

Mend it, don't end it: optimal mortality in affairs of honor*

Tom Ahn[†]

Jeremy Sandford[‡]

Paul Shea[§]

University of Kentucky

University of Kentucky

University of Kentucky

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Abstract

Duels, also known as affairs of honor, were an important mechanism for honorably settling disputes in the American South until around the time of the Civil War. Although barbaric by modern standards, dueling's widespread use and persistence suggest it must have yielded social benefits. We examine the welfare implications of dueling by modeling a three stage game where two agents compete in a political contest. Agents may increase their probability of winning either by moderating their position or libeling their opponent. Either agent may reduce the effects of libel, however, by challenging his opponent to a duel and thus risking death. We have three major results: 1) allowing dueling deters

*Do not reject this paper, under penalty of being challenged to a duel.

[†]tah224@uky.edu

[‡]jeremy.sandford@uky.edu

[§]paul.shea@uky.edu

agents from libeling their opponent, 2) when dueling deters libel, agents substitute toward moderation, 3) if policy can affect the mortality rate, then it is always possible to choose an equilibrium where no dueling occurs, but the threat of dueling reduces libel and promotes moderation. Outlawing dueling is thus never optimal.

JEL Classification: C72, K40, N41.

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1 Introduction

Years later, reflecting on the Southern “Code” of dueling, [US senator from Maryland] Charles Gibson maintained that as wicked as the code was, the vulgar public behavior following the demise of the practice was worse still. “The code preserved a dignity, justice and decorum that have since been lost,” he argued, “to the great detriment of the professions, the public and the government. The present generation will think me barbarous but I believe that some lives lost in protecting the tone of the bar and the press, on which the Republic itself so largely depends, are well spent.”

—*Team of Rivals*, Doris Kearns Goodwin, pg. 65

“...you do further solemnly swear that [you] have not fought a duel with deadly weapons within this State nor out of it, nor have you sent or accepted a challenge to fight a duel with deadly weapons, nor have you acted as a second in carrying a challenge, nor aided or assisted any person thus offending, so help you God.”

—Kentucky oath of office, as of March 12, 2010

It is impossible to precisely quantify the number of duels which took place among gentlemen in the antebellum American South. We have, however, constructed a data set of one interesting subset, US senators, and have to date found 54 senators who participated in an affair of honor, approximately 20% of all senators who represented states in which dueling was tolerated.¹

¹Henry Clay, Humphrey Marshall, David C. Broderick, Armistead T. Mason, Andrew Jackson, George A. Waggaman, James Shields, John Randolph, William H. Crawford, John Rowan, George M. Bibb, Thomas H. Benson, James D. Westcott, David Barton, James Gunn, James Jackson, Josiah Johnson, Thomas Clingman, John Fremont, Sam Houston, John Crittenden, Pierce Butler, Thomas Metcalfe, John Adair, Benjamin Gratz Brown, Henry Geyer, Henry Foote, Louis Wigfall, Alexander Buckner, Lewis Linn, Garrett Davis, Jonathan Dayton, George McDuffie, William Gwin, John Breckenridge, James Farley, George Wallace Jones, Harrison Riddleberger, James Hammond, Dewitt Clinton, Edward Lloyd, Robert Wright, Thomas Rusk, George Campbell, Jefferson Davis, William R. King, Gabriel Moore, Clement C. Clay, William C. C. Claiborne, Jeremiah Clemens, Ambrose Sevier, Solon Borland, Aaron Burr, and Judah Benjamin. Senators Bibb, Johnson, Crittenden, Adair, and Davis acted as seconds in duels, but may not have ever participated as principals. Senator Linn participated in a friend’s duel as a surgeon. Senators Metcalfe, Davis, Dayton, Hammond, Rusk, King, and Benjamin issued calls to the field of honor, but were declined or otherwise unable to come to acceptable terms. Sen. Barton is not known to have been personally involved in a duel, but his brother Joshua was killed in one defending charges the senator had made in a newspaper against a rival. The other 41 acted as principals on the field of honor. We do not count William Yancey, who was a confederate senator from Alabama.

The true number is surely larger than this estimate. Only three of these fell on the field of honor. These data present two puzzles. One, why was something so barbarous accorded such stature that senators, congressmen, future presidents, and sitting vice-presidents viewed it as an acceptable means of conflict resolution? Two, why did such an august institution use inefficient and inferior weapons such as smooth-bore, short-barreled, muzzle-loaded, flintlock handguns?

This paper is the first to formally model dueling. Our research shows that most duels occurred in a political environment, broadly defined. We therefore model a game in which two politicians compete for a prize, and each can increase his chance of winning either by moderating his position to be more in line with the median opinion or by libeling his opponent. We consider two ways in which libel affects outcomes, one by distorting the opponent's position, the other by increasing the randomness of the contest, pushing both politicians' win probability towards $\frac{1}{2}$. In societies such as the antebellum South, where duels were widespread, a duel was seen as an essential way to refute attacks on one's honor. We therefore model participation in a duel as reducing the effectiveness of libel. Because libel and moderation are substitutes, if the price of libel increases (as when the threat of a duel is higher), then moderation increases. Importantly, we do not assume that honor enters politicians' utility functions, but that they care about it only as much as it affects their probability of winning the contest.

We find that if dueling is afforded public legitimacy, then: one, the threat of dueling has a deterrent effect on provocative behavior. Two, increasing the cost of a duel (for example by outlawing it) leads to more political extremism. Three, if policy can affect the cost of dueling, then it is always possible to construct an equilibrium with no dueling but with less bad behavior than were dueling outlawed. It is thus possible that dueling was an efficient institution.

We begin by providing an overview of dueling as an institution, including descriptive statistics on the prevalence and deadliness of duels in the United States. After a brief review of related literature, we present our model of political conflict.

1.1 Overview of dueling

While the July 11, 1804 duel between Alexander Hamilton and Aaron Burr — which ended Hamilton’s life and Vice-President Burr’s career — is widely known, duels also claimed the lives of three US senators (one sitting),² one signer of the Declaration of Independence,³ one standing congressman,⁴ and naval war hero Stephen Decatur.⁵ Henry Clay⁶ and Andrew Jackson⁷ both participated in multiple duels. Abraham Lincoln narrowly avoided a duel by the maneuvering of his representatives, but the feud was serious enough that both parties did arrive at the agreed-upon location.⁸

Dueling was common in the Southern United States throughout the 19th century. Though anathema in New England from the time of the founding (Stevens, pg. 31), and in the rest of the North after the death of Alexander Hamilton in 1804, the South felt no such restraint until after the Civil War.⁹ In addition to the 54 senators mentioned in the introduction, we also know of 29 governors, 54 US congressman, and 7 cabinet secretaries who participated in a duel. Dueling was commonplace in both the army and the navy; estimates for the army are elusive, but one source suggests that $\frac{2}{3}$ as many naval officers died on the field of honor as died in all naval conflicts between 1798 and the start of the Civil War (Stevens, 1940, pg. 73). Despite its frequency, there has not been one single court martial for dueling in the history of either service.

²Armistead T. Mason of Virginia was killed by his brother-in-law on 2/6/1819. George A. Waggaman of Louisiana was killed on 3/31/1843. David C. Broderick of California was shot on 9/13/1859 by David S. Terry, a chief justice of the California supreme court, who resigned “to free himself from possible criticism” which might arise upon his shooting Sen. Broderick.

³Button Gwinnett, died 5/16/1777 at the hands of Lachlan Macintosh, a brigadier general in the Continental Army.

⁴Congressman Jonathan Cilley of Maine was killed by standing Congressman William Graves of Kentucky on 2/24/1838. Two other active congressmen served as the seconds (Stevens, pp. 219-227).

⁵Decatur was shot by a subordinate officer he had once court-martialed for ‘unpreparedness’ on 3/22/1820 (Seitz, 1966).

⁶Clay dueled former Sen. Humphrey Marshall, of Kentucky, on 1/19/1809. Both men were shot, but survived. Clay also dueled Sen. James Randolph on 4/8/1826, but managed only to shoot a hole in his coat.

⁷When Jackson announced his candidacy for the presidency, a political opponent published a pamphlet entitled “The Indiscretions of Andrew Jackson” which claimed Jackson was involved in 14 duels between the ages of 13 and 60 (Seitz, pg. 123). Only one is known to have resulted in a fatality; Jackson killed Charles Dickinson on 5/30/1806. Dickinson had himself killed 26 people in Duels (ibid.).

⁸Illinois state auditor James Shields had challenged Lincoln to a duel. Lincoln, as was his right as the challenged, selected heavy broadswords wielded while standing on a narrow plank as his preferred weapon. The duel was to take place on 9/22/1842. The two became friends and President Lincoln later appointed Shields a brigadier general in the Union army (Seitz, 1966).

⁹*A history of the old South*, 1975, by Clement Eaton provides an interesting account of shifting attitudes towards dueling in the North and South.

Dueling was the preferred method of settling personal disputes honorably between Southern gentlemen. Indeed, duelers enjoyed near-complete legal immunity.¹⁰ We can find only a handful of duelers who were arrested, and their cases were generally dropped, often without an indictment.¹¹ Though a series of anti-dueling measures were passed in the South in the early 19th century, including Kentucky amending its constitution to require the oath of office quoted above, these laws were dead letters.¹² There is almost no evidence of anyone being prosecuted under them (Stevens, 1940, pg. 13).¹³ Even the principals who actually killed their antagonists were rarely bothered by the law — prosecutors, judges, and juries considered defending one’s honor an acceptable motive for murder.¹⁴

Surprisingly well-defined and commonly-accepted sets of rules existed for duels. A meeting of Irish nobles at Clommel in 1777 produced a set of 26 rules followed in the English-speaking world until the practice’s demise; two American dueling codes were published, the more important in 1838 by former South Carolina governor John Lyde Wilson (Stevens 1940).¹⁵ The rules prescribed the distance the duelers should stand at (usually 30 feet), how the seconds should conduct themselves, and the type of weapons to be used. Were a challenged party to suggest a meeting at a closer distance, or that relatively more deadly weapons be used than prescribed by the code, the challenger had the right to suggest an arrangement even more likely to end in the death of at least one party. We find little evidence of this occurring. As the *Code Duello* enjoyed wide acceptance in the antebellum South, those who failed to live up to its standards suffered large reputational hits.¹⁶

¹⁰There is only one record of an execution resulting from a duel, in Illinois, and even this was more for dishonorable conduct than murder. The duel’s seconds intended to stage a mock duel to test the challenged man’s courage, so they gave the principals unloaded weapons. The man in question learned of this dastardly plot and loaded his weapon with his own bullet, allowing him to slay his adversary. For this he was executed (Stevens, 1940, pg. 93).

¹¹See esp. John Rowan’s experience in Kentucky; after killing Dr. Chambers, Rowan was arrested, but despite there being no disagreement as to the facts of the case, the judge declared there was “no evidence sufficient to hold the defendant to the grand jury” and released Rowan (Coleman, 1953, pg. 11).

¹²Governor Mitchell of Georgia, who signed his state’s anti-dueling bill into law in 1809, had himself killed a man in a duel (Stevens, 1940, pg. 38).

¹³Schwartz et al. (1984) find records of only 19 antebellum appellate cases pertaining to anti-dueling laws in 10 Southern states.

¹⁴When Congressman William Yancey dueled Congressman Thomas Clingman, the Alabama state legislature passed a special bill immunizing Yancey from any prosecution (Stevens, 1940).

¹⁵As dueling fell out of favor in England, these codes were the subject of derision, with one satirical publication advising the duelist ‘If he dies, he is to go off with as good grace as possible’ and not to under any circumstances choose an Irishman as a second, owing to their bellicose nature (Stevens 1940).

¹⁶Andrew Jackson, upon murdering Charles Dickinson after re-cocking his misfired pistol, faced “many who felt that the General had grossly violated the unwritten code of dueling; and the honor for which he risked his

The *Code Duello* prescribed the use of flintlock, short-barreled, smooth bore pistols (as opposed to percussion cap, long-barreled, and rifled), at great cost to accuracy. The flintlock weapons misfired often, wasting many shots in duels.¹⁷ Precise estimates for the probability of injury or death in an affair of honor are hard to come by. One 1836 writer estimated that 1 in 6 duelers were injured, and 1 in 14 killed (Schwartz, et al., 1984). Another estimate puts the conditional probability of a naval officer dying on the field of honor at 20% (Stevens, 1940, pg. 71). Our data on dueling senators supports the former figure. We know of 41 senators who received fire on the field of honor, 3 of whom died. As it is far more likely that we failed to find politicians who dueled and lived than those who died defending their honor, the mortality rate among senators was probably well below $\frac{3}{41}$.

If the point of dueling were to legitimize murder, then this could have been done more efficiently with better weapons. Percussion cap pistols were developed around 1830, while rifling was invented hundreds of years earlier. Why, then, did Southerners persist with such inefficient weapons? Our theoretical model demonstrates that a low mortality rate could have contributed to the efficiency of the institutions.

The first stage to a duel was an insult, real or perceived, often in the press.¹⁸ The slighted party would then write to the originator of the insult demanding a full retraction. If the latter was unwilling, the aggrieved party would then choose between letting the matter drop or challenging his tormentor to a duel. Once challenged, refusing the duel was out of the question, as it would forever brand the refuser a coward.¹⁹ Extensive negotiations between surrogates would then follow to choose the time, date, weapons, and rules for the interview, with the challenged party responsible for choosing weapons.²⁰ These ‘seconds’ were also

life was seriously tarnished” (Coleman pg. 29, 1953). Jackson was able to rehabilitate his reputation only with military heroics in the war of 1812.

¹⁷Often enough that the term ‘flash in the pan’, referring to the gunpowder in the priming pan igniting, yet failing to ignite the powder in the barrel itself, permanently entered the lexicon. A misfire would exhaust the combatant’s turn.

¹⁸Burr, for example, was offended by reading a newspaper article in which the reporter alluded indirectly to Hamilton’s “despicable opinion” of Burr. John Rowan and James Chambers drunkenly began quarreling over “which understood some of the dead languages the best.” The argument resulted in future Senator Rowan killing Chambers in a duel to defend his honor (Coleman, 1953).

¹⁹Declining a challenge gave the aggrieved party license to ‘post’ his antagonist, publicly declaring him a poltroon. For example, when John Randolph declined James Wilkinson’s request for a meeting, Wilkinson posted fliers all over Washington saying ‘Hector unmasked. In justice to my character I denounce John Randolph, a member of Congress, as a prevaricating, base, calumniating scoundrel, poltroon, and coward’ (Stevens, 1940, pg. 43).

²⁰The one loophole in the *Code Duello* we are aware of allowed a challenged party to extricate himself honorably by suggesting absurd weapons. For example, Senator Crittenden of Kentucky, upon receiving a

encouraged to seek a peaceful end to hostilities, which usually demanded finding a way for honor to be satisfied without either man losing much face. On the day of the duel, the parties would arrive separately, usually accompanied by a doctor and between one and three seconds who would enforce the rules and ensure that both mens' honor was preserved. The seconds would array themselves so as to verify the duel took place honorably, but often so as to be unable to testify in court that they witnessed one dueler killing another.²¹ Rules varied from duel to duel, but typically each combatant would fire one shot at the other from 30 feet, at which point the seconds would meet to decide if an additional round was necessary (Stevens, 1940, pg. 133).

After a brief review of the literature, we turn to a model that addresses two important questions; one, what benefit did Southerners derive from this barbaric practice that allowed it to persist for so long? Two, why were more efficient weapons not used?

1.2 Related literature

Legal scholars have extensively studied dueling, largely focusing on two questions. First, why did dueling exist as a quasi-legal institution for such an extended period of time? Second, why did dueling largely disappear in the United States at the end of the nineteenth century? A typical answer to the first question is that dueling was a substitute for nonviolent institutions, particularly the civil legal system, as a mechanism to redress grievances (cf. Schwartz, et al., 1984).²² According to Wells and Harwell (2001), “honor was not a quality that could be repaired through the legal system... a libel suit carried the message that the plaintiff was one who thought his honor could be repaired by monetary damages... [and was] an admission

challenge from Senator Rusk of Texas, replied (from Stevens, 1940):

Sir: your note of this day is received and the challenge accepted. Exercising my undoubted [right] to select the mode of battle, I [wish] to fight across the Rio Grande with field howitzers. As I do this entirely for your satisfaction, I shall require you to furnish the howitzers with a suitable supply of powder and ball, and of provisions.

I have the honor to be, etc.

J.J. Critenden

The editor of the *Tennessee Whig*, when challenged, suggested the most vile hogpen in all of Knoxville as a location, and dung forks as the weapon. Neither duel ever took place. We do not, however, see widespread exploitation of this loophole, even by politicians who were in no condition to fight.

²¹It seems as dueling became more entrenched in the South, the need for secrecy vanished almost completely. As many as 100 people witnessed and wagered on some duels (Stevens, 1940, pg. 79).

²²Posner (1996) proposes that dueling may have been an efficient institution “when societies are not sufficiently wealthy or organized to support powerful, centralized governments.” Lessig (1995) states that “the duel was like a lawsuit.”

of both weakness and cowardice.”²³ Our contribution to this question is to formally model dueling and derive conditions where its existence is socially optimal. We find that a rational policy maker will allow dueling only when the public accepts its legitimacy as a method of redressing defamation and when mortality from dueling is not too high. As to why dueling disappeared, legal scholars provide two related explanations: that a shift in attitudes resulted in dueling being seen as barbaric instead of noble, and that the development of legal institutions rendered the practice unnecessary.²⁴ In our model, a shift in attitudes against dueling is easily represented by reducing the effectiveness of dueling at mitigating libel. We show that, holding the preferences of potential duelers constant, the shift in attitudes reduces both the incentive to duel and its effectiveness at reducing libel and encouraging political moderation.

While dueling has been almost completely ignored by the economics literature, there is a small literature reexamining the efficiency of old institutions. Leeson (2009) argues that ordeals, which required suspected criminals to, for example, submerge their arms in boiling water under the theory that God would prevent an innocent man from burning, created different incentives for the guilty and the innocent such that the institution may have enhanced efficiency. Leeson (2007) suggests that incentives on pirate ships were surprisingly well-structured by an elaborate system of checks and balances, and that abuse by pirate captains was, as a result, quite rare.

Our paper is also related to the literature on “mutually assured destruction” (MAD) in international conflicts.²⁵ Both dueling and the stockpiling of nuclear weapons threaten annihilation to deter the opponent the opponent from behaving badly.²⁶ Unlike the MAD literature, duelers do not invest in weapon effectiveness.²⁷ Our model of dueling also takes

²³As President Jackson’s mother advised, “Never tell a lie, nor take what is not your own, nor sue anybody for slander, assault and battery. Always settle them cases yourself.”

²⁴While some legal scholars suggest that the purpose of the largely unenforced anti-dueling laws was to change social norms in order to eventually end dueling, Wells and Harwell (2001) conclude that anti-dueling laws were largely ineffective at changing social norms and only the trauma of the Civil War initiated the demise of dueling in the South.

²⁵See John et al. (1993), Garfinkel (1990), van der Ploeg and de Zeeuw (1990), and Intriligator (1975) among others.

²⁶The MAD literature tends to focus on the repeated game played between two nations as they make decisions to invest in weapons which increase the deadliness of any potential conflict. In any conflict both nations usually release their stockpiles which then destroys one or both nations. Hence, the usual first-best outcome in these models is zero stockpile (usually unenforceable unless there exists a social planner), so the probability of survival of both nations is one. The second-best outcome is for both sides to accumulate a large enough stockpile to assure mutual destruction, which then deters all conflicts.

²⁷A person challenged to a duel may request deadlier weapons, but the vast majority of duels used standard dueling pistols. In any case, weapon effectiveness is necessarily symmetric according to *Code Duello*.

a more nuanced approach to conflicts between the parties than the MAD literature. Duelers can expect to antagonize each other to some extent before a duel is called. This is equivalent to the superpowers limiting themselves to conventional warfare or diplomatic wrangling even when the nuclear option was available.

We now present a model of dueling.

2 Model

Two politicians compete for a prize, which may be a political election, a more general political dispute, or simply the esteem of society. Each politician makes three choices that affect his probability of winning. First, he publicly commits to a political position. Second, he chooses how much to libel his opponent.²⁸ Finally, upon observing his opponent’s libel, he chooses whether or not to challenge his opponent to a duel.

A position $s_i \in [0, 1]$ closer to the median opinion (normalized to be $\frac{1}{2}$) increases a politician’s probability of winning. Committing to position s_i costs $\phi(|s_i - \theta_i|)$, where θ_i is the politician’s true belief. ϕ is the disutility a politician gets from having to compromise his views. Assume ϕ is an increasing C^1 function, and that as $s_i \rightarrow \frac{1}{2}$, $\phi \rightarrow \infty$.

Creating libel l costs a politician $c(l)$, where $c'(l) > 0$, $c'(0) = 0$, and $c''(l) > 0$. We consider two channels where libel affects the contest’s outcome. First, libel can “redefine” an opponent, convincing the public that he is more extreme than his stated position. Second, libel can increase the entropy of the election, pushing both politicians’ win probabilities towards $\frac{1}{2}$. In the former case, both politicians will libel if the cost is low enough, while in the latter case only the more extreme politician has an incentive to libel.

Participation in an affair of honor potentially benefits a politician by reducing the effectiveness of both parties’ libel. This assumption captures the widespread belief among Southern gentlemen that dueling was essential to restoring one’s honor after a false or malicious attack.²⁹ Specifically, assume politician i ’s libel l_i is reduced to αl_i for $i = 1, 2$ and some $\alpha \in [0, 1)$. In

²⁸Our definition of libel is broader than the legal definition of libel which refers to published defamation. Here libel may also include all defamation of character, slander, negative campaigning, etc.

²⁹In *Honor and Violence in the Old South*, Oxford University Press 1982, Wyatt-Brown argues “almost all [duels] arose because one antagonist cast doubt on the manliness and bearing of the other... The stigma had to be dealt with or the labels would haunt the bearer forever.” Schwartz et al. (1984) argue “the willingness to risk one’s life may have been a good indication how honorably a party had behaved in the incident giving rise to the duel.”

a duel, each politician dies with probability b .³⁰

Player 1 wins the contest with probability $\gamma(s_1, s_2, l_1, l_2)$.³¹ The form of γ depends on the type of libel under consideration. In either case, we assume γ is a C^1 function and that $\alpha\gamma_i(s_1, s_2, \alpha l_1, \alpha l_2) \leq \gamma_i(s_1, s_2, l_1, l_2)$ for all $\alpha \in (0, 1)$.³² Winning the contest provides utility equal to B . Regardless of the outcome of the contest, each politician receives utility A from being alive.

The mortality rate b is loosely interpretable as a policy parameter. Under the *Code Duello*, most duels were fought with inefficient weapons at a distance of 30 feet or greater, far outside of the range at which the weapons were accurate. Even as the use of rifled and percussion cap weapons became commonplace, braces of antiquated dueling pistols continued to be used nearly exclusively for affairs of honor. Our model suggests the persistence of these inefficient weapons may have enhanced the efficiency of the institution.

The game proceeds in three stages. In stage 1, the politicians simultaneously announce their stances s . In stage 2, each politician chooses his level of libel l . In stage 3, each chooses whether or not to challenge his opponent to a duel.³³ After stage three, the contest is resolved, and each politician receives payoff $A+B$, A , or 0 , if he won, lost, or died in a duel, respectively.

³⁰Note that the deliberate choice of inferior weapons helped eliminate advantages in shooting, equalizing the probabilities of death for each combatant.

³¹Throughout the paper, we assume that moving closer to the median position increases a politician's probability of winning, but that the politician closer to the median does not win with certainty. This deviation from the basic median voter theory of Downs (1957) often arises when politicians care both about winning the contest and aligning their public and private positions, and the model includes uncertainty. Alesina and Cukierman (1990) show that if voters are not fully informed about politicians' positions, then politicians typically choose a policy between his own position and that of the median voter. Additionally, politicians have an incentive to create ambiguity that makes it difficult for voters to pinpoint their positions. Gul and Pensendorfer (2009) obtain a similar result when uninformed voters have preferences over candidates' personalities. Similar results also arise in Bernhardt, Duggan, and Squintani (2007) by assuming that politicians are uncertain about the median voters' preferences. Alesina (1988) takes a very different approach, demonstrating that equilibrium divergence from the median voter occurs if voters are fully rational and thus able to see through politicians' attempts to deviate from their private positions. In the context of these models, our approaches of modeling the effect of libel may be viewed as either manipulating the choices of uninformed voters with personality preferences, or reducing the fraction of informed voters. The empirical evidence also overwhelmingly rejects the theory of convergence to the median voter (cf. Gerner and Lewis (2004) and Stratton (1995)).

³²This assumption requires that γ not be "too concave" in l_i , and is needed to rule out the possibility that under extreme parameter values the marginal benefit of libel can increase after a challenge has been issued.

³³We assume that once the challenge is issued, it must be accepted. Our reading suggests the vast majority of challenges were accepted.

3 Solving the model

3.1 Case I: libel redefines opponent's position

Let θ_i and s_i be in the interval $[0, \frac{1}{2}]$,³⁴ and assume that player 1's probability of winning is

$$\gamma(s_1, s_2, l_1, l_2) = \frac{1}{2} + s_1 - \pi(s_1, Il_2) - s_2 + \pi(s_2, Il_1) \quad (1)$$

where $I = 1$ if no duel takes place, and $I = \alpha$ if there is a duel. The function $\pi(s_i, l_j)$ defines the effectiveness of j 's libel against i . Assume $\pi_{ls} < 0$, $\pi(s_i, 0) = 0$, $\pi_l(s_i, l) > 0$, $\lim_{l \rightarrow \infty} \pi(s_i, l) = s_i$, and $\alpha\pi_l(s, \alpha l) < \pi_l(s, l)$.³⁵

We begin in stage 3, where (s_1, s_2, l_1, l_2) are taken as given. Politician 1's utility from issuing a challenge and not, respectively, are³⁶

$$U_1^D = A(1 - b) + B(1 - b) \left(\frac{1}{2} + s_1 - \pi(s_1, \alpha l_2) - s_2 + \pi(s_2, \alpha l_1) \right) - \phi(|s_i - \theta_i|) - c(l_i)$$

$$U_1^{ND} = A + B \left(\frac{1}{2} + s_1 - \pi(s_1, l_2) - s_2 + \pi(s_2, l_1) \right) - \phi(|s_i - \theta_i|) - c(l_i)$$

We define $l_2^*(l_1)$, which may be infinite, as the minimum amount of libel where (2) holds with equality.³⁷ If l_2 exceeds $l_2^*(l_1)$, then politician 1 challenges politician 2 to a duel.

$$B(1 - b) \left(\frac{1}{2} + s_1 - s_2 - \pi(s_1, \alpha l_2^*(l_1)) + \pi(s_2, \alpha l_1) \right) - B \left(\frac{1}{2} + s_1 - s_2 - \pi(s_1, l_2^*(l_1)) + \pi(s_2, l_1) \right) = bA \quad (2)$$

Politician 2 faces an analogous problem in deciding whether or not to issue a call to the field of honor; he will do so only if libeled more than $l_1^*(l_2)$.

Moving back to stage 2, politician 2 takes (s_1, s_2, l_1) as given and decides how much to

³⁴This assumption is equivalent to one in which politician one chooses a position in $[0, \frac{1}{2}]$ and politician 2 in $[\frac{1}{2}, 1]$, which would cover the case in which one politician is liberal and the other conservative.

³⁵One sensible function satisfying these conditions is $\pi(s_i, l_j) = s_i \frac{l_j}{1+l_j}$.

³⁶We assume that a politician's chances of winning the contest are unaffected by killing his opponent in a duel.

³⁷Equation (2) may hold with equality for multiple levels of libel. Throughout section 3, we assume that α is small enough to ensure that only the lowest l^* affects politicians' decisions. Section 4 discusses the model where higher values of α result in multiple economically significant levels of l^* .

libel by playing either $l_2^*(l_1)$, l_2^{ND} , or l_2^D , where the latter two are defined by:

$$\begin{aligned} B\pi_l(s_1, l_2^{ND}) &= c'(l_2^{ND}) \\ B(1-b)\alpha\pi_l(s_1, \alpha l_2^D) &= c'(l_2^D) \end{aligned}$$

If $l_2^{ND} < l_2^*(l_1)$, then the former is preferred to the latter. If $l_2^{ND} \geq l_2^*(l_1)$, then 2 decides between playing l_2^D , knowing that this will lead his opponent to call for a duel, or playing $l_2^*(l_1)$, and libeling his opponent the maximal amount possible without a challenge. Specifically, 2 prefers l_2^D to $l_2^*(l_1)$ if the following incentive constraint holds:

$$\begin{aligned} U_2^D(s_1, s_2, \alpha l_1, \alpha l_2^D) &\geq U_2^{ND}(s_1, s_2, l_1, l_2^*(l_1)) \\ \iff \pi(s_1, \alpha l_2^D) - \pi(s_1, \alpha l_2^*(l_1)) &\geq \frac{2bA + Bb}{B(1-b)} \end{aligned} \quad (3)$$

where the second line in (3) comes from substituting equation (2) into player 2's incentive constraint. Equation (3) states that player 2 chooses l_2^D if and only if it is sufficiently higher than $l_2^*(l_1)$. An analogous incentive constraint governs player 1's libel decision.

In a stage 2 Nash equilibrium, either both players choose l_i^D and a duel takes place, or each plays either $l_i^*(l_j)$ or l_i^{ND} and no duel takes place. If $l_i^*(l_j^{ND}) \geq l_i^{ND}$ for $i = 1, 2$, then (l_1^{ND}, l_2^{ND}) is a stage 2 Nash equilibrium. If, as measured by (3), l_i^D is preferred to $l_i^*(l_j^D)$ for $i \in \{1, 2\}$, $j \neq i$, then (l_1^D, l_2^D) is a stage 2 Nash equilibrium, and a duel takes place. If neither of the above hold, then there is a stage 2 equilibrium in which one of the politicians is deterred, and the field of honor sits vacant.

Note that there is *always* an equilibrium in which both politicians play l_i^D in stage 2, and both issue a call for an interview in stage 3. Since we consider these equilibria to be implausible if neither party would benefit from a duel, we hereafter focus only on equilibria in which any politician indifferent about issuing a call to the field of honor chooses not to duel.

An equilibrium always exists in the stage 2 game. Let $l_i(l_j)$ denote i 's best response to l_j , taking into account the stage 3 dueling decision. Clearly, $l_i(l_j) = \max\{l_i^*(l_j), l_i^{ND}\}$ if no duel takes place, and l_i^D if a duel occurs. Per the discussion above, l_i^{ND} is preferred to $l_i^*(l_j)$ if and only if $l_i^{ND} < l_i^*(l_j)$, while l_i^D is preferred to $l_i^*(l_j)$ if either l_i^D is 'enough' greater than $l_i^*(l_j)$ (i prefers to induce a challenge) or if l_j is sufficiently large (i prefers to challenge j).

$(l_1, l_2(l_1))$ is an equilibrium if $l_1(l_2(l_1)) = l_1$. If no such point exists, then at least one of the politicians issues a challenge in stage 3 and (l_1^D, l_2^D) is played in stage 2 of an equilibrium. Figure 2 demonstrates.

We now turn to stage 1, where players choose levels of moderation s_1 and s_2 . Consider the best response curve $s_1(s_2)$. Each politician considers two effects when considering where to set s_i . One, the more he is being libeled in period 2, all else equal, the less he moderates, as more libel means he gets to ‘keep’ less of his moderation. As there is the most libel in a no dueling equilibrium and the least in a dueling equilibrium, the disincentive to moderate will be the largest in a no dueling equilibrium. Two, he recognizes that his moderation alters his rival’s libel decision. For example, in a no dueling equilibrium, politician 1 moderating a little more causes l_2^{ND} to increase by a small amount. Proposition 1 states that, if α and b are low enough, outlawing dueling unambiguously results in more extreme politicians. Requiring a low α and b ensures that dueling is an effective means of repairing honor and is not so deadly that no rational actor would ever issue a challenge.

Proposition 1 *Outlawing dueling results in more extreme politicians, if α and b are low enough.*

Proof. For a fixed (s_1, s_2) , three things can happen if dueling is legalized relative to a regime in which it is illegal: 1- no change in behavior, 2- a deterrence equilibrium, or 3- a dueling equilibrium. For fixed (s_1, s_2) , libel is lowest if either case 2 or case 3 obtain, meaning legalizing dueling has the direct effect of encouraging moderation.

There is also an indirect effect of moderation on opponent’s libel, that is also the most unfavorable in an unconstrained equilibrium, if α and b are low enough. From equation (2), an increase in s_i decreases $l_j^*(l_i)$ for all values of l_i , if b is sufficiently low, and so the indirect effect of moderation on opponent’s libel results in more moderation when dueling is allowed if a deterrence equilibrium obtains.

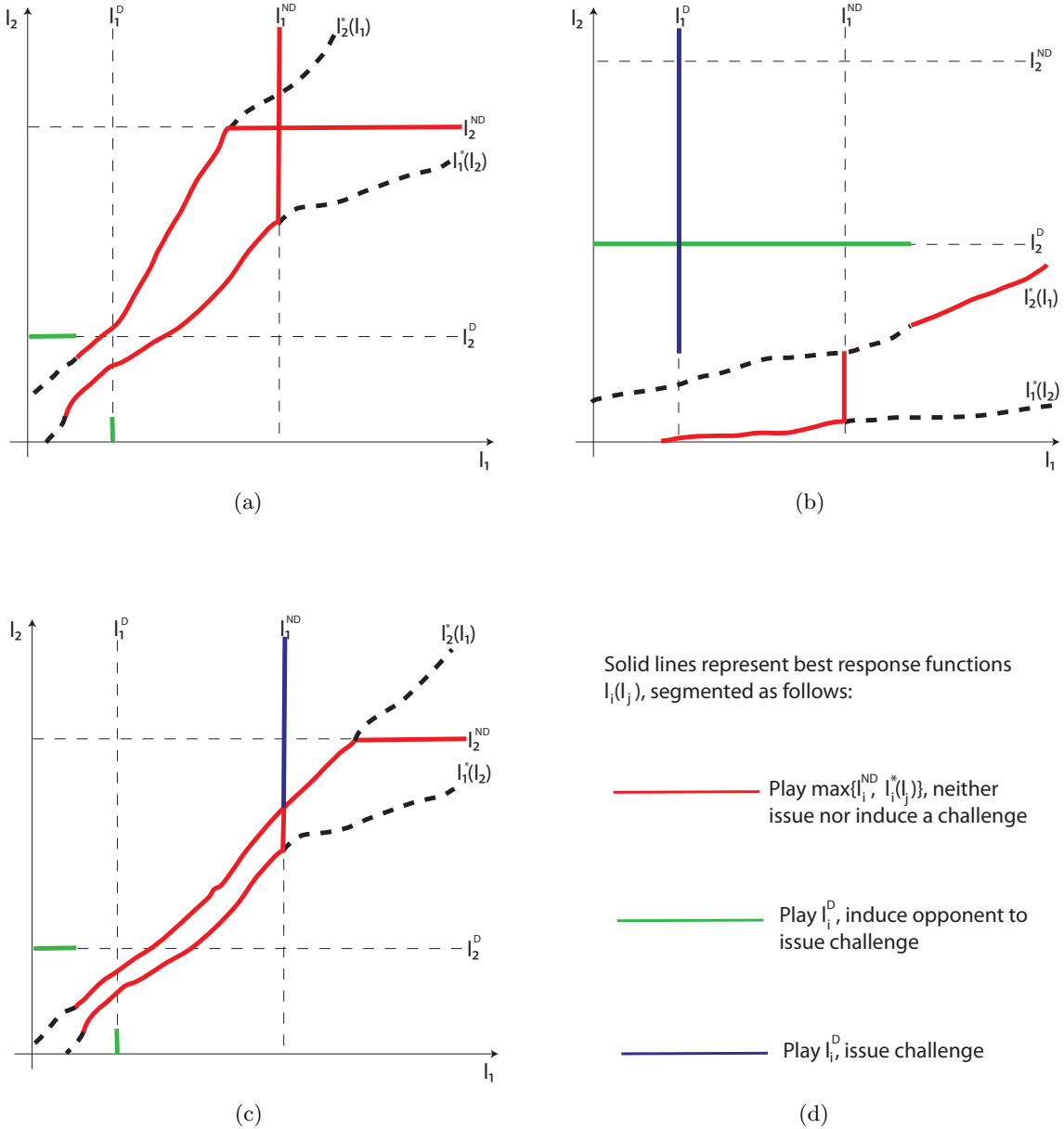


Figure 1: There are three possible types of equilibrium; unconstrained (figure 1a), dueling (figure 1b), and deterrence (figure 1c). An duel results only in the second case. In the first, dueling has no effect on equilibrium label, while in the third, one or both politicians label just enough to leave their opponent indifferent between a call to the field of honor and doing nothing; they would label more were it not for the threat of a duel.

If, on the other hand, a dueling equilibrium obtains, we have that

$$\Rightarrow \frac{\partial}{\partial s_1} l_2^{ND}(s_1) = \frac{B \left(\frac{\partial^2}{\partial s_1 \partial l_2} \pi(s_1, l_2^{ND}) \right)}{c''(l_2^{ND}) - B \frac{\partial^2}{\partial l_2^2} \pi(s_1, l_2^{ND})} \quad (4)$$

$$\Rightarrow \frac{\partial}{\partial s_1} l_2^D(s_1) = \frac{B(1-b)\alpha \frac{\partial^2}{\partial s_1 \partial l_2} \pi(s_1, \alpha l_2^D)}{c''(l_2^D) - \alpha^2 B \frac{\partial^2}{\partial l_2^2} \pi(s_1, \alpha l_2^D)} \quad (5)$$

Clearly, $\frac{\partial}{\partial s_1} l_2^{ND}(s_1) > \frac{\partial}{\partial s_1} l_2^D(s_1)$ if α is sufficiently low, and thus at the margin second-period libel increases more in response to increased first-period moderation in an unconstrained equilibrium than in a dueling equilibrium.

Politician i sets s_i so that the marginal benefit of moderation equals the marginal cost, for any s_j . From the above discussion, for any given level of s_i , the marginal benefit of moderation is lower in a no-dueling equilibrium than in either a deterrence equilibrium or a dueling equilibrium. Therefore, should dueling be outlawed, it is clear that the first-period equilibrium has (weakly) more extreme politicians. ■

Figures 2a and 2b summarize the intuition of Proposition 1. When dueling is outlawed, there is no strategic interaction in period 1; both politicians play s_i^* regardless of what his opponent plays. When dueling is allowed, each politician takes into account the increased effectiveness of moderation (as he will always have the option to call a duel to reduce his opponent's libel, if he so chooses), which leads to weakly more moderation for both players.

Finally, Proposition 2 states that there is less libel in any equilibrium when dueling is allowed.

Proposition 2 *If dueling is outlawed, libel (weakly) increases.*

Proof. If an unconstrained equilibrium obtains when dueling is allowed, outlawing dueling has no effect on equilibrium libel. If the legalization of dueling results in a deterrence equilibrium where one politician plays $l_i^*(l_j^{ND})$, this libel level is less than the level of libel that existed when dueling was outlawed, as otherwise the politician who was constrained in his libel choice could improve his utility by choosing the level of dueling from when dueling was illegal. If upon the legalization of dueling a dueling equilibrium obtains, as $\alpha \rightarrow 0$, the marginal benefit of libel goes to zero, and so for sufficiently low α , surely we see less libel in a dueling equilibrium than when dueling is illegal. ■

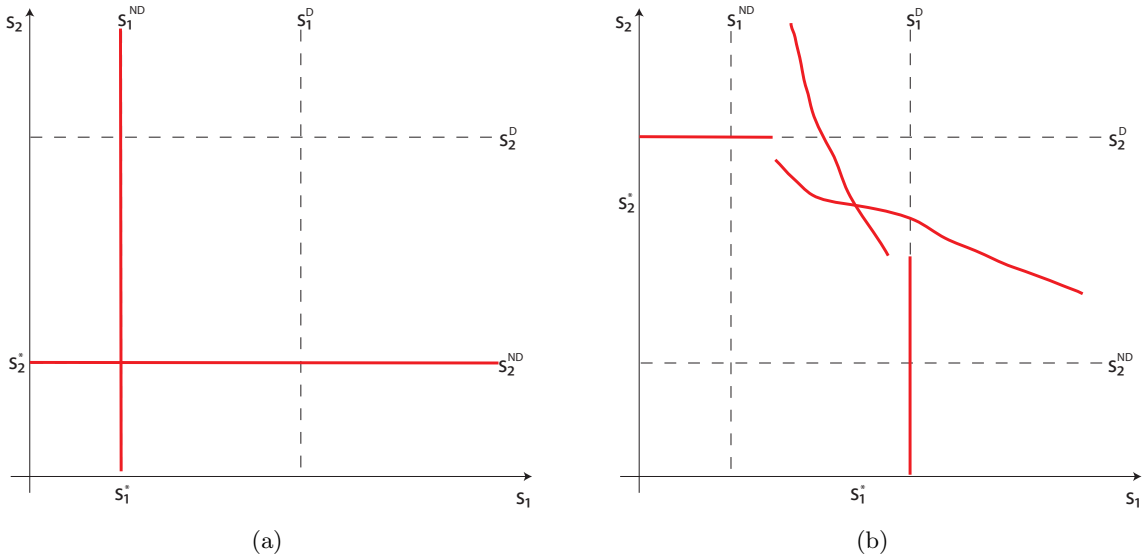


Figure 2: If a meeting on the field of honor is not an option, both politicians know they will be libeled at l_j^{ND} in period 2 and set s_i accordingly (subfigure 2a). If, however, the field of honor is available (subfigure 2b), then moderation weakly increases, as for at least some (s_1, s_2) pairs, a deterrence or dueling equilibrium will obtain in period 2, which induces more moderation in period 1.

Our model has three variables that can affect social welfare. One, presumably social welfare is decreasing in libel. Two, social welfare is increasing in the moderation of the two politicians.³⁸ Three, welfare is decreasing in blood spilt on the field of honor. Propositions 1 and 2 demonstrate the tradeoff between blood as a cost of dueling and less libel and more moderation as a benefit. Indeed, if b can be manipulated through policy, it can be set so that for each possible (θ_1, θ_2) pair there is either a deterrence or unconstrained equilibrium, so that overall libel is reduced, moderation is increased, and no politicians die.

3.2 Case II: libel increases the entropy of the contest

We now consider an alternate version of the model where *total* libel, $L(l_1, l_2)$, introduces noise into the contest rather than redefining an opponent's position. We assume that L is increasing in both l_1 and l_2 . In this case, the effect of libel is random. The public may be persuaded by it, increasing the libeler's chances of winning, or it may be disgusted by it, to the benefit of the libelee. Libel thus increases the entropy of the election, which necessary

³⁸Either the expected moderation of the winning politician or the average moderation of each candidate could affect welfare.

moves both politicians' chances of victory closer to $\frac{1}{2}$.³⁹ We continue to restrict s_i and θ_i to the interval $(0, \frac{1}{2})$. We further assume diminishing marginal effects of libel, $\frac{\partial^2 \gamma}{\partial L^2} < 0$, and that the marginal effect of libel increases with the difference between the two politicians' level of extremism, $\frac{\partial^2 \gamma}{\partial L \partial (|s_1 - s_2|)} < 0$.

We investigate the properties of the model's subgame perfect Nash equilibria. Without loss of generality, $|\theta_1 - \frac{1}{2}| < |\theta_2 - \frac{1}{2}|$, meaning politician 1 is more moderate than politician 2. Define the stage 3 utility of politician 1 from dueling as $U_1^D(s_1, s_2, L)$ and from not dueling as $U_1^{ND}(s_1, s_2, L)$, where

$$\begin{aligned} U_1^D(s_1, s_2, L) &= A(1 - b) + B(1 - b)\gamma(s_1, s_2, \alpha L) - c(l_1) - \phi(|s_1 - \theta_1|) \\ U_1^{ND}(s_1, s_2, L) &= A + B\gamma(s_1, s_2, L) - c(l_1) - \phi(|s_1 - \theta_1|) \end{aligned}$$

Proposition 3 *If $\theta_2 < \theta_1$, then $s_2 < s_1$.*

Proof: It is direct that $s_i \geq \theta_i$. Suppose that $\theta_2 < \theta_1$, and $s_2 \geq s_1$. Optimization requires $U_2(s_2, s_1, Il_1) > U_2(s_2, s_1, 0)$, which implies that:

$$\phi(s_2 - \theta_2) - \phi(s_1 - \theta_2) < B \left(\gamma(s_1, s_2, IL) - \frac{1}{2} \right) \quad (6)$$

where I equals α if a duel occurs and 1 otherwise. Equation (6) states that, for politician 2, the increased probability of winning that results from playing s_2 instead of s_1 necessarily exceeds the additional cost of deviating from his private position. By the convexity of ϕ , it must be true that:

$$\phi(s_2 - \theta_1) - \phi(s_1 - \theta_1) < \phi(s_2 - \theta_2) - \phi(s_1 - \theta_2) \quad (7)$$

Combining (6) and (7) proves that if politician 1 had chosen s_2 instead of s_1 , then the increased costs from ϕ would have been less than the benefits from being more likely to win the contest. It is also direct that had politician 1 chosen s_2 , libel would have equaled zero in stage 2, eliminating his cost of producing libel. Therefore $U_1(s_2, s_2, 0) > U_1(s_1, s_2, Il_1)$, which is a contradiction. ■

³⁹Formally, the entropy of a random variable x equals $-E[\log_2 p(x)]$. The entropy of the contest thus equals $[-\gamma \log_2(\gamma) - (1 - \gamma) \log_2(1 - \gamma)]$, which is maximized at 1 "bit" when $\gamma = \frac{1}{2}$.

Proposition 3 establishes that only the more extreme politician 2 will ever play a positive amount of libel, as he will always take a more extreme position and thus politician 1 will always be harmed by libel.⁴⁰

Politician 1 will prefer not to challenge his opponent to a duel if $U^D(s_1, s_2, L) \leq U^{ND}(s_1, s_2, L)$, or if the following condition holds:

$$B[(1 - b)\gamma(s_1, s_2, \alpha L) - \gamma(s_1, s_2, L)] \leq bA \quad (8)$$

If B , the gains from winning the prize are large, or if the mortality rate b is low, then politician 1 is more likely to issue a challenge. In addition, if the gains from a duel (moving from $\gamma(s_1, s_2, L)$ to $\gamma(s_1, s_2, \alpha L)$) are large, then politician 1 will be more enthusiastic about defending his honor. Because dueling reduces the benefits of libel, the more extreme politician 2 will never challenge politician 1 to a duel.

We define L^* , which may be infinite, as the minimum level of libel where (8) holds with equality.⁴¹

Define l^{ND} and l^D by:

$$\begin{aligned} -B\gamma_3(s_1, s_2, l^{ND}) &= c'(l^{ND}) \\ -B(1 - b)\gamma_3(s_1, s_2, \alpha l^D) &= c'(l^D) \end{aligned}$$

Politician 2 then maximizes over the set $\{l^D, L^*, l^{ND}\}$, with libel level l^D resulting in a duel and l^{ND} , or L^* resulting in no duel. If equation (8) does not hold for l^{ND} , then politician 2 chooses l^{ND} and no duel occurs. If equation (8) does hold for l^{ND} , however, politician 2 chooses either L^* or l^D . If he optimally chooses L^* , then the threat of being challenged to a duel has deterred him from further libel; absent this possibility he would choose $l^{ND} > L^*$. Finally, if politician 2 optimally chooses l^D , then both politicians take the field of honor.

⁴⁰This result is similar to Stergios and Grofman (1995), who show that underdog candidates are more likely to engage in negative campaigning.

⁴¹Section 4 discusses the existence of multiple levels of libel where (8) holds with equality.

In stage 1, both politicians simultaneously choose s_1 and s_2 .

$$B(1 - b \frac{I-1}{\alpha-1})[\gamma_{s_1}(s_1, s_2, IL) + L_{s_1}(s_1, s_2)\gamma_L(s_1, s_2, IL)] = \phi'(|s_1 - \theta_1|) \quad (9)$$

$$-B(1 - b \frac{I-1}{\alpha-1})[\gamma_{s_2}(s_1, s_2, IL) + L_{s_2}(s_1, s_2)(\gamma_L(s_1, s_2, IL) - c'(L))] = \phi'(|s_2 - \theta_2|) \quad (10)$$

We now present two propositions that are similar to Propositions 1 and 2. They demonstrate that the threat of a duel increases moderation and decreases libel, and that outlawing dueling is never optimal, even if society is unwilling to accept any deaths from dueling.

Proposition 4 *Outlawing dueling results in more libel and less moderation, if α and b are low enough.*

Proof. Follows closely from the proofs of Propositions 1 and 2. ■

Proposition 5 argues that under any possible weighting of these three variables, outlawing dueling is Pareto dominated by an alternative regime in which dueling has mortality b , for some b .

Proposition 5 *If social welfare is increasing in moderation and decreasing in libel, and if α is sufficiently small, then outlawing dueling is never optimal, as there exists some value of b where deterrence equilibria exist for some (θ_1, θ_2) , but no dueling equilibria exist.*

Proof. Abusing notation, let $l^{ND} = l^{ND}(s_1(\theta_1, \theta_2), s_2(\theta_1, \theta_2))$ for all (θ_1, θ_2) . By (8), for b sufficiently close to 1, no duels will occur and $l_2 = l^{ND} \forall (\theta_1, \theta_2)$. Furthermore, L^* is an increasing function of b that diverges to infinity as b approaches some $\tilde{b} < 1$ and so for all $b > \tilde{b}$, no duels occur. Therefore, for any (θ_1, θ_2) , there exists some $\bar{b}(\theta_1, \theta_2) < 1$ where $l^{ND} = L^*$, maximized over all values of (θ_1, θ_2) . Let $\hat{b} = \sup_{\theta_1, \theta_2} \bar{b}(\theta_1, \theta_2)$.

From equations (9) and (10), $U_2^{ND} > U_2^D$ for any (θ_1, θ_2) . For any $\delta > 0$, there exists $\epsilon(\delta) > 0$ such that $\delta > U_2^{ND}(L^*(\hat{b})) - U_2^{ND}(L^*(\hat{b} - \epsilon))$. Therefore, there exists $\epsilon > 0$ so that:

$$U_2^{ND}(L^*(\hat{b} - \epsilon)) > U_2^D(\tilde{l}_2)$$

for any $\tilde{l}_2 > L^*(\hat{b} - \epsilon)$. It is therefore optimal for politician 2 to induce a deterrence equilibrium. Therefore, there exists a value of b that results in a deterrence equilibrium for some (θ_1, θ_2) , and

a no dueling equilibrium for all others. Using Proposition 4, libel decreases and moderation increases weakly for all (θ_1, θ_2) pairs and strictly for some (θ_1, θ_2) pairs. ■

We now provide an illustrative example of our model, in which both politicians possess the following utility function:

$$U_i(s_i, \theta_i, l_i) = A + B \left(\frac{1}{2} + \frac{s_i - s_j}{I(l_1 + l_2) + 1} \right) - \kappa l_i^2 - \frac{1}{\lambda} \left(\frac{s_i - \theta_i}{\frac{1}{2} - s_i} \right)^2 \quad (11)$$

We now numerically solve the model using the following baseline calibration: $b = 0.025$, $A = B = 100$, $\lambda = 0.1$, $\kappa = 0.1$, and $\alpha = 0.5$. We calculate equilibrium over a lattice where θ_1 , and θ_2 vary between 0 and $\frac{1}{2}$. Figure 3 illustrates the three types of equilibria that occur over the lattice. When the difference in politicians' types is large, so is the marginal benefit of libel to politician 2. He therefore chooses a sufficiently large amount of libel to induce a dueling equilibrium. If the difference between types is small, however, then politician 2's optimal choice of libel does not result in a duel, and (8) is not binding. Intermediate differences in types result in a deterrence equilibrium. In this case, (8) holds with equality, but the reduced effectiveness of libel and the risk of death make it optimal for politician 2 to avoid a duel. He therefore selects L^* , the maximum amount of libel that does not induce a duel. The threat of a duel therefore deters libel and makes him substitute toward moderation by increasing s_2 .

We now compare the equilibrium properties of each region of figure 3 to an alternative regime where dueling is effectively outlawed. For this section, we assume that θ_1 and θ_2 are uniformly distributed between 0 and $\frac{1}{2}$ in order to be able to report 'average' libel. Table 1 reports the results.

When a deterrence equilibrium arises, society is unambiguously better off by allowing dueling. The deterrence of libel induces both politicians to substitute toward moderation. In addition to increasing moderation, however, less libel increases the probability that the more moderate politician wins the contest. When a dueling equilibrium arises, the effects on social welfare are ambiguous relative to a model without dueling.

The size of these three regions depends on the model's parameters. We interpret policy as influencing b , the likelihood of dying in a duel, through explicit regulation or implicit codes of conduct. As b increases, the likelihood of a duel declines. Very large values of b are therefore

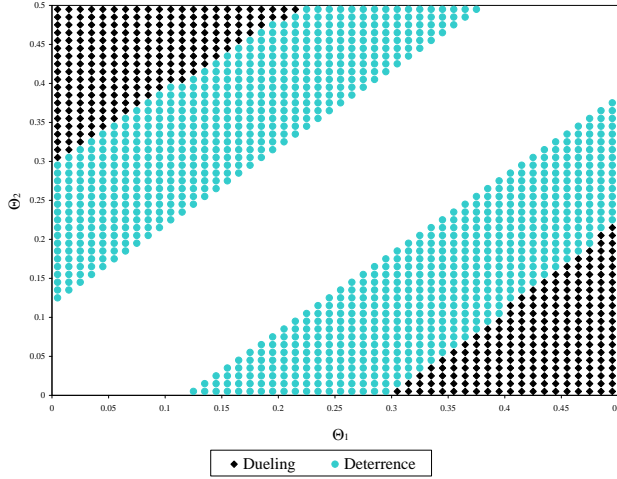


Figure 3: Equilibrium Types over θ_i and θ_j

isomorphic to a policy that effectively outlaws dueling.⁴² Table 2 reports the results.

When b is very low, duels are very likely to occur. As b increases, the parameter spaces resulting in unconstrained or deterrence equilibria grow, libel is minimized, and dueling deaths are maximized. For large b , however, the more extreme politician is able to choose a high level of libel knowing that his opponent will not choose to risk death on the field of honor. Libel thus increases as dueling deaths decline. For some intermediate levels of b (including $b = 0.045$ in the simulations), deterrence equilibria exist, but dueling equilibria never occur. For such a b , there thus exists less libel and more moderation relative to a regime without the threat of dueling. Even a society that is unwilling to accept any positive probability of its leaders being shot dead in a duel is therefore unambiguously worse off by outlawing dueling.

4 Ineffective libel

We now consider the existence of multiple values of libel where equations (2) or (8) hold with equality. For any (s_1, s_2) , there exist either zero or two such finite values of l_i outside of a set of measure zero. In the latter case, we define these levels of libel as l^* and \bar{l}^* .

⁴²Setting $\alpha = 1$ is also isomorphic to outlawing dueling.

Table 1: Effects of banning dueling by equilibrium type under a uniform distribution over type space. The first header row describes the type of equilibrium that exists in a regime where dueling is allowed, where the ‘All’ columns average across all types. The second header row distinguishes between a regime where dueling is allowed and an alternate regime where dueling is effectively outlawed.

	Unconstrained	Deterrence		Dueling		All	
	Both	Allowed	Banned	Allowed	Banned	Allowed	Banned
s_i (winner)	.268	.306	.286	.328	.306	.286	.278
Libel	.830	.507	1.61	2.06	1.97	.904	1.20
Dueling Deaths	.000	.000	.000	.050	.000	.007	.000
% of Space	58.8%	27.9%		13.3%		100.0%	

Proposition 6 *If dueling is sufficiently effective (α is sufficiently small), then politician 2 will never choose $l > \bar{l}^*$.*⁴³

Proof. It is direct from our distributional assumptions that $(\gamma(s_1, s_2, \alpha l_1, \alpha l_2) - \gamma(s_1, s_2, l_1, l_2))$, politician 1’s increased probability of winning from dueling, is single peaked. The value of l_2 corresponding to this peak, and hence \bar{l}_2^* , become arbitrarily large for sufficiently small values of α . An analogous result holds for \bar{l}_1^* . ■

If $l_2 > \bar{l}_2^*$, then politician 2 so extensively libels politician 1 that reducing the effect of libel by a factor of α is not worth risking death in a duel. This possibility is at odds with our reading of dueling in the antebellum American South. Dueling persisted in this region because the public considered it an acceptable avenue for preserving one’s honor and mitigating the impact of libel. As demonstrated by Proposition 6, such effectiveness ensured that it did not incentivize politicians to choose exorbitant levels of libel.

Dueling may therefore be an efficient institution in a society which recognizes it as a legitimate method of refuting libel. Because the historical record identifies the antebellum South as one such society, our results help explain both dueling’s persistence and the reliance on such ineffective weapons. The fact that modern society views dueling as barbaric, and as a bizarre method of dispute resolution, is captured in our model by a value of α close to one. For this parameterization, the moderating effects of the institution disappear, and it is unsurprising that the practice is effectively outlawed.

⁴³For numerical simulations in section 3.2, $\alpha = 0.5$ is small enough to ensure that \bar{l}^* is never economically important.

Table 2: Effects of dueling mortality on social welfare

b	p(Uncon)	p(Deter)	p(Duel)	s_i (winner)	Libel	Dueling Deaths
0.000	0.000	0.000	1.000	0.287	1.17	0.0000
0.005	0.177	0.101	0.721	0.287	1.14	0.0072
0.010	0.289	0.202	0.509	0.287	1.06	0.0101
0.015	0.392	0.261	0.347	0.287	0.98	0.0104
0.020	0.493	0.281	0.226	0.287	0.93	0.0090
0.025	0.588	0.279	0.133	0.286	0.90	0.0037
0.030	0.677	0.261	0.063	0.286	0.90	0.0038
0.035	0.757	0.221	0.021	0.285	0.93	0.0015
0.040	0.830	0.169	0.001	0.284	0.98	0.0001
0.045	0.892	0.108	0.000	0.282	1.06	0.0000
0.050	0.943	0.057	0.000	0.280	1.13	0.0000

5 Conclusion

It is easy to argue that dueling was an undesirable and barbarous aspect of pre-Civil War Southern society. The costs were evident. Not only did duels frequently end in death, but those dying were usually prominent politicians, soldiers, and other respected figures in society. In addition, many of the disputes seem of minor importance to the modern eye. However, this is only half of the story, as dueling had significant benefits for the South as well. We showed that dueling may have been an efficient method of maintaining civility in society.

Dueling served to moderate personal and political attacks by introducing a potentially costly punishment. In modern society, conduct detrimental to society is prohibited by law, and the enforcement of the punishment if the law is broken is the purview of the government. In the antebellum South, where honor could not be repaired by judicial verdict, genteel society policed its own. In this sense, dueling served as a substitute for the legal means of addressing grievances available today, when such institutions did not exist, or were simply not acknowledged as an effective means of restoring one's damaged honor.

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