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Rooking the state☆

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ABSTRACT

Throughout history, governments have engaged in exchange with private actors. Recent work has documented the prevalence of opportunism in a number of government bounty schemes, exploring how private entrepreneurs may rook the state and hence undermine the stated aims of these programs. We draw on transaction cost economics to provide a theory that explains the variation in the extent of opportunism in public-private exchange. The nature and extent of opportunism depends on the ability of the public authority to observe the production process of the good being claimed and the incentives to deny false claims. Where transaction costs limit observation, alternative (i.e., opportunistic) production processes will be prevalent. Where institutional features incentivize lax enforcement, opportunistic production processes will be prevalent. We illustrate our theory with two cases: navigational prizes in Great Britain and wolf bounties in North America. The cases provide evidence consistent with our theory.

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1. Introduction

Governments have engaged in exchange with citizens to solve problems for thousands of years. Greeks employed the use of a bounty to bring a traitor to justice during the Persian Wars (499–449 BC) (Beck, 2013). On May 7, 1662, the Massachusetts Bay Colony instituted a bounty with the following words: "This Court doth order, as an encouragement to persons to destroy Woolves, That henceforth any person killing any Woolf, shall be allowed out of the Treasury of that County where such Woolf was slain, Twenty shillings..." (Early American Imprints, 1st series, no. 88). At the present day, the United States executive branch operates an "Office of Social Innovation and Participation" that uses "cash prizes and other incentives to reach beyond the 'usual suspects' and increase the number of problem-solvers addressing a critical issue," (White House 2016).[1] As described below, bounties have

also been a favorite tool of governments facing a destructive pest population across a variety of species.

Despite their prevalence, such government programs have met with varying degrees of success. Some have failed not only to achieve their stated ends, but have positively engendered the very opposite of that which they were implemented to curtail. In fact, fraud is evident to varying degrees across time, place, and type of good in bounty programs. Consider the following examples. The South African government's payment to individuals infected with tuberculosis generated an illicit trade in infected sputum (Lucas and Fuller, 2017). Rewards for military enlistment during the Civil War incentivized individuals to enlist, defect, and then enlist again in attempt to collect the bounty multiple times (Heidler and Jeanne, 2002, p. 257). Jacob and Levitt (2003) demonstrate that linking teacher punishments to student outcomes generated cheating on the part of teachers. Van Buren (2011) suspects that attempts at trash collection in reconstruction-era Iraq were undermined by fraudulent generation of trash. In colonial Congo, failure to meet rubber quotas carried the death penalty. Overseers were required to present the severed hands of those executed for failure to meet the quota. This policy incentivized overseers to sever the hands of living innocents in an attempt to prove their thoroughness and competence (Stanley, 2012).

Perhaps most notably (and sometimes humorously), government bounties have often precipitated fraudulent outcomes in the case of pest control. Lucas and Fuller (2017) document several cases where governments have set bounty prices for the removal of pests

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[1] Since its founding in 2010, the Office has posted over 450 challenges and awarded over $150 million in prizes for devices that could better detect food-borne illnesses like Salmonella or an app that improved public safety services (White House 2016).

from public spaces, including rats in Hanoi, Vietnam and feral pigs in Fort Benning, Georgia. In the former case, rats had proved a major carrier of disease in Hanoi and a general pestilence. The government opted to purchase rat tails to curb the rat population. Eventually, tail-less rats began mysteriously appearing (Vann, 2003).

What determines the extent of opportunism in government bounty programs? When does the state get rooked? Our paper provides an answer to this under-explored question. To shed light on it, we extend the insights of transaction cost economics to the study of government bounties.[2]

We argue that opportunism in public–private exchange becomes more frequent when transaction costs limit the state actor's ability to observe the supplier's production process and when incentives of the purchasing actor are inconsistent with the policy ends. We illustrate our theory with two cases of government-instituted bounties. Our evidence is qualitative in nature. Hence, we face well-recognized issues in establishing the explanatory and predictive power of our theory of bounties (King et al., 1994). Among the many potential candidates (Lucas and Fuller, 2017), we selected our historical case studies in such a way as to minimize these issues.[3] Both case studies refer to efforts to incentivize the private provision of governance, involving the interconnections between government and private actors in the co-production of services (Grabosky, 1995; Boettke et al., 2011; Alford and O'Flynn, 2012). The two differ in the key features of our theory: transaction costs and incentive alignment. In one case we examine—prizes for navigational solutions—we find success. In another case—prizes for wolf eradication—we find evidence of widespread opportunism.

The first case—one where our theory predicts limited opportunism—is Great Britain's navigational awards in the 18th century. As we discuss below, the navigational prizes established by the British government exemplify a low transaction cost, incentive-aligned bounty program. The program thus approximated the ideal or "best-case" conditions for limiting opportunism. The second—a case where our theory predicts rampant opportunism—is the case of state and local wolf bounties in 19th century North America. The wolf bounties neatly capture a high transaction costs environment rife with incompatible incentives.

While the economic goods in these two cases are quite unique, the nature of the exchange between government and citizenry is analytically commensurable. Both represent opportunities for *ex ante* unspecified individuals to claim payment for the provision of a good from the government. Furthermore, the differences in the two goods themselves are useful for our analysis: they present an exogenous source of transaction cost variation.

A limitation in any study of illegal activity is the difficulty in assessing the true extent of that activity. The more successful fraud is, the less one might expect to know about its frequency and nature. Thus, without access to quantitative data on the extent of fraud, we present an analytical narrative relying on reports and firsthand accounts as evidence of the extent of fraud. While this is an imperfect exercise, we utilize as many sources as possible to provide a reasonable picture of opportunism. It is at least plausible that more "uncovered" fraud is correlated with more actual fraud.

The paper proceeds as follows. Section 2 develops a simple model of the interaction between a public authority and its subjects when the former introduces a bounty. Section 3 applies the

theory to Great Britain's navigational awards. Section 4 applies the theory to wolf bounties in the United States and Canada. Section 5 concludes.

2. Theory

In their simplest form, bounties and prizes can be characterized as a loosely specified form of exchange. We define a bounty program as an outstanding offer by the state to pay a predetermined price for a specified good to any supplier. On one side of the transaction is the public authority (federal, state, or local government). On the other side are the citizens, any of whom can complete the state's "ask." "Pest management" bounties, "whistleblower" rewards (e.g., the False Claims Act), and discovery "prizes" all have these common features: anyone can submit the correct pest, information, or invention for these prizes and expect to receive payment. Thus, all of these can be addressed with a common theory. Government contracts between a government agency and a *designated* supplier (e.g., military contracts) fall beyond the scope of our analysis.

We follow Allen (1999, 2015) in defining transaction costs as "the costs of establishing and enforcing property rights." According to this interpretation, in a world of zero transaction costs, all contracts would be perfectly specified and costlessly enforced, which is to say that the Coase theorem would apply (Coase, 1960). According to this approach, such issues as opportunistic behavior, external economies, and conflict over resources are all due to the presence of transaction costs. As stated, our definition of transaction costs is a mere tautology. In order to make it empirically relevant, one must specify the nature of the costs preventing property rights and contracts from being perfectly enforced. Perhaps the most successful attempt to apply transaction costs economics is the theory of the firm. Coase (1937) identifies the cost of using market-generated prices in organizing production as the main determinant of the existence of firms.

Coase's ideas have been extended and modified to identify more specifically the nature of these costs, giving rise to the modern, alternative, theories of the firm. For example, Alchian and Demsetz (1972) identify metering and monitoring costs (respectively, the cost of measuring the contribution of an input to overall output and the cost of identifying shirking in the context of team-work) as fundamental determinants of the creation of hierarchical organizations. Other applications include vertical integration (Williamson, 1971), the structure of ownership of assets within and across firms (Cheung, 1983; Hart and Moore, 1990), and a wide array of contractual relations such as piece-rate compensation schemes (Cheung, 1983; Lazear, 1986) and franchise contracts (Klein, 1980).[4]

An important strand of the transaction costs literature relates to the possibility of fraud and opportunism (Williamson, 1985). Transactions costs can arise to do the difficulty in measuring aspects of the bundles of property rights that are being exchanged, enabling suppliers to intentionally (or unintentionally) mislead consumers (Barzel, 1982). Similarly, Allen (1999) writes, "The inability to separate the contributions to quality by nature and man allows for cheating to take place in equilibrium" (Allen, 1999, p. 907). These insights have been applied fruitfully in a variety of contexts. Brinig and Alexeev (1995) discuss the extent of fraud in marriage contracts. Historical investigations reveal how ancient societies developed transaction cost-saving social and political institutions

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[2] For a theoretical discussion, see North (1990), Hammond (1996), and Williamson (2005). This framework has been fruitfully applied to a wide array of governance institutions, including seventeenth century Pirate societies (Leeson, 2007), American prison gangs (Skarbek, 2011), and Latin American ransom markets (Shortland, 2017).

[3] Unfortunately, there is no guarantee that such issues can ever be entirely eliminated, especially when it comes to qualitative, non-experimental analysis.

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[4] The transaction costs approach has been extended to the study of a large number of economic, social, legal, and political institutions, including slavery (Barzel, 1977), criminal firms (Leeson, 2007), and social norms (Ellickson, 2009). All these works share the fundamental proposition that the organization of human interactions depends on the ability of the parties involved to monitor each other's behavior, reward cooperation, and punish opportunism.