Journal of Economic Behavior & Organization 99 (2014) 96–108

Contents lists available at ScienceDirect

Journal of Economic Behavior & Organization

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

When parity promotes peace: Resolving conflict between asymmetric agents☆

Erik O. Kimbrough[a], Roman M. Sheremeta[b,*], Timothy W. Shields[c]

[a] Department of Economics, Simon Fraser University, 8888 University Drive, Burnaby, BC V5A 1S6, Canada
[b] Weatherhead School of Management, Case Western Reserve University and the Economic Science Institute, Chapman University, 11119 Bellflower Road, Cleveland, OH 44106, USA
[c] Argyros School of Business and Economics, Chapman University, One University Drive, Orange, CA 92866, USA

ARTICLE INFO

Article history:
Received 12 June 2013
Received in revised form
20 December 2013
Accepted 30 December 2013
Available online 8 January 2014

JEL classification:
C72
C91
D72
D74

Keywords:
Contest
Asymmetries
Conflict resolution
Experiments

ABSTRACT

Due to the high costs of conflict both in theory and practice, we examine and experimentally test the conditions under which conflict between asymmetric agents can be resolved. We model conflict as a two-agent rent-seeking contest for an indivisible prize. Before conflict arises, both agents may agree to allocate the prize by fair coin flip to avoid the costs of conflict. The model predicts that "parity promotes peace": in the pure-strategy equilibrium, agents with relatively symmetric conflict capabilities agree to resolve the conflict by using a random device; however, with sufficiently asymmetric capabilities, conflicts are unavoidable because the stronger agent prefers to fight. The results of the experiment confirm that the availability of the random device partially eliminates conflicts when agents are relatively symmetric; however, the device also reduces conflict between substantially asymmetric agents.

© 2014 Elsevier B.V. All rights reserved.

1. Introduction

> "Justice originates among those who are approximately equally powerful (. . .) where there is no clearly recognizable predominance and a fight would mean inconclusive mutual damage (. . .)"
> (Friedrich Nietzsche, *Human, All Too Human*, Section 92)

In the opening quote, Nietzsche contends that peace and justice are most easily negotiated when the costs of conflict are highest, or when opponents are evenly matched. In this paper, we develop a model formalizing Nietzsche's intuition, and we test the predictions of the model in a laboratory experiment in which two individuals bargain to avoid conflict over a valuable resource. We model conflict as a variation of the classic Tullock (1980) rent-seeking contest between two agents. In

☆ The earlier version of this paper circulated under the title "Resolving Conflicts by a Random Device." The authors thank the Economic Science Institute at Chapman University for financial support. The authors thank the Associate Editor and two anonymous referees for thoughtful and constructive comments. The authors also thank Larry Iannaccone, Kai Konrad, Florian Morath, Jared Rubin and economic seminar participants at the Economic Science Institute at Chapman University and the Max Planck Institute in Munich, as well as participants at the 2011 Economic Science Association Conference in Tucson, Southwest Economic Theory Conference in Honolulu, and Tournaments, Contests and Relative Performance Conference in Fresno for insightful comments.
* Corresponding author. Tel.: +1 216 368 4271.
E-mail addresses: rms246@case.edu, rshereme@gmail.com, sheremet@chapman.edu (R.M. Sheremeta).

0167-2681/$ – see front matter © 2014 Elsevier B.V. All rights reserved.
http://dx.doi.org/10.1016/j.jebo.2013.12.021

our setup, two agents face the prospect of conflict over an indivisible prize. Before conflict arises both participants may agree to settle the dispute via a simple conflict resolution mechanism (a fair coin flip) and thereby avoid the costs of the contest. We assume that individuals can credibly commit to the outcome of the random device.[1] The model predicts that "parity promotes peace": if agents are relatively symmetric, then conflicts can be avoided through appeals to the random device (consistent with Nietzsche's conjecture); however, when agents are substantially asymmetric, then conflicts are unavoidable because the stronger agent has no incentive to consent to randomization.

Equipped with theoretical predictions, we conduct a laboratory experiment to examine the conditions under which human participants avoid conflict. In the experiment, we alter both the availability of a conflict resolution mechanism (random device versus no random device) and the relative strength of agents (weak asymmetry versus strong asymmetry). The results of the experiment indicate that, consistent with the theory, the availability of the random device partially (although not fully) eliminates conflicts when agents are relatively symmetric. Contrary to the theory, however, the device also reduces conflict between substantially asymmetric agents.

We chose to use a random device (a fair coin flip) as a conflict resolution mechanism for a number of reasons. First, using a coin flip is transparent and easy to understand for participants. Second, it provides an ex-ante unbiased allocation of an indivisible resource (consistent with egalitarian norms). Finally, there are many modern and historical examples suggesting that such conflict resolution mechanisms are common in practice.

For example, third-party arbitration can be viewed as a conflict resolution mechanism employing a random device.[2] Although arbitration can be socially efficient (because it reduces the expenditures the parties must make to compete without arbitration), there is substantial randomness involved in the process (Ashenfelter et al., 1992; Burgess et al., 1996), making arbitration unpredictable (i.e., similar to a coin flip). The nature and degree of this randomness will then influence the likelihood that parties consent to low cost arbitration. Our findings imply that despite these potential social gains, parties may only enter arbitration when their probability of winning in competition is sufficiently close to their probability of winning in arbitration.

Other modern examples of conflict resolution by a random device include rock-paper-scissors, drawing straws, and throwing dice. Recently, a judge in Florida required lawyers on opposing sides of a case to settle a disagreement by rock-paper-scissors. Similarly, the auction houses of Sotheby's and Christie's played the game to determine who would receive a contract to sell $17.8 million worth of art.[3] In some political jurisdictions, a coin flip decides the outcome of elections in which two candidates receive equal numbers of votes, and in other jurisdictions coin flips are employed to determine the recipient of a government contract when two companies tender equal offers (Lissau, 2011). Obviously these cases differ from our setup since the parties are forced into a randomized allocation as a result of a tie. Nevertheless, their use highlights awareness that random devices can reduce the costs of conflict.

Besides modern examples, historically conflict resolution mechanisms using a random device took many forms, including divining rods, the casting of lots, and the inspired interpretation of cracks in fire-heated bones (Bernstein, 1996; Bowden, 2005). All of these mechanisms were used to settle private disputes, determine guilt or innocence, and make decisions related to war and peace, but perhaps the most famous example of conflict resolution via random device is the Delphic Oracle (Bowden, 2005; Iannaccone et al., 2011).

Consider a (hypothetical) dispute between Athens and Sparta over a piece of territory, where the alternative to abiding by the Oracle's proposed allocation is armed conflict. In this context, appealing to the Oracle offers a surplus-preserving solution to a multi-player contest. With evenly matched opponents, the potential cost of conflict may overwhelm the gains to deviation from the Oracle's decision. Hence, the small and autonomous city-states have a strong interest in supporting a randomizing Oracle. However, if Sparta, for example, is sufficiently stronger than Athens, then Sparta may no longer benefit from using a random device. If the gains to conflict are sufficient, then random decisions by the Oracle can only handcuff Sparta's ambition. Indeed, as Greece became a unified empire it no longer had need of the Delphic Oracle for political purposes. As such by the third century BCE the Oracle was used mainly for religious and personal inquiries (Bowden, 2005), and this is consistent with both our theory and the comparative statics of our experiment.

2. Background

A rich literature on conflict resolution in economics extends back to Schelling's (1960) *Strategy of Conflict* in which he applied the tools of game theory to identify the necessity of credible commitment to avoiding conflict. Since Schelling,

[1] When faced with the threat of conflict, individuals seeking a peaceful resolution usually face two problems: (1) a coordination problem, in which agents must assent to mediation, and (2) a commitment problem, in which individuals must agree to bind themselves to the mediated outcome. Here, we limit our attention to problem (1) and assume that there is no commitment issues. For interested readers, the issue of commitment is addressed in studies by Kimbrough and Sheremeta (2014) and Kimbrough et al. (2013).

[2] There is a large experimental literature on arbitration. Deck and Farmer (2007, 2009), Dickinson (2004, 2005), Farmer and Pecorino (1999), and Pecorino and Van Boening (2001, 2004, 2010) experimentally examine various arbitration mechanisms and their impact on the probability and costs of conflict. However, in all these studies the arbitration process is not random and depends (at least implicitly) on the arbitrator's notion of the appropriate split. Moreover, the outcome of arbitration also depends on endogenously chosen offers of conflicting parties. In contrast, the outcome of a random draw does not depend on the preferences of the third party and contestants cannot influence the outcome.

[3] See the following news article from the AP: http://www.msnbc.msn.com/id/13221673/ns/us_news-weird_news/

Download English Version:

https://daneshyari.com/en/article/7243589

Download Persian Version:

https://daneshyari.com/article/7243589

Daneshyari.com