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The hidden perils of affirmative action: Sabotage in handicap contests☆

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ABSTRACT

Contests are ubiquitous in economic, organizational and political settings. Contest designers often use tools to make a contest among asymmetric contestants more even, in order to either elicit higher effort levels, or for ethical reasons. Handicapping – in which stronger participants are *a priori* weakened – is one successful tool that is widely used in sports, promotional tournaments and procurement auctions. In this study we show theoretically that participants may also increase their destructive effort, and sabotage their rivals' performance, when handicapping is employed. We empirically verify this prediction using data on 19,635 U.K. horse-races in 2011 and 2012. Our results suggest that while a level field may be conducive to heightened positive effort in general, in a setting where both handicapping and sabotage are present it also lays the ground for greater destruction.

1. Introduction

Contests, in which individuals have the opportunity to expend costly resources in order to affect the probabilities of winning a prize, are ubiquitous in everyday life. Examples include promotion tournaments, political races, rent-seeking, elections, sports, and various market competitions such as advertising or patent races (see Konrad, 2009 for a broader discussion). In many of these situations, a contest designer plans a contest with certain objectives in mind. In sports, promotional tournaments, and social contests with positive externalities – to name a few – maximizing total effort is usually the central objective.

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The potential participants of a contest do not necessarily have even abilities or efficiencies. A sufficiently uneven contest, however, has several disadvantages. It may fail to give a level playing field to a historically disadvantaged or minority group. As a result, contestants from a minority group may decide not to participate in the contest. It can also fail to elicit significant efforts from weaker participants if they perceive their probability of winning to be too small (Lazear and Rosen, 1981; Runkel, 2006). Knowing this, a stronger participant also has limited incentives to exert high effort, and the overall effort exerted in a sufficiently uneven contest is usually low. Hence, ex ante differences in efficiencies or abilities among participants are a matter of concern for a contest designer interested in maximizing total effort.

In this context, Brown (2011) empirically finds that the presence of a 'superstar' – in this case, an in-form Tiger Woods – serves to reduce the absolute performance (and implicitly, the effort) of his fellow professional golfers. Sunde (2009) finds a similar effect in women's professional tennis.

It would be natural, therefore, to conclude that a contest designer should aim to level the playing field, since it will make the contestants exert more effort. Handicapping – where stronger participants are *a priori* weakened – is one such tool that is widely used in sports, promotional tournaments and other types of contests. Firms that use contests as a motivational tool often handicap those of superior ability, or give head-starts to those with inferior ability. Similarly, expenditure in political campaigns is often capped – thereby handicapping the candidate with the richest connections (Che and Gale, 1998). It is also common to observe handicapping of an outsider in a local procurement auction, or in internal promotional tournaments (Chan, 1996). One extreme policy used to handicap the most efficient players is to exclude them altogether (Baye et al., 1993). All these designs are implemented essentially to 'level the playing field' for all the participants, to rescale the ex ante likelihood of winning for all the participants, and to incentivize participants to exert higher levels of efforts in the contest. In sports this is known as 'competitive balance' and is an important component when designing sports tournaments (Szymanski, 2003; Fort and Maxcy, 2003).

Economists have also studied and analysed the effects of handicapping in the context of affirmative action. Overall, both theoretical and applied results support an employment of affirmative action tools in the interests of higher effort as well as equality. Fryer and Loury (2005) show that profile-specific affirmative actions can increase effort, and reduce inequality. Fu (2006) shows that such policies may improve incoming test scores for an academic institution, while still admitting students from minority backgrounds. Similar results are confirmed in different contest structures and information settings by Franke (2012a) and Calsamiglia et al. (2013). Kirkegaard (2012) lays down mechanisms by which an affirmative action policy can also improve effort. Empirically, the issue of levelling the playing field is supported by Schotter and Weigelt (1992), who run a laboratory experiment with equal opportunity programs and affirmative actions. They show that such policies benefit the disadvantaged group and at the same time increase the effort levels of all contestants. In addition, Balafoutas and Sutter (2012) focus on the effect of various types of affirmative action on the participation and performance of females in tournaments. They find that females are more likely to enter competitions, and perform equally well or better, when affirmative action is used. Along the same lines, Niederle et al. (2013) show that implementing affirmative action increases the entry of females, and the benefit overshadows the cost of affirmative action. Furthermore, in a similar setting as Brown (2011) and Franke (2012b) investigates the area of amateur golf tournaments and shows that handicapping the efficient players elicits higher effort in the tournament. However, Girard (2016) shows, with data from Northern India, that the effect of affirmative action – a mandatory quota in the local assembly for lower caste people – stops once the mandatory quota is taken out.

Despite the predominant success of handicapping/affirmative action, implementation of such policies is not without danger. Contests between participants of comparable ability may see more effort diverted to destruction (i.e., sabotage), rather than production.[1] In a political race this may take the form of negative smear campaigning, rather than a positive focus on the issues (Skaperdas and Grofman, 1995). In a firm, sabotage could involve the spreading of malicious rumours about a colleague (Lazear, 1989). In markets, this may mean negative advertising or even introducing ways to increase rivals' costs (Salop and Scheffman, 1983). On a football (soccer) pitch, this may mean using fouls to stop rival teams scoring (Deutscher et al., 2013). Regardless of the setting, any increase in sabotage is to the detriment of the contest designer. Fallucchi and Quercia (2016) find that introducing an affirmative action policy increases the entry rate and performance of the disadvantaged group, but retaliation may also increase. In a similar way, Leibbrandt et al. (2015) find that introducing gender quotas may increase sabotage against women; they find that sabotage is directed specifically towards women by women. Up until now, however, no study has attempted to investigate whether the policies used to elicit higher effort, or reduce inequality, actually increase sabotage in a field setting. In this paper we aim to answer this question.

We analyse an environment in which there is both handicapping and sabotage, by examining 19,635 horse races run in the U.K. in 2011 and 2012.[2] Of these, 11,766 (59.9%) are handicap races. In handicap races, horses within a range of abilities

[1] Sabotage in static and dynamic contests has been considered by a number of authors (e.g. Lazear, 1989; Konrad, 2000; Chen, 2003; Kräkel, 2005; Amegashie and Runkel, 2007; Münster, 2007; Soubeyran, 2009; Gürtler and Münster, 2010). Although experimental evidence has been forthcoming (e.g. Harbring et al., 2007; Harbring and Irlenbusch, 2008; Carpenter et al., 2010) – see Dechenaux et al. (2015) for a survey – there has been relatively little field analysis. Notable exceptions include the work of Garicano and Palacios-Huerta (2014), del Corral et al. (2010), Balafoutas et al. (2012), Deutscher et al. (2013) who examine fouls, as a form of sabotage, in sports. Please see Chowdhury and Gürtler (2015) for a comprehensive survey on sabotage in contests.

[2] Horse racing has been used by other authors to examine contest theory. For example, Lynch (2005) uses Arabian horse racing data to examine how the structuring of the prize schedule, and the translation of effort into reward, affects aggregate effort in contests. Coffey and Maloney (2010) use horse and dog racing data to disentangle the effect of incentives and selection on effort in contests.