Journal of Public Economics 152 (2017) 143–153

Contents lists available at ScienceDirect

Journal of Public Economics

journal homepage: www.elsevier.com/locate/jpube

Turf wars

Helios Herrera[a,*], Ernesto Reuben[b], Michael M. Ting[c]

[a] University of Warwick, United Kingdom
[b] New York University Abu Dhabi, United Arab Emirates
[c] Columbia University, United States

ARTICLE INFO

Article history:
Received 6 May 2016
Received in revised form 28 April 2017
Accepted 12 June 2017
Available online 4 July 2017

JEL classification:
D73
D74
D82

Keywords:
Turf war
Organizations
Bureaucracy
Jurisdiction
Competition
Information withholding

ABSTRACT

Turf wars in organizations commonly occur in environments where competition undermines collaboration. We develop a game theoretic model and experimental test of turf wars. The model explores how team production incentives ex post affect team formation decisions ex ante. In the game, one agent decides whether to share jurisdiction over a project with other agents. Agents with jurisdiction decide whether to exert effort and receive a reward based on their relative performance. Hence, sharing can increase joint production but introduces competition for the reward. We find that collaboration has a non-monotonic relationship with both productivity and rewards. The laboratory experiment confirms the model's main predictions.

1. Introduction

The "turf war" is one the most commonly recognized organizational pathologies.[1] When informally discussing turf wars with people with work experience, anecdotal accounts abound. While there is no consensus on the definition of the term, accounts of the phenomenon typically possess common elements. Agents, such as government bureau heads or corporate division managers, perceive themselves to be in competition with one another over resources, promotions, or publicity.[2] This friction hampers efficient, that is welfare maximizing, team formation: given the opportunity to pursue an important task or assignment, these agents will attempt to exclude rivals from participation. Tactics might include withholding crucial information, or using decision-making rights to shunt rivals' activities into low-profile tasks. Importantly, principals or other external actors may want agents to collaborate, but they do not always have the ability to enforce such behavior.

Unsurprisingly, turf battles are widely believed to have significant adverse effects on organizational performance. In his classic analysis of bureaucratic politics, Wilson (2000) devoted an entire chapter to describing the consequences of turf-motivated strategies. Moreover, examples involving some of the largest organizations and most significant pieces of legislation are not difficult to find. The following list illustrates four major instances of turf wars. All suggest persistent inefficient allocations of property rights that were ultimately addressed through external interventions.

U.S. Military Branches. The National Security Act of 1947 established the basic structure of the modern U.S. national security bureaucracy. The law preserved the relative autonomy of the individual armed services, which led to competition and low levels of coordination between functionally similar units. In the Korean and Vietnam wars, the Navy and Air Force ran essentially independent air campaigns, and subsequent operations in Lebanon and Grenada in the early

* Corresponding author at: University of Warwick, Department of Economics, CV47AL Coventry, United Kingdom.
E-mail addresses: H.Herrera@warwick.ac.uk (H. Herrera), ereuben@nyu.edu (E. Reuben), mmt2033@columbia.edu (M.M. Ting).

[1] We look at organizational behavior, but the term "turf wars" can be used to refer to other research domains such as conflict and politics. This is not what we address here.

[2] An alternative view, offered by Garicano and Posner (2005), is that turf wars are a form of influence activities (Milgrom and Roberts, 1988).

http://dx.doi.org/10.1016/j.jpubeco.2017.06.002
0047-2727/

1980s were marred by the services' inability to communicate. As Lederman (1999) documents, this performance record culminated in the 1986 Goldwater-Nichols Act. The reforms included the creation of Unified Combat Commands, which allowed local commanders to coordinate centrally the activities of all American forces operating in a given region.

Emergency Management in New York City. The events of September 11, 2001 revealed widespread deficiencies in the ability of the city's agencies to share jurisdiction over emergency responses. The police and fire departments' activities on that day were often wastefully redundant, and the lack of interoperable radio equipment hampered even attempts at cooperation (see Hauser, 2008). These shortcomings resulted in the 2004 introduction of the Citywide Incident Management System, which attempted to identify more clearly a lead agency for specific types of emergency events. As Esposito (2011) documents, this system has generated a new set of turf battles. For example, the police department could exclude the fire department by designating a site as a "crime scene", or it could fail to share information that would maximize the fire department's resources.

Pepsico's Restaurants. While it was the owner of Pizza Hut, Taco Bell, and KFC, Pepsico operated the restaurant chains as autonomous divisions that competed with each other and reported directly to the CEO (Dahlstrom et al., 2004). As a result, managers worked independently and rarely communicated with each other because they feared they would give away trade secrets. The restaurant chains often failed to coordinate their purchasing, headquarter tasks, data management, and real estate functions, effectively relinquishing an estimated $100 million per year in cost savings (Montgomery, 2001). Some of these issues were subsequently addressed when the restaurant chains were spun off to form Tricon Global Restaurants, which allowed the creation of common procurement and information management divisions (Dahlstrom et al., 2004).

Drug Enforcement. Wilson (1978) discusses the U.S. Drug Enforcement Agency's (DEA) geographical drug enforcement program, which was used to allocate "buy money" for drug investigations. The money was allocated competitively across DEA regions on the basis of previous arrests, with more significant arrests earning larger rewards. This, however, resulted in perverse sharing incentives:

"Many drug distribution networks cut across regional lines. One organization may bring brown heroin from Mexico in to Detroit, where it is cut and then sent on to Boston or New York to be sold on the street. Six DEA regions have an interest in this case … If agent and regional directors believe they are rewarded for their stats, they will have an incentive to keep leads and informants to themselves in order to take credit for a Mexican heroin case should it develop. A more appropriate strategy would be for such information to be shared so that an interregional case can be made … The perceived evaluation and reward system of the organization … threatens to lessen the credit, and therefore (it is believed) the resources, available for a given region."

The geographical drug enforcement program induced a bias toward capturing street-level offenders, even though most agents and outsiders would have preferred higher profile cases.[3] The DEA responded to these sharing issues by creating investigation-specific inter-regional task forces. However, these task forces often only displaced the turf issue, as regional offices were reluctant to share their best agents and the assignment of credit for a successful investigation could be difficult.

These examples illustrate that there exist many instances in which cooperation among competing agencies is hard to achieve in spite of repeated interactions, and where ex ante transfers that implement the efficient, welfare maximizing, allocation of resources are unavailable.[4]

This paper develops a model of organizational turf wars. It is, to our knowledge, the first model to consider how turf wars in organizations arise, and how they might be controlled. As Posner (2005) notes, "The literature on turf wars is surprisingly limited, given their frequency and importance" (p. 143). Accordingly, the model is simple and attempts to capture only the essential elements of a turf battle. We view these elements to be the following.

Joint Production. Perhaps most obviously, questions about responsibility over a task can only arise between agents who are capable of contributing to the joint production of relevant outcomes.

Property Rights. Agents have property rights over their jurisdiction. In other words, agents can choose whether they want to involve other agents in the production process they control or exclude them to protect their turf.[5]

Competition. Agents must be in competition. The competition might be over an explicit prize, for example a promotion in a rank-order tournament, or an informal reward. The intensity of the competition might emerge from basic indivisibilities of prizes that are only awardable to a single "winner". Examples include gaining favorable media attention, or securing a prestigious project assignment.[6]

Our basic model considers two agents who can exert effort in order to contribute to a collective project. One agent, labeled the *originator*, begins the game by choosing the set of agents who will have jurisdiction over the project.[7] She may keep jurisdiction, which prevents the partner agent from working, she may refer jurisdiction, thus giving the partner exclusive authority, or she may share jurisdiction, allowing both agents to work on the project. Agents care about the project's overall output and an indivisible prize that is increasing in their joint production. Each agent's productivity is common knowledge, and the probability of winning the prize is increasing in each agent's relative contribution to the project. Sharing jurisdiction increases the project's overall output but reduces the

[3] Wilson (1978) mentions variations of this behavior at several levels in the investigation and prosecution of drug law violators: e.g., by U.S. Attorneys, local police agencies, and the Federal Bureau of Investigation.

[4] Even within academia, activities such as co-authorships have a similar incentive structure to the DEA example above. When deciding whether to invite a second author into a promising new research idea or project, the first author faces a clear trade-off. While co-authorship with a more skilled second author is likely to increase significantly the quality of an article, it is also likely to lessen the individual credit and perhaps the promotion chances of the first author. This problem is most prominent in disciplines where the formation of research teams is a first order problem, such as medicine and biology.

[5] An important assumption of our model is that an external actor such as a legislature cannot simply force agents to share jurisdiction, which trivializes the problem. The motivating logic behind centralizing re-organizations such as those proposed by the *9/11 Commission Report* is that agents would be more easily induced to share if they were placed under one roof. While this approach has no doubt had its successes, such reforms have not been uniformly successful. One reason for this is that competition may be more pronounced within organizations than between them (e.g., Posner, 2005). In the U.S. Central Intelligence Agency, for example, the two main branches (operations and analytics) are historically fierce rivals (Gates, 1987). Thus, we focus on the determinants of turf wars in environments where collaboration is plausibly non-contractible.

[6] This assumption is considered natural in the bureaucratic setting. For example, Downs (1966) argued that bureaucracies were in a constant state of competition, and in particular that "No bureau can survive unless it is continually able to demonstrate that its services are worthwhile to some group with influence over sufficient resources to keep it alive."

[7] Originator status may arise from technology or statutory assignments of responsibility, or from a principal's inability to re-assign property rights.