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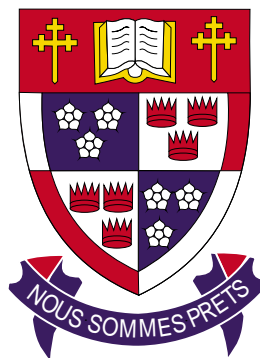
Discussion Papers

02-14

Dueling as a Screening Device

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October 2002



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Dueling as a Screening Device

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October 2002

* Simon Fraser University. Thanks to James Amegashi, David Andolfatto, Cliff Bekar, Greg Dow, Bob Ellickson, Chris Hall, Dean Lueck, Eric Posner, Tom Ross, Wing Suen, Yoram Barzel and an anonymous referee for their slashing remarks and penetrating comments.

...in a state of highly polished society, an affront is held to be a serious injury. It must, therefore, be resented, or rather a duel must be fought upon it; as men have agreed to banish from their society one who puts up with an affront without fighting a duel.

[Samuel Johnson, quoted in Boswell, p. 484, 1980]

1. Introduction

In 1829 the Duke of Wellington, much to the chagrin of the anti-Catholic Earl of Winchilsea, helped bring about the passing of the Roman Catholic Relief Bill. When the Duke later became the patron of King's College, London, the Earl took the opportunity in writing to suggest that the Duke was acting under the "cloak of some outward show of zeal for the Protestant religion" in order that he might bring about the "introduction of Popery into every department of the state."¹ When the letter reached the press the Duke sought a public withdrawal and apology, and when none was forthcoming the Duke demanded "satisfaction" in the form of a duel. Winchilsea granted the duel, stating "the satisfaction which your Grace has demanded, it is of course impossible for me to decline." The duel took place the next morning, with both parties firing wide, and a letter of apology produced by the Earl immediately following.

Several aspects of this story seem incredible: the ground for the duel is trivial; the response to settle a "point of honor" with pistols an overkill; and the Earl's reply of "no choice but to accept" unbelievable. Furthermore, the immediate production of a prepared apology makes one wonder why lives were put on the line. And finally, it must be pointed out that no police action was ever taken over the affair. As unlikely as these facts seem, they are characteristic of most duels of honor. Indeed, the puzzling institution of dueling is exacerbated by the fact that during its popular reign from 1500-1900 it was nominally illegal and often criticized in the

¹ See Baldick, (1965) pp. 104-106 for a discussion of the whole affair.

press.²

Other aspects of dueling make it an interesting social institution. Generally speaking the state or Crown protects its right to monopoly over violence, and to be the sole provider of courts for settling disputes. Though dueling was generally illegal, and though the punishments were often severe if convicted, duelists were seldom brought to court, and less likely to be convicted, and if convicted, likely to be pardoned. Penalties for dueling among the elites usually only occurred if there was evidence that the duel was not fair or did not follow a conventional code of conduct.³ Why was the state, throughout European and North American countries, so willing to allow the private use of violence to settle disputes?

The specifics of dueling are also interesting. As with all such institutions, one wonders what explains the rise of the civilian duel around 1500, and its collapse

² The Wellington-Winchilsea duel, although conducted along conventional dueling rules, was quite atypical in that extremely important, “quasi-royal” individuals like the Duke were not common partakers in duels, especially towards the end of dueling. Indeed, in response to the Wellington-Winchilsea duel the Morning Herald stated in part:

The city was thrown into a great ferment this morning by a report which seemed utterly improbable, that at first few people believed it ... the Duke of Wellington, the conqueror of a greater conqueror than either Alexander or Caesar, the first warrior of his day, the victor of a hundred battles, the Prime Minister of Britain, ... placed himself in a position where it was probable that he might have become a murderer ... And all this risk was run ... merely because a noble lord, in a fit of anger, wrote a pettish letter....

[Baldick, p. 106, 1965]

³ Kiernan reports that:

It was winked at in the eighteenth century as it had been in the Restoration epoch, and occasions for it were often as frivolous as before. Under George III (1760–1820) 172 duels were reported ... but ninety-one of them had fatal results. Legally, in all these fatal cases, murder was committed, yet only eighteen came to trial and executions numbered a meagre two. In 1771 a lawyer affirmed that he knew of no instance in England of capital punishment following a duel properly conducted.

[p. 102, 1988]

at different times in different countries. Why did the duel end in England and North America around 1850, but not until WWI on the continent? What explains the myriad of codes of conduct, the role of seconds, the choice of weapon, and the efforts to randomize the outcome?

Not too surprisingly, economists have ignored the exotic institution of dueling. More surprising, economic historians have also paid little attention to it. Dueling has attracted attention, however, among social historians and legal scholars. With social historians dueling is usually viewed as a manifestation of inherent male violence. For example, Kiernan states:

It is part of what makes man human that he should be capable of a conviction, or at any rate of being impressed by it in others, that life is not worth living at any price. He needs the assurance ... of an impregnable inner self that the outer world cannot tamper with; the pundonor, the point of honour, is its boundary-stone.

[p. 17, 1988]⁴

In addition, dueling is often considered a substitute for war and provides a release for aggression. According to Nye, "... the duel was still, as it had always been, an occasion to publicly demonstrate the personal courage that testified to the qualities of a man." (p. 85, 1998).⁵

In contrast, legal scholars have viewed dueling as a social norm substituting for legal proceedings in a court of law. As such, most conclude that it was an inefficient, or even irrational, replacement for traditional courts. Consider, for example, Lessig:

⁴ McAleer expresses similar sentiments:

As the sole method by which, at certain pivotal moments, one's "masculinity" could be "expressed" and "restored," the act of dueling articulated certain upper-class German conceptions of manhood.

[p. 43, 1994]

⁵ There are, however, many substitutes for dueling to demonstrate courage. Furthermore, duels often arose in the military, and often during times of battle, where courage could easily be demonstrated without resorting to dueling.

The duel was like a lawsuit where the judge, after establishing that indeed there was a wrong, flips a coin to decide who, between the plaintiff and the defendant, should be executed for the wrong.

[p. 969, 1995]

The problem with viewing a duel as a lawsuit or trial is that the metaphor fits so badly. Lessig goes on to say:

No doubt then, the duel often misfired, either because the challenge itself was wrongful and the challenged suffered death, or because the challenge itself was correct but the challenger suffered death. ... To us, certain features are clearly ridiculous: the practice is random, it strikes down some of the community's most valuable citizens, and its sanction is not proportional to its harm.

[pp. 969-970, 1995]

Posner (1996) views dueling as a social norm or rule that prevented “disputes from exploding into feuds by formalizing and channeling the means of enforcement.” For Posner, dueling was inefficient because the state is better at settling disputes and avoiding serial violence than private individuals. Schwartz, *et al.* (1984), come closest to an efficiency explanation of dueling by recognizing dueling played a role in facilitating social interactions by helping to enforce good reputations, but they also view duels as containing “strong elements of ritual, myth, and symbolism that are reflections of the deeply felt value structure of the social group.” (p. 331). As a result, for them the role of dueling centers around the cultural value placed on honor. Without it dueling cannot act as a substitute for courts.

Our purpose here is to provide an economic explanation of dueling and its features not based on culture, gender, or court substitution. For us the duel is best seen as a screening device separating trustworthy from dishonest individuals in a world where patronage and trust were important mechanisms for monitoring political exchanges among a small ruling class. The duel was never an event to assist in policing ordinary business transactions where other mechanisms with lower transaction costs were available, nor was the duel a manifestation of male aggression, nor a substitute for judicial decisions.⁶ Rather it acted as a screen to filter out

⁶ In business practices, trades could be self enforced through reputations or efficiency wages. See

marginal aristocrats who had not invested in social capital used as a bond to assure performance in the administration of government. Because of its illegal standing, official records of dueling frequencies do not exist. Still, there is ample evidence for its existence, structure, lethality, and general occurrence to warrant economic investigation. Indeed, our screening model explains the rise and fall of dueling, its unusual characteristics — limits on participation, the role of seconds, the evolution of weapons — and differences in dueling over time and space.

2. A Brief History of Dueling

Dueling has a long history, much of which is only peripheral to the central elements of our analysis.⁷ Dueling began around the turn of the first millennium and took the form of the “judicial duel” or “trial by combat.” These duels were to decide matters of justice with the belief that God would prevail for the righteous. The loser of such a duel, if not killed, would often suffer additional consequences such as the removal of a hand or hanging, depending on the crime. In England this form of dueling was introduced with the Norman Conquest and continued until late in the 16th century.⁸

The other form of dueling in the middle ages was the “duel of chivalry.” Here dueling was between knights and other nobles, and was often conducted as sport. These duels often took place on horseback, and used lances and spears as weapons. Like the judicial duel, these duels were sanctioned by the state, and were held in public places as a spectacle for the general public. Unlike the judicial duel, the Church was opposed to the duel of chivalry as it would be of later duels. The fading

Avner Greif (1989, 1993) for examples of how medieval traders were able to police cheating. As a result, the European merchant class was not allowed to duel, and if caught, would be tried for murder.

⁷ See Baldick (1965) for a detailed history.

⁸ The judicial duel remained part of the English law, however, and amazingly in 1817 a man accused of murdering a girl requested a trial by combat. Since the only combatant was too young to fight, the man was eventually discharged. In 1819 the right to trial by combat was abolished in England, (Baldick, p. 20, 1965).

of feudalism marked the end of the chivalrous duel, with the last English duel in 1492 and the last French one in 1547.

This paper is not concerned with the judicial duel nor the duel of chivalry, but with a different form of dueling that lasted much longer: the “duel of honor.” This type of duel began *c.*1500, peaked in the 1600s, and lasted in some places until the First World War. The duel of honor had several characteristics, most of which are distinct from the earlier forms. First, the causes of the duel were both trivial and unconnected. Trial by combat was usually reserved for major crimes such as murder and treason; however, the duel of honor was usually fought over an insult, a slap to the face, a slur on reputation, ‘coolness of manner’, or most serious of all, an accusation of lying.⁹ Whereas God was believed to intervene in the judicial duel, in the duel of honor no mechanism existed to correct the wrong — the “guilty” party was not necessarily the loser of the duel. Second, the outcome of a duel of honor was irrelevant. The loser was not punished socially, and after a duel reconciliation was common. Third, duels of honor were regulated by strict sets of rules. One of the critical aspects of the duel was the role of seconds. These individuals, chosen by each of the duelists, dealt with the logistics of the duel. Fourth, duels of honor were held in secret and were almost always nominally illegal. Finally, the duel of honor was not as lethal as the earlier duels. In fact, the duels were often fought until first blood was drawn, and as will be shown, several rules helped lower the chance of death.

Weapons in the duel of honor were restricted to a subset of lethal weapons. Early duels were fought with a rapier and dagger. The rapier was a heavy inflexible straight sword used for stabbing, while the dagger was used to parry thrusts from the opponent. Quickly after the start of dueling all defensive weapons such as shields, helmets, and armor were ruled out, and even the dagger was dropped as an allowable weapon. In addition the rapier was replaced with a lighter more flexible

⁹ “The accusation of lying was ... the essential act which set in motion the duel procedure.” (Billacois, p. 9, 1990).

sword called the *épée*, and duels became much quicker affairs. In various regions the *épée* remained the weapon of choice, but in the eighteenth century the saber was introduced. This was a slashing weapon, and although it could cause much damage, was generally not as lethal as the *épée*. Finally, dueling with pistols was introduced in the late eighteenth century. Speaking generally, the lethality of weapons fell over time.

Dueling was a European invention. Starting in Italy dueling quickly spread to France, what is now Germany, and the rest of Europe. Dueling was brought to the Americas and was conducted in Canada, Mexico, and the United States. Dueling ended first in the northern European countries of Europe by the late eighteenth century. It ended in England in the first half of the nineteenth century, in the United States by the civil war, and lasted in France and Germany until the first world war. Dueling was the sole domain of the ruling aristocratic class until the nineteenth century, whereupon upper middle class professionals also began to duel.

3. Patronage and the Dueling Screen

Understanding the relevant transaction costs is the key to understanding all institutions. Institutions, whether they be courts, families, markets, or firms are designed to facilitate trade taking into account the transaction costs that arise in the production of specific types of goods. During the period of interest the key institutions of the state was civil service. Unlike modern bureaucracies, governments during the pre-modern era were staffed by aristocrats and senior appointments were made mostly on the basis of patronage.¹⁰ The system of patronage is completely

¹⁰ During the pre-modern era the alternative to patronage was the sale of offices. Selling offices was feasible when the incentives of the purchaser were generally aligned with the Crown. When there were incompatible incentives patronage was used. See Allen (1997) for an explanation of purchase in the Army, and Allen (2002) for an explanation of patronage in the Navy during the age of sail. As a general rule the Great Offices of the state were granted through patronage and occupied by aristocrats. The lesser offices were sold and occupied by the merchant class. This paper addresses the high civil offices granted through patronage. We do not explain the lack of a professional class based on merit and contract, nor its rise in the 19th century.

alien to the modern civil service. There was no advertising for positions, no examination, no interview, and no need for professional qualifications. A civil servant often had no tenure in office and was expected to act on behalf of his patron. In fact, to the modern ear patronage rings of corruption and nepotism, but it was a system of promotion from within a given class, based on personal connections. At a time when monitoring inputs and outputs was difficult, trust and honesty were highly valued traits.

Patronage did not work exactly the same in all European countries, of course, but the general principle was the same. Consider, for example, the system of appointments in England during the eighteenth century. In 1726 there were only 179 peers in the country, and with such a small number politics could not help but be personal. At the top of the civil service was the King's Household which held all the Crown's ministers at the pleasure of the King. "The Court was the heart of political and social life, for all decisions taken, all places promised, from a turnkey to a bishopric, had to be discussed and argued with the King."¹¹ Ministers and members of Parliament would then control different parts of the government depending on their influence. Powerful ministers would have massive amounts of control. Patronage was passed down level by level: minister to court official, deputy lieutenant, sheriff, and justice of the peace. From these positions other positions of local government were then handed out to those in favor.¹²

The result was a very clannish form of administration, but one where "patrons were careful to select members whose views would not compromise their relations

¹¹ Plumb, p. 50, 1963.

¹² Aylmer describes the general system this way:

Just as one can think of a etaphorical 'pyramid' of tenants in the feudal system of land holding, so what can be called 'subinfeudation' was firmly entrenched in most branches of the government. Greater officials had the right to appoint their subordinates, and so on down the scale.

[p. 69, 1961]

with the government....”¹³ The entire system depended on the goodwill of its members and the ability to trust one another in exchanges where direct monitoring was almost always absent. Aylmer states that:

... patronage was very important, the more so considering how often positions of trust and importance in the King’s service were filled by the private secretaries and confidential servants of Court peers and great officers.

[p. 77, 1961]

The critical question is why would a patron trust his appointment? Our argument is that trust was based on critical levels of social capital. Social capital are those assets owned by individuals that generate value through connections with other people. When individuals attend the same schools, parties, and churches, they build their social capital. Social capital is also acquired through education, inter marriage, business connections, and family history. Social capital *investment* is generally unobservable, but most importantly, requires the cooperation of others in the group for it to be useful. Social capital is not transferable to other levels of society, and as a result, any investments in it are sunk. Social capital is characterized by economies of scale such that social capital that helps to guarantee one exchange can be used to guarantee others as well. Finally, social capital depreciates over time, and must be maintained if it is to continue to serve its purpose.

Social capital’s importance comes from enforcing cooperative behavior among the aristocracy. Individuals found lacking in some way, either through unacceptable behavior or political practices, could be punished severely with ostracism when they have invested in social capital. To be a social outcast in an aristocratic society was to be cut off from social, business, and governmental affairs of the ruling class.¹⁴ But how can one tell if a given level of social capital is present? By assumption,

¹³ Plumb, p. 41, 1963.

¹⁴ What we are calling social capital seems often to be what is meant by “honor” to many historians. To have honor was to necessarily behave a certain way or lose the honor. Freeman notes the importance of this for ambitious politicians in the early years of U.S. government:

For politicians of the early republic, honor was thus much more than a vague sense of self-worth; it represented the ability to prove oneself a deserving political leader

social capital investment is not observed and cannot be directly measured. Although individuals would have signals of certain levels of such capital, we hypothesize that the duel was designed to screen for a critical level of capital among individuals that needed to invest in social capital. Those individuals that rejected the duel demonstrated that their social capital was too low, and that they could not be trusted. As Frevert states:

To be regarded as a coward for avoiding a duel equaled expulsion from society, a social death sentence, to which possible death in a duel was obviously preferable.

[p. 41, 1998]¹⁵

We argue that the duel was a low cost screen, and therefore was an efficient institution during the age of patronage.¹⁶ The duel was designed to be difficult to fake, easy to verify, and unenjoyable in and of itself. Dueling had costs, however. First, dueling practices excluded large numbers of individuals from civil service, even though they may have been trustworthy types. Second, dueling often resulted in death or serious injury to talented people. Third, dueling created an incentive for

... Men who did not abide by these rules were neither gentlemen nor leaders...

[p. 170, 2001]

¹⁵ Similarly:

...failure to behave honorably was viewed with intense disfavor by the elites that accepted the dueling convention. As these elites were cohesive, loss of reputation, measured by the reduced opportunities for advantageous relations with other group members, could be very substantial.

[Schwartz *et al.*, p. 322, 1984]

¹⁶ The issue of self-enforcement is critical to the discussion of optimal institutions. As has been mentioned, a king would grant an important position of state to an aristocrat in exchange for loyal service. Beneath this position would be many offices, some of which were sold, others which were further granted as patronage. Thus an office was a source of wealth to both patron and king. The value of an office depended on the net income it could generate. This income was higher if cheating problems could be mitigated. Hence the king and his chief appointments had a strong incentive to make sure the dueling screen worked. Likewise, those who dueled had a strong incentive to enter only those duels that would be recognized by the patron. The dueling codes were simply codifications of these self-enforcing practices.

individuals to invest in acquiring dueling skills. Fourth, the conditions necessary for dueling to work were not robust to changes in the size of the ruling class. Finally, though measures existed to prevent it, at the margin cheating at duels took place. Hence, when patronage was ultimately replaced by a professional bureaucracy based on merit, dueling ceased to be practiced.

3.1. The Model

Imagine a political market where only self-enforced trades take place. That is, participants engage in exchanging complicated sets of property rights honestly only when it is in their interest to do so. In this political sphere third party enforcement of contracts is not possible. The ability to sustain self-enforced agreements depends on the parties standing to lose a stream of rents from their office if they cheat. Competition among potential civil service appointments assures that each agent must earn zero profits. Assuming the positions are not acquired through purchase, profits are competed away through the investment in sunk social capital. Each individual will forfeit their office if they are found to be cheating or if they are found to have insufficient levels of social capital. That is, cheaters and potential cheaters are expelled from the group and treated as social outcasts.

Suppose there are N individuals in the population, and each individual is born with a different level of social capital, s_i , distributed with a cumulative density function $F(s)$ and ranked from the highest to the lowest (i.e., $s_1 > s_2 > \dots s_N$). The level of social capital one is born with is *observable*, but it can be acquired at a cost. This investment is a sunk cost, and any increases in social capital are *unobservable*.

In every political exchange each individual can either be honest or dishonest, and the gains from exchange are a positive function of honest trades, and the number of people involved in trade. The aggregate gains from trade for the group are given by

$$G = g(h, n) \tag{1}$$

where n is the fraction participating in trade, and h is the fraction of honest trades. By assumption $g_h > 0$, and $g_n > 0$.¹⁷ The first-best level of gains from trade is given by $G(1, 1)$ where every potential person is participating and being honest. By assumption, \underline{G} is some minimal gain from trade in the non-elite group. Furthermore, the fraction of honest trades and the fraction of traders depends on the *minimum* level of social capital necessary to participate in trade, with $h_s > 0$ and $n_s < 0$.

If both the level *and* investment of social capital was observable, then the problem of policing political exchanges would be trivial. The aggregate gain from trade would be maximized, implying that $h_s(s^R) \equiv n_s(s^R)$, where s^R is the reservation level of social capital necessary enter the trading group (equal to $n(s^R)$).¹⁸ Those individuals with social capital levels above s^R would participate in political self enforced trades, while those with social capital levels below the reservation level would be left with only trades outside the political sphere.¹⁹

However, although the initial level of social capital is observable, the level of investment is not. In response, a mechanism is necessary to screen those with the reservation level of social capital.²⁰ For the moment imagine a game that one accepts or rejects based on the level of one's social capital. This game might be a lottery where the loser is executed, a game of Russian roulette where there is some chance of death, or a duel against an opponent in the group. An individual who survives the game participates in trade with the elite group and receives the average

¹⁷ Subscripts denote partial derivatives.

¹⁸ Technically, h_s and n_s are multiplied by relevant prices normalized to one so they can be interpreted as the marginal benefit and marginal cost of adjusting the reservation level of social capital. For notational simplicity we ignore this.

¹⁹ Trade would be policed along the lines of Klein and Leffler (1981). That is, individuals with investment s^R find it in their own interest to be honest in trades. Trade with individuals with social capital below s^R will lead to cheating. For a similar application related to the role of gift giving to signal relationship investments, see Carmichael and Macleod (1997).

²⁰ We abstract from setting higher reservation levels of social capital for higher levels of patronage appointments. There is no evidence in the historical record that any "ranking" of duels existed. We also ignore strategic issues between the two duelists. As we point out later, the rules for dueling were designed to minimize this problem.

payoff of the elite group:

$$\frac{1}{n(s^R)N} \times g(h(s^R), n(s^R)). \quad (2)$$

If we assume π is the probability of dying in this game, the value of death is normalized to zero,²¹ and the cost of investing in social capital is given by $C(\bullet)$, then the game is designed by choosing π such that:

$$\pi \times 0 + (1 - \pi) \left[\frac{1}{n(s^R)N} \times g(h(s^R), n(s^R)) \right] - C(s^R - s_i) \geq \underline{G}. \quad (3)$$

That is, the expected net gains from surviving and participating in the group must be at least as great as the gains from spot market trading outside the group in power. Equation (3) is the condition necessary for an individual *with* $s_i \geq s^R$ to accept a duel rather than reject it. Since investment in social capital is expensive and there is competition among duelists to enter the elite group, this dueling participation constraint will be set to equality.

Equation (3), however, is only half the screening story. Since investment in social capital is both costly and unobservable, individuals born with levels below s^R have an incentive to accept the game without investment.²² Those that fake investment have several impacts on the gains from trade. First, they increase the size of the trading elite and receive a lower share.²³ Second, their lower level of social capital reduces the number of honest trades, and therefore, lowers the total gains from trade. Finally, since they do not have the critical level of social capital, fakers will cheat more often and therefore stand a higher chance of getting caught cheating. For simplicity, we assume that the probability of getting caught is $p(s_i) > 0$, with $p(s^R) = 0$. Hence the second screening condition is:

$$(1 - \pi)(1 - p(s_i)) \left[\frac{1}{n(s_i)N} \times g(h(s_i), n(s_i)) \right] \leq \underline{G}. \quad \forall s_i < s^R \quad (4)$$

²¹ Although a spectrum of injuries could result, here we model the game as having only two outcomes: death and survival.

²² Not everyone with $s_i < s^R$ will be able to do this. Most people will be born with social capital levels so low that they would never be credible in faking investment by accepting duels.

²³ Keep in mind that the political elite in pre-modern countries was small, and so the fall in share may not be negligible.

Equation (4) simply states that the expected gains from faking social capital are less than the gains of trade outside the ruling elite. Hence, only those that have made the sunk investment in the reservation level of s will enter the game. Those that reject the game demonstrate that they have not made the investment and cannot be trusted in self-enforced trades. In this sense, such a game screens people based on their level of social capital. Equations (3) and (4) are quite restrictive, and in the rest of the paper we demonstrate how these restrictions manifested in the characteristics of dueling.²⁴

4. Predictions and Tests of the Dueling Screen Hypothesis

4.1. Duels vs Lotteries and Russian Roulette

From the model, it is clear that any screening device based on self-sacrifice could reveal social capital and sift for potential trading partners. Why would dueling, which seems like an awkward screen, be more efficient than a lottery, Russian roulette, or some other such mechanism? Consider a lottery, where those interested in participating in government subjected their names to a gamble with some probability of death. In such a lottery the probability of dying could be random, no effort would be made to train for the lottery, no one would be born with an inherent advantage, and presumably the cumbersome procedures of the duel could have been avoided.

The problem is that a lottery requires monitoring since the outcome is subject to manipulation. Who would trust such a lottery? With such a screen it might prove prohibitively costly to convince participants that the outcome was indeed random. Likewise with any other type of screen that required the administration of a third party. On the other hand, the competitive adversarial nature of the duel gave it three advantages over alternative administered screens. First, duelists could trust

²⁴ In particular, the two conditions are unlikely to hold for large ruling groups and in situations where self-enforced honesty is not important.

the honesty of the duel because it was in their control and each had an incentive and ability to ensure fairness. Second, members of the elite group could trust the fairness of the dueling screen because its clear all or nothing character, role of seconds, imminent occurrence, and other institutional features provided a screen that was not easily subject to manipulation. Third, the competitive nature of duelists attempting to prove their social capital in an effort to be eligible for patronage, meant that successfully staged duels would have short term consequences. Dueling involved self-selected duelists who would have information on the social capital of others in their peer group. Individuals who entered the elite ruling group on the grounds of a staged duel would likely find themselves soon challenged by more legitimate holders of social capital. Hence, the private duel, with its verifiable fairness, restrictions on manipulation, and constant threat of occurrence made it a low cost screen.

4.2. The Cause, The Challenge, and The Consequence of Duels

One of the most obvious predictions of the screening hypothesis is that the grounds for the duel, the identity of the challenger, and the outcome are all irrelevant. The importance of the duel is its function as a screen, and participants needed the duel to only prove their trustworthiness. Failure to accept a duel implies that equations (3) and (4) are not met, and therefore the individual is not to be trusted. Individuals who enter a duel, either as the challenger or the challenged, whether they win or lose, demonstrate they have invested in social capital and stand to lose if socially ostracized.

This prediction is borne out in the historical record. Unlike earlier judicial duels that were fought over capital crimes, duels of honor were fought over any slight against ones' character, family, or reputation. McAleer, writing on the duel in Germany noted that virtually all duels were the result of either impoliteness, cursing or attribution of shameful qualities, or touching another's person.²⁵ Within these broad categories, there existed a virtual limitless number of grounds for a

²⁵ McAleer, p. 47, 1994.

duel, and the historical record shows that duels were fought over trivial slights, as well as issues of great slander.

In contrast, the fact that duels could be triggered by almost anything has been used by social historians as evidence of its irrationality or manifestation of inherent male violence. Kiernan, in one of the most comprehensive studies, states:

The triviality of many disputes, which satire could scarcely exaggerate, and the willingness of so many men, young men in particular, to risk death, maiming, or exile, on the spur of the moment, suggest an infantile mentality, minds incapable of serious thought, and reacting to any stimulus like automata.

[p. 117, 1988]²⁶

In addition to the irrelevance of the grounds for dueling, there was no social advantage to challenging or winning. Who initiated or became the victor was irrelevant in a duel.²⁷ Parker notes that “the restoration of honor did not depend on the outcome of the confrontation. Ideally, a well-fought duel reconciled the two adversaries, reestablished mutual respect, and “cleansed” the stain caused by the original insult.”²⁸ Indeed, it is one of the great ironies of dueling that the adversaries would subsequently renew friendships.²⁹ Since the duel was used as a screen,

²⁶ Similarly, Frevert suggests that the trivial nature of dueling grounds was simply the result of a culture of sensitivity:

The conflict was generally triggered by an insult or an offense to one’s honor, the definition of which might depend on the individual involved. The early modern period was marked by extreme sensitivity in the perception of such offenses ...

[p. 38, 1998]

On the other hand, Schwartz *et al.*, are on the right track when they state that:

The duel, in these [trivial] circumstances, may be viewed as a means for the two parties to demonstrate that, whatever the facts of the precipitating incident, they are in fact honorable people.

[p. 345, 1984]

²⁷ This is another contrast with the earlier judicial duel, where the victor was viewed as being favored by God.

²⁸ Parker, pp. 8-9, 2001.

²⁹ Histories of individual duels are replete with such stories.

and since one demonstrated social capital through participation, the outcome was irrelevant and was treated as such.

4.3. Exogenous Probabilities Through Dueling Rules: The Code Duello

If dueling is to act as a screen, then it is critical that the probability of death be exogenous to the participants. Failure to provide an exogenous probability of death means that the level of social capital investment necessary to induce cooperative behavior is unknown. Endogenous probabilities mean that individuals can invest in skills that alter the probabilities in their favor. Hence a good marksman or a good fencer may find a given duel acceptable simply because they stand a good chance of winning and not because they've made the necessary investment in social capital. An additional problem with endogenous outcomes is the inefficiency that results from investments in dueling skills where an "arms race" develops as individuals over invest in talents to increase their odds of winning. In the language of dueling, there was to be a "level playing field," and this essentially meant that the outcome was to be random.³⁰

One of the most important methods of achieving random outcomes was the institution of dueling rules. There were many sets of rules, with many rules overlapping. Although codified rules for dueling first began to appear in Italy in the late fifteenth century, the first widely popular set of rules was published in Venice in 1550 by Girolamo Muzio. In these early rules, several features are common. First, seconds must be present at the duel. The actual role of the seconds varied, but eventually they acted as witnesses to the general fairness of the duel. Second, deadly weapons must be used. All dueling rules eliminated the trivial duel or the duel where there was no chance of loss of life. Third, generally speaking, the challenged was allowed the choice of weapon, and other, but not all, features of the duel that influenced the absolute and relative lethality. Finally, the duel was to take place without delay, usually the next morning.

³⁰ "A fair duel was a game of chance that displayed the willingness of both principals to die for their honor, not their skill at inflicting pain or death." (Freeman, p. 178, 2001).

The Code Duello was a set of rules drawn up by Irish gentlemen delegates at Clonmel Summer Assizes, in 1777. Although the code was prescribed for general use in Ireland, it was generally followed in England, the Continent, and America with small variations throughout the 19th century. The Code Duello contains 26 rules, and in fact, was often called “The Twenty-Six Commandments.” These rules generally divided over delineating the rights of the challenged and challenger, grounds for terminating the duel, rules for conducting the duel, and the rights and obligations of the seconds. Many of these rules were designed to keep the probability of death exogenous.

A series of rules restrict expert duelists or staged duels. For example, consider the following rules:

Rule 6. If A gives B the lie, and B retorts by a blow ... no reconciliation can take place till after two discharges each, or a severe hit ...

Rule 7. But no apology can be received, in any case, after the parties have actually taken ground, without exchange of fires.

Rule 13. No dumb shooting or firing in the air is admissible in any case.

A problem with using a duel as a screen is that a duel could be staged. Insults could be traded and a duel agreed to that in actual fact was all an act. As rules 6 and 7 state, however, certain events automatically triggered a duel, and once on a field shots must be fired. Rule 13 states that shots fired must be fired at the opponent.³¹

³¹ Even if shots were directed at non-fatal parts of the body, in an age lacking antibiotics any wound could kill. Indeed, most deaths from dueling resulted from infections rather than the wound itself. This is why duelists often stripped to the waist. Interestingly, the duel with Wellington and Winchelsea ended with each firing into the air. This duel occurred when dueling was ending in Britain. In an earlier time, another country, or with a lesser participant, such an episode would have not ended the duel. McAleer, notes that:

To compound the danger factor yet more, the bighearted gesture of shooting over an opponent’s head or firing off into the woods, as often portrayed in fantasy,

All duels required seconds, and usually had a doctor and others present. All of these features lowered the chance of fake duels.

More interestingly, many of the rules were designed to make the outcome random. Pistol duels were conducted with weapons that were not accurate, and being hit was largely a matter of chance. This randomness was enhanced by several rules:

Rule 3. If a doubt exists who gave the first offense, the decision rests with the seconds; if they won't decide, or can't agree, the matter must proceed to two shots or to a hit.

Rule 17. The challenged chooses his ground; the challenger chooses his distance; the seconds fix the time and terms of firing.

Rule 18. The seconds load in presence of each other

Rule 20. In all cases a miss-fire is equivalent to a shot, and a snap or non-cock is to be considered as a miss-fire.

Rule 22. Any wound sufficient to agitate the nerves and necessarily make the hand shake, must end the business for that day.

Essentially the pistol duel was designed to provide a limited number of attempted shots. Individuals who were better marksmen, and who could better calibrate the weapon would have an advantage in duels where there was unlimited shooting. The duel was also designed with a set time for shooting and with the seconds doing the loading. An expert with the pistol would have an advantage in correctly loading his weapon and in terms of the speed at which it was conducted. Rules 17 and 18

was strictly forbidden by the dueling codes. ... Were the seconds to note such a conspicuous miss, it was their duty to rush between the combatants before an opponent could return fire, to reprehend the offender and begin anew, ...

p. 69, 1994]

eliminated this advantage. Finally, to the extent a better duelist was less likely to become agitated by a wound, rule 22 worked against him. Other rules developed to randomize events. For example, not only was rifling the barrel not allowed, but dueling pistols had short barrels (reducing accuracy) and aids in aiming were also discouraged.³² McAleer points out that:

The piece was ordinarily fitted with sight and bead, but these must have been removable since most duels were prosecuted minus their aid — and for the same reason that groves of trees were avoided as dueling sites: so as not to inordinately channel one's aim.

[p. 65, 1994]

Although it varied from time to time, a general theme in dueling rules was to assign rights in such a way that they favored the challenged. For example, consider:

Rule 15. Challenges are never to be delivered at night, unless the party to be challenged intend leaving the place of offense; before morning; for it is desirable to avoid all hot-headed proceedings.

Rule 16. The challenged has the right to choose his own weapon, unless the challenger gives his honor he is no swordsman ...

Rule 16 was not always found in earlier rules, but it took away a major advantage of the challenger and leveled the playing field considerably. As Rule 17 stated, other rights regarding the ground and the timing of shots were not held by the challenger. Indeed, since challenges could also be provoked, we should not be surprised that rights were also held by the challenger and the seconds. In German dueling codes there was a complicated sets of rights to the “insulted” party that depended on the level of insult. McAleer notes that these rules were designed to prevent “ruffians

³² It is worth pointing out that the impediments placed on pistols made them *inaccurate* not *ineffective*. Dueling pistols were well crafted, expensive, and looked after. They were expected to work every time. In the spirit of the literature on optimal punishments, one might think more accurate weapons, leading to fewer costly duels might be more efficient. However, accurate weapons open the door for training and marksmanship, which destroys the value of the duel as a screen. Hence, more accurate weapons would not be more efficient.

with strong arms and practiced eyes to go around intentionally picking fights.”³³ Rule 15 essentially protected unassuming victims from accepting duels from strategic challenges in the heat of the moment. A final set of rules pertained to the ending of the duel, and essentially amounted to “first blood.” Duels, especially towards the end of dueling, were usually not fatal. Aside from the efforts to make the duel random, the first blood rules also reduced the chance of death. The rules on limiting shots have already been mentioned, but the same held true for swords.

Rule 5. If swords are used the parties engage until one is well blooded, disabled, or disarmed; or until, after receiving a wound, and blood being drawn, the aggressor begs pardon...

In fencing duels gloves were generally not worn, which meant that most first wounds were to the armed hand since it was closest to the opponent’s blade. The first blood rule in fencing duels eliminates any advantage one duelist might have due to physical size or strength. Since each duelist used a weapon identical to the other, the opponents armed hand was the same sword distance away from each other. This was not true of the opponent’s torso since individuals with longer reaches have an advantage in attacking the body. There were other restrictions on sword duels that hindered excellent fencers. McAleer notes that:

The duelist was not allowed to follow-up an attack which had disarmed his opponent or had caused him to stumble and fall. It was impermissible to transfer a blade from one hand to the other. Parrying of the opponent’s blade with one’s free hand was not allowed, ...

[p. 61, 1994]

In fencing duels it was more difficult to level the playing field than in pistol duels, which may explain why duels evolved generally into pistol fights.³⁴

³³ p. 47, 1994.

³⁴ McAleer notes that in Germany during the 19th century, only about one in four duels were with sabers (p. 58, 1994). He also notes the difficulty in equalizing the duel with sabers:

Although saber duels [without thrusting] were historically suggestive of the blunted weapons used in medieval jousting, saber duels [with thrusting] were theoretically

4.4. The Role of Seconds

One of the most important aspects of dueling was the presence of seconds. These men were chosen by the duelists, and played a role from the beginning to the end of a duel. All communication and negotiation between duelists was done between the seconds, not the actual duelists. Weapons were inspected and armed (if pistols) by seconds. Social historians often contend that the role of seconds was little more than ceremony, something that allowed the aristocracy to view the duel as less barbaric and above the mere brawl of the common man.³⁵ To the legal scholar the role of the duel was to substitute for legal court actions, and thus the role of the second was to act as a mediator and judge, and to prevent the action from escalating to violence.³⁶

adjured as “more chivalrous” because of the circumspect and deliberate style they fostered, giving physically disadvantaged opponents an even chance. ... in saber duels [with thrusting] physically weaker duelists were compensated, while technically inferior duelists were reimbursed in matches [without thrusting]. What was fair to the strong was annoying to the skilled ... Consequently, sabers under both species were generally disdained, and even relative experts shunned the form.

[p. 63, 1994]

³⁵ Frevert states:

The purpose of such rules [including the role of seconds] was to elevate the single combat of honor above ordinary quarrels and to give it a certain outward dignity.

p. 39, 1998]

³⁶ Schwartz *et al.* state:

The seconds could, in principle, have engaged in the settlement process in two ways. Under one conception, each second would attempt, like an attorney representing a party to litigation, to achieve the best possible results for his principal, given the probabilities of the various outcomes of the duel and the costs of proceeding to successive stages. The second possibility is that the seconds were obliged to conduct settlement negotiations so as to achieve a result which accorded with the merits of the dispute giving rise to the challenge.

[p. 337, 1984]

Under our screening hypothesis the seconds have two roles that are different from the two interpretations above. First, the role of the second was to prevent strategic duels from occurring. In order for dueling to act as a screen it is important that excellent duelists be discouraged from exercising their talent opportunistically. The role of the second was to protect their friend from such duels.³⁷ Second, the role of the second was to ensure that the odds of dying were as fair as possible. Weapons were to be inspected, guns were to be loaded, conditions such as the placement of the sun, the firmness of the ground, etc, were to be considered. In short, the role of seconds was to increase the randomness of the duel.³⁸ This explains the confusing observations of seconds at times refusing duels and other times insisting they take place. The second’s role was not to avoid all duels, only those duels that were not legitimate.

4.5. Changes in Lethalness Across Jurisdictions

Given the wealth maximizing level of social capital s^R , we can solve equation (3) for the optimal level of lethality:³⁹

$$\pi^* = 1 - \frac{[\underline{G} + C(s^R - s_i)]n(s^R)}{g(h(s^R), n(s^R))}. \quad (5)$$

If we assume that the cost of acquiring social capital is convex with positive parameters then it is easy to show that $\partial\pi^*/\partial C < 0$. This means that if social capital is more expensive to acquire, then the duel is less lethal. Essentially social capital and

³⁷ In addition, seconds would have indirectly made collusion among duelists more difficult. First, simply having more individuals involved in a duel makes collusion more difficult. Second, since a doctor and other notables generally attended duels, seconds were required to carry out the duel rules that raised the cost of collusion. Finally, seconds involved in collusion must be paid off since their social capital is not enhanced by a successfully staged duel.

³⁸ The cover picture of Murray’s 1984 catalog of Lt. Col. William Orbelo’s collection of American dueling pistols is of two .60 caliber flintlock pistols. However, on the inside jacket it states: “Interestingly, one pistol is smooth-bore and the other rifled. In many early dueling codes rifled barrels were illegal, although some gunmakers produced guns with secret rifling, which was invisible at the muzzle.” (p. 4, 1984). It was a critical job of the second to minimize such practices.

³⁹ The cost of acquiring social capital does not enter into equation (4), hence equation (5) comes from equation (3) alone.

lethality are substitutes. Costly social capital means that anyone caught cheating on an exchange stands to lose significantly more, and as a result, the chance of loss of life in a duel need not be as high.

It seems reasonable to suppose that in aristocratic societies the cost of acquiring social capital was higher than in more egalitarian societies. It is practically the definition of aristocracy that movement through social ranks, including those within the upper class, is difficult. In egalitarian societies, social status often depends on few dimensions, sometimes just on wealth. Movement from the middle class to the upper class in Europe, then was considerably more difficult than in the New World, and as a result dueling is predicted to be less lethal in Europe.

Dueling in America

The first reported duel in America was between two servants of a Massachusetts gentleman in 1621.⁴⁰ The most famous duel in history, the Burr-Hamilton duel in 1804, was also an American duel. Although no unique American dueling rules arose and American duels were conducted along the same procedures as European duels, the two duels just mentioned contain the essential differences. First, duels in the Americas were essentially open to everyone. There were duels among gentlemen and commoners, landholders and the landless. In addition to Burr and Hamilton, General Andrew Jackson, the future president, fought in a duel, as did Senators, and Supreme Court Judges.⁴¹ So common were duels in San Francisco during the gold rush that “San Francisco became the duelling capital of America, with the local newspapers advertising duels as if they were stage performances, and one duelling editor putting up a notice in his office which read: ‘Subscriptions received from 9 to 4, challenges from 11 to 12 only’.”⁴² Second, the duel in America was more deadly than those in Europe. Baldick, in quoting Tocqueville, states:

⁴⁰ Baldick, p. 115, 1965.

⁴¹ Abraham Lincoln even met on the field of honor to fight a duel in 1842 with broadswords. His opponent, James Shields, had second thoughts and the duel was not carried out (Steward, p. 126, 2000).

⁴² Baldick, p. 134, 1965.

In Europe one hardly ever fights a duel except in order to be able to say that one has done so; the offence is generally a sort of moral stain which one wants to wash away, and which most often is washed away at little expense. In America one only fights to kill; one fights because one sees no hope of getting one's adversary condemned to death. There are few duels, but they almost always end fatally.

[p. 115, 1965]

The two differences in American dueling are consistent with our model. Since all of the colonies lacked a well defined aristocracy, observations of endowed social capital is less easily observed. As a result, there were no restrictions on the abilities of anyone to duel. Halliday, noting the social status of duelers in Canada, states that:

Most Canadian duellists would have been regarded as country bumpkins by the patrician classes in England, and only a rare colonial duel was even noticed by British reporters or authors. In the international realm of duelling, Canadians were small fry, and their encounters decidedly *déclassé*.

[p. 6, 1999]

When a society is more egalitarian, then duels become more lethal.⁴³ European duels of the 19th century had a fatality rate of around 2%.⁴⁴ In contrast, Schwartz, *et al.*, claim that the fatality rate in U.S. pistol duels was 1 in 14, or slightly more than 7%.⁴⁵ An additional feature of American dueling was that it was more common in the South than in the North. Given that the social structure of patronage was stronger in the south this is also consistent with our hypothesis.

⁴³ In his discussion of Missouri duels, Steward contrasts the differences in social status between the old South and Missouri. Whereas the old South had a formal class structure, Missouri was more egalitarian. He also notes a difference in lethality consistent with our hypothesis:

Missouri was not like the Deep south. In Dixie many duels were "bloodless" ... While southern duels often left both reputation and body undamaged, Missourians sought satisfaction with blood.

[p. 8, 2000]

⁴⁴ Hughes reports that the fatality rate for Italian duels in the late 19th century actually fell to half of one percent (p. 73, 1998).

⁴⁵ In most of the American duels discussed by Baldick the outcomes were fatal.

4.6. Limits on Participation

A major cost of dueling was that individuals stood some chance of being killed. To the extent members of the political class are valuable, this is a considerable loss. One way to minimize this was to lower the lethality of the duel; however, for a given environment, changing the probability of death violates the screening equations. An alternative method that does not alter the incentives found in equations (3) and (4) would be to limit those who are allowed to participate in the duel. Since social capital acquired at birth is generally observable, it is clear that there is no need for individual's born with social capital well above the critical level to enter a duel — it is already known they meet the threshold level. It is only those marginal members of the group who must prove their worthiness. If an individual is very valuable in terms of their human capital, even if they are technically allowed to duel, there may be restraints placed on them to prevent it. Hence, the very highest members of society should not be allowed to duel.

From equations (3) and (4) it is clear that for some individuals with extremely low levels of social capital, it would never pay to invest in acquiring sufficient social capital to qualify for patronage. These individuals would only duel for reasons other than to screen for social capital: they are either exceptional duelists, they have staged the duel, or they are using the duel to simply settle a dispute.⁴⁶ As a result, they should be barred from the practice. Low social capital individuals who duel impose social costs with no offsetting benefits.⁴⁷

Both of these predictions are consistent with the historical facts of dueling. Several classes of individuals were not allowed to duel, nor were they allowed to be

⁴⁶ Dueling was a high cost mechanism for conflict resolution for many of the reasons mentioned in the introduction. One of the primary roles of manorial courts was to resolve disputes between peasants.

⁴⁷ There is a third class of individuals who, though not barred from dueling, virtually never dueled: women. Although there are records of women duels, the numbers were trivial. The lack of dueling resulted from their lack of participation in civil administration.

challenged. Royal family members for example, were excluded from dueling.⁴⁸ In addition, during times of war, and especially during battles, military officers were not allowed to duel. Officers were also not allowed to duel with officers of a higher rank. Indeed, it would appear that most dueling took place among the lower levels of the ruling elite. Schwartz cites a Virginia court and states:

The men most likely to resort o the duel as a mode of arbitrament were the men generally most ambitious of public honors, power and distinction. These men would feel most keenly their entire exclusion from every hope of preferment.

[p. 322, 1984]

Finally, the lowest members of European society were not allowed to duel. This was accomplished by making dueling illegal for everyone, but allowing aristocrats the privilege of dueling without concern over arrest. Ironically, those making anti-dueling laws were the very individuals most active in dueling. While many writers on dueling find the practice of dueling among legislator incongruent with laws banning the practice, this is an implication of the screening hypothesis.⁴⁹ Dueling was made illegal in order to prevent individuals with low levels of social capital from participating. Though aristocrats convicted of dueling could always receive a pardon, commoners caught engaging in a fatal duel were charged with murder. This is

⁴⁸ Halliday notes that:

... courts of honour attempted to deter challenges made for frivolous reasons. These courts were particularly common in the 16th century and were most useful when the *higher nobility* was involved. Monarchs — Elizabeth I most notably — kept a close eye on their courtiers and intervened to prevent the loss of valued advisors. But lesser aristocrats and those with patrician pretensions either duelled impetuously or ignored the existing avenues of mediation.

[p. 3, 1999]

⁴⁹ For example, Steward notes that:

Ironically, he roots of violence in Missouri were nurtured by men espousing an extreme sense of individualism and were cultivated by statesmen ostensibly professing the best of democratic traditions.

[p. 6, 2000]

an important point in distinguishing the legal theories of dueling to the screening hypothesis. Most legal scholars writing on dueling argue that the state actually wanted to eliminate dueling through the use of legal sanctions, and that the anti-dueling laws were ultimately successful in changing social norms and eliminating the practice. However, there are several problems with this theory. First, dueling was always illegal, and yet it lasted for centuries. Second, the anti-dueling laws were enforced and effective — lower class individuals were effectively barred from dueling. Finally, when dueling ended it was not replaced by law, but by a meritocracy. Although it is common in the legal social norm literature to see anti-dueling laws upheld as an example of how the law can be used to change social norms, we agree with Wells (2001) who suggests this implication is mostly in the imagination of those seeking to manage social behavior. Dueling ended when its role as a screen ceased, not because it was illegal. Dueling was reserved only for aristocrats, those individuals for whom civil service and the administration of the kingdom was an option.⁵⁰

4.7. No Patronage, No Dueling: The English Commonwealth

Dueling did not exist simply because there were no alternatives, or because the central legal authority was weak. It existed because it was an efficient screen in times of patronage. Posner (2000) suggests that the end of dueling resulted from increases in wealth that were able to fund better mechanisms for settling disputes. he states:

So when states finally gain a sufficient amount of wealth and power, they replace the forms of nonlegal regulation [dueling] with more purely legal institutions, and eventually succeed because the legal institutions are better.

[p. 218, 2000]

Posner's argument is consistent with the general rise in wealth and decline of dueling

⁵⁰ As Kiernan states: "Its affiliation was always and everywhere with social groups occupying a pre-eminent and privileged position, or inspired by the striving towards such a position..." (Kiernan, p. 2, 1988).

through out the 19th century. However, it is inconsistent with the history of dueling during the English commonwealth.

Dueling became popular in the 17th century. Thomas Hoby's translation of the Italian Castiglione's *The book of the courier* in 1561 is the first English book to mention dueling among aristocrats. Over the next forty years several treatises on dueling, courtesy guides, and codes of honor were published in England, and there was a concomitant increase in the amount of dueling. Peltonen reports that "the numbers of duels and challenges mentioned in newsletters and correspondence jumped from five in the 1580s to nearly twenty in the 1590s. The peak was reached in the 1610s with thirty-three recorded duels and challenges, although the number of actual duels and challenges must have been much higher."⁵¹

By accounts, however, there was a dearth of dueling in England from 1642-1660, the years of the Civil War and Commonwealth. Baldick states: "After thriving during the first decades of the seventeenth century, duelling became an extremely rare occurrence in the Civil War. ... The same conditions obtained during the Protectorate, After the Restoration, duelling very naturally regained all its previous prestige, and soon ballrooms, coffee-houses and public walks were all scenes of fighting and bloodshed."⁵²

During the non-republican years the government of the monarchs ruled much as they had in times past, through the use of patronage. It was the prerogative of the royal court to deliver positions within the administration, military, and general government to whom it pleased, and as discussed earlier these ministers would then act as patrons to lesser individuals for other positions in the civil service. However, the Civil War and the subsequent government of Oliver Cromwell was considerably different. Aylmer states that "The coming of the Protectorate and the institutional

⁵¹ Peltonen, pp. 9-10, 2001.

⁵² Pp. 67-69. Kiernan also confirms this: "In England [dueling] fell off after 1642 when the civil wars broke out, but in the Royalist camp steps had to be taken to curb it." (p. 94, 1988).

changes which followed it altered the pattern of appointments appreciably. Direct appointment by Parliament virtually disappeared.”⁵³

Oliver Cromwell, though a conservative and born of a small gentry class, was a puritan who had strong beliefs in religious tolerance. By 1644 he found himself second in command of the Parliament army, and frustrated by the unwillingness of his noble generals to fully engage and defeat the royal forces in the civil war. As he would do later with many of the civil service positions, he demanded a purging of the military high command and the establishment of a national army with a highly central control. As historian Kenyon puts it: “He got his way.”⁵⁴ The “New Model Army” turned out to be very effective, and within one year the first civil war was over. Cromwell’s power continued to rise over time, mostly due to his military successes. From 1653 to 1657 he enjoyed virtually supreme power, and had complete control in appointing great officers of state and judges.

It would be an error to suggest that Cromwell dispensed with a system of patronage; however, it would be just as incorrect to suggest that the system of appointment and promotion remained the same. At a fundamental level, the Civil Wars and the subsequent governments were driven by serious divisions of theology, and at one level Cromwell screened appointments with a “religious screen”. At a personal level Cromwell was concerned with what he termed “the root of the matter” which most historians seem to take as a minimum standard of Puritan belief. Consistent with this is the purging of many administrative positions based on belief. There was the “Plundered Minister’s Committee” which was “responsible for purging non-puritan Episcopalian clergymen and imposing tests on all others; these were often replaced by previously ‘plundered’ puritan ministers.”⁵⁵ He also introduced the “Ejection Commissioners” to get rid of ministers for “misconduct or

⁵³ p. 70, 1973.

⁵⁴ Kenyon, p. 152, 1978.

⁵⁵ Aylmer, p. 10, 1973.

non-subscription to the prescribed minimum of Protestant belief.”⁵⁶ Having said this, though, Cromwell put an emphasis on merit and ability that was absent in the royal administrations prior to and after the Commonwealth. Aylmer puts it this way:

The Commonwealth was a revolutionary regime. It had come to power through civil war and military force, and its legality was not universally recognised in the country. This put a premium on political or ideological reliability, and meant that loyalty to the government was something which patrons needed to stress, and appointing bodies to satisfy themselves about. *It also led t a formidable battery of tests and oaths.* ... over and above loyalty and morality, we find emphasis on men’s actual fitness for the work in question. It could mean a particular skill in writing, accounting or foreign languages, or a more all-round ability.

[pp. 61–62, 1973, emphasis added]

Thus we find strong evidence that dueling was tied to the system of patronage. When civil service positions were dealt out among the aristocracy dueling was active. When Cromwell instituted a system of appointment based on religious beliefs and merit, the practice of dueling stopped. Dueling owed its existence not to the level of wealth, but to the presence of patronage/screening.⁵⁷

⁵⁶ Aylmer, p. 61, 1973.

⁵⁷ China provides another case where there was an absence of patronage and dueling. Beginning as early as the third century B.C. and ending in 1905, China introduced a series of imperial examinations for the civil service. Hucker states:

Early imperial China is nevertheless famous, and deservedly so, for instituting and systematizing rational, merit-oriented techniques for the recruitment, placement, and evaluation of government officials that had no counterparts elsewhere until very recent times.

[p. 156, 1975]

Once appointed to an office, a man served on probation for a year; if he performed satisfactorily, the appointment was then made permanent. Every third year officials submitted efficiency ratings on their subordinates, which led to salary adjustments and occasionally to promotions, demotions, or dismissals.

[p. 159, 1975]

These exams were conducted as a series of tournaments. Exams would be held over several weeks each year in small country towns, with the very best students moving on to provincial capitals, and then to the royal court. Once eligible and appointed on the bases of merit, performance was monitored on the job. Consistent with our model, in this system of merit based civil service dueling

4.8. Dueling's Decline in the Late Nineteenth Century

Dueling existed because of patronage in the senior civil service, at a time when other options of staffing were not viable. Our final piece of evidence on this point is the decline of dueling throughout the 19th century. For England, the eighteenth century saw tremendous growth in its Empire. By end of this century, the colonies of British North America and India were not controlled by monopoly companies like the Hudson Bay or the East India companies, but rather were being administered by the British civil service. This change was part of an enormous growth in the civil service. Whereas at in 1700 there may have been one to two thousand members, by 1914 the British Civil Service had 167,628 employees, and by 1919 this had grown to 393,205.⁵⁸ These positions were not filled by patronage, but through examinations, and interviews with selection boards. For other European countries like France and Germany, the nineteenth century would see large formations of colonies around the world with similar civil administrations, again appointed generally outside the realm of patronage.

Likewise in the United States the 19th century saw a decline in the role of patronage, culminating in the Pendleton Act of 1883. Johnson and Libecap (1994) document how the increase in the sheer size of the civil service over this period prevented the President or members of Congress from controlling and benefiting from their patronage appointments. In noting that the federal work force grew from 26,000 to 51,000 between 1851 and 1871, they note:

When the labor force was small, federal politicians could monitor the actions of their appointees to guarantee their allegiance and to see that they responded to the demands of influential constituents. .. As the federal labor force grew, however, careful supervision of patronage workers by the President or members of Congress, as had been practiced earlier, became more difficult.

[pp. 97–98, 1994]

did not exist because its screening function was not required.

⁵⁸ Campbell, p. 56, 1965. Brewer (p. 65, 1990) states that in the 17th century “the overall picture is clear: the central administrative apparatus was tiny.” He estimates that in 1688 the civil service employment was 2500 men. By 1760 he estimates it had grown to 16,000.

Other changes were taking place between 1780 and 1850 that also led to the radical reforms in civil administration. The industrial revolution, changes in communication technology, and tremendous falls in transportation costs all led to a huge increase in the size and wealth of the middle class. This increase in wealth outside the aristocratic group increased \bar{G} , and lowered the attractiveness of social capital as a method for policing exchanges in the elite group.

Regardless of the reasons, whether from increased size of bureaucracy, better gains from outside the group, and lower cost methods of measuring merit, there is no denying the fact that the use of formal patronage was replaced by a professional bureaucracy in the first half of the 19th century.⁵⁹ As merit replaces patronage, dueling ceases to play a screening role. Not surprisingly then, with the changes in size of governments in Europe and the United States came the end of dueling and a general fall in lethal duels. In England the duel all but ceased to exist by 1850. In France and Germany the duel remained until WWI, but the probability of death diminished greatly. In Germany, sword duels ceased using the épée and switched to the saber. This weapon was curved to prevent penetration and the tip was often dulled and the blade rinsed with an antiseptic carbolic acid solution to prevent infection.⁶⁰ Most German duels, however, were with pistols, and as has already been mentioned, the dueling rules essentially guaranteed a low fatality rate. As for the French duel of the late 19th century, the chance of death had become something of a joke in other parts of Europe:

The Germans did indeed regard dueling in the Third Republic as something of a joke because of its hilariously low fatality rate, which, from a pool of between four and five hundred duels a year until the first decade of the twentieth century, never exceeded twelve annual deaths and was often as low as two per year.

⁵⁹ Although a theory of movement from patronage to merit is beyond the scope of this paper, this suggests an economies of scale for merit. Patronage was efficient for small numbers of appointments, but with large bureaucracies the fixed costs of instituting merit appointments became feasible. An alternative hypothesis, also consistent with our analysis, is that the transition from patronage to meritocracy was motivated by increases over time in \bar{G} . Such increases could have made the required conditions for a dueling screen become unsatisfied.

⁶⁰ McAleer, p. 62, 1994.

[McAleer, p. 75, 1994]

Although his estimates on the number of duels is different, Nye suggests the same chance of survival:

between 1875 and 1900 there were at least two hundred duels each year, perhaps three hundred in certain years, and in periods of unusual political effervescence ... dozens of duels a week for weeks on end... Fatalities were rare. ... there were probably no more than two dozen deaths in duels in this era.

[p. 88, 1998]

Contrast this with French dueling at the turn of the seventeenth century where “[T]he cream of the French nobility — perhaps ten thousand men — perished in duels in the last decade of the sixteenth and first decade of the seventeenth centuries.”⁶¹ Indeed it has been estimated that over the first half of the seventeenth century between 300 and 500 noblemen died from duels per year.⁶² By WWI dueling was little more than fencing with the possibility of scaring due to limited face protection.

By the end of the nineteenth century, the ritual had become overly refined and excessively formalized, indicating a shrinking, a withdrawal. The self-conscious obsession with technique and protocol was a symptom of decadence.

[McAleer, p. 45, 1994]

Dueling had ceased to be used as any form of screen for social capital.⁶³

5. Conclusion

The 19th century was a transition century. One is amazed at the number of institutions that developed centuries earlier and were either seriously transformed or terminated during this century. Patronage and purchase of military and civil

⁶¹ Nye, p.83, 1998.

⁶² McAleer, p. 18, 1994.

⁶³ Hughes reports that dueling fatalities also fell in Italy over the last part of the nineteenth century. Of 3918 duels reported between 1879–1899 in Italy, only 20 deaths resulted. Italians in this period also fought with sabers (p. 73, 1998).

offices, along with dueling are just a few examples. Viewed from the 21st century many of these institutions seem archaic and beyond economic rationale. Yet, if we seriously believe that institutions are formed for the purpose of maximizing wealth net of transaction costs, then understanding these costs should provide an explanation of these rules. We take as given that civil servants were appointed through a system of patronage in a world where direct monitoring of service and appointment and promotion based on merit seldom existed. We view dueling as a response to the problem of selecting who would be eligible for such positions of power. Our model implies a participation constraint to duel, whereby participation in dueling indicated a sufficient investment in social capital had been made. This investment policed behavior in self-enforced political transactions. Our hypothesis not only provides an efficiency rationale for dueling, but it also explains many of its puzzling features. Dueling was not a recreational sport, not an irrepressible manifestation of masculine aggression, nor a poor substitute for law courts. The purpose of dueling was to screen for individuals who would behave properly in their post and not threaten the position of their patron.

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