1990; Hodgson, 2002). However, the literature has also neglected the analysis of these evolutionary behaviors.

We believe corruption does not follow simple patterns of behavior in answer to environmental perturbations. Societies undergo economic, political and cultural changes that affect individual decision-making and the development of corrupt behaviors. Corrupt agents will survive if they can learn from changes and act more efficiently than governments and markets, in an adaptive process. Because short-term fluctuations in the overall system are intrinsically unpredictable, corrupt behavior survives in a changing society. And corruption adds complexity since the answer of corrupters to changes cannot be predicted in the short and medium-term.

Moreover, as it has been widely demonstrated (Klitgaard, 1988), corruption comes in many guises: bribery (Williams and Beare, 1999), extortion and evasion (Hindriks et al., 1999), fraud and trafficking (Bowles et al., 2000), embezzlement (Peterson and Gibson, 2003), nepotism and cronyism (Prendergast and Topel, 1996), etc. Campaigns to minimize the opportunities and incentives of a concrete form of corruption may induce the growth of another form because corrupters may quickly adapt their behavior in order to minimize the cost of penalties or social pressures. Thus, the fight against corruption and corrupt efforts may be correlated (Lui, 1986) and the "absolute

integrity" results impossible (Anerchiarico and Jacobs, 1996). Because the legal system seems unable to keep pace with corrupters, corruption may continually expand its capacity to answer[12].

Corruption's 'novelty'. In addition to this adaptive character, the literature has timidly noted that, even without the influence of exogenous perturbations that might cause a reaction, the corrupt system itself changes (Choi and Thum, 2003; Aidth, 2003; Rinaldi et al., 1998; Bichelli and Rovelli, 1995). We consider that the description of corruption as a self-transforming and creative phenomenon is essential to understand the nature of its complexity as long as this factor is able to produce a high degree of behavioral complexity.

Literature on corruption has shown two different sources of novelty: the historical and the hierarchical character of corruption. Both are consequences of the social character of mankind. Corrupt individuals desire or need to interact with other corrupt individuals in the same society or organization, creating a particular history for the corrupt system[13]. This dimension is largely connected with the hierarchical character of the phenomenon. The incentives of an individual to be corrupt are affected by others not only because of the desire of approval, but also because that individual is part of a system, and not an isolated element.

Although it is from the decisions of self-interested individuals that corruption finally stems (Husted, 1999), the phenomenon presents a social facet. A decade ago, political and sociological studies were focused on the broad range of

individual behaviors and the official vice, acting or not in "organized" (Celantani ad Ganuza, 2002) or mafia groups (Gambetta, 1993). Nowadays, most of the economic analysis on corruption focuses on collective corruption entailing voluntary collaboration among self-interested accomplices. This social nature is viewed as a hierarchical nature (Mishra, 2002; Bag, 1997; Bac, 1996; Mookherjee and Png, 1995; Kofman and Lawarree 1993; Basu et al, 1992).

Controlling corruption in hierarchies introduces new complexity in the analysis of this unethical behavior (Brass et al., 1998; Bag, 1997; Bac, 1996) because

(a) supervisory procedures must be added (Bac, 1998) and

(b) models must include dissemination mechanisms working from upper levels to lower levels, and the other way around since corruption can spread in both directions (Goudie and Stasavage, 1997).

In summary, corruption must be considered as a complex phenomenon because of the number and heterogeneity of its elements that, when they meet, form non-trivial links. These links in turn pave the way to creative changes following both the environment's evolution and the inner developments of the complex system. Any effective anti-corruption strategy must explicitly tackle this complexity.

IMPLICATIONS

Since corruption is a complex phenomenon formed by heterogeneous elements linked with nontrivial relationships, the fight against corrupt practices needs to

be conducted on a broad front. Curbing corruption must avoid the use of simple and instrumental strategies and must rely on a wide variety of actors and issues. Indicators based on single and linear cause-effect relationships (supposedly manageable by command-and-control instruments) are not enough. A new approach is needed.

The increasing complexity of governing cannot be addressed only in a hierarchical direction (horizontal instruments) but demands the development of continuing interaction (vertical instruments) among different actors and interdisciplinary indicators, that is, *governance* (Rhodes, 1997). While information, resources and capacity for anticorruption are widely dispersed and asymmetrically distributed between diverse public and private organizations and sciences, any efficient anticorruption strategy must transform that plurality into an unique governance design.

However, the process of building and institutionalising a "self-organising network" for anticorruption is not easy. While relationships between government and private organizations or individuals are based on coercion and control, governance interactions between public and private organizations located in different social levels must be rooted in *mutual trust* and *negotiated rules of game*. Government designs *horizontal* instruments for coercion which connect single cause with single effect; on the contrary, governance needs *vertical* instruments with capacity to connect a plurality of causes and effects.

Mutual trust and negotiation with non-state actors are not habitual for policy-makers, but the shift from government to governance will be only possible if this new perspective is adopted and vertical instruments are developed and

implemented. To obtain the involvement of the non-state actors, the World Bank suggests the design of instruments "that give *voice* to beneficiaries (such as beneficiary surveys and citizen scorecards)"; "enabling the development of independent and competitive media that can investigate and report on governance work" or that create "opportunities for (civil society) participation and oversight" (WBG, 2006, pp. 12 -14, its emphasis), in which the business community is considered a "crucial ally" against corruption (WBG, 2006, p. 17). Sadly, its appeals to governance are still limited to the methodological arena. Thus, traditional indicators continue being instrumental and focused on coercive norms.

In the line of the modern moral philosophy, most of the literature on corruption continues to focus on sanctions. Duties and norms are emphasized, but dispositions and judgement are excluded (Melé, 2005). Similarly, institutional pressures rather than strategic analysis of social issues and stakeholders seem to guide some decision-making of multinational companies with respect to corporate social responsibility (Husted and Allen, 2006). Ethical programs from international institutions tend to be adopted primarily as a response to institutional guidelines, that is, as *horizontal* instruments.

But this is a very weak vision of ethics. In fact, ethics is the *most vertical* instrument, which allows us to explain the union between the person and his/her actions (Aristotle, 2000). Ethics contains all the person's facets, including rules, habits, dispositions and goals. A complete ethical understanding results an instrument able to link diverse issues and actors in the fight against corruption.

Corrupt behaviour must be understood as a *prâxis*, that is, as an action which is the result of many diverse past activities affected by institutional rules, social norms, personal habits or individual and organizational values. While government regulations investigate *what* causes corruption, and its resolution through the change a concrete cause, ethics investigates *why* corruption exists, obligating us to understand simultaneously dispositions, rules, values and goods.

Ethics is often presented in a fragmented manner as a separate set of rules, principles, values and virtues (Melé, 2005). However, those elements form a unity. This leads us to an appropriate analogy. Corruption is a complex phenomenon, whose diverse elements form a unity. Analysis and solution obligates us to employ similar instruments, that is, complete governance instruments, such as ethics.

Our conclusion is that, because of its nature of complex social phenomenon, corruption needs governance solutions. Regulation works exclusively in the horizontal direction. We need vertical instruments, which make it possible to permeate all the "onion layers".

The business community has gone over a part of this road, recognizing ethics as an efficient instrument which permits a vertical combat. The codes of voluntary ethical conduct or the programs on corporate social responsibility are good examples. If the business community is able to self-regulate its conduct, anti-corruption strategies must rely on these conditions and experiences in order to ensure success.

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GRAPH 1: Corruption as a Complicated Problem. Bibliographical Summary.

Tree structure:

CORRUPTION branches into OPPORTUNITY, PROFIT, RISK

OPPORTUNITY → WEAK DEMOCRATIC DESIGN, WEAK PUBLIC POLICIES

WEAK DEMOCRATIC DESIGN → POLITICAL PROCESSES, RULES OF GAME

POLITICAL PROCESSES:
- INSTABILITY (Fredriksson and Svensson, 2003)
- NO DEMOCRACY (Sung, 2004; Sandholtz and Koetzle, 2000; Goldsmith, 1999)
- IMMATURITY (Treisman, 2000)
- NO POLITICAL COMPETITION AND PARTICIPATION (Mendez and Sepulveda, 2006; Ades and Di Tella, 1999)
- CONSTRAINTS OF MEDIA FREEDOM (Brunetti and Weber, 2003; Stapenhurst, 2000)
- LOW LEVELS OF CIVIL MONITORING (Kaufmann, 1997)
- LOW EDUCATION (Ades and Di Tella, 1997)

RULES OF GAME:
- NO ENFORCEMENT CONTRACTS (Polinsky and Shavell, 2001)
- NO PROPERTY RIGHTS (Acemoglu and Verdier, 1998)
- NO ANTI-CORR. AGENCIES (Doig, 1995)

WEAK PUBLIC POLICIES → ADMINISTRATIVE HAND, ECONOMIC FORCES

ADMINISTRATIVE HAND:
- NO ACCOUNTABILITY (Lederman et al, 2005)
- LACK OF TRANSPARENCY (Bac, 2001)
- CENTRALIZATION (Fisman and Gatti,, 2002; Tanzi, 1995)
- SMALL NUMBER-NO COMPETITION (Ades and Di Tella, 1999; Laffont and Guessan, 1999))
- UNBALANCED STATE-MARKET (Clarke and Xu, 2002)
- NO INCENTIVES, LOW WAGES (Van Rijckeghem and Weder,2001)

ECONOMIC FORCES:
- UNOFFICIAL ACTIVITY (Friedman et al. , 2000)
- COLLUSION (Foellmi and Oechslin, 2003)
- ASYMMETRY (Kingston, 2005)
- SIZE OF THE STATE (Tanzi,1994)

PROFIT → TRADE RESTRICTIONS (Mauro, 1997)
- FAVOURITISM INDUSTRIAL (Anechiaricio and Jacobs,1998)
- TAX DEDUCTIONS (Auriol and Warlters 2005; Sanyal et al, 2000)
- INTEREST RATE AND CREDIT CONTROL (Gupta and Chaudhuri, 1997)

RISK → NO LAW ENFORCEMENT, HIGH SOCIAL TOLERANCE

NO LAW ENFORCEMENT:
- BAD INCENTIVES FOR ENFORCERS (Polinsky and Shavell, 2001)
- WEAK SANTION'S SYSTEM (Hindriks et al., 1999 ; Bowles and Garoupa, 1997)

HIGH SOCIAL TOLERANCE → CULTURAL ELEMENTS, ETHICS

CULTURAL ELEMENTS:
- RELIGION (Treisman, 2000; La Porta et al 1999)
- CIVIL LAW SYSTEM (Treisman, 2000)
- COLLECTIVISM (Husted, 1999)
- POVERTY AND INEQUALITY (Mauro, 2002; You and Khagram, 2005)

ETHICS:
- BUSINESS ETHICS (Argandoña, 2001; Méle,2005).

SUMMARY

Corruption is a pervasive problem. Traditionally, it has been defined and analyzed as a complicated question. From that perspective, research and policy recommendations have been focused on a wide range of simple causal relationships. Such knowledge is undoubtedly useful, but insufficient because corruption is a highly complex phenomenon. Anticorruption efforts must be aware of this complexity and include the needed governance instruments. In this sense, the firm's involvement is absolutely necessary. Command and control measures clearly fall short of society's demands. Self regulation and ethics are called on to play a fundamental role.

NOTES

[1] "Governance in the European Union: A White Paper" (2001).

[2] The Bank presented in August 2006 the "Voluntary Disclosure Program", which "encourages companies to adopt business practices that will contribute to a more competitive and healthy sector in the countries we serve… and to became part of the solution and join the global fight against corruption". This new tool was not included on the WBG (2006) report which was presented in September.

3 See, for instance, the Special Issue of the *Organization Science* 10(3), 1999.

[4] In order to construct a workable model, the representation should select a relatively small number of elements with some degree of homogeneity, and whose interactions must be much denser within than outside (Anderson et al, 1998). The main requirement is the stability of the object of interest —some equilibrium— which permits us to extract uniformities, that is, conditions that must hold for the existence of the equilibrium to be guaranteed. Researchers, analysts or decision-makers observe each problem attempting to understand the current state and the conditions of equilibrium in order to use the resulting model to make predictions that support a particular course of action.

[5] For an introduction to the study of complexity, see Holland (1995).

[6] Herbert Simon (2002) underlines that highly complex systems are able to modify their designs through mutations, crossover and natural selection (business fits in this framework as an organism).

[7] Beyond that consensus, an ongoing debate persists in certain contexts over the exact meaning of terms such as discretionary power, misuse or penalty. The public or private character of discretionary power, the existence of illicit but legal corruption, or the corruption without monetary rents are several examples of problematic questions.

[8] "Market corruption" (Scott, 1972)—rents are allocated competitively to whichever firm or citizen who pays the highest bribes— has been studied in relation with rent-seeking contexts (Nitzan, 1994). "Parochial corruption" — situation where barriers to access favors of power-holders (Lambbsdorff, 2002)— has been related with favoritism and linked with social structure (Kingston, 2006).

[9] Such interactions are hypothesized and econometrically tested by several authors (Paldam, 2002).

[10] The method for dynamic panels by Arellano and Bond (Arellano and Bond 1991) and Arellano and Bover (Arellano and Bover, 1995) are being often employed in corruption (Busse and Hefeker, 2006; Costa, 2006; Bardhan and Mookherjee, 2006; Chowdhury, 2004; Edison et al., 2002)

[11] In general, studies dealing with institutional features and their impact on other institutional characteristics find that the greater difficulty arises with ascertaining causality. The relationship between economic freedom and political liberties is an illustrative example. The various aspects of the institutional framework are intimately related and causality works from economic freedom to political liberties and the other way around. In other words, freedoms can be mutually reinforcing, at least to some extent (Dawson, 2003).

[12] Globalization has deepened the phenomenon. The international or supra-territorial economic integration based on increased market openness (Husted, 2003) has changed global structures, and it is creating new and dynamic rules of the game. The incorporation of many developing and in-transition countries into global markets has largely affected the corruption phenomenon. The concentration of grand corruption in countries with institutional weaknesses, underdeveloped market structures and high social tolerance for illegal behavior, has changed the scenario, globalizing the problem.

[13] The acceptance of a bribe depends on the size of the bribe and the punishment as well as on the behavior of peers and colleagues (Wirl, 1998). Any society or organization presents a collective reputation which, spontaneously formed, may modify the incentives of its members to be corrupt (Tirole, 1996). Thus, a spontaneous and inner change on the "social pressure" or on ethical values may provoke 'novelty' on corruption. The history of a social and political context, understood with regard to past corruption levels, becomes an important determinant of current corruption levels "in the presence of dynamic strategic complementarities" (Aidt, 2003, p.647)