

Beasts of Prey or Rational Animals?

Private Governance in Brazil's *Jogo do Bicho*

by
Danilo Freire

A rational-choice account of Brazil's jogo do bicho (animal game), possibly the largest illegal lottery game in the world, examines the mechanisms that have fostered the lottery's notable growth outside the boundaries of Brazilian law and reveals how animal-game financiers combine costly signals and selective incentives to induce cooperation from members of the community and exploit the fragmentation of Brazil's political system to advance their long-term interests.

Uma abordagem da teoria da escolha racional do jogo do bicho, possivelmente o maior jogo de loteria ilegal do mundo, examina os mecanismos que fomentaram o crescimento notável da loteria fora dos limites da lei brasileira e revela como os financiadores de jogos de animais combinam caros sinais e incentivos seletivos para induzir a cooperação de membros da comunidade e explorar a fragmentação do sistema político brasileiro para promover seus interesses de longo prazo.

Keywords: Brazil, Criminal organizations, Corruption, Jogo do bicho, Private governance

In 1892, Baron João Batista de Viana Drummond came up with a new idea to fund his cash-strapped zoo. Situated in a quiet neighborhood in the north of Rio de Janeiro, the zoo hosted a variety of exotic species and offered beautiful views of the city, but it lacked visitors. An experienced businessman, Drummond realized that the zoo would have to provide other kinds of entertainment to keep itself afloat. He suggested a new lottery raffle.

The rules were straightforward. In the morning, the baron would choose one animal from a list of 25 beasts and put its picture in a wooden box at the zoo's entrance. Visitors who wanted to join the raffle received a ticket bearing the stamp of one of those 25 animals.¹ The winner would take home a prize worth 20 times the ticket price, an amount higher than a carpenter's monthly wage (Chazkel, 2007: 542). Drummond called the lottery the *jogo do bicho* (animal game). Eager to capitalize on its initial success, he made it possible to buy tickets not only at the zoo but also in many stores across Rio de Janeiro. What was once a small raffle soon became a large gambling market. An animal-game craze quickly swept the whole city. A network of street bookmakers, called

Danilo Freire is a postdoctoral research associate in the Political Theory Project at Brown University. His research interests include political violence, informal governance, and computational social science.

bicheiros, made the lottery available in every part of Rio by scalping tickets or promoting their own versions of the numbers game (Chazkel, 2011: 37). The lottery became so widespread that Olavo Bilac, a major literary figure in nineteenth-century Brazil, wrote, "Today [1895] in Rio de Janeiro, the game is everything. . . . Nobody works! Everybody plays" (Pacheco, 1957: 43).²

This tolerant state of affairs did not last. Civil servants and police officers criminalized the animal game on the grounds of public safety, and in the late 1890s they launched a countrywide campaign against the lottery (Benatte, 2002). The campaign extended for several decades, and in 1941 the Brazilian government officially banned the animal game. Drummond's animal lottery remains illegal to this day. Yet the game has survived. It has outlasted more than 30 Brazilian presidents and thrived under both military regimes and democratic governments (Jupiara and Otavio, 2015). More than an act of civil disobedience, it is a successful capitalist enterprise (Labronici, 2014; Magalhães, 2005). A recent study by the Fundação Getúlio Vargas, a Brazilian think tank, showed that it earns R\$1.3–2.8 billion per year (US\$400–850 million), making it the largest clandestine gambling game in the world (HuffPost Brasil, 2015). Schneider (1996: 171) estimated that in the 1990s the game furnished about 50,000 jobs in Rio de Janeiro, almost as many as the oil giant Petrobras in 2011 (*Exame*, 2016).

In this article I offer a rational-choice interpretation of the animal game.³ More specifically, I draw from an array of sources to show that the game operators (*bicheiros*)⁴ have developed unique strategies to solve collective action problems and to maximize their political strategies. This does not mean that their tactics are morally defensible; they often employ intimidation and corruption to achieve their goals. Nevertheless, they are effective, and while they seem counterintuitive they do address the long-term needs of the game's financiers. My analysis discusses three strands of the academic literature.

First, it contributes to the scholarship on extralegal institutions, in particular on collective action in criminal organizations. For instance, Gambetta (1996) examines how the Sicilian Mafia settles disputes among its members and enforces rules. Skarbek (2011; 2012; 2014) highlights the role of written and implicit norms in mitigating rent-seeking behavior and coordinating productive activities in California prison gangs. I argue that *bicheiros* employ reputation strategies and provide club goods to enforce contracts and to foster trust in the community.

Second, this work relates to the literature on signaling theory and asymmetric information (e.g., Akerlof, 1970). I provide evidence that *bicheiros* are aware of their social stigma and in response devise signaling strategies to convey reliable information and to reduce the uncertainty associated with clandestine markets. Their main tool to increase credibility is costly signaling (Gambetta, 2009; Schelling, 1960), sacrificing their immediate interests to gain a reputation for honesty that will benefit them in the long run.

Lastly, this work connects to the literature on state capture, one of the most important topics in public-choice theory (Tollison, 1982). I use the Brazilian case to illustrate how politicians and civil servants are co-opted by criminal groups and how this collusion distorts the electoral process and benefits wealthy members of the animal-game network. Queiroz (1992) explored why

bicheiros turned into patrons of the Carnival's samba schools and found that this influence gave them leverage over the political authorities. Misse (2007) investigated the links between bicheiros and police officers and suggested that the illegal lottery had been the main cause of police corruption in Rio de Janeiro until the 1970s. I supplement this literature by highlighting how asymmetric information and rent-seeking behavior offer convincing explanations to the issues presented above. By doing so, I integrate seemingly contradictory historical facts into a single narrative that connects micro-level decisions to macro-level outcomes.

AN OVERVIEW OF THE ANIMAL GAME

Late-nineteenth-century Brazil had four characteristics that explain the emergence of the animal game: (1) a growing urban population excluded from the formal labor market, (2) an inflow of immigrants whose extended family networks helped them engage in trade, (3) an expansion of the monetary supply in the first years of the republic (1880s–1890s), and (4) a judicial system that, albeit repressive, had only imperfect law enforcement.

Brazil abolished slavery in the late 1880s, a period in which the country was rapidly urbanizing. Cities like São Paulo and Rio de Janeiro offered a number of occupations for former slaves who wanted to move away from their former rural masters (Skidmore, 1993). Increasing numbers of Asian and European immigrants settled in large cities after arriving in Brazil, since urban areas provided better standards of living than the countryside, but their hopes were frustrated by a series of downturns in the Brazilian economy. Brazil's labor markets suffered a severe contraction in the wake of the Encilhamento financial crisis of 1891, and the economic instability aggravated the already difficult conditions of the working classes (Topik, 2014). As a result, large segments of the urban population turned to the informal economy. As Chazkel (2011: 115) observes, there were few occupations available to lower-class women and foreigners in the 1890s, and a large number of poor workers became street vendors. The profession requires few technical skills and has low barriers of entry, but it can be profitable if one can quickly identify a growing demand for a particular product. As the demand for lottery tickets grew, the game became an important component of the Brazilian extralegal economy.

The abolition of slavery and the growing industrialization of Brazil increased the amount of capital available in the country (Franco, 1987). Moreover, the 1888 Banking Act gave extra liquidity to local financial markets, which made credit more widely available in cities like São Paulo and Rio de Janeiro. Individuals received a temporary boost in personal income, part of which they spent on leisure activities. Finally, Chazkel (2011: 69–100) notes that until the 1940s police district chiefs operated within a large margin of discretion, and therefore official repression against bookmakers was notably inconsistent. In the early years of the game, bicheiros were allowed to operate virtually free from police interference, and this surely contributed to the game's rapid initial expansion (Chazkel, 2007: 544). Prosecution of bicheiros hardened in 1917 after

the promulgation of the Civil Code, and in 1941 the animal game was banned. Five years later, the federal government declared all games of chance illegal.

Although outlawed since the mid-twentieth century, the animal game continues to be ubiquitous in Brazil. There is virtually no city that does not have its local group of *bicheiros*. Cross and Peña (2006) suggest a distinction between informal and illegal markets that is useful for understanding the current “semi-legal” status of the game. It started as an informal activity in which Drummond and his associates sold lottery tickets to the public; the product itself was not illegal or allegedly immoral. The criminalization in 1941 brought important changes to Brazil’s gambling markets, among them the development of a new elite that has exerted considerable economic and political leverage. Their influence is not restricted to the game itself but extends to wide sectors of Brazilian society.

The animal game operates with three levels of hierarchy. At the bottom are the *bicheiros*, those in charge of selling the tickets (Chazkel, 2007; DaMatta and Soárez, 1999). They are the most visible part of the game. They usually build their vending stands inside a shop such as a small grocery store and are recognizable by their chairs facing the street, stamps, and blocks of paper (Chazkel, 2011: 259). They usually work alone but may employ up to 10 people depending on how busy the betting site is (Labronici, 2014: 69). The *gerentes* (managers) oversee all the stands in a given area. Their task is akin to that of a firm accountant. They control the cash flow between the *bicheiros* and the *banqueiros* (bankers), manage the payroll, and provide financial information to the top members of the organization. They also supervise individuals who carry out menial tasks, transfer money to other gambling branches, and double-check the balance sheets of the betting sites (Labronici, 2012: 71; Misse, 2007: 142). The *banqueiros* make up the small financial elite of the game. A 2012 report by the Brazilian Federal Police asserted that 10 *banqueiros* controlled the market throughout the country and 5 of them were based in the state of Rio de Janeiro (*Globo*, 2012b). Apart from funding the game, the *banqueiros* provide support for the employees—paying bribes to police personnel, bailing out ticket sellers who are arrested, and offering legal assistance to employees who are prosecuted (Labronici, 2012: 75).

Banqueiros solve problems of internal cooperation by providing club goods while selectively punishing cheaters (Dal Bó, 2005). The main club good is private security. Since the game is illegal, ticket sellers cannot rely on official institutions to protect them. Thus, the *banqueiros* have built an extensive network of gunmen and bribed police officers to protect their employees from other criminals (Chinelli and Machado, 1993: 48; Labronici, 2012: 51). Zé, a *bicheiro* interviewed by Labronici (2012: 52), eloquently described the deterrent effect of the game’s informal security personnel:

Bums are scared and they don’t mess around with us; they think there’s an officer nearby or something like that. Look at all this money here! [Shows the interviewer a handful of cash.] It’s not ours [referring to street-corner book-makers]. And if it’s not ours, it’s someone else’s. When I worked in Penha,⁵ the owner of a pub close by always asked me to stay at the front door of his pub. People know that bums are afraid of *bicheiros*.

Banqueiros often employ violent methods against competitors and their own staff. Jupiara and Otavio (2015) argue that Ailton Guimarães Jorge, a former army officer, tortured and murdered rival lottery bosses in the late 1970s. One of his former allies, Colonel Paulo Malhães, told the Rio de Janeiro State Truth Commission that Guimarães “went on a rampage” to consolidate his power (Belém, 2015). Castor de Andrade, Rio’s most influential banqueiro, also employed similar methods to run his business. He kept an armed bodyguard of 23 men and allegedly murdered a number of competitors. In a famous case he shot Euclides Ponar, an old animal-game boss known as the “Grey-Headed Chinese,” after Ponar denounced a fraud in lottery draws in 1976. Andrade was likely involved in other assassination plots in the 1990s (*Globo*, 2017).

The threat of violence is not the only tool the bicheiros have at their disposal. They balance the use of violence with financial benefits to low-ranking members of the organization. The most important of these is the *descarga* (unloading), which insures ticket sellers against credit risk (Labronici, 2012: 59; Magalhães, 2005: 178). To be able to honor large bets, they buy insurance from wealthier financiers for a fee that ranges from 20–25 percent of the total selling amount (*Folha de São Paulo*, 2006). This mechanism has significantly changed the distribution of resources in the animal game, and the richest banqueiros benefit the most from it. Simple probability dictates that a bicheiro rarely pays the highest lottery prize, and yet the banqueiros receive a commission for every game they hedge. Over time, there is a transfer of income from the bottom to the top of the animal-game structure due to the fees. This accumulation of capital is one of the reasons banqueiros in the 1990s started offering other types of entertainment such as slot machines and sports lotteries (*Estado de São Paulo*, 2006). They simply had more capital to invest, and this eventually helped to compensate for the downturn in the game markets of recent years (*Globo*, 2017). In sum, while the *descarga* has made the game more resilient at the aggregated level, it has increased profits for the richest financiers at the expense of the small bicheiros.

The *descarga* has had broad consequences for the Brazilian illegal economy. As the number of slot machines increased in Brazil, the opportunity for criminals to use them for money laundering increased as well. The owner of a slot machine issues a ticket with a winning prize, and the criminal declares the prize as his legitimate wealth. Then he can legally use that money for any purpose without raising suspicion from the authorities. The practice has become more widespread in recent decades, and in 2009 a Federal Police task force arrested about a dozen animal-game bosses involved in the so-called slot-machine mafia. Relatives of Castor de Andrade were also involved in the scheme (*Estado de São Paulo*, 2011). In 2012 President Dilma Rousseff sanctioned a law that considered slot machines and the animal game money laundering.

Money from the animal game has other effects on the economy, some of which are indirect. For instance, the game boosts the economy by providing jobs for unskilled workers who cannot easily join the labor market. By doing so, it prevents some of the poorest members of Brazilian society from demanding more inclusive government policies. Because of the income generated by the animal game, poor workers are able to consume without resorting to

government assistance, and therefore state officials can spend a larger amount of public funds on other, probably wealthier sectors of the population.

The animal game's market formation closely resembles what Fligstein (1996) calls "markets as politics," in which firms create institutions to restrain competition and organize the labor force. At the formation of the lottery market, competition is fierce, and participants are akin to social movements. They are constantly trying to convince others of the viability of their ideas. When markets stabilize, however, incumbents collude to impose their conditions of control on other players and on workers. In the case of the animal game, this means a mix of financial incentives and threats of violence by corrupt state agents or private bodyguards.

A more difficult question is how the banqueiros elicit cooperation from gamblers, community leaders, and public officials. It is puzzling because bicheiros do not use violence to induce individuals to play the lottery and have never clashed with the Brazilian government. Precisely because violence could reduce profits, they have devised other mechanisms to create a friendly environment for the illegal lottery. Two of these are costly signaling and reputation building.

WINNING HEARTS, MINDS, AND POCKETS: ILLEGAL MARKET DYNAMICS

Evolutionary game theory (Axelrod, 1984) and empirical case studies (Ostrom, 1990) have demonstrated that long-term cooperation is possible even in difficult situations. The main requirement for sustained cooperation is that players believe future pay-offs will be higher than present ones. Given that condition, fear of retaliation will induce individuals not to cheat. In theory, the same should apply to illegal organizations, but in practice criminal groups are generally short-term-oriented—more than most people they tend to discount the future. This makes cooperative behavior among criminals rather uncommon, and there is substantial evidence suggesting that illegal groups face serious collective action problems (e.g., Gambetta, 2009; Skarbek, 2011; 2012). The animal game is an exception to this rule. The game has been running for more than a century without significant interruption, attesting to the fact that bicheiros have managed to solve collective action issues in one way or another.

Signaling theory predicts that when a characteristic one is interested in is not easily observed, one searches for signals that credibly convey pieces of that required information. In the case of an illegal lottery, the main signal a gambler is looking for is honesty—whether the holder of winning tickets actually receives the prize. The animal-game entrepreneurs have made considerable efforts to present themselves as honest brokers. One trust-enhancing mechanism they have employed is the use of a fixed-multiplier formula for pay-outs. Players who win the lowest prize receive 18 times their investment regardless of the size of the bet. Bigger prizes naturally offer higher returns; the winner of the top prize wins up to 4,000 times the value of the bet (Labronici, 2012: 89; Magalhães, 2005: 20).

This stands in sharp contrast to the common practice of sharing a prize among winners. Lottery pay-outs demand high levels of trust: players rely on

unverifiable information about the total funds collected by the lottery, and they can never be sure that the payments are evenly distributed. The fixed-multiplier formula alleviates such problems (Akerlof, 1970; Cohen and Siegelman, 2010; Levin, 2001). Since players and vendors know the prize value beforehand, the method provides consumers with complete information about their individual prizes while also binding the *bicheiros* to a contract that can be easily enforced. This technique offers buyers a simple but effective screening strategy that induces *bicheiros* to provide honest information about the game (Stiglitz and Weiss, 1981).

Bicheiros have addressed information asymmetries in other ways. Since the 1950s, the public has been excluded from the lottery draws because of security concerns (Chazkel, 2011: 259). This could have led to a decline in trust among buyers and vendors of lottery tickets and, as a result, to reduced profits, but *bicheiros* have mitigated this problem by using the winning numbers from the government-run lottery (Chazkel, 2007: 546; Labronici, 2012: 89), which are public information. The media broadcast the draws on radio and TV, and therefore any interested player can verify the numbers selected. Thus *bicheiros* can free-ride on the lottery's long-standing reputation for credibility. This confidence reduces the potential for conflict in the game. Since the public does not see the animal game as violent, the repugnance associated with gambling becomes less pervasive. By reducing the possibility of cheating and putting long-term interests first, the animal game has avoided the fate of other repugnant markets (DaMatta and Soárez, 1999: 20).

STATE CAPTURE: THE ANIMAL GAME, SAMBA, AND POLITICS

The impact of the animal game is not restricted to the Brazilian economy. Since the 1960s *bicheiros* have been the key sponsors of the country's most important cultural festivity, the Rio de Janeiro Carnival parade (Queiroz, 1992). The animal game accounts for such a large share of the funding of the parade that a famous *banqueiro* once remarked that without it "the Carnival would have ended" (Dia, 2016). On the basis of this support, *bicheiros* have established an extensive patronage network of samba schools and local politicians (Arguello, 2012; *Jornal do Brasil*, 2011; Misse, 2011: 16). This network brings large material benefits to its members, but it has created perverse incentives for government officials and caused distortions of the Brazilian democratic system.

The animal game's clientelism is most evident in the state of Rio de Janeiro. The city of Rio de Janeiro was the capital of Brazil for almost 200 years, and despite losing the position to Brasília in 1960 it has remained one of the country's main cultural and financial centers. Animal-game operators had historical ties with popular movements, especially samba groups, and its elites eventually exploited these connections to their advantage. The emergence of state-sponsored Carnival parades created an opportunity for *bicheiros* to expand their influence over public authorities either via bribing or by funding political campaigns. In this regard, Rio provided a favorable environment for self-interested politicians, community leaders, and animal-game financiers to collaborate. These illegal networks are crucial to understanding why samba and

Carnival became constituent features of Brazil's national identity and how the festival has contributed to Rio's high levels of state corruption.

In 1930 the opposition leader Getúlio Vargas led a bloodless coup d'état that brought Brazil's First Republic to an end. His authoritarian-corporatist Estado Novo (New State) promoted a politicized nationalism designed to transcend the regional aspects of Brazilian culture (Williams, 2001). Popular music occupied an important place in Vargas's project of "Brazilianizing Brazil." Created in the late 1920s in the shantytowns of Rio de Janeiro, modern samba embodied the idea of the multicultural, racially tolerant country the government aspired to forge (Stockler, 2011). By the late 1930s, samba had reached a unique position in Brazil's cultural identity. In a period when civil and political rights were limited, Vargas used samba to incorporate ethnic minorities and the new urban classes into the Brazilian mainstream (Chinelli and Machado, 1993: 213). Patriotic sambas exalted the country's natural beauties and the figure of the "friendly, happy, cordial, and industrious" mulatto (Vianna, 1995: 51). The institutionalization of the Carnival parade in 1935 and the subsequent increases in public funding for the festival cemented the relationship between politicians and samba groups (Cabral, 2016).

The samba groups were not passive in this process. Since the 1960s, the Rio Carnival has expanded in scope. Stimulated by growing numbers of spectators, the parades have become more elaborate (Cabral, 2016; Chinelli and Machado, 1993: 214). Unable to cope with rising costs, the samba schools that compete in the Carnival turned to animal-game financiers to fund their activities (Misse, 2007). This informal agreement remains effective to this day, and many of Rio's most famous samba schools are officially presided over by high-profile members of the animal-game elite (Misse, 2011; Queiroz, 1992).

The animal game has at times faced opposition from the public, which has often perceived it as immoral and repugnant. Aware of this problem, bicheiros decided to finance samba schools, hoping to win the support of the population and attach a more positive image to the game. Members had been involved in the Carnival since the early 1920s, but in 1984 a group of rich banqueiros founded Liga Independente das Escolas de Samba (Independent League of Samba Schools—LIESA), a civic association intended to direct and sponsor the Carnival parade in Rio de Janeiro. This marked a shift in the history of the parade, with bicheiros acting as a group in this respect for the first time. The institution was very effective in expanding the parade, but it also provided other benefits to the animal-game banqueiros. It consolidated their power over the Carnival and provided a formal mechanism for resolving disputes (Farias, 2013: 171; Labronici, 2012: 55).

The funding of the samba schools has had an indirect effect on the animal game. The patronage reduced agent-principal problems within the game. Bicheiros donate to samba schools to gather support of the communities, and by doing so they gain access to local information on their business. Clients who have a positive image of the bicheiro may denounce cheaters to their superiors, reducing incentives to cheat. In addition, bicheiros are often recruited from poor communities and therefore tend to be immediate beneficiaries of the game's donations (BBC, 2012). Thus the funds donated to samba schools and other charitable organizations help align the interests of different members of

the animal game. The patronage can be interpreted as an illegal version of profit-sharing, a mechanism that has induced effectively cooperative behavior in both small and large corporations (Cahuc and Dormont, 1997; FitzRoy and Kraft, 1987; Kruse, 1992).

Samba schools have profited from this association too. First, they have gained autonomy from the government. Samba schools do not need to rely exclusively on public funds to organize the parade, and money from the animal game has permitted the schools to act independently (Chinelli and Machado, 1993: 209). Second, the support of the game has increased the political and social clout of the samba schools. In a country where the state is not present everywhere and human rights abuses are frequent (O'Donnell, 1993; Pinheiro, 2000), animal-game banqueiros and, more recently, drug traffickers have provided private governance to poor areas of Rio de Janeiro by enforcing property rights, mediating disputes, and preventing police abuse in the favelas (Arias, 2006). In return for funds and protection from the bicheiros, samba schools have served as intermediaries between the underworld and the political system. Although the banqueiros are interested in weak law enforcement against the animal game, politicians have resorted to samba schools to contact bicheiros and use their financial and electoral influence in the shantytowns (Misse, 2011: 17). The samba schools, therefore, have increased their bargaining power in the political sphere and have extended their reach within Rio's poor communities (Chinelli and Machado, 1993: 215).

The collaboration between the public authorities and the bicheiros gained prominence during the military dictatorship (1964–1985) (Jupiara and Otavio, 2015). The regime effectively dismantled the few checks and balances implemented in the Second Republic (1945–1964), and paramilitaries and police forces had considerable discretion in repressing political dissidents. Extortion of civilians was also widespread (Misse, 2009). Bicheiros saw the corruption of some members of the military as an opportunity to increase profits, and an agreement between bicheiros and corrupt members of the military was ultimately responsible for the transformation of the animal game into a coercive oligopoly (Jupiara and Otavio, 2015). When the game transitioned from an informal to an illegal market, the use of violence in it became more widespread. The support of the armed forces meant that new groups would be prohibited from entering the market and the illegal lottery could operate undisturbed by the government.

The links between bicheiros and the public authorities changed after Brazil became a democracy in 1985. Under the military regime, government officials were mainly interested in bribes from the animal game, but in the democratic period votes became the most sought-after political resource. Bicheiros are important in this sense because they have direct influence over a number of poor communities because of their role as patrons or as reliable sources of governance. Their patronage networks ensure that candidates supported by bicheiros receive a substantial number of votes from areas where campaigning is too difficult or too costly (Misse, 2011: 17).

Politicians from all spheres of government are involved with animal-game banqueiros. Recent investigations have shown that politicians of every level receive illegal money to fund their campaigns. Carlinhos Cachoeira, a famous

animal-game banqueiro from Goiás, established a large patronage network that included mayors, deputies, senators, judges, and businessmen, many of them linked to the federal government. His brother Marcos ironically noted that Carlinhos was “too dedicated to politics” and had illegally donated about US\$300 million to political candidates in his home state (*Estado de São Paulo*, 2012).

The Brazilian political system is particularly conducive to clientelism. Brazil has one of the most fragmented party systems in the world, and this induces political entrepreneurs to run highly individualized campaigns (Figueiredo and Limongi, 2000). In addition, Brazil uses an open-list proportional-representation electoral system (Samuels, 2000: 483). These two elements indicate that Brazilian politicians are often free of the strong requirements of political parties and can run their campaigns with a high degree of independence. Nevertheless, that independence means that candidates rely mostly on themselves to raise funds and mobilize potential voters, and therefore political campaigns in Brazil tend to be expensive and personality-centered. The support from the animal game mitigates both problems. Illegal donations from bicheiros help to cover advertising expenses while having the additional benefit of not appearing in the official records of the candidates (*Globo*, 2012a). This suggests that game-funded politicians can circumvent spending limits and have an electoral advantage over their competitors. Since candidates do not know whether their competitors receive funding from the game or the amount each one was paid, they often contact the bicheiros and join their networks. The situation is a prisoner’s dilemma in which candidates would be better off running cheaper campaigns and not being dependent on animal-game banqueiros, but asymmetric information prevents them from reaching a cheaper solution.

Voting is compulsory in Brazil, and therefore turnout rates tend to be higher than in other democracies. This means that votes have high marginal utility for politicians. Since elections may be decided by small differences, the bicheiros’ client ties guarantee a minimum number of votes that politicians can rely upon on election day. Nonetheless, the patronage subverts the preferences of the public and the democratic process. Individuals may be punished if the candidate does not receive the expected number of votes, and they are often compelled to vote for politicians who have only loose connections with their communities. Therefore, although voters have the right to choose their representatives, in practice the suffrage is limited for a proportion of Brazil’s lower classes.

In a nutshell, the difficulty in permanently outlawing the animal game showcases the fact that the Brazilian state itself is deeply embedded in criminal sectors of the society. While some sectors of the Brazilian bureaucracy may be described as “islands of excellence” and closely resemble the Weberian ideal of public administration (Bersch, Praça, and Taylor, 2017), local politicians remain dependent on unstable and often unlawful connections with elites. This system of “partial embedded autonomy” (Evans, 1995) provides the required stability for the political system to operate, but it offers significant opportunities for rent-seeking behavior.

CONCLUDING REMARKS

Past research has shown that criminal organizations face considerable challenges in eliciting cooperation from their members and establishing close ties with the population. The animal game offers a convincing example that it is possible for an illegal syndicate to operate with low levels of violence for more than a hundred years. Bicheiros employ a number of strategies to obtain reliable information from their subordinates while offering club goods and other benefits to workers. Furthermore, by investing in the Carnival parade, bicheiros have been able to gather popular and government support. Poor communities have associated themselves with the bicheiros to receive welfare provisions, and politicians have collaborated with them to reap the financial and electoral benefits that the animal game's networks can provide.

Nevertheless, the animal game has also created negative externalities. Violence is used to punish defectors and to constrain competitors. The client relationship that bicheiros have with local politicians has led to undemocratic outcomes such as predatory political campaigning, distortions in electoral representation, and impunity for human rights violations. These negative externalities have long-term effects and continue to impact the public sphere.

Although the animal game has received increasing attention from scholars, its inner workings remain poorly understood. First, the relationship between bicheiros and drug dealers is a topic that deserves attention. Brazil has become one of the world's largest consumers of illicit drugs and South America's principal drug-trafficking transit route (Miraglia, 2015; Misse, 2011). Whether bicheiros collaborate in or oppose the emergent drug-dealing business is still unclear. Second, the extent to which bicheiros use other businesses, such as hotels or factories, to launder money has been mentioned by members of the Brazilian judiciary (*Globo*, 2012a); however, there is no reliable estimate of the size of this effort. Lastly, more research is required to clarify how bicheiros from different parts of Brazil coordinate their activities and prevent large-scale conflicts. Case studies are usually focused on Rio de Janeiro's bicheiros, but scholars would benefit from comparative analyses involving a larger number of states. This is an important step in elucidating how bicheiros continue to influence politics and the public throughout Brazil.

NOTES

1. At first, the zoo staff distributed the tickets at random, so the game consisted in a simple raffle. However, the zoo soon allowed participants to choose the animals they preferred. This small change made the game considerably more appealing as it introduced an element of divination to the game (DaMatta and Soárez, 1999: 71–74).

2. Unless otherwise noted, all translations from the Portuguese are my own.

3. I adopt a very broad definition of "rationality" in this paper. In contrast with stricter versions of rational-choice theory, I assume here that individuals not only are constrained by formal and informal institutions but also have access only to imperfect information at the moment of their choices. Thus, my analysis employs a "thin" notion of rationality and a "thick" description of social institutions in which individual action can only be understood with reference to the social environment (Boettke, 2001: 253).

4. While there are important hierarchical differences among these groups, all members of the game are collectively called “bicheiros.” I follow the same practice here and refer to their specific roles within the animal-game structure only when necessary for clarification.
5. Penha is a lower-middle-class neighborhood in the city of Rio de Janeiro.

REFERENCES

- Akerlof, George
1970 “The market for ‘lemons’: quality uncertainty and the market mechanism.” *Quarterly Journal of Economics* 84 (August): 488–500.
- Arguello, Katie
2012 “Criminalização dos jogos de azar: contradição entre lei e realidade social.” *Revista da EMERJ* 15 (October): 239–250.
- Arias, Enrique Desmond
2006 “The dynamics of criminal governance: networks and social order in Rio de Janeiro.” *Journal of Latin American Studies* 38 (May): 293–325.
- Axelrod, Robert
1984 *The Evolution of Cooperation*. New York: Basic Books.
- BBC
2012 “Brazil’s illegal numbers game under pressure.” <https://bbc.in/2PVgxnJ> (accessed August 3, 2017).
- Belém, Euler de França
2015 “Livro Diz que Capitão do exército modernizou o jogo do bicho e produziu uma máfia tropical.” <https://bit.ly/2ETTI2S> (accessed October 14, 2018).
- Benatte, Antônio Paulo
2002 “Dos jogos que especulam com o acaso: contribuição a história do jogo de azar no Brasil (1890–1950).” Ph.D. diss., University of Campinas.
- Bersch, Katherine, Sergio Praça, and Matthew Taylor
2017 “State capacity, bureaucratic politicization, and corruption in the Brazilian state.” *Governance* 30 (January): 105–124.
- Boettke, Peter
2001 *Calculation and Coordination: Essays on Socialism and Transitional Political Economy*. London and New York: Routledge.
- Cabral, Sergio
2016 *Escolas de samba do Rio de Janeiro*. Rio de Janeiro: Editora Lazuli.
- Cahuc, Pierre and Brigitte Dormont
1997 “Profit-sharing: does it increase productivity and employment? A theoretical model and empirical evidence on French micro data.” *Labour Economics* 4 (September): 293–319.
- Chazkel, Amy
2007 “Beyond law and order: the origins of the *jogo do bicho* in republican Rio de Janeiro.” *Journal of Latin American Studies* 39: 535–565.
2011 *Laws of Chance: Brazil’s Clandestine Lottery and the Making of Urban Public Life*. Durham, NC: Duke University Press.
- Chinelli, Filipina and Luis Antonio Machado
1993 “O vazio da ordem: relações políticas e organizacionais entre as escolas de samba e o jogo do bicho.” *Revista do Rio de Janeiro* 1 (January): 42–52.
- Cohen, Alma and Peter Siegelman
2010 “Testing for adverse selection in insurance markets.” *Journal of Risk and Insurance* 77 (March): 39–84.
- Cross, John C. and Sergio Peña
2006 “Risk and regulation in informal and illegal markets,” pp. 49–80 in P. Fernández-Kelly and J. Shefner (eds.), *Out of the Shadows: Political Action and the Informal Economy in Latin America*. University Park: Pennsylvania State University Press.
- Dal Bó, Pedro
2005 “Cooperation under the shadow of the future: experimental evidence from infinitely repeated games.” *American Economic Review* 95: 1591–1604.

DaMatta, Roberto and Elena Soárez

1999 *Águias, burros e borboletas: Um estudo antropológico do jogo do bicho*. Rio de Janeiro: Rocco.

Dia

2016 "'O Carnaval está em pé graças à contravenção', diz Anísio Abrão David." <https://bit.ly/2SixnhS> (accessed May 18, 2017).

Estado de São Paulo

2006 "Bicheiro dono de máquinas caça-níqueis é preso em Belém." <https://bit.ly/2qbBdFS> (accessed November 14, 2016).

2011 "Justiça do Rio condena 11 por máfia dos caça-níqueis." <https://bit.ly/2RfIGae> (accessed October 16, 2018).

2012 "O 'gene' do jogo do bicho dos Cachoeira." <https://bit.ly/2PoG0Jd> (accessed October 25, 2018).

Evans, Peter

1995 *Embedded Autonomy: States and Industrial Transformation*. Princeton: Princeton University Press.

Exame

2016 "As 15 maiores empresas da cidade do Rio de Janeiro." <https://abr.ai/2qdG4NO> (accessed February 1, 2017).

Farias, Edson Silva

2013 "A afirmação de uma situação sociocomunicativa: desfile de Carnaval e tramas da cultura popular urbana carioca." *Caderno CRH* 26 (January): 157–178.

Figueiredo, Argelina and Fernando Limongi

2000 "Presidential power, legislative organization, and party behavior in Brazil." *Comparative Politics* 32 (January): 151–170.

FitzRoy, Felix R. and Kornelius Kraft

1987 "Cooperation, productivity, and profit sharing." *Quarterly Journal of Economics* 102 (February): 23–35.

Fligstein, Neil

1996 "Markets as politics: a political-cultural approach to market institutions." *American Sociological Review* 61: 656–673.

Folha de São Paulo

2006 "Bicheiro dá garantia contra apostas altas." <https://bit.ly/2PWtXjp> (accessed December 19, 2016).

Franco, Gustavo

1987 "Reforma monetária e instabilidade durante a transição republicana." Master's thesis, Catholic University of Rio de Janeiro.

Gambetta, Diego

1996 *The Sicilian Mafia: The Business of Private Protection*. Cambridge: Harvard University Press.

2009 *Codes of the Underworld: How Criminals Communicate*. Princeton: Princeton University Press.

Globo

2012a "Bicheiro recebia políticos em sua casa." <https://glo.bo/2PT9pby> (accessed July 7, 2017).

2012b "PF: país foi fatiado pelas quadrilhas de contraventores." <https://glo.bo/2O6hR5t> (accessed September 18, 2016).

2017 "Castor de Andrade, chefe do bicho, cria império à base de corrupção." <https://glo.bo/2OQ3sjb> (accessed October 15, 2018).

HuffPost Brasil

2015 "Caixa estima que legalização de jogos de azar pode quintuplicar arrecadação do Brasil." <https://bit.ly/2SVrrf3> (accessed October 25, 2018).

Jornal do Brasil

2011 "Jogo do bicho e política: influência vem de longa data." <https://bit.ly/2D9irhM> (accessed February 7, 2017).

Jupiara, Aloy and Chico Otavio

2015 *Os porões da contravenção*. Rio de Janeiro: Editora Record.

Kruse, Douglas

1992 "Profit sharing and productivity: microeconomic evidence from the United States." *Economic Journal* 102 (January): 24–36.

- Labronici, Rômulo Bulgarelli
 2012 "Para todos vale o escrito: uma etnografia do jogo do bicho." Master's thesis, Fluminense Federal University.
 2014 "Sorteio de bicho: uma análise do lazer para fora da lei." *Record: Revista de História do Esporte* 7 (July): 1–31.
- Levin, Jonathan
 2001 "Information and the market for lemons." *RAND Journal of Economics* 32: 657–666.
- Magalhães, Felipe Santos
 2005 "Ganhou Leva . . . do vale o impresso ao vale o escrito: uma história social do jogo do bicho no Rio de Janeiro (1890–1960)." Ph.D. diss., Federal University of Rio de Janeiro.
- Miraglia, Paula
 2015 "Drugs and drug trafficking in Brazil: trends and policies." <https://brook.gs/2oZA5hg> (accessed October 10, 2018).
- Misse, Michel
 2007 "Mercados ilegais, redes de proteção e organização local do crime no Rio de Janeiro." *Estudos Avançados* 21 (September): 139–157.
 2009 "Sobre a acumulação social da violência no Rio de Janeiro." *Civitas: Revista de Ciências Sociais* 8 (September): 371–385.
 2011 "Crime organizado e crime comum no Rio de Janeiro." *Revista de Sociologia e Política* 19 (October): 13–25.
- O'Donnell, Guillermo
 1993 "On the state, democratization, and some conceptual problems: a Latin American view with glances at some postcommunist countries." *World Development* 21: 1355–1369.
- Ostrom, Elinor
 1990 *Governing the Commons*. Cambridge: Cambridge University Press.
- Pacheco, Renato José Costa
 1957 *Antologia do jogo de bicho*. Rio de Janeiro: Organização Simões.
- Pinheiro, Paulo Sérgio
 2000 "Democratic governance, violence, and the (un)rule of law." *Daedalus* 129 (March): 119–143.
- Queiroz, Maria Isaura Pereira de
 1992 *Carnaval brasileiro: O vivido e o mito*. São Paulo: Brasiliense.
- Samuels, David
 2000 "Ambition and competition: explaining legislative turnover in Brazil." *Legislative Studies Quarterly* 25: 481–497.
- Schelling, Thomas
 1960 *The Strategy of Conflict*. Cambridge: Harvard University Press.
- Schneider, Ronald
 1996 *Brazil: Culture and Politics in a New Industrial Powerhouse*. Boulder: Westview Press.
- Skarbak, David
 2011 "Governance and prison gangs." *American Political Science Review* 105: 702–716.
 2012 "Prison gangs, norms, and organizations." *Journal of Economic Behavior and Organization* 82 (January): 96–109.
 2014 *The Social Order of the Underworld: How Prison Gangs Govern the American Penal System*. Oxford: Oxford University Press.
- Skidmore, Thomas
 1993 *Black into White: Race and Nationality in Brazilian Thought*. Durham, NC: Duke University Press.
- Stiglitz, Joseph and Andrew Weiss
 1981 "Credit rationing in markets with imperfect information." *American Economic Review* 71 (September): 393–410.
- Stockler, Julia Santiago
 2011 "The invention of samba and national identity in Brazil." *Working Papers in Nationalism Studies*. <https://bit.ly/2Pm6GLA> (accessed February 20, 2017).
- Tollison, Robert
 1982 "Rent seeking: a survey." *Kyklos* 35: 575–602.

Topik, Steven

2014 *The Political Economy of the Brazilian State, 1889–1930*. Austin: University of Texas Press.

Vianna, Hermano

1995 *O mistério do samba*. Rio de Janeiro: Jorge Zahar/Ed. UFRJ.

Williams, Daryle

2001 *Culture Wars in Brazil: The First Vargas Regime, 1930–1945*. Durham, NC: Duke University Press.