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ABSTRACT

A central requirement in the design of a legal system is the protection of law enforcers from coercion by litigants through either violence or bribes. The higher the risk of coercion, the greater the need for protection and control of law enforcers by the state. This perspective explains why, in the 12 th and 13 th centuries, the relatively more peaceful England developed trials by jury, while the less peaceful France relied on state-employed judges for both collecting evidence and making decisions. Despite considerable legal evolution, these initial design choices have persisted for centuries (largely because France remained less peaceful than England), and may explain many differences between common and civil law traditions with respect to both the structure of legal systems and the observed social and economic outcomes.

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Introduction

The laws of many countries in the world originate in those of England and France. Legal systems based on the laws of England are typically described as belonging to the common law tradition, while those based on the laws of France as belonging to the civil, or Roman, law tradition[1]. Structurally, the two legal systems operate in very different ways: civil law relies on professional judges, legal codes, and written records, while common law on lay judges, broader legal principles, and oral arguments. In addition, recent research reveals significant differences between common law and (French) civil law countries in a variety of political and economic conditions. If we compare countries at the same level of development, French civil law countries exhibit heavier regulation, weaker property rights protection, more corrupt and less efficient governments, and even less political freedom than do the common law countries (La Porta et al. 1999, Djankov et al. 2000). One area where this greater insecurity of property rights in the civil law countries shows up clearly is the development of financial markets. On just about any measure, common law countries appear to be more financially developed than civil law countries (La Porta et al. 1997, 1998).

These observations raise two crucial questions. First, why did such very different legal systems evolve in France and in England? Second, why are these differences in the organization of legal systems associated with such different social and economic outcomes? In this paper, we argue that the historical design of legal systems in France and England as far back as the 12th and 13th centuries has had long-lasting effects on how these systems operate. As legal historians such as Dawson (1960), Berman (1983), and Damaska (1986) show, the two countries chose very different strategies for law enforcement and adjudication. Specifically, they opted for different levels of control that the sovereign exercised over judges. France went in the direction of adjudication by royally-controlled professional judges, while England moved toward

[1] There are other important legal traditions as well, including German (also derived from Roman law), and Scandinavian, but for our purposes we focus on the English and the French.

adjudication by relatively independent juries. We believe that these historical choices account for many distinctive features of the legal systems that we observe today, as well as for the differences in outcomes reported in the empirical work.

The different choices made in England and France in the 12th and 13th centuries are especially puzzling in light of the widely recognized observation that, at that time, the English king commanded greater power over his subjects than the French king (Dawson 1960, Reynolds 1994). By that time, the English kings have clearly prevailed over the nobles. In contrast, the French king was at best the first among equals with various dukes, and did not even have full military control over the Ile-de-France. It would seem natural, then, for the more powerful English kings to create a legal system that extended royal control more deeply into the life of the country, while for the weaker French king to accept more decentralized adjudication of disputes. Yet the opposite happened.

What explains the different choices of how to design adjudication? In this paper, we adopt a new perspective on this question. A central problem of any legal system is how to protect law enforcers from being bullied with either physical force or bribes by powerful local interests. In the middle ages, judges and juries faced both physical and financial incentives to cater to the preferences of local feudal lords. "A celebrated statement in the Yorkshire eyre roll of 1294 stated that 'Justice and Truth are completely choked,' as a result of the way in which influential men manipulated legal proceedings." (Prestwich 1997, p. 283). In another instance, "A conspiracy in 1287 on the part of some sailors at Dunwich was a serious matter. They had prevented the local court from sitting, had appropriated fines imposed by royal justices, and prevented the execution of royal writs and judgments." (Prestwich 1997, p. 281). To take a more modern example, in Russia's transition economy in the 1990s, businessmen occasionally bribe judges to excuse breaking the law. In one instance, when a judge jailed a powerful executive, the judge's husband was assassinated. Not surprisingly, a rapid release of the executive followed.

For a legal system to protect property, the effects of coercion and corruption must be restrained. When bullying is moderate, it is more efficient to leave the adjudication of disputes to well-informed local decision makers, such as juries, than to delegate it to less well informed

and possibly biased state-employed judges who are more insulated from bullying. In contrast, when bullying is extreme, it is better to accept the distortions inherent in less well-informed but better insulated adjudication by state-employed judges, than to leave decisions in the hands of the vulnerable locals. The politicization of justice may be efficient when the state is the only institution with enough military power to fight local bullies. Consistent with the historical evidence, we argue that France chose to rely on state-employed judges precisely because local feudal lords were too powerful: there was no possibility of effective local justice when these lords' interests were involved. England, in contrast, had weaker local magnates, and its juries were less vulnerable to subversion. As a consequence, it could afford the luxury of entrusting adjudication to local juries. Moreover, these differences in basic choices persisted for centuries, in part because of persistently greater power of local magnates in France than in England.

There is another, perhaps more general, way to make this point. Feudal lords in France were so powerful that they were more afraid of each other than of the king, and as a consequence it was more efficient to delegate dispute resolution to the sovereign, even if he had his own stake in the matter. People demand a dictatorship when they fear a dictator less than they fear each other (Olson 1993, Grossman 1997). Feudal lords in England, in contrast, were less powerful, and more afraid of the king than of their neighbors. As a consequence, they were willing to pay the king to allow them to resolve disputes locally. This could occur because in England, but not in France, the royal power was sufficient to protect law enforcers. Both France and England thus opted for a system that was more efficient for each country at the time. In fact, we try to argue that, in England, the Magna Carta was a Coasian bargain that supported the efficient outcome.

This analysis of the structure of common and civil law – with its emphasis on controlling law enforcers -- helps understand many of the structural differences in the organization of the two systems. For example, codification, which involves greater reliance on specific "bright line" rules rather than broad principles for adjudication, has been seen as a defining element of a civil law system (von Mehren 1957, Merryman 1969). Codification emerges in our model as a natural element of an effort by the sovereign to control judges. The simplicity of bright line rules, and the possibility of verifying their violation, enables the king to use them to structure incentive contracts for judges. Codification thus follows naturally from the original choice of royal judges

over juries. Our model also sheds light on such differences between the two systems as the reliance on written records versus oral argument, importance of trials, role of appeal, combining versus separating prosecution from judging, and the importance of precedent. In all these dimensions, common and civil law systems differ, and the difference can be plausibly traced to the fundamental choice of state controlled versus independent justice.

Our approach also helps understand why the two legal systems lead to very similar outcomes in some areas, and to different ones in others, and thus sheds light on such topics as legal convergence and transplantation. In particular, we show that as the accuracy of codes improves and the power of the state to constrain local pressures on the judges increases, common and civil law systems will tend to produce similar resolutions of specific disputes. In contrast, the transplantation of rules designed for a system with little bullying into a system with a greater amount can lead to the breakdown of rule of law.

Finally, this broad approach brings us back to the question of greater security of property rights, as well as greater political freedom, in common law countries. We identify the circumstances under which common law regimes are likely to provide greater security of property rights, and show that financial markets are predicted by the model to be one such area. We also show how civil law more easily accommodates the expansion of government intervention in economic and social life, consistent with the experience of the 20th century. At least to some extent, these outcomes reflect the different law and order environments prevailing in England and on the continent over the last millennium.

Although this paper deals with a broad set of issues related to the design of a legal system, we do not address one crucial area, namely the ability of the judges themselves to check the conduct of the sovereign or of the government officials. The power of common law courts to adjudicate disputes involving government officials has been seen as a key determinant of English freedom (Dicey 1939, 1st edition 1884, Hayek 1960). The power of the Supreme Court in the United States to assess the constitutionality of laws has similarly been seen as a key element of the American system of checks and balances, and a crucial guarantee of freedom (Hayek 1960). These attributes of legal systems are doubtless important, but in this paper we stick to perhaps

even more basic features of historical design.

II. Royal Judges vs. Independent Juries

The central choice in the design of a legal system is that between judges controlled by the sovereign (royal judges) and judges who are not (juries). In this section, we formally consider this choice. Historians of legal systems, such as Berman (1983) and Dawson (1960), agree that this choice is central for the divergence between the French and English legal systems in the 12th and 13th century, and explains many persistent differences between civil and common law.

We focus on the 12th and 13th centuries because, before then, the legal systems of the two countries were similar, governed primarily by religious and customary law. Disputes among nobles were resolved by battle. Murder suspects were tried by ordeal, whereby they were tossed into a river with a stone around their legs. Those who floated were presumed innocent (Dawson 1960). Yet over the following two centuries, these practices were largely replaced by procedures that have persisted to modern times in a recognizable form.

In the 11th century the Gregorian revolution delineated the scope of secular and ecclesiastical authority, and the Church adopted its own canon law, patterned after Roman law, to deal with the matters over which it had jurisdiction. This development opened up the need for competing secular legal systems (Berman 1983). We focus on what Berman (1983) calls royal law, which in the early years covered major crimes and civil disputes. Our analysis does not apply to many other areas of law, such as manorial, feudal, and urban law, where adjudication was entirely local and governed by custom. The narrowness of this focus is important, since most law in those times was not royal law, and was very local in nature. Our analysis thus exaggerates the differences among the two countries. On the other hand, it is the royal law than eventually came to dominate. We present a theoretical account of the development of royal law.

In the 12th century, England under Henry II develops the jury system. Pollock and Maitland (1898) define the jury as "a body of neighbors summoned by some public officer to give upon oath a true answer to some question" (vol. 1, p.138). Despite a long-standing debate on the true novelty of this Angevin innovation (e.g., to what extent was the jury just a slight

modernization of the Frankish inquest), there is no question that the jury became a primary tool of English law around that time. In its original formulation (dated roughly to the various royal assizes in the 1150s and 1160s), the jury was an assembled body of local notables who would inform itinerant royal judges of local facts. The jury of novel disseisin, for example, had to inform a royal judge of who was seized (roughly meaning "in possession") of the land at some past date. In its initial incarnation, the jury was responsible for providing *vere dicta* (true statements) and not actually given control over the outcome of the case. While the public nature of the juries' verdicts surely made it difficult for judges to completely ignore them, initially juries were an efficient means of gathering information, not a check on royal prerogative.

In fact, in the 12th and early years of the 13th century, English kings did not surrender ultimate control to juries. "Behind the keen interest of Henry II and John in the operations of the courts of justice there lay a ready instinct to ensure that judgments inclined favourably towards the king's friends and ministers and away from those who were out of favour or distrusted. On occasion John's writs assumed that customary procedure should give way, if necessary, to royal prohibition" (Holt 1992, p. 84). Indeed, "It is noteworthy that the one novelty with which the king [John] can reasonably be linked was designed to investigate, and if needed quash, the verdicts of local jurors. Its purpose was supervisory. And it is fitting that it should appear on the Fine roll, for it is in this roll that the king's control of government is seen at its most immediate and unremitting" (Holt 1992, p. 182).

In subsequent years, there was a gradual movement to ensure that judges could not convict (or amerce, i.e., fine, in any way) without the consent of a jury. The critical statement of this veto power is the Magna Carta. At Runnymede, in exchange for cash and peace, King John agreed that he and his subjects were to be governed by rule of law and that "no person may be amerced without the judgement of his peers" (Cap. 39). At this point, there is little doubt that the king accepted juries as a check on royal judges and royal power. After 1215, the influence of the juries generally increased. In the 14th century, Parliament "interpreted the phrase 'lawful judgment of peers' to include trial by peers and therefore trial by jury, a process which existed only in embryo in 1215. Secondly, 'the law of the land' was defined in terms of yet another potent and durable phrase – 'due process of law,' which meant procedure by original writ or by

an indicting jury" (Holt 1992, p.10). In fact, an important phenomenon in English legal history is jury nullification, whereby juries systematically refused to convict suspects of crimes when the penalties were seen as excessive (such as a hanging for theft of value above one shilling)[2].

During the ensuing centuries, despite the fact that English judges continued to serve the king, juries remained a check on royal discretion. "The presence of the jury as fact-finder and the absence of any effective modes of controlling the juries, meant during the earlier centuries that the judge's role was limited to maintaining courtroom order, framing the questions that the juries must answer, and ensuring compliance with the ground rules of the various forms of action" (Dawson, 1960, p. 136). In addition, even the judges in England have been traditionally more independent than those in France. Throughout history, common law judges insisted that the principal source of English law was historical precedent rather than the will of the sovereign, with Coke emerging as the leading advocate of this view. The Tudors responded to the increasing independence of judges and juries by creating new courts more subordinate to the monarchy, such as the Star Chamber, and by punishing juries whose decisions they disliked. Only the Revolution of the 17th century conclusively removed royal control over the legal system. The Star Chamber was abolished in 1641, while the Act of Settlement in 1701 confirmed Parliamentary appointment of judges, and their subsequent independence from both king and Parliament. Starting in the 18th century, judicial independence was an undisputed element of the English legal system, in contrast to the sovereign control of judges in France.

Indeed, the French path was radically different. The Frankish inquest existed in France as well, and institutions like juries – such as e*nquete par turbe* -- continued to show up throughout the *ancien regime.* However, the critical step in France was the decision under Philip Augustus and then more importantly under Louis IX to move toward a judge-inquisitor model governed by Romano-Canon law. This model became widely available in the 12th and especially 13th centuries, after the Justinian code was rediscovered in 1080, and the scholars of Bologna

[2] Kessler and Piehl (1997) present a more modern example of discretion in a common law system undoing harsh penalties (mandatory sentencing guidelines in the U.S.).

modernized it for the use by the Catholic Church in its own courts[3]. Philip Augustus was one of several European monarchs who went in this direction and Louis IX organized the Parlements de Paris in 1256 (Berman 1983). In this system, judges would question witness privately and separately, prepare written records, and *themselves* determine the outcome of the case. These judges were directly beholden to the king, and there is no question that the king had the ability to strongly influence their actions through appointments, re-appointments, and bribes.

As in England, royal control over judges in France was not absolute. Sale of judicial offices afforded judges at least some independence. Indeed, through the centuries, French kings made efforts to redesign the system of courts, and to create new courts of law whose judges would be more responsive to the king's will (Ford 1953). Some, like Louis XIV, succeeded better than others, like Louis XV. Yet despite this ongoing tug of war between the king and the judges, sovereign control over the judiciary remained greater in France and in England, and culminated in an effort at a complete subordination of the judiciary by Napoleon.

To explain the different choices in England and France, we rely on the generally accepted historical fact that the power of local magnates in the 12th and 13th centuries, including influence over lower level local notables such as knights, was greater in France than in England. "In practice relations between kings and counts [in France] were still in many cases more like those between independent powers than Suger would have admitted" (Reynolds 1994, p. 272). In contrast, "The power of the English government meant that all English fees in the 12th and the 13th centuries were to some extent precarious, but the same power also protected free property from anyone except the government" (p. 394).

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[3] It is sometimes argued that Henry II designed his legal system too early, and that the choice of Romano-Canon law was not available to him. Berman (1983) presents compelling evidence against this view, including the fact that one of Henry's principal advisors had previously worked for Roger II in Palermo, who chose the Roman law system for his country.

In this environment, a jury of notables in France would not have been able to deliver justice when the interests of the local magnates were involved. It was more efficient to surrender adjudicatory powers to royal judges even when the preferences of the king did not reflect community justice. In England, in contrast, local magnates were weaker relative to the knights, in large part because William the Conqueror prevented the creation of vast contiguous land holdings. As a consequence, local pressure on the juries was weaker, and the decisions they could reach were probably closer to justice. It was more efficient, then, to delegate the adjudicatory powers to the juries, and the magnates were willing to pay the king for that privilege. "The French kings could not make effective use of local village and county institutions, as English kings could, because the tradition of local self-government was less developed in the Frankish than in the Anglo-Saxon kingdom and was therefore more vulnerable to a takeover by the feudal barons." (Berman 1983, p. 465).

We examine the choice of adjudicators from the viewpoint of social welfare, including that of the king and of his subjects. In this model, the king always prefers adjudication by a royal judge beholden to him. However, if the subjects want a jury system strongly enough, they are willing to fight and to pay for it. As long as there is some way of enforcing a bargain whereby the king agrees to decentralized adjudication in exchange for taxes, there might be efficiency pressures toward such bargain, including efforts to secure peace. The Magna Carta, as a document in which the king gave up some control over adjudication in exchange for peace and taxes, might reflect such a bargain. To consider this possibility more closely, we examine the conditions under which either of the two systems sits on the Pareto frontier.

We focus on the adjudication of cases involving local magnates or their interests. The key advantage of juries is that they reflect the subjects' preferences, not those of the king. By assumption, juries, unlike judges, cannot be incentivized or controlled by the king, or at least that there are significant limits of such control. The disadvantage of juries is that they are vulnerable to influence by local magnates, which can take the form of either physical bullying or corruption intended to influence the verdict. A royal judge is less vulnerable to bullying by a powerful local lord than a jury both because of the king's own military resources and because the king's payments offset the influence of local magnates. On the other hand, a royal judge caters to the

king's rather than the subjects' preferences. In our model, the tradeoff is between a judge incentivized by the king and therefore less vulnerable to local magnate pressure, and a jury, whose preferences are closer to those of the community but which faces no incentives and can be more easily coerced.

The Setup

Our model focuses on violations, like the takings of land, which involve the interests of local magnates, or of parties close to them. We think of these violations as crimes, as they would be today, but in the 12th century there was no clear distinction between civil and criminal justice. To be concrete, we suppose that one magnate has taken the land of another, and that the offender is powerful enough to threaten or corrupt the adjudicator. In a more general model, both sides would bully adjudicators.

Violations differ on two dimensions, denoted D and R. We separate the gains from punishment into two components to allow different actors in the model to have different preferences over punishment. D captures the severity of the violation. The utility of the subjects from convicting and punishing a violation of type D is normalized to equal D (these gains combine deterrence, incapacitation and taste-for-vengeance and subtract social costs of punishment). The subjects (the community) then want to punish all violations for which D > 0.

The variable R captures the extent to which the king wants to punish this violation. R might be positive in the case of political violations that are dangerous to the king. Alternatively, if the violator is a royal ally, R might be negative. The king's utility from conviction is given by $D+qR$, where $q>0$. The term q captures the degree to which the preferences of the king do not match those of the society. In a perfect democracy, q is presumably close to zero, but it rises as the sovereign becomes less constrained by his subjects.

In this section, we assume that D and R are common knowledge, and that the two attributes are independently distributed with smooth cumulative distribution functions F(D) and G(R) and finite variances. The expected value of D is assumed to be positive, and the expected value of R is zero.

To compare the efficiency of alternative systems of adjudication, we define "social welfare" as a weighted average of the preferences of the king and those of his subjects, with the king's weight in the social welfare function given by λ and the subjects by $1-\lambda$. The total social payoff from each conviction therefore equals: $D+\lambda qR$. For most of history, the king's resources were relatively meager relative to those of his subjects, and hence we concentrate on the case of λ close to zero. In fact, $\lambda = 0$ is an important special case, for which all of our results hold. Our model can also deal with the case of λ close to 1, in which an outcome close to the king's preferences materializes. This may be a useful case to describe the developments of the 19th and especially 20th centuries, but not for most of history.

With these assumptions, social welfare is given by

(1) $\iint (D+\lambda qR) f(D) g(R) dD dR$

We consider two possible modes of adjudication. The first is a jury (which we treat as a single person). We assume that the tastes of the jury mirror those of the subjects, in part because the jurors come from among them. Thus the jurors want to see the violators of community rules punished, but also – to some extent – internalizes the social costs of punishment because one day a juror might himself be accused. When the jury convicts, it receives the subjects' benefit of conviction times a shift parameter β minus A. The shift parameter, β, reflects the extent to which the jury cares about doing justice relative to being bullied or bribed. The term "A" captures the pressure put on the jury by the local magnate, whose interests are jeopardized. These could be direct physical reprisals for conviction, but also bribes that the juror receives if he acquits the magnate.

In some well-functioning societies, A is small and jurors are well protected from physically or financially powerful interested parties. But elsewhere A may be higher. In the 12th and 13th centuries, the control of local affairs – including adjudication -- by local feudal lords versus that by the king was the central problem of government. In a more recent context of the developing world, unpaid or low-paid judges and jurors are subject to local political pressures

and corruption from oligarchs, landowners, and local officials. In Russia today, influence by the oligarchs and regional governments over courts is the central problem of rule of law. Even in the United States, local juries and judges have been routinely intimidated or bribed (as in various acquittals of Al Capone or civil rights cases in Southern courts). The susceptibility of juries to bullying, A, is the central parameter of the model. The fact that juries from the earliest times consisted of 12 men rather than one can also be seen as a guard against bullying.

We assume that the king cannot intimidate or incentivize the juries -- in fact that was the whole point of juries in Magna Carta. In our model, the *defining* characteristic of the jury is that the king cannot incentivize it to follow his preferences, by either money or intimidation, in contrast to his ability to incentivize a royal judge. As we mentioned earlier, in the 16th and 17th centuries, the Tudors and then the Stuarts engaged in jury intimidation, and this possibly contributed to the English revolution. After the Revolution, acts of Parliament specifically reaffirmed the independence of the juries, and prohibited various forms of bulling them.

The jury convicts if $\beta D > A$, which always leads to fewer convictions than the society wants. Obviously, in cases where local magnates wish to convict a rival, magnate pressure might also lead to over-conviction.

Because the unconditional expectation of R is zero and the juries ignore R, social welfare under the jury system equals $\int_{D>A/\beta} Df(D)dD$. Figure 1 illustrates the social welfare loss from jury coercion relative to the first best when $\lambda = 0$. The social loss is increasing in A and decreasing in β. Juries perform worse when local magnates are more powerful, and better when they are more committed to their own independent preferences.

In the case of a royal judge, we assume that the judge has some set of innate preferences and is also subject to local pressure. However, the judge can be punished and rewarded by the king who perfectly observes all aspects of the case. The judge's utility from convicting is $\beta_J(D+\theta_J R)-A$ plus whatever the king chooses in his incentive scheme. The parameters β_J

and q_J are meant to keep the judges preferences flexible[4]. However, as the king observes R and knows the preferences of the judge, a simple incentive scheme can easily induce the judge to exactly follow the king's preferences. The king simply pays the judge A+ $b_J(q-q_J)R$ if the judge convicts. The two terms together undo the coercion of the magnate and the fact that the judge's preferences differ from those of the king. After the judge had been incentivized, he convicts whenever the king would, i.e., if and only if $R>-D/q$. For any given D, then, a fraction of cases equal to $1-G(-D/q)$ reach conviction.

For l =0, total social welfare in this case equals $\int_D D(1-G(-D/q))f(D)dD$, and the total social losses are shown in the two triangles in Figure 2. Unsurprisingly, the social losses from the royal judge system increase when the preferences of the king and his subjects fail to overlap. More generally, the following proposition holds:

Proposition 1: When l is sufficiently close to zero, there exists a value of A>0 at which "social welfare" is the same under royal judges and independent juries. For A > A*, royal judges yield higher social welfare. For A < A*, independent juries yield higher welfare.*

Proof: For all proofs, see the Appendix.

Proposition 1 illustrates the centrality of the parameter A to our analysis. A represents the ability of local notables to bully, coerce, or corrupt the arbiters of the king's justice. Across societies, A will generally be higher when there is a significant amount of local inequality – powerful local lords who have the resources to bribe or hire local thugs. A is also a function of the general level of violence in the society. When the supply or armed warriors is high, it is cheaper to coerce the king's justice. A is also higher when the crown is weak and cannot punish violators. The crown may be weak either because it has access to few tax revenues or because transport costs prevent the crown's forces from enforcing justice.

[4] For a discussion of preferences of judges, see Posner (1995a,b).

Our view is that throughout the past millenium, and particularly in the 12th and 13th centuries, the ability of local bullies to control their environment was higher in France than in England. During the earlier period, the nobles such as the Duke of Burgundy or the Constable Bourbon essentially ran independent principalities within the technical borders of France[5]. In the 19th century, France saw major regional fights over the revolution (the Chouans resisting the forces of the Directory; the merchants of Bordeaux acquiescing only nominally to the revolution of 1848). Even during the apotheosis of the centralized French power under Louis XIV and Napoleon Bonaparte, the ability of local authorities to undermine central control was much greater in France than in the age of Parliamentary control in England.

Why were the local magnates so much weaker in England than in France? We see three key differences. First, in 1066 William the Conqueror gave out to his followers dispersed holdings of land, precisely to minimize the ability of any general to create a local power base. As a consequence, while the French nobles held sway over vast, contiguous areas of land, the English nobles had parcels that were dispersed over the country. This initial allocation of land holdings vastly limited the creation of concentrated local authority. Second, between 1066 and today, the fighting on the English soil was limited. While England was invaded successfully (by William of Orange and Henry Tudor) and unsuccessfully (by Bonnie Prince Charlie and the French during the Hundred Year War), these invasions were short and bloodless by historical standards. In contrast, the great battles of Europe were fought in France. The Angevin monarchs of England were prone to war, but fought their wars during 1150-1213 on the French soil. The comparatively peaceful period of 1213-1340 in France was followed by the mayhem of the Hundred Years War. Despite comparative peace after 1450, France was still in nearly continual war on its own soil. Louis XI fought the Duke of Burgundy in the 15th century. The early 16th century saw the revolt of Constable Bourbon, while in the late 16th century France was wrecked by the wars of religion. In the early 17th century, fighting with Spain raged in Northern France. In the mid-17th century, both the nobles and the Parisian notables started internal wars during the Fronde. Louis XIV was almost continuously at war, often on his own territory. The constant war on the French soil meant that weapons and warriors were constantly available to

[5] The king's writ did not run in the duchies, but they exemplify the power of the nobles.

anyone who wanted to subvert justice.

The two periods of lengthy battle on English soil were the War of the Roses in the second half of the 15th century and the English civil war. As our model suggests, the ability of local nobles to subvert justice increased during the War of the Roses, and after the war Henry Tudor brought English justice closer to the French model. The courts of Star Chamber represent an attempt to increase royal control over justice. The English civil war was fought in part to secure the independence of the legal system from royal control, and in fact succeeded in doing so.

Our theory, then, suggests that England and France went their different ways in adopting judicial systems for reasons of efficiency. The relatively higher ability of the magnates to subvert justice in France led to the adoption of the civil law system controlled by the crown. The relatively lower ability of such magnates in England to subvert justice led to the adoption of the jury-controlled common law system. Both outcomes were efficient at the time for their environments. In fact, the Magna Carta is a remarkable example of an early Coasian bargain, in which the people and the crown agree on a cash transfer needed to support the efficient outcome.

This analysis is broadly consistent with the available historical accounts of the divergence in approaches to adjudication, and in particular with the classic work of Dawson (1960). "So we return to the question why France, which started with institutions so similar [to the English], followed in the end such a different course. The answer that has been given centers on weakness – weakness at the critical times. The marks of weakness had appeared very early. The community courts, analogous to the English county and hundred courts, had been captured by local feudal lords during the breakdown of government in the tenth and eleventh centuries. When the rebuilding of monarchy began, the French crown lacked an important resource that the Norman kings of England had already put to very good use. But it was much more than this. Over large parts of France that owed a nominal fealty to the king great territorial lords had effective control; in them, for long, the king's writ did not run. Even within the king's own domain there could be no massive enlistment of free subjects whose allegiance was to the crown as a symbol of national government transcending and displacing the bonds of feudal tenure (p. 299)." In Dawson's view, the adoption of canonist inquest by royal judges was a sign of the

crown's weakness in France, not of strength.

In broader terms, this analysis reveals how the royal judge vs. independent jury decision hinges upon the extent to which the magnates fear the crown more or less than they fear each other. This point has much broader implications. It suggests in part that the connection between English legal origin and rule of law, emphasized by Hayek (1960), may flow as much from rule of law to the common law system as vice versa. Juries are better systems for the countries where local notables are not able to freely terrorize them, i.e., in countries that are fundamentally at peace. When in contrast a country is not fundamentally at peace, state inquisitors may be the only means of enforcing justice. It is not entirely surprising in this regard that tight state control of adjudication has often been introduced as part of national liberation or unification, often in the aftermath of civil war and other disorder. Without internal peace to begin with, a system of juries may simply not work.

Other parameters of the model also influence the choice of judge versus jury systems.

Proposition 2: The value of A^* *rises with* b *and falls with* l. When l *is sufficiently close to zero, then A* rises with* q.

When juries are stronger and better able to use their own preferences rather than succumb to the influence of the local magnate, jury systems work better. This may explain why juries in England were often made up of twelve local knights. Presumably a body of twelve fighting men was not as easy to bully as that of unarmed but otherwise respected citizens.

The value of q captures the extent to which the preferences of the king differ from those of the society. The more they differ, the harder it is for the public to accept royal justice. This was to become more important in later periods when democratic government replaced royal government. If the population trusts the democratically elected leaders who control the judicial system, then it becomes more natural to believe that juries are unnecessary. This analysis might account for the enormous expansion of public law and regulation in the 20th century, even in common law countries such as the United States and England. Such growth of parliamentary

control over lay justice is broadly consistent with our analysis, yet, as Hayek (1960) so clearly emphasized, is likely to undermine the freedoms inherent in Magna Carta.

III. The Adoption of Bright Line Rules

In this and the following sections, we discuss how some of the crucial differences between civil and common low regimes stem from the original choice of professional versus lay judges. In this section, we discuss what has historically been seen as a central element of a civil law system, namely the reliance on codes and bright line rules as opposed to more general legal standards. Von Mehren's (1957) classic textbook states in its opening chapter: "Two points of difference are emphasized in comparing the civil and the common laws. First, in the civil law, large areas of private law are codified. Codification is not typical of the common law. Second, the civil law was strongly and variously influenced by the Roman law. The Roman influence on the common law was far less profound and in no way pervasive" (p. 3). In this section, we focus on the first of these two differences.

Codification aims to provide adjudicators will clear bright line rules, as opposed to broad legal principles or standards, for making decisions. Compared to a legal principle, a bright line rule takes the form of a fixed penalty for a clear action. Some modern examples clarify the difference. The law can prohibit dangerous driving (a standard) or it can impose a speed limit (a BLR). The law can prohibit stock trading by insiders on non-public information (a standard) or all trading by insiders within N days of a public announcement by a firm (a BLR). The law can prohibit self-dealing by corporate officers (a standard) or all financial transactions by such officers not approved by a vote of the majority of disinterested directors of the firm (a BLR). The law can prohibit all "sham transactions designed to evade taxes" (a standard) or very specific trades in the capital market (a BLR).

No system is made up entirely of bright line rules, but civil codes are basically collections of rules intended to restrict the actions of the participants in the legal system. We maintain that the purpose of such rules is enable sovereigns – whether kings or parliaments -- to control judges; they are a natural consequence of the reliance on state-controlled judiciaries. Merryman

(1969) describes the role of the judge and the code as seen by the writers of Code Napoleon as follows: "If the legislature alone could make laws and the judiciary could only apply them (or, at a later time, interpret and apply them), such legislation had to be complete, coherent, and clear. If a judge were required to decide a case for which there was no legislative provision, he would in effect make law and thus violate the principle of rigid separation of powers. Hence it was necessary that the legislature draft a code without gaps. Similarly, if there were conflicting provisions in the code, the judge would make law by choosing one rather than another as more applicable to the situation. Hence there could be no conflicting provisions. Finally, if a judge were allowed to decide what meaning to give to an ambiguous provision or an obscure statement, he would again be making law. Hence the code had to be clear" (p. 30).

Common law countries also have codes of laws, such as the Unified Commercial Code in the United States, and the many codes of the State of California. Some of these codes have even more statutes than civil codes do. However, as Merryman (1969) explains, the codes in common law countries often summarize prior judicial decisions. Moreover, a common law judge, to the extent that he can focus on the differences between the case under review and specific provisions of the code, has some flexibility to disregard these provisions when they conflict with the basic principles of common law. In civil law countries, in contrast, judges are not even supposed to interpret the codes very much, and in principle must seek not to differentiate a specific situation, but to fit it into the existing provisions of the code. As a restraint on the judge, codes are much more powerful in civil than in common law countries.

Historically, codification has often been associated with efforts to control judges. Although there is some dispute of whether the Code of Justinian has the character of modern codes as opposed to the summary of cases, there is little doubt that Justinian himself was interested in the control of justice. Similarly, the work of the Glossators and their successors for the Roman Church and the continental kings was centrally focused on developing centralized control over adjudication through a system of clear rules. The early Stuarts tried to introduce codification in 17th century England out of their frustration with the failure of common law judges to cater to royal preferences. Absent the rebellion against the king, they might have succeeded. Elsewhere, codification was promulgated by Philip II in Spain, Frederick the Great

in Prussia, and Napoleon Bonaparte in France. These men saw their codes as a means of controlling their judges. Napoleon wrote that he wanted to turn French judges into automata simply enforcing his code. We believe that the perspective of this paper is a better way to interpret the history of codification than the usual view that bright line rules make adjudication "less complex," which focuses more on the control of individual conduct than on the control of the judges (e.g., Kaplow 1992, 1995).

We keep the basic structure of the previous model, and again compare the efficiency of royally controlled judges and juries. Violations have attributes D and R. We assume that the king no longer observes the values of D and R. Instead, he observes only a bright line, namely whether $D > \overline{D}$. The value $\overline{D}$ represents some fixed threshold of severity. We assume that $\overline{D}$ does not equal zero (which would yield the first best). Increases in the absolute value of $\overline{D}$ correspond to higher imprecision of BLRs. We also assume:

Assumption 1: $Expectation\left(D \middle| D > \overline{D}\right) > 0 > Expectation\left(D \middle| D < \overline{D}\right)$

This assumption ensures that if the only thing known about a crime were its relation to the BLR, the king would want to convict violators and release non-violators. We think of this signal as exogenously given by nature rather than a choice by the king as to where "to draw the line."

What is the optimal policy for the king when he can verify whether a bright line has been crossed? We take the view that the public and the king can strike a Coasian bargain over the type of system, but that the king cannot credibly commit to how he is going to compensate his judges on a day-to-day basis. The incentive contract for the judge is then the one the king chooses.

After each case, the king receives two pieces of information: (1) was the bright line rule violated and (2) did the judge convict. Any incentive scheme must be based exclusively on these two pieces of information. Since both of these items are binary, it must be the case that any optimal incentive system contains at most four different payouts. Furthermore, since we are not

concerned with the absolute level of payment to the judge, but only with the quality of the judge's decisions, we can normalize the payouts in the case of non-conviction to zero regardless of whether the BLR had been violated. The judge's decision is only affected by the incremental payment for conviction, which would depend on whether the BLR had been violated or not. Denote this increment by P_i for i=v,nv (i.e., the BLR has been violated or not violated).

The judge convicts if:

$$b_J(D + q_J R) + P_i > A$$

The king chooses incremental payments for conviction, P_V and P_{NV}, for the cases when the BLR has been violated (D > $\overline{D}$) and when it has not (D < $\overline{D}$), to maximize his welfare. For example, when D > $\overline{D}$, the king chooses P_V to maximize:

(4) $\int_{D>\overline{D}} \int_{R>\frac{A-P_V}{b_J q_J}-\frac{D}{q_J}} (D+qR) f(D) g(R) dD dR$, when $q_J > 0$, and

(4') $\int_{D>\overline{D}} \int_{R<\frac{A-P_V}{b_J q_J}-\frac{D}{q_J}} (D+qR) f(D) g(R) dD dR$, when $q_J < 0$.

The value of P_{NV} is chosen in a similar manner.

The incentive contract that maximizes the king's welfare when the king only observes whether a judge convicts and whether a bright line rule is violated is described by:

Proposition 3: If the distribution g is sufficiently close to uniform, then the king's optimal strategy is a pure bright line rule system if and only if $q_J < 0$.

When $q_J < 0$, as the king raises P, the marginal violator (holding D constant) will have an increasingly higher value of R, and the king will want to pay even more for convictions. This

makes the king's problem convex, so it is optimal for the king to get either universal conviction or universal releases within a given region of D's. Since Assumption 1 guarantees that convictions dominate when the bright line rule is violated, and releases dominate when it is not, the king will just order the judge to follow the bright line rule to the letter.

This proposition illustrates the importance of judicial tastes in pushing the king toward bright line rules. Bright line rules are particularly attractive to a sovereign when the tastes of the judges are far from his own (e.g., when $q_J < 0$, then this always holds). One of Napoleon's difficulties was that his judiciary was made up of men trained in pre-revolutionary times who survived various revolutionary regimes. These judges did not share Napoleon's preferences, and he could not count on their unconstrained choices to reflect his views. The Code Napoleon can be seen as his attempt to control judges who disagreed with the emperor.

With a pure bright line rule system, social welfare is $\int_{D>\overline{D}} Df(D)dD$, assumed to be strictly positive. The key parameter shaping the relative attractiveness of juries and BLRs is again A:

*Proposition 4: There exists a value of A, denoted A**, at which social welfare is the same under independent juries and a pure bright line rule system. For A>A**, bright line rules dominate and for A<A**, independent juries dominate. The value of A** rises with the absolute value of* $\overline{D}$.

Proposition 4 shows that pure bright line rules are socially desirable when A is high and when $\overline{D}$ is close to zero. The quality of the bright line rule and the security of juries determine the efficiency of alternative systems.

Having compared BLRs to juries, we next compare them to independent judges. We assume that $q_J < 0$ so the king wants to impose bright line rules on the judges.

*Proposition 5: If θ_J is sufficiently close to zero, there exists a value of A, denoted A***, at which unincentivized judges and bright line rules provide the same level of social welfare. For A > A***, BLRs dominate and for A < A***, unincentivized judges dominate. When λ is sufficiently close to zero, the value of A*** increases with β_J. The value of A*** rises with the absolute value of $\overline{D}$.*

These comparative statics are all fairly intuitive. Judges are preferred when they are able to resist local magnates successfully (i.e., when β_J is high) and when their tastes reflect those of the subjects (i.e., when θ_J is close to zero). Unincentivized judges are inefficient when A is high. Bright line rules do poorly when the signal they convey is far from the efficient standard of justice. This occurs when the bar is set too high or too low (i.e., $\overline{D}$ is large in absolute value).

This proposition, we believe, goes to the heart of von Mehren's observation of complementarity between civil law and codification. The choice of the common law regime means that juries are capable of making roughly efficient and independent decisions, and therefore bright line rules are less necessary to control them. With jury independence and the impossibility of penalizing the jurors, it is not even clear that the use of BLRs can be forced upon the juries, as the evidence of jury nullification indicates. The choice of a civil law regime in contrast means that adjudication is delegated to judges. Unless judges without any controls can be relied upon to make efficient decisions, the king would use the information he can verify to monitor and shape the decisions of the judges. Bright line rules are exactly this instrument of control. Proposition 5 suggests that unless the bright line rules are extremely imprecise, they will be used in a civil law system to control judges. Bright line rules thus emerge as a central element of a civil law regime because, in the absence of full verifiability of information by the sovereign, they become an integral part of state control over adjudication.

The use of bright line rules, the violations of which can be verified by higher level authorities, as an instrument of control is more general than our application to legal design. For example, bright line rules can be used to control agents in a bureaucracy. In his classic study of

the United States Forest Service, Kaufman (1960) describes how forest rangers in the United States were obligated to follow extremely detailed operating manuals regulating their behavior in a large number of foreseeable circumstances. The focus of forest rangers is especially interesting because they operate, nearly alone, in remote locations, and are subject to significant pressures from the logging interests to make favorable decisions on harvesting trees. The idea of using BLRs to control agents in situations where local bullying is high is not unique to legal design.

To conclude, this section has focused on our central theme: a key goal in the design of a legal system is to control law enforcers. Starting with Becker (1968), the law and economics literature has focused on the regulation of the behavior of individuals as the principal goal of legal design (see Polinsky and Shavell 2000). Becker and Stigler (1974) consider the compensation of law enforcers as a way of preventing corruption, but the focus on the design of law enforcement has remained peripheral. In our view, the control of law enforcers has historically been as or more important to the design of legal systems as the control of individual behavior. Not just the compensation of enforcers, but legal rules themselves are shaped with the purpose of verification of the decisions of law enforcers, such as judges. Codification, which many have seen as one of the defining elements of a civil law system, is best understood from this perspective. In the next section, we argue that other differences between common and civil law systems are also best understood from the perspective of efficient design of enforcement.

IV. Consequences of Alternative Systems

In the previous sections, we described the difference between legal systems of France and England as the outcome of an efficient choice. This is the choice between a regime that favors incentivized decision-makers to protect against local pressure and corruption, and a regime that favors de-incentivized decision-makers to protect against the state. Once we focus on this choice, we can understand many of the aspects of the two legal traditions, both in terms of the organizations of the legal system and in terms of the implications for social outcomes[6]. In our

[6]In this analysis, we obviously simplify. Even the legal systems of the U.S. and the U.K.

comparison, we rely heavily on the comprehensive comparison of the two approaches to adjudication presented by Mirjan Damaska (1986).

Among other things, Damaska emphasizes the following procedural differences between civil and common law systems. The common law system greatly relies on oral argument and evidence, while in civil law systems, much of the evidence is recorded in writing. Trials play a much larger role in a common law than in a civil law system. Civil law systems rely on regular and comprehensive superior review of both facts and law in a case; in common law systems, in contrast, the appeal is much less frequent, and is generally restricted to law rather than facts. Common law systems, at least in the last century, have generally relied on heavily incentivized state prosecutors, who are separate from judges, especially in the criminal cases. In civil law systems, in contrast, judging and prosecution are generally combined in the person of the same judge. Finally, although this distinction is less clear-cut, common law systems generally rely to a greater extent on the precedents from previous judicial decisions than do the civil law systems. We argue below that these differences can be understood from the perspective of our model.

First, compare the English tradition of oral argument and evidence with the French reliance on written evidence. The key feature of written evidence is that it facilitates oversight of the court by higher level officials. For the central authorities to monitor judges, it is much easier to verify whether the decisions adhere to the rules and to the preferences of the sovereign when there are written records. A higher authority would find it difficult to punish and reward judges in the hinterland if the judges do not produce any written records, and decisions are made based on oral evidence provided to the jury. Furthermore, written evidence in a jury-type system would have been hard in any modern period because of high rates of illiteracy among the general population. In fact, in so far as in the 12th and 13th centuries kings wanted to control their judges, they needed written records and because of the need for such records they needed to use literate clerics as judges. It is possible that the imperative of using clerics in a civil law system was a further factor that moved the English kings during this period toward juries – recall that both Henry II and King John were excommunicated. Using clerics must have been much more

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have important structural differences (Posner 1996).

attractive to the French kings, who were closely allied with the Church and usually canonized.

Second, the more central role of trials in the common law system is obviously linked with adjudication by generally illiterate juries. Evidence can only be collected from and presented to such juries in a public trial. In civil law systems, in contrast, most evidence is collected prior to the trial by a judge-inquisitor, and hence the trial plays only a secondary role of rehashing this evidence publicly. The surprises and revelations of a common law court room play no role in this process. Moreover, the reliance on trials makes it harder to review judicial decisions than does the written report of the findings, which is inconsistent with the centrality of such review in civil law. This difference, then, is also linked to the choice of the method of adjudication.

Third, review by higher level courts is automatic in a civil law system and reconsiders both procedure and evidence. Review by higher level courts in a common law system restricts itself to legal procedure. Again, this appears to be closely linked to the problem of monitoring judges. As we argued, the defining element of the civil law system is the reliance on state-employed judges, who need to be incentivized to follow the preferences of the sovereign. Appellate review is how this incentive scheme works; it is one of the main ways that judicial incompetence and corruption are detected. In a system based on incentivizing judges, this type of review creates crucial data for providing these incentives. In a common law system, in contrast, it is the unincentivized juries rather than the state-employed judges that render verdicts. The need to monitor the decisions of such juries is less pronounced, except to the extent that the judges must be properly informing the juries about the basic outline of the law.

In this respect, we come close to Damaska (1986), who argues that the civil law systems are characterized by the "bureaucratic/hierarchical" ideal, while common law systems by the "coordinative" ideal. We agree with Damaska that the existence of an extensive judicial bureaucracy reviewing the decisions of lower branches is a necessary consequence of verification of judicial decisions. Consistent with this analysis, Dawson (1960) presents most striking facts: "The total number of royal judges [in France] at this stage [16th century] must certainly have exceeded 5,000. These estimates from France should be compared with figures from England: from 1300 to 1800 the judges of the English central courts of common law and

Chancery rarely exceeded fifteen. These judges, furthermore, conducted most of the trials and all the appellate review that English courts undertook" (p. 71).

Fourth, with independent and weakly incentivized judges and juries, a common law system needs to rely on state prosecutors to develop cases. Judges and juries do not care strongly enough about convictions to invest resources in collecting information and otherwise developing cases. In the instances of private litigation, private parties bringing suit have strong enough incentives to do the work. In criminal cases (which were brought privately in England until well into the 19th century for obvious incentive reasons), in contrast, it may be necessary to have motivated prosecutors who are paid for convictions, even if they end up being advocates of the state's position rather than seekers of justice[7]. In a civil law system, to the extent that a judge is already motivated to do the state's bidding, a state prosecutor is less necessary to pursue the goals of the state. Thus the difference in approaches to advocacy and prosecution in the two systems emerges as a natural consequence of the difference in incentives faced by the judges.

Our model also suggests why precedents play a larger role in a common law system. Absent bright line rules and other guides for adjudicators, precedents may serve to remind judges and juries where the law has drawn lines previously. Despite precedents, it is common for advocates in common law systems to draw subtle distinctions between cases, unlike in the civil law systems, where similarities are sought by a judge (Damaska 1986). Nonetheless, precedents may serve to eliminate excessive unpredictability, which may be a natural consequence of the importance of individual trials and of particular sentiments of the juries. "Certainty is achieved in the common law by giving the force of law to judicial decisions, something theoretically forbidden in civil law" (Merryman 1969, p. 51). Precedents have the further advantage that, unlike bright line rules, they have been established by independent judges rather than by the sovereign. As such, they again may provide protection from the ability of the state to change the rules through dictate. It is for this reason that writers like Coke and Hayek have celebrated the

[7] Incentives for prosecutors are discussed by Dewatripont and Tirole (1999) and by Glaeser, Johnson, and Shleifer (2001).

reliance on precedents as a key guarantee of freedom in the English legal system.

This approach to comparative law sheds light not only on the formal differences in the organization of legal systems, but also on some of the differences in social outcomes described in the introduction. For example, it may explain why countries with civil law regimes appear to be more interventionist, as documented by La Porta et al. (1999). Our model is consistent with Damaska's (1986) view that civil law is adopted as part of "policy implementing" while common law as part of "dispute resolving" approach to the design of a legal system. The sovereign uses codes and bright line rules to regulate social and economic activities according to his rather than the community's tastes. Such regulations might be efficient under some circumstances, but the point remains that they are more likely to be adopted in countries and communities where the government gets to have its way. The government needs to have these regulations to control its own policy implementing bureaucracy, including the judges. In contrast, the relatively more laissez-faire common law approach is to rely on the standards of the community rather than to cater to the preferences of the king. We should not be surprised, therefore, that the civil law countries are more interventionist on any number of scores than the common law countries[8].

We can alternatively look at these issues from the perspective of security of property rights. The extent to which violations are not punished when D>0 measures the insecurity of property rights. In the case of independent juries, violations go unpunished with probability $\int_{D=0}^{A/b} f(D)dD \Big/ \int_{D\geq 0} f(D)dD$. In the case of bright line rules, they go unpunished with probability

[8] Djankov et al. (2000) describe this phenomenon in the context of the regulation of entry of new firms. They show that, holding the level of economic development constant, civil law countries require more steps such as permits and licenses for an entrepreneur to take to begin operating legally than do the common law countries.

$\int_{D=0}^{\overline{D}} f(D)dD \Big/ \int_{D\geq 0} f(D)dD$. The level of A above which bright line rules yield greater security for property rights is $\tilde{A} = \overline{D} / \beta$.

This simple calculation has a number of implications. Consider first its implications for different areas of law, and suppose that the choice of the form of adjudication is system-wide, rather than specific to a given area of law. The analysis implies that, for a given level of pressure on adjudicators, A, civil law systems work better when bright line rules accurately capture community justice (i.e., $\overline{D}$ is close to zero), while common law systems work better when BLRs are inaccurate (i.e., $\overline{D}$ is far from zero). One area in which BLRs notoriously fail to catch undesirable conduct is the expropriation of investors by corporate insiders, generally governed by company and security laws. The reason that BLRs do not work well in this area is that there is a broad range of creative behavior designed to expropriate investors that "falls between the cracks" in the rules (Johnson et al. 2000). When the resources at stake are enormous, the creativity in such behavior rises accordingly. As a consequence, the model predicts that common law regimes would do better than civil law in the areas of law governing investor protection, just as the evidence indicates (La Porta et al. 1997, 1998).

More generally, this analysis bears on the empirical evidence on the comparative security of property rights. First, to the extent that legal systems are chosen efficiently, countries that choose common law will generally have greater law and order, i.e., lower A's, than countries that choose civil law. According to this logic, it is the countries with greater security of property rights that choose the common law system, and those with less security of property rights that choose the civil law system. While surely relevant for the 13th century history, this logic may not be as compelling for the experience of the last two centuries.

During that period, most countries did not freely choose their legal systems, but rather adopted them in the process of colonization or post-colonial independence, but still with great influence of the former colonizers. As a consequence of such transplantation, some mismatches may have occurred. In particular, the analysis in this section indicates that while common law

regimes may be relatively immune to transplantation, codification may be significantly undermined when put into a new environment. For BLRs to work well, they must accurately capture the community's view of violations. In the process of transplantation, some BLRs may simply not work, in part because violations take a different form, and in part because they can no longer be verified by a sovereign. The transplantation of civil law regimes may thus lead to significant losses of efficiency. This observation might explain why, in a cross-section of countries, French legal origin is associated with inferior security of property rights.

Finally, the analysis may shed light on the experience of developed economies in the 20th century. In all countries, the role of the state has expanded greatly, in part because of voters' wishes and in part because of the expansion of the state monopoly on violence. To the extent that civil law presents the government with the ready mechanism of regulation and enforcement of its preferences through the state-employed judiciary, this expansion of the role of the state has been more natural and pervasive in civil law countries. The state has of course also expanded greatly in common law countries, such as the U.K. and the U.S. Yet in the large areas of private law, including corporate law and labor law, this expansion of the state has been more moderate and more checked in the common law countries. The reason, we believe, is precisely the fact that government intervention in private contracts is not naturally compatible with the resolution of disputes by a group of neighbors so crucial to the design of common law.

In summary, this section has argued that many of the key features of a civil law system – as seen both in the legal procedures and in the social outcomes -- "come with" its reliance on state-employed judges to adjudicate disputes. Most of these features do not have a role in a system that relies heavily on adjudication by local unincentivized juries.

V. Convergence

In this section, we ask under what circumstances do common and civil law systems converge, i.e., lead to similar decisions, and alternatively, when to they yield different outcomes?

Some writers have argued that, from the perspective of substantive outcomes, there has

been a great deal of convergence between common and civil law systems in the 20th century (Coffee 2000). To understand this phenomenon, we consider the degree of overlap in the decisions between the BLR and the independent jury systems. Assume that $A/b > 0 > \overline{D}$. In this scenario, the range of cases in which the two regimes lead to different decisions is given by $\frac{A}{b} \le D \le \overline{D}$. When bright line rules are inaccurate ($\overline{D}$ is far from zero) and there is no rule of law (A is high), the two systems deliver very different outcomes. Which one does better depends on whether the lack of rule of law or the inaccuracy of the BLRs is a bigger problem.

The degree of divergence of the two systems is (1) rising with A, (2) falling with b, and (3) falling with $\overline{D}$. Unsurprisingly, we expect to see convergence in outcomes as juries become more immune to pressure and corruption (i.e., as either A falls or as b rises). The tendency of juries to be swayed by local influence would have been fallen as the ability to protect them rose over the 20th century. This may be one reason for the tendency of systems to converge.

A second reason is that codifications may have been brought more into line with the tastes of the public as large, i.e. $\overline{D}$ has gotten closer to zero. As societies became more democratic, parliaments wrote laws and codes that better reflected the views of the entire community. As a result, the tendency of codes to reflect the preferences of the elite rather than the will of the people must have declined. Bright line rules may also have become better as the information systems in the society have improved, and hence it became possible to draw sharper "lines" between different forms of conduct. As $\overline{D}$ goes to zero, when A is low, civil codes will resemble jury systems more and more. In that case, the two systems are both more or less accurately reflecting the will of the public. In fact, as we take the limit as both A and $\overline{D}$ converge to zero, the two systems converge to efficiency in terms of the outcomes they deliver.

VI. Conclusion: the practice of justice

Economists generally agree that the state's main role in the economy is to protect property rights. The libertarians believe that this is pretty much all the state should do, while

economists with more interventionist tendencies begin from there and go on. The trouble with this imperative is that it does not tell us exactly how the state can design a functional legal system, and what it takes to "protect property rights." At the heart of the libertarian view is Coase's (1960) idea that individual contracting will move societies toward efficient resource allocation, *as long as these contracts are enforced by courts.* But there is nothing in the Coasian logic to explain what would enable or motivate courts to enforce contracts, or for that matter why such judicial enforcement would work better than property rights protection by other means, such as government regulation. In at least some instances, regulation by government agencies appears to work better than enforcement of contracts by inefficient courts susceptible to political pressures (Glaeser, Johnson, and Shleifer 2001). The imperative of protecting property rights, at the most general level, tells us nothing about the desirable extent of government intervention.

In fact, as we try to show in this paper, efficient solutions to the problem of the design of legal systems to protect property rights may lead to very different answers in different environments. In countries where the law and order environment is benign to begin with, a system of law enforcement relying on decentralized adjudication by peers may be the most efficient. In such a system, we would see greater security of property rights and relatively little state intervention in the economy and society. In contrast, in countries with weak law and order to begin with, a system of law enforcement relying on more centralized adjudication of disputes by government employees may be the most efficient. In such a system, we would see less security of property rights, more regulation, and more state intervention in the economy. Indeed, we might see a lot of institutions that can be viewed as unfriendly to a free market economy, even though – from a broader perspective – they might be efficient for the environment. Put differently, people might demand some level of "dictatorship" and "state control" because it is better than the alternative of lawlessness. Our analysis is thus consistent with Hayek's (1960) recognition that common law is associated with higher levels of freedom from state coercion than civil law, but Hayek's is a statement of association and not necessarily causality.

At the broadest level, then, the conclusion of our paper is that goal of establishment of law and order is compatible with a very broad range of institutional arrangements. Legal origins matter because they capture the alternative ways of making these institutional arrangements. In a

way, our analysis reconciles the political and the legal views of why legal origins matter. According to the political view (see, e.g., Damaska 1986, La Porta et al. 1999), legal origins matter because the societies that wish to intervene more are driven to choose civil law as it gives the governments the tools of regulation. According to the legal view (see, e.g., La Porta et al. 2000, Johnson et al. 2000), legal origins matter because the internal structure of civil law itself necessitates greater intervention by the government. The framework suggested by this paper argues that both views are part of the story: civil law is chosen when greater state regulation is desirable, which in turn has lead to an economy with greater a more extensive practice of state intervention. This practice of justice has shown to protect property rights in some market economies, just as the common law system has protected them in others.

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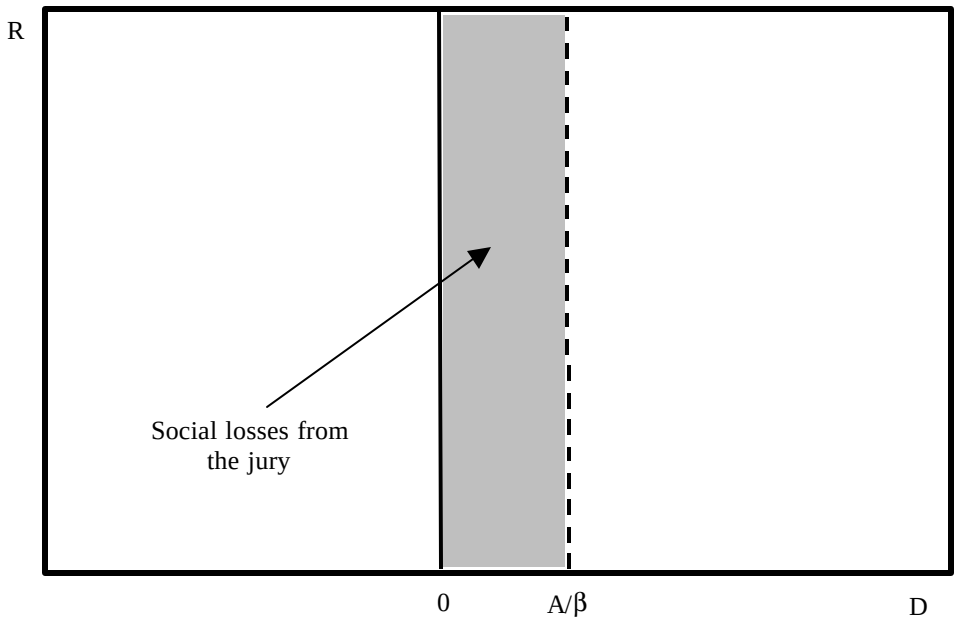

Figure 1: Social losses from jury coercion relative to the first best when δ=0.

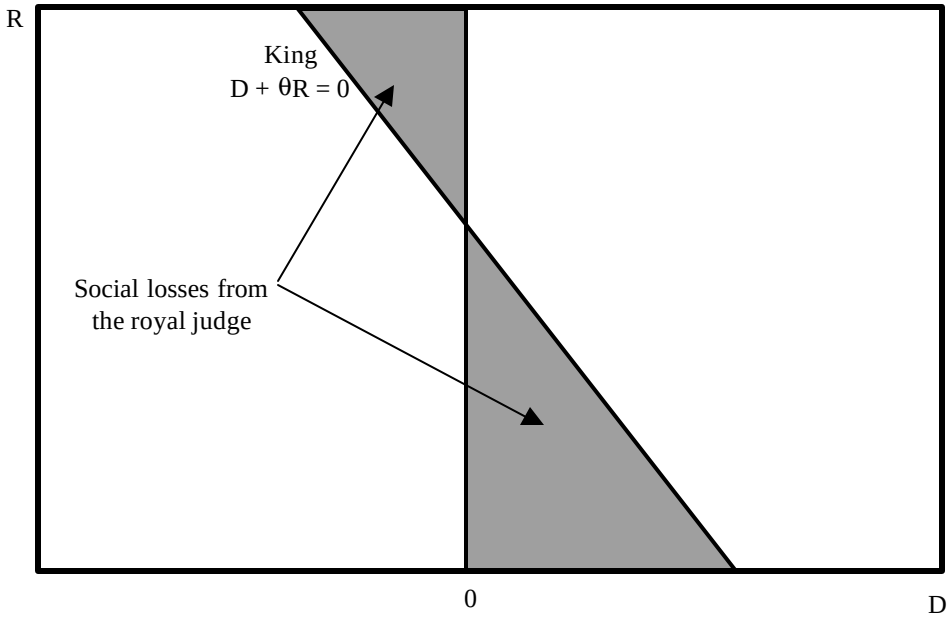

Figure 2: Social losses from the Royal Judge System when θ=0

Appendix: Proofs of Propositions

Proposition 1: When l is sufficiently close to zero, there exists a value of A*>0 at which "social welfare" is the same under royal judges and independent juries. For A > A*, royal judges yield higher social welfare. For A < A*, independent juries yield higher welfare.

Proof: Because the unconditional expectation of R is zero, social welfare under the jury system equals $\int_{D>A/b} Df(D)dD$. This expression is both monotonically declining in A and converges to zero as A increases to infinity. The social welfare under the royal judge equals:

(A1) $$\int_D D(1-G(-D/q)f(D)dD + lq\int_{DR>-D/q}\int Rf(D)g(R)dDdR.$$

The first term is positive because E(D)>0 and the weighting functions puts a higher weight on higher D's. The second term is positive because $E(R|R>-D/q)$ is positive for every D. Because social welfare under royal judges is strictly positive, and social welfare under juries converge to zero as A increases, for sufficiently high levels of A judges must dominate juries.

When A=0 and $l=0$, social welfare under juries reaches the first best and therefore strictly dominates social welfare under judges of $\int_D D(1-G(-D/q)f(D)dD$, which does not reach the first best. Because social welfare under judges is continuous in l, for values of l close to zero judges still dominate juries at A=0. Using the mean value theorem, for these values of l, there must exist a value of A (denoted by A*) at which social welfare under judges and that under juries are equal. By monotonicity of social welfare under judges with respect to A, for values of A above A* juries dominate judges and for values of A below A*, judges dominate juries.

Proposition 2: The value of A^* rises with b and falls with l. When l is sufficiently close to zero, then A* rises with q.

Proof: The value of A* is defined through:

$$\text{(A1)} \quad \int_{D>A^*/b} Df(D)dD = \int_{D} \int_{R>-D/q} (D + lqR) f(D) g(R) dDdR$$

For (A1) to hold, $\frac{A^*}{b}$ must remain constant as $ rises. Differentiation then shows that $\frac{\partial A^*}{\partial b} = \frac{A}{b} > 0$.

Differentiating both sides of (A1) and inverting gives us that:

$$\text{(A2)} \quad \frac{\partial A^*}{\partial l} = \frac{-b^2 \int_{D} \int_{R>-D/q} qR f(D) g(R) dDdR}{A^* f(A^*/b)},$$

which is always negative since $E(R|R > -D/q) > 0$.

Differentiating both sides of (A1) and inverting gives us that:

$$\text{(A3)} \quad \frac{\partial A^*}{\partial q} = \frac{b^2 \left[\int_{D} \frac{(1-l)D^2}{q^2} f(D) g\left(-\frac{D}{q}\right) dD - \int_{D} \int_{R>-D/q} lR f(D) g(R) dDdR \right]}{A^* f(A^*/b)},$$

which is positive if and only if:

$$\text{(A4)} \quad \frac{(1-l)}{lq^2} \int_{D} D^2 f(D) g\left(-\frac{D}{q}\right) dD > \int_{D} \int_{R>-D/q} R f(D) g(R) dDdR,$$

which always holds when l is sufficiently small.

Proposition 3: If the distribution g is sufficiently close to uniform, then the king's optimal strategy is a pure bright line rule system if and only if $q_J < 0$.

Proof: For any subset of D's (denoted Ω_i) captured by any bright line, the problem is to choose P_i, the subsidy towards conviction, to maximize: $\int_{D\in\Omega_i}\int_{R>\frac{A-P_i}{b_J q_J}-\frac{D}{q_J}}(D+qR)f(D)g(R)dDdR$ when $q_J > 0$ and $\int_{D\in\Omega_i}\int_{R<\frac{A-P_i}{b_J q_J}-\frac{D}{q_J}}(D+qR)f(D)g(R)dDdR$ when $q_J < 0$. This problem yields first order condition:

$$\text{(A5)}\quad \frac{1}{b_J q_J}\int_{D\in\Omega_i}\left(\frac{q_J - q}{q_J}D+\frac{q(A-P_i)}{b_J q_J}\right)g\left(\frac{A-P_i}{b_J q_J}-\frac{D}{q_J}\right)f(D)dD = 0.$$

P_i is defined as the solution to (A5), and when second order conditions hold this will represent the optimal incentive scheme (from the king's perspective). The second derivative of the maximand is:

$$\text{(A6)}\quad \begin{aligned}&\int_{D\in\Omega_i}\left(\frac{-q}{b_j^2 q_j^2}\right)g\left(\frac{A-P_i}{b_J q_J}-\frac{D}{q_J}\right)f(D)dD+\\ &-\left(\frac{1}{b_J q_J}\right)^2\int_{D\in\Omega_i}\left(\frac{q_J - q}{q_J}D+\frac{q(A-P_i)}{b_J q_J}-\frac{D}{q_J}\right)g'\left(\frac{A-P_i}{b_J q_J}-\frac{D}{q_J}\right)f(D)dD\end{aligned},$$

when $q_J > 0$ and -1 times this quantity when $q_J < 0$. Thus, if terms involving g'(.) are small, (A6) is positive if and only if $q_J < 0$. When (A6) is positive for any finite value of P_i, then no

system with finite payoffs can be an optimum. Thus, we only need consider schemes where the judge is given infinite positive or infinite negative incentives to convict. In the case of high levels of D, convicting is, on average, better than letting go. In the case of levels of D below the bright line rule, convicting is, on net, worse than letting go. Thus, when $q_J < 0$, it is optimal to pursue a pure bright line rule strategy.

When $q_J > 0$, second order conditions hold and (A5) determines the optimal subsidy for conviction. Since (A5) implies finite rewards and judicial discretion, a pure bright line rule system is not optimal for the king when $q_J > 0$.

Proposition 4: There exists a value of A, denoted A**, at which social welfare is the same under independent juries and a pure bright line rule system. For A>A**, bright line rules dominate and for A<A**, independent juries dominate. The value of A** rises with the absolute value of $\overline{D}$.

Proof: As before, social welfare under juries is a function of A and social welfare under bright line rules is not. At A=0, juries produce the social optimum and bright line rules do not, so juries are preferable. For sufficiently large values of A, social welfare under juries is arbitrarily close to zero and social welfare under bright line rules are assumed to be strictly positive. Because the social welfare under juries is monotonically and continuously decreasing in A, there must exist a value of A, for which the levels of social welfare under juries and bright line rules are identical. Above that value, bright line rules dominate, and below that value, juries dominate.

A** is defined by $\int_{D>A^*/b} Df(D)dD = \int_{D>\overline{D}} Df(D)dD$ and taking derivatives yields:

(A7) $$\frac{\partial A^{**}}{\partial \overline{D}} = \frac{\overline{D} f(\overline{D}) b^2}{A^{**} f(A^{**}/b)}$$

Because (A7) takes on the sign of $\overline{D}$, this means that A** rises with the absolute value

of $\overline{D}$.

Proposition 5: If q_J is sufficiently close to zero, there exists a value of A, denoted A***, at which unincentivized judges and bright line rules provide the same level of social welfare. For A > A***, BLRs dominate and for A < A***, unincentivized judges dominate. When l is sufficiently close to 0, the value of A*** increases with b_J. The value of A*** rises with the absolute value of $\overline{D}$.

Proof: Unincentivized judges convict whenever $b_J(D + q_J R) > A$. When A=0 and $q_J = 0$, this yields welfare of $\int_{D>0} Df(D)dD$ which strictly dominates $\int_{D>\overline{D}} Df(D)dD$ -- the welfare under the bright line rule system (since $\overline{D}$ does not equal zero). By continuity, this will also be true for values of q_J that are close to zero. For A sufficiently large, independent judges do not convict anyone and the bright line rule must dominate.

Social welfare under the judge system equals: $\int_R \int_{D>A/b_J - q_J R} (D + lqR) f(D) g(R) dD dR$, and its derivative with respect to A equals:

$$\text{(A8)} \quad -\frac{1}{b_J}\int_R \left(A/b_J + (lq - q_J)R\right) g(R) f(A/b_J - q_J R) dD,$$

When $q_J = 0$ and $l = 0$, (A8) must be negative for A>0. That is, social welfare under the royal judge system must be declining in A when q_J and l are close to zero (the slope may be positive at A=0 for values of q_J and l which are slightly different from zero, at A=0 social welfare from the judge system strictly dominates the bright line rules, so this causes no problems).

Since social welfare from unincentivized judges dominates the bright line rule system at

A=0, is dominated by the bright line system for sufficiently high values of A, and is monotonically falling with A (while social welfare from the bright line rules is unaffected by A), the mean value theorem tells us that there exists a level of A, denoted A***, at which social welfare from the two systems is the same. Naturally, it follows that unincentivized judges dominate bright line rules for levels of A below A*** and bright line rules dominate for higher levels of A.

A*** is defined by:

$$\text{(A9)} \quad \int_{R} \int_{D>A^{***}/b_J - q_J R} (D + \lambda q R) f(D) g(R) dD dR = \int_{D>\overline{D}} D f(D) dD$$

It is clear that A*** must rise as b_J rises to keep the expression A/b_J constant. Social welfare under independent judges is falling with A***, and social welfare under bright line rules is falling with the absolute value of $\overline{D}$. As the absolute value of $\overline{D}$ rises, the value of A*** must rise as well.