

## Resolving Conflicts Over Scarce Resources: Private Versus Shared Ownership

W.C. Bunting

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# RESOLVING CONFLICTS OVER SCARCE RESOURCES: PRIVATE VERSUS SHARED OWNERSHIP

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*This Article models private ownership as a conflict resolution mechanism and contends that for the Coase Theorem, as narrowly defined in this Article, to be consistent, private ownership must yield the Pareto-optimal use of scarce resources among all feasible conflict resolution mechanisms. Conflict over a scarce resource may be better resolved, however, by eliminating the possibility of private ownership and “forcing” disputing parties to share ownership of the contested resource. A corollary to the Coase Theorem is introduced which states: In the absence of transaction costs, the distribution of private and shared ownership is efficient. Further, assuming transaction costs are high and shared ownership is socially optimal, a role for the courts is suggested wherein de facto shared ownership is established by courts rendering private property rights random or unclear—judicial behavior that stands in sharp contrast to the normative implications of the Coase Theorem.*

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## I. INTRODUCTION

This Article explores the following question: In disputes over private property rights, what role can the courts play in promoting the shared use of contested scarce resources? Specifically, this Article examines how an inability to make credible commitments creates an incentive *not* to share valuable scarce resources, developing a conceptual model of *shared ownership* and the factors that work against shared ownership. At the outset, it is important to note that our theory of private property rights is grounded in the notion that “might makes right.”<sup>1</sup> This Article follows an important literature that prioritizes the “in rem” nature of private property rights, emphasizing the centrality of the “right to exclude” to the institution of private property.<sup>2</sup> Here, private property rights are conceptualized as fundamentally an exercise of power or brute force.<sup>3</sup> That is, in the discussion to follow, the distribution of private property rights in society is modeled not as providing a necessary buffer against the dangers of overreaching state power but as the final outcome of coercive power itself, where individuals in society use violence, or some other

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1. See John Umbeck, *Might Makes Rights: A Theory of the Formation and Initial Distribution of Property Rights*, 19 *ECON. INQUIRY* 38, 39 (1981) (“Ultimately all ownership rights are based on the abilities of individuals, or groups of individuals, to forcefully maintain exclusivity.”).

2. See Thomas W. Merrill & Henry E. Smith, *Making Coasean Property More Coasean*, 54 *J.L. & ECON.* S77, S81–92 (2011) (defining “in rem rights” as rights that create duties of noninterference in *all* other persons, not just a set of specifically identified other persons, and contending that “the bundle-of-rights picture [of private property rights as ‘in personam’ rights] fails to capture the centrality of exclusion rights to the institution of property”); Thomas W. Merrill, *Property and the Right to Exclude*, 77 *NEB. L. REV.* 730, 739 (1998) (emphasizing the centrality of the exclusion right to the conception of private property, and noting that under the bundle of rights view, the exclusion right is no more important than the right to inherit or the right to use property for a specific purpose); see also Thomas W. Merrill & Henry E. Smith, *What Happened to Property in Law and Economics?*, 111 *YALE L.J.* 357, 385 (2001) (noting that under the bundle of rights view, “[p]roperty rights are simply ‘entitlements,’ little empty boxes filled with a miscellany of use rights that operate in the background of a world consisting of nothing but in personam obligations”); Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus Principle*, 110 *YALE L.J.* 1, 8 (2000). See generally 2 *WILLIAM BLACKSTONE, COMMENTARIES* \*2 (defining private property as the “sole and despotic dominion which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe”).

3. See Umbeck, *supra* note 1; see also David D. Haddock, *Force, Threat, Negotiation: The Private Enforcement of Rights*, in *PROPERTY RIGHTS: COOPERATION, CONFLICT, AND LAW* 168, 178 (Terry L. Anderson & Fred S. McChesney eds., 2003) (arguing that, as a positive matter, might makes rights in the absence of government). See generally Peter T. Leeson, *Efficient Anarchy*, 130 *PUB. CHOICE* 41, 43–46 (2007) (contending that where markets are sufficiently thin, or where government is prohibitively costly, anarchy is the efficient mode of social organization).

means of force (e.g., political power, judicial power), to secure exclusive possession of valuable scarce resources.<sup>4</sup> Although establishing a system of private property rights generally results in a social welfare gain—despite the fact that there are those who lose in the transition from shared ownership to private ownership—sometimes it does not, and in these instances, however limited, where shared ownership is socially optimal, the question asked in this Article is how to incentivize disputing parties to *share* contested scarce resources when refusing to share is an optimal strategy for one (or more) of the players in a particular kind of resource ownership game.<sup>5</sup>

The Article proceeds as follows: Part II provides a conceptual background, providing a very brief primer on the Coase Theorem, and explains how a *random* grant of private ownership can be understood as a conflict resolution mechanism.<sup>6</sup> The point is made that in positing a system of private property rights as a primitive of the model, the Coase Theorem, as narrowly defined in the present Article, assumes a particular mechanism of conflict resolution at the outset, namely, a random grant of

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4. In certain aspects, this corresponds to a predatory theory of government in which the state emerges out of the self-interested behavior of some subset of agents possessing a comparative advantage in conflict. *See, e.g.*, MANCUR OLSON, *POWER AND PROSPERITY: OUTGROWING COMMUNIST AND CAPITALIST DICTATORSHIPS* 1 (2000); Martin C. McGuire & Mancur Olson, Jr., *The Economics of Autocracy and Majority Rule: The Invisible Hand and the Use of Force*, 34 J. ECON. LIT. 72 (1996); Mancur Olson, *Dictatorship, Democracy, and Development*, 87 AM. POL. SCI. REV. 567, 572 (1993); *see also* ADAM SMITH, *THE WEALTH OF NATIONS* 291 (Andrew Skinner ed., Penguin Books 1986) (1776) (“Till there be property there can be no government, the very end of which is to secure wealth, and to defend the rich from the poor.”). *But see* MARGARET LEVI, *OF RULE AND REVENUE* (1988) (contending that the consent (or social contract) and predatory theories of government are not, in fact, mutually exclusive because, in both cases, a ruler requires the consent of at least some subset of the population).

5. In the present Article, “conflict” is defined as excluding others by means of some type of force from deriving a utility benefit from a scarce resource (i.e., from *possession* of the scarce resource).

6. *See* Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960). One of the well-known aspects of Coase’s article is that Professor Coase himself never actually states a theorem. In fact, Coase credits George Stigler with coining the term “Coase Theorem” and for first formulating it precisely. *See* GEORGE STIGLER, *THE THEORY OF PRICE* 113 (3d ed. 1966) (“[U]nder perfect competition private and social costs will be equal.”). Interpreters of the Coase Theorem, however, have generally restricted its applicability to bargaining situations of bilateral monopoly and have chosen not to expand the scope of the Coase Theorem to competitive markets in which rational actors take prices as given. *See, e.g.*, Douglas W. Allen, *Transaction Costs*, in 1 *ENCYCLOPEDIA OF LAW AND ECONOMICS: THE HISTORY AND METHODOLOGY OF LAW AND ECONOMICS* 893 (Boudewijn Bouckaert & Gerrit De Geest eds., 2000) [hereinafter 1 *ENCYCLOPEDIA OF LAW AND ECONOMICS*]. *But see* Herbert Hovenkamp, *Coasean Markets*, 31 EUR. J.L. & ECON 63 (2011).

private property rights.<sup>7</sup> Yet, this is only one of a number of different ways to resolve a more primordial conflict over scarce resources.<sup>8</sup> For example, the conflict may be better resolved by excluding the opportunity for private ownership altogether and “forcing” the disputing parties to share possession of the contested scarce resource.<sup>9</sup> Thus, in order for our narrowly defined Coase Theorem to be consistent on its own terms, a random grant of state-enforced private property rights must yield the socially optimal use of scarce resources *among all feasible conflict resolution mechanisms*.<sup>10</sup> To the extent that another method of conflict resolution yields a more efficient outcome, the Coasean prediction that, in the absence of Coasean transaction costs, the private exchange of private property rights will always result in the optimal use of scarce resources is correct, but only in a more qualified sense, specifically, *conditional* upon the assumption that a random grant of state-enforced private property rights is the operative conflict resolution mechanism with respect to conflicts over scarce resources.<sup>11</sup>

Part III sets forth the main theoretical contribution of this Article. Equating private ownership to conflict, the following question is considered: Assuming that pre-conflict shared ownership is socially optimal, under what conditions will parties privately bargain (or contract) around conflict, agreeing not to impose a system of private property rights, and divide the resulting cooperative surplus such that both parties are made better-off relative to post-conflict private ownership? That is, assuming that shared use of the scarce resource is socially preferred to exclusive use, the question is: When will parties in mutual conflict over a contested scarce resource fail to implement the socially optimal shared-use outcome? Part III introduces the *Fearon Corollary* as the answer to this question. Equating the term “transaction costs” to the three rationalist explanations for war identified by Fearon, the Fearon Corollary holds that, in the absence of transaction costs, the distribution of private ownership and shared ownership is efficient.<sup>12</sup> Under this interpretation, provided that shared ownership is socially optimal, private

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7. See *infra* Part II.B.

8. See *infra* Part II.

9. See *infra* Part II.B.

10. See *infra* Part II.B.

11. See *infra* Part II.

12. See James D. Fearon, *Rationalist Explanations for War*, 49 INT. ORG. 379, 383–90 (1995).

ownership can be understood as a *failure* to settle for the efficient bargain.<sup>13</sup>

Finally, Part IV presents an argument in favor of settlement. Assuming that individual disputants are unable to bargain around socially suboptimal conflict, uncertain judicial resolution of property law disputes is modeled as capable of providing the requisite nudge, compelling the parties to share a contested scarce resource in a socially optimal manner. This uncertainty serves to weaken private property rights, increasing the level of costly conflict in society and, in turn, creates an incentive for the disputing parties to settle the conflict (i.e., the lawsuit) and share the contested scarce resource, as the payoffs associated with shared ownership are now relatively more attractive compared to private ownership.<sup>14</sup> In this way, *less secure claims to private property promote efficient social cooperation*. Notably, as discussed in Part IV, this contention that courts should define private property rights that are uncertain or unclear stands in sharp contrast to the commonly understood normative implications of the Coase Theorem.

## II. BACKGROUND

Under a system of state-enforced private property rights, conflict over possession of scarce resources is generally no longer resolved by means of violence or physical force.<sup>15</sup> Instead, the conflict over contested scarce resources is resolved by the state in a variety of ways without the use of violence or other forms of physical coercion.<sup>16</sup> This subpart briefly examines a few examples of conflict resolution mechanisms that involve the assignment of state-enforced private property rights.

### A. Centralized Intervention

To provide an illustrative context, recall the dilemma faced by King Solomon in Kings 3:16–28.<sup>17</sup> As the familiar story goes, two women appear before King Solomon (i.e., the state) with a baby boy, both claiming to be the boy's true mother.<sup>18</sup> King Solomon, who does not know

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13. See *infra* Part III.B.

14. See *infra* Part IV.B.2.

15. Robert Bates, Avner Greif & Smita Singh, *Organizing Violence*, 46 J. CONFLICT RESOL. 599, 612 (2002).

16. See *infra* Parts II.B, II.C.

17. See 1 Kings 3:16–28.

18. See *id.*

the identity of the true mother, wishes to award the child to the true mother, but at no additional cost to her.<sup>19</sup> To resolve this dilemma (i.e., this conflict over a scarce resource), King Solomon calls for a sword and decrees that the child will be cut in two, with each woman receiving exactly one half of the baby boy.<sup>20</sup> In response to this decree, the “true-mother” shrieks in horror and insists that the child, rather than meet such a cruel fate, be given to the “impostor-mother.”<sup>21</sup> Ignoring her plea, King Solomon resolves the conflict by awarding custody (or possession) of the child to the distraught mother on the theory that only the child’s true mother would have responded in this panic-stricken fashion.<sup>22</sup>

The brilliance of the Solomonic resolution of this conflict over custody of the child is that the threat to cut the child in two is, in fact, a bluff—King Solomon never intends to slay the baby boy.<sup>23</sup> Yet, this aspect of the allocation rule also implies that the mechanism is useless if the disputing parties both correctly anticipate this conflict resolution mechanism at the outset and, in effect, call Solomon’s bluff by both responding as did the true-mother in the original parable.<sup>24</sup> Fortunately, there are other mechanisms that do provide the correct incentives for both parties to reveal or report their true type/intrinsic valuation. The disputants, for example, could be *required* to participate in a Vickrey auction.<sup>25</sup> Vickrey showed that each party, *if* compelled to participate in

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19. *See id.* The true-mother’s intrinsic valuation of the baby boy is assumed to exceed the impostor-mother’s intrinsic valuation.

20. *See id.*

21. *See id.*

22. *See id.*

23. *But see* Ann Althouse, *Beyond King Solomon’s Harlots: Women in Evidence*, 65 S. CAL. L. REV. 1265, 1271–72 (1992) (citing J.P. DUNN, MASSACRES OF THE MOUNTAINS: A HISTORY OF THE INDIAN WARS OF THE FAR WEST, 1815–1875, at 319 (Archer House Inc. 1958) (1886)) (describing how if two men were locked in a dispute over possession of a captive woman (or a horse), the standard Apache method of conflict resolution was to shoot the woman (or the horse), where the threat of murder was not a bluff but instead was thought to provide a strong incentive for the disputants to quickly resolve the conflict over the woman (or the horse)); *see also* JOSEPH HELLER, GOD KNOWS 12 (1984) (“I’ll let you in on a secret about my son Solomon: he was dead serious when he proposed cutting the baby in half . . . . The dumb son of a bitch was trying to be fair, not shrewd.”).

24. Formally, the Solomonic conflict resolution mechanism is not truthfully implementable. *See supra* note 17. *But see also* Ian Ayres & Eric Talley, *Solomonic Bargaining: Dividing a Legal Entitlement to Facilitate Coasean Trade*, 104 YALE L.J. 1027, 1047–65 (1995) (showing that when two parties have private information about how much they value an entitlement, endowing each party with a partial claim to the entitlement can reduce the incentive to behave strategically during bargaining, thereby enhancing economic efficiency).

25. A Vickrey (or second price) auction is a type of sealed-bid auction in which bidders

such an auction, can do no better than to bid their true intrinsic valuations, irrespective of what each believes the other auction participants will bid.<sup>26</sup> By forcing the disputing parties to participate in a Vickrey auction, the highest valued user of the scarce resource will submit the highest bid, winning the auction, and will be awarded the private property right, paying a price equal to the next-highest bid submitted.<sup>27</sup> To successfully implement this Vickrey auction, however, requires a substantial amount of coordinated centralized intervention by the state.<sup>28</sup>

### B. A Decentralization Result: The Coasean Framework

Proponents of the Coasean framework argue that intervention by a centralized authority, as required under a Vickrey auction, is unnecessary and should be minimized, and that conflicts over scarce resources are better resolved by means of a simple *random* grant of private ownership, with the efficient allocation obtaining as a result of mutually beneficial private exchange—*assuming* that transaction costs are sufficiently low.<sup>29</sup> This connection between transaction costs and private property rights is

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submit written bids without knowledge of the bids submitted by the other auction participants, and in which the highest bidder wins, but the price paid is equal to only the second-highest bid. See generally VIJAY KRISHNA, *AUCTION THEORY* 15 (2d ed. 2010).

26. See William Vickrey, *Counterspeculation, Auctions, and Competitive Sealed Tenders*, 16 J. FIN. 8, 20 (1961) (showing that dominant strategy in a second-price sealed-bid auction is to truthfully reveal one's willingness to pay). This efficiency result assumes that there are no binding individual budget constraints. To avoid this assumption, there exists allocation rules where individual disputants play a game designed to be unprofitable for all but the highest valued user. As a result, the lower valued users refuse to participate in the game; the game is never played; and the conflict is resolved without any monetary payment. See, e.g., Cheng-Zhong Qin & Chun-Lei Yang, *Make a Guess: A Robust Mechanism for King Solomon's Dilemma*, 39 ECON. THEORY 259, 259 (2009) (introducing endogenous fees for participating in a second-price auction and showing that such fees maintain the agents' incentives for truth revelation and guarantee participation by the highest valued user); see also Jacob Glazer & Ching-To Albert Ma, *Efficient Allocation of a "Prize"—King Solomon's Dilemma*, 1 GAMES & ECON. BEHAV. 222, 228 (1989); Wojciech Olszewski, *A Simple and General Solution to King Solomon's Problem*, 42 GAMES & ECON. BEHAV. 315 (2003); Motty Perry & Phillip J. Reny, *A General Solution to King Solomon's Dilemma*, 26 GAMES & ECON. BEHAV. 279, 279 (1999).

27. See Vickrey, *supra* note 26, at 20.

28. See *id.* at 29.

29. See generally Friedrich A. Hayek, *The Use of Knowledge in Society*, 35 AM. ECON. REV. 519 (1945); see also FRIEDRICH A. HAYEK, *INDIVIDUALISM AND ECONOMIC ORDER* (1948). But see Joseph Farrell, *Information and the Coase Theorem*, 1 J. ECON. PERSP. 113, 115–17, 122–25 (1987) (developing a model showing that this “first-best” decentralization result holds true only in the special case where there is no private information and that the “second-best” result, where private property rights are more efficient than centralized intervention, crucially depends upon the parameters of the model).

famously summarized in the Coase Theorem, which can be stated here as follows:<sup>30</sup>

**Coase Theorem:** If private property rights are well-defined under zero transaction costs, then the allocation of scarce resources is efficient, and is invariant with respect to a *random grant of state-enforced private property rights*, income effects notwithstanding.<sup>31</sup>

To understand how a random grant of private ownership by the state can be understood as a conflict resolution mechanism, consider the following hypothetical: Suppose that the state awards, by the flip of a coin, exclusive use of a scarce resource to the lower valued user of the resource (e.g., the imposter-mother in King Solomon's dilemma). Because the higher valued user, by assumption, values the scarce resource more than does the lower valued user, the higher valued user can offer the lower valued user some amount of money (or value) to make bilateral exchange worthwhile. And, the higher valued user, therefore, acquires possession of the scarce resource, in equilibrium.<sup>32</sup> On the other hand, in the event that the coin flip favors the higher-valued user, there is no amount of money (or value) that the lower-valued user can offer to make trade worthwhile, and the higher-valued user, again, in equilibrium, acquires possession of the scarce resource. Hence, under either *random* initial allocation of a state-enforced private property right, the higher valued user acquires possession of the scarce resource, and the conflict between the two parties is resolved in an efficient manner, assuming that private bargaining takes place as described above (i.e., assuming that Coasean transaction costs are sufficiently low).<sup>33</sup>

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30. See Hovenkamp, *supra* note 6, at 72.

31. Note that the Coase Theorem, as stated here, encompasses two general propositions. The first proposition—the *efficiency hypothesis*—corresponds to the claim that the final allocation of resources resulting from private bargaining among well-informed private individuals will be efficient, regardless of the initial assignment of private property rights. See Steve G. Medema & Richard O. Zerbe, Jr., *The Coase Theorem*, in 1 *ENCYCLOPEDIA OF LAW AND ECONOMICS*, *supra* note 6, at 836, 838. The second proposition—the *invariance hypothesis*—corresponds to the claim that the final allocation of scarce resources will be invariant across alternative initial assignments of private property rights, assuming that changes in the wealth distribution are relatively small. See *id.*

32. This assumes that neither party is subject to a binding budget constraint.

33. It is assumed that the parties cannot simply bargain around the state of anarchy without some form of conflict resolution by the state (e.g., at a minimum, contract enforcement). If the parties can solve the state of anarchy game, then there is no need for state-enforced private property rights, and the Coase Theorem, as narrowly defined here, is moot. There is an important literature, however, showing that, in the absence of public government institutions, private institutional arrangements can emerge to prevent conflict and encourage

But, in what sense can the state truly resolve conflict over possession of scarce resources by “randomly” awarding private property rights? As will become relevant in Part IV,<sup>34</sup> it is important to realize that a system of private property rights in which possession is legally *transferred* by means of random coin flips, albeit absurd and a total abstraction, is, in the limit, equivalent to a system of shared property ownership.<sup>35</sup> That is, if the legitimacy of individual private property rights is determined purely randomly, by state-enforced coin flips, then private ownership is

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cooperation. See, e.g., ROBERT C. ELLICKSON, *ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES* (1991); Lisa Bernstein, *Opting Out of the Legal System: Extralegal Contractual Relations in the Diamond Industry*, 21 J. LEGAL STUD. 115, 115 (1992); Karen Clay, *Trade Without Law: Private-Order Institutions in Mexican California*, 13 J.L. ECON. & ORG. 202, 202 (1997); Robert C. Ellickson, *A Hypothesis of Wealth-Maximizing Norms: Evidence from the Whaling Industry*, 5 J.L. ECON. & ORG. 83, 85 (1989); Avner Greif, *Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders' Coalition*, 83 AM. ECON. REV. 525, 526 (1993); Peter T. Leeson, *The Laws of Lawlessness*, 38 J. LEGAL STUD. 471, 471 (2009); Paul Milgrom, Douglas North & Barry R. Weingast, *The Role of Institutions in the Revival of Trade: The Medieval Law Merchant, Private Judges, and the Champagne Fairs*, 2 ECON. & POL. 1, 1 (1990); Curtis J. Milhaupt & Mark D. West, *The Dark Side of Private Ordering: An Institutional and Empirical Analysis of Organized Crime*, 67 U. CHI. L. REV. 41, 41 (2000); Claudia R. Williamson & Carrie B. Kerekes, *Securing Private Property: Formal Versus Informal Institutions*, 54 J.L. & ECON. 537, 538–39 (2011); see also ELINOR OSTROM, *UNDERSTANDING INSTITUTIONAL DIVERSITY* 238 (2005) (providing theoretical and empirical evidence suggesting that individuals often overcome the problem of collective action and arrange privately for the provision and allocation of public goods, including informal property rights, and finding that local experimentation and self-governance often produce more effective results than rulemaking by the state); ELINOR OSTROM, *GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION* 92 (1990) (same); Avner Greif, Paul Milgrom & Barry R. Weingast, *Coordination, Commitment, and Enforcement: The Case of the Merchant Guild*, 102 J. POL. ECON. 745, 745 (1994) (discussing the evolution of a specific institution of that became a private legal system—the merchant guild). These arrangements, which include the use of multilateral punishment in the form of ostracism or boycott, the emergence of conflict-inhibiting social norms, and the use of arbitration organizations for international trade, operate primarily through the mechanism of reputation. And yet, as Leeson forcefully argues, these reputation-based mechanisms tend to secure exchange, effectively and without state enforcement, only in small, relatively close-knit local communities, do not work well in large populations, and are, therefore, of limited applicability. See Leeson, *supra* note 33, at 490–99; see also AVINASH K. DIXIT, *LAWLESSNESS AND ECONOMICS: ALTERNATIVE MODES OF GOVERNANCE* 4 (2004); Avner Greif, *Institutions and Impersonal Exchange: From Communal to Individual Responsibility*, 158 J. INST. & THEORETICAL ECON. 168, 168–71 (2002); Richard O. Zerbe & Terry L. Anderson, *Culture and Fairness in the Development of Institutions in the California Gold Fields*, 61 J. ECON. HIST. 114, 115–16 (2001). But see Daniel B. Klein, *Promise Keeping in the Great Society: A Model of Credit Information Sharing*, 4 ECON. & POL. 117, 121–23 (1992) (arguing that the institution of credit reporting creates reputations, even in large groups, and, in turn, makes credit relationships feasible).

34. See *infra* Part IV.

35. This assumes that the cost of filing a lawsuit is sufficiently low.

effectively not enforced by the state under such a legal system, and all ownership is shared (at least in the eyes of the state).<sup>36</sup> Hence, if private property rights are to have any kind of true legal meaning, then the random allocation of private property rights must apply only in the narrower, more restricted context of an *initial* allocation of a private property right.<sup>37</sup> In other words, the conflict purportedly resolved under the Coasean framework through a random grant of state-enforced private ownership is a more primordial one in which parties are in conflict over possession of a scarce resource to which all individuals in society are, in theory, otherwise entitled.<sup>38</sup> Once the private property right is properly legally established, however, the state must then uphold transfers of private property rights predictably, and in accordance with existing property law principles.<sup>39</sup>

In positing a system of state-enforced private property rights as a primitive of the model, the Coase Theorem, as narrowly interpreted here, thus assumes a particular mechanism of conflict resolution at the outset—a random grant of private ownership.<sup>40</sup> Because a random grant of private property rights is only one of a number of possible mechanisms for resolving this primordial conflict over scarce resources, in order for our narrowly interpreted Coase Theorem to be consistent on its own terms, (and, in particular, with respect to the efficiency hypothesis),<sup>41</sup> a random grant of state-enforced private property rights must yield the socially optimal use of scarce resources *among all feasible conflict resolution mechanisms*.<sup>42</sup> The final Coasean equilibrium is efficient only if a random grant of private ownership corresponds to the optimal conflict resolution mechanism.<sup>43</sup> Different conflict resolution mechanisms, however, may produce different final equilibrium uses of the scarce resource, some of which may improve upon the equilibrium outcome in terms of efficiency, even if transaction costs, strictly defined in a Coasean sense, are zero.<sup>44</sup>

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36. See *infra* Part IV.B.1.

37. See *infra* Part IV.B.2.

38. See *infra* Part IV.B.1.

39. See *infra* Part IV.B.2.

40. See *infra* Part IV.B.1.

41. See Medema & Zerbe, *supra* note 31 (defining efficiency hypothesis).

42. See *infra* Part IV.B.1.

43. See *infra* Part IV.B.1.

44. Under the typical neoclassical view that defines “transaction costs” as those costs resulting from the transfer or exchange of property, the zero transaction cost condition is understood to imply that there are no impediments or costs to private bargaining. See Allen, *supra* note 6, at 893. Because any inefficient allocation leaves unexploited contractual

In fact, to the extent that another conflict mechanism yields a more efficient outcome, the Coasean prediction that, in the absence of Coasean transaction costs, private exchange will result in the optimal use of scarce resources is *not* correct, or, alternatively, is correct, but only in a more qualified sense, specifically, *conditional upon* the assumption that the random assignment of state-enforced private property rights is the operative conflict resolution mechanism in society regarding conflicts over valuable scarce resources.<sup>45</sup>

### III. A SIMPLE MODEL

As suggested above, a random grant of private ownership is not the only means by which the state can resolve conflict over scarce resources.<sup>46</sup> The state can resolve such conflict in a number of ways without explicitly granting private ownership. The state, for instance, could intentionally intensify the level of violence between two warring factions, increasing a pre-existing asymmetry in fighting capability or expertise (e.g., by supplying the relatively stronger faction with arms and other weapons) such that the stronger faction is now able to end the conflict by destroying the weaker faction, eliminating the weaker faction from the resource ownership game entirely.<sup>47</sup> Or, as in the case of two squabbling young siblings who cannot share a new toy, the state could simply “take the toy away,” explicitly denying both parties possession of the contested scarce

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opportunities, the allocation cannot be a contractual equilibrium—this is a tautology and has been referred to as the Weak Form of the Coase Theorem, with the Strong Form encompassing both the efficiency and invariance hypotheses. *See, e.g.,* Michael Brooks, *Toward a Clarification of the Block-Demsetz Debate on Psychic Income and Externalities*, 10 Q.J. AUSTRIAN ECON. 223, 224–27 (2007), [http://mises.org/journals/qjae/pdf/qjae10\\_3\\_3.pdf](http://mises.org/journals/qjae/pdf/qjae10_3_3.pdf) [<https://perma.cc/W5M3-TLED>]; *see also* Pierre Schlag, *The Problem of Transaction Costs*, 62 S. CAL. L. REV. 1661, 1675 (1989) (noting widely divergent definitions of “transaction costs” and stating that “an overly expansive view of transaction costs threatens to make the Coase [t]heorem tautological,” whereas “an overly restrictive view of transaction costs can effectively invalidate the [t]heorem.”). Importantly, as discussed below, transaction costs in the present Article are expressly defined *not* to include the costs associated with bargaining around the future exercise of power or brute force, such as political or military power.

45. *See infra* Part IV.B.1.

46. *See supra* Part II.B.

47. *See, e.g.,* JOHN SISLIN & FREDERIC S. PEARSON, ARMS AND ETHNIC CONFLICT 48–49 (2001); *see also* James Risen, Mark Mazzetti & Michael S. Schmidt, *Militant Forces Got Arms Meant for Libya Rebels*, N.Y. TIMES, Dec. 6, 2012, at A1, [http://www.nytimes.com/2012/12/06/world/africa/weapons-sent-to-libyan-rebels-with-us-approval-fell-into-islamist-hands.html?\\_r=0](http://www.nytimes.com/2012/12/06/world/africa/weapons-sent-to-libyan-rebels-with-us-approval-fell-into-islamist-hands.html?_r=0) [<https://perma.cc/S3U7-8K8N>] (“The Obama administration secretly gave its blessing to arms shipments to Libyan rebels from Qatar . . .”).

resource.<sup>48</sup> Indeed, several governments have created certain inalienable property that cannot be lawfully transferred from one citizen to another (e.g., pension income, aboriginal title, Social Security numbers, electoral votes, and so forth), thereby eliminating the possibility of legal conflict between parties seeking to acquire exclusive possession of these scarce resources.<sup>49</sup>

The specific conflict resolution mechanism considered in this Article is *shared ownership*, where conflict over a scarce resource is resolved by excluding the opportunity for private ownership and forcing the disputing parties to share possession of the contested resource.<sup>50</sup> So, for example, the two young siblings are awarded access to a new toy only if both *credibly* agree to share possession of the toy (e.g., the siblings know that some form of punishment or external sanction will be imposed if possession of the new toy is not shared). Arguably, in this specific instance, shared ownership of the new toy resolves the conflict over possession of the new toy more sensibly than does randomly assigning a private property right in the new toy to one of the two siblings (even if private bargaining between the two siblings results in the highest valued user of the toy obtaining a private property right).

#### A. *The Fearon Game*

This subsection introduces a simple formal model of shared ownership. Suppose there are two identical parties, each of whom places a value,  $V > 0$ , on possession of a scarce resource.<sup>51</sup> Assume that the set of feasible action choices for each party is (1) share possession of the scarce resource; or (2) incur a cost of conflict,  $C > 0$ , to exclude the other party from acquiring possession of the resource.<sup>52</sup> In the formal literature,

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48. See, e.g., Lissy Gloeckler & Jennifer Cassell, *Teacher Practices with Toddlers During Social Problem Solving Opportunities*, 40 EARLY CHILDHOOD EDUC. J. 251 (2012) (exploring how teachers can foster an environment that facilitates social problem solving when toddlers experience conflict and aggression).

49. See, e.g., David Andolfatto, *A Theory of Inalienable Property Rights*, 110 J. POL. ECON. 382, 382 (2002) (developing a model where inalienable property rights emerge as a natural institutional response to improvident tendencies of some members of society when a majority of individuals share a common distaste for neighborhood squalor). See generally Margaret Jane Radin, *Market-Inalienability*, 100 HARV. L. REV. 1849 (1987).

50. See *infra* Part III.A.

51. See Barry C. Field, *The Evolution of Property Rights*, 42 KYKLOS 319, 328 (1989) (“If the resource has no value, there would be little incentive to encroach, and thus it would be relatively easy to exclude, other things equal.”).

52. A more general model of the evolution of private property would not take the cost of conflict and the value of ownership as fixed and exogenously determined. See Herbert Gintis,

the first strategy is typically referred to as “Hawk” and the second strategy as “Dove.”<sup>53</sup> If both parties choose Dove, then the parties are assumed to share the scarce resource equally, splitting a cooperative payoff,  $1.5V$ , such that each party receives a payoff equal to  $3V/4$ .<sup>54</sup> On the other hand, if both parties choose Hawk, then each party is assumed to have an equal probability of success in the ensuing conflict over the scarce resource, receiving a payoff equal to  $V$  if victorious in this conflict and a payoff equal to 0 if not.<sup>55</sup>

The payoff structure of this symmetric two-player resource-ownership game, referred to as a Fearon Game, is summarized in Table 1<sup>56</sup>:

**Table 1: Two-Player Fearon Game**

	Hawk	Dove
Hawk	$\frac{V}{2} - C, \frac{V}{2} - C$	$V, 0$
Dove	$0, V$	$\frac{3V}{4}, \frac{3V}{4}$

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*The Evolution of Private Property*, 64 J. ECON. BEHAV. & ORG. 1, 3 (2007); see also Alan Grafen, *The Logic of Divisively Asymmetric Contests: Respect for Ownership and the Desperado Effect*, 35 ANIMAL BEHAV. 462, 466 (1987) (noting that the costs and benefits of possession depend upon the state of the population, the density of high-quality territories, the cost of search, and other variables that may depend upon the distribution of strategies in the population).

53. See, e.g., JOHN MAYNARD SMITH, *EVOLUTION AND THE THEORY OF GAMES* 11 (1982); see also John Maynard Smith & Geoff A. Parker, *The Logic of Asymmetric Contests*, 24 ANIMAL BEHAVIOR 159, 161 (1976); John Maynard Smith & George R. Price, *The Logic of Animal Conflict*, 246 NATURE 15, 15–18 (1973). See generally James E. Krier, *Evolutionary Theory and the Origin of Property Rights*, 95 CORNELL L. REV. 139, 152 (2009). Similar evolutionary accounts have also been used to explain the contemporary development of property rights. See, e.g., Richard A. Epstein, *The Allocation of the Commons: Parking on Public Roads*, 31 J. LEGAL STUD. S515, S528–33 (2002) (examining the spontaneous emergence of snow-parking rights in contemporary Chicago); Katrina Miriam Wyman, *From Fur to Fish: Reconsidering the Evolution of Private Property*, 80 N.Y.U. L. REV. 117 (2005) (offering a case study of contemporary property rights formation and arguing that the evolution of private property must take into account the political process through which private property is often formed).

54. If the payoff is, instead, zero, then the game corresponds to a War of Attrition game, which is typically employed to model a contest decided by display duration. See, e.g., John Maynard Smith, *The Theory of Games and the Evolution of Animal Conflicts*, 47 J. THEORETICAL BIOLOGY 209 (1974).

55. See SMITH, *supra* note 53, at 12.

56. This definition of a “Fearon Game” is new to the present Article.

Assume that  $0 < 2C < V$ .<sup>57</sup> There exists one pure-strategy Nash equilibrium in this property ownership game: (Hawk, Hawk).<sup>58</sup> In this Nash equilibrium, the contestant who is victorious in the conflict game acquires private ownership of the resource. The payoff structure in the Fearon Game implies that both contestants prefer uncontested private ownership to shared ownership—the payoff under uncontested private ownership is equal to  $V$  compared to  $3V/4$  under shared ownership—whereas both contestants prefer shared ownership to contested private ownership—the payoff under contested private ownership is equal to  $V/2 - C$  compared to  $3V/4$  under shared ownership.<sup>59</sup>

Moreover, although the Fearon Game represents a type of standard Prisoner's Dilemma, the underlying story here differs from that told in the usual common-pool resource framework.<sup>60</sup> Specifically, the parties do not fail to cooperate by shortsightedly plundering a common-pool resource, depleting the resource in a socially suboptimal way contrary to the collective, long-run best-interests of the group as a whole, as in the traditional “tragedy of the commons” game.<sup>61</sup> Rather, one party simply

57. Note that if  $0 < V < 2C$ , then this two-player game corresponds to the well-known Hawk-Dove game. The Hawk-Dove game is an example of an anti-coordination game in which it is mutually beneficial for the players to play different strategies, i.e., playing different strategies Pareto-dominates playing the same strategies. *See, e.g.*, Robert B. Ahdieh, *Beyond Individualism in Law and Economics*, 91 B.U. L. REV. 43, 62–65 (2011) (noting how conflict enters into coordination games).

58. *See* SMITH, *supra* note 53, at 12.

59. The Fearon Game follows an important literature that recognizes that property right enforcement is costly and that property rights may be inefficient as a result. *See* Alex Robson & Stergios Skaperdas, *Costly Enforcement of Property Rights and the Coase Theorem*, 36 ECON. THEORY 109, 122 (2008) (showing that if the associated enforcement costs are sufficiently large, then it is ex ante Pareto-efficient to abstain from property right exchange); *see also* Winston C. Bush & Lawrence S. Mayer, *Some Implications of Anarchy for the Distribution of Property*, 8 J. ECON. THEORY 401, 401 (1974); David De Meza & J.R. Gould, *The Social Efficiency of Private Decisions to Enforce Property Rights*, 100 J. POL. ECON. 561 (1992); Herschel I. Grossman & Minseong Kim, *Swords or Plowshares? A Theory of the Security of Claims to Property*, 103 J. POL. ECON. 1275, 1276 (1995); Stergios Skaperdas, *Cooperation, Conflict, and Power in the Absence of Property Rights*, 82 AM. ECON. REV. 720, 723 (1992). The present Article, however, identifies a different type of inefficiency (i.e., the absence of shared ownership) that may exist *even if* the cost of appropriation (or conflict), as defined in this literature, is zero. Unlike this literature, which argues against private property rights on the grounds that such rights are too costly to establish and maintain, the inefficiency related to private ownership arises here *not* from excessive expenditure on costly conflict but from an *inability to credibly commit* not to use some form of power or brute force to secure exclusive possession of the scarce resource.

60. *See* Fearon, *supra* note 12, at 403.

61. *See* Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243, 1244 (1968); *see also* PARTHA DASGUPTA & GEOFFREY HEAL, ECONOMIC THEORY AND EXHAUSTIBLE

takes the scarce resource by violence, or other means of brute force, and fails to cooperate by excluding all other parties from possession of the resource.<sup>62</sup> Thus, the Fearon Game represents a somewhat different tragedy of the commons wherein the winner of the resource ownership game forcibly excludes *all* other players in the game from deriving any benefit from the commons, at a net loss to society as a whole.<sup>63</sup>

For expositional clarity, Table 2 restates the individual expected payoffs in the Fearon Game under both shared and contested private ownership:

**Table 2: Expected Payoffs Under Shared and Private Ownership**

		Property Ownership	
		Shared	Private
Payoffs		$\frac{3V}{4}, \frac{3V}{4}$	$\frac{V}{2} - C, \frac{V}{2} - C$

From Table 2, it follows that shared ownership, which is not, in fact, an equilibrium outcome of the conflict game, corresponds to the socially optimal use of the scarce resource.<sup>64</sup> Specifically, defining social welfare in a Kaldor–Hicks sense as the sum of individual payoffs, social welfare under shared ownership is equal to  $1.5V = 3V/4 + 3V/4$ , whereas under contested private ownership, social welfare is only equal to  $V - 2C = V/2 - C + V/2 - C$ , with  $V - 2C < 1.5V$ .<sup>65</sup>

To amplify the payoff structure in the Fearon Game, consider a conflict over the rights to a popular song between two musicians in the same band. Assume that only one of the two musicians has satisfied the legal elements necessary to create a valid copyright in this song, but it is unclear which musician has done so. Under a Coasean resolution to this conflict, a private property right in the song is randomly assigned to one of the two musicians, and efficiency obtains by means of private bargaining, assuming Coasean transaction costs are sufficiently low. That

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RESOURCES (1979); H. Scott Gordon, *The Economic Theory of a Common-Property Resource: The Fishery*, 62 J. POL. ECON. 124, 126 (1954); Anthony Scott, *The Fishery: The Objectives of Sole Ownership*, 63 J. POL. ECON. 116, 117 (1955).

62. See Gordon, *supra* note 61, at 133–34.

63. *Id.*

64. This is a standard feature of all Prisoner Dilemma games. See MARTIN J. OSBORNE & ARIEL RUBINSTEIN, *A COURSE IN GAME THEORY* 169 (1994).

65. See RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 10–16 (6th ed. 2003) (explaining the concept of Kaldor–Hicks efficiency).

is, the property right is viewed as indivisible and *exclusive* use of the contested resource—the song—is awarded to one of the two musicians. But, suppose that awarding exclusive use of the song to one of the musicians results in hard feelings and internal tensions within the band such that the band now breaks up due to irreconcilable differences. In this case, the legal property right holder will receive all royalties on the song at issue, minus legal fees (i.e.,  $V - C$ ), but new songs generating future royalties will not be recorded by the band, and the band's maximal profitability (i.e.,  $1.5V$ ) is never attained. In other words, assume that the socially optimal outcome is for the two musicians to keep on playing together as a band, sharing possession of the contested song in some mutually-agreed-upon proportion.<sup>66</sup> Of course, the claim is not that such a *joint enterprise* will always be socially optimal. The point is merely that exclusive use of a scarce resource by one of the disputing parties might not be the socially optimal outcome in *all* conflicts over scarce resources.<sup>67</sup> In some situations, the disputing parties may be able to work together cooperatively to maximize the joint output of their collective resources in the long run, forgoing a costly, short-sighted conflict to establish and maintain some allocation of private ownership over these collective resources.<sup>68</sup>

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66. A court will generally be unable to implement this particular shared-use outcome, i.e., to force the parties into a joint enterprise. This outcome can be achieved only by means of voluntary cooperation by the disputing parties. See, e.g., JAY P. FOLBERG & ALISON TAYLOR, *MEDIATION: A COMPREHENSIVE GUIDE TO RESOLVING CONFLICTS WITHOUT LITIGATION* 8, 10 (1986) (noting that disputants have the freedom to tailor settlement to their personal preferences because the process does not operate under the binding constraints of legal precedent). Instead, courts traditionally protect property rights either by means of an injunction, entitling one of the disputing parties to exclusive use of the scarce resource at issue, or by means of compensatory monetary damage awards, providing for exclusive use in return for a payment of money damages. See Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089, 1106–07 (1972); see also Carol M. Rose, *The Shadow of The Cathedral*, 106 YALE L.J. 2175, 2178–79 (1997) (noting that, under a property rule, i.e., an injunction, “the entitlement holder has the whole meatball, so to speak, and the other party has nothing—one has property, the other has zip”). There exists a third option as well: a rule of no-liability or a “zero-price” liability rule. See Mark A. Lemley & Phil Weiser, *Should Property or Liability Rules Govern Information?*, 85 TEX. L. REV. 783, 786 (2007) (noting that, in the property framework, a zero-price liability rule is equivalent to a commons or “open access” regime).

67. See, e.g., Armen Alchian & Harold Demsetz, *The Property Right Paradigm*, 33 J. ECON. HISTORY 16, 22 (1973).

68. See *id.*

As the payoff structure in Table 1 illustrates,<sup>69</sup> however, this type of cooperation might not be a strategic best-response given the payoffs of the underlying conflict game. Both contestants might choose to fight (i.e., to play Hawk), seeking to acquire exclusive use of the scarce resource, despite the fact that shared use of the resource is socially optimal. In this way, the Fearon Corollary is concerned with the opposite problem considered by the Coase Theorem. Under the Coasean framework, efficiency typically requires the two parties to be “apart” in some sense, as an activity undertaken by one imposes an externality on the other (i.e., has a negative spillover effect), and a system of state-enforced private property rights is viewed as providing the requisite distance or separation.<sup>70</sup> Under the Fearonian framework, by contrast, efficiency generally requires the two parties to work together as part of a joint enterprise, cooperatively using a scarce resource, and a system of state-enforced private property rights is not a solution, but is itself a problem, creating an economic incentive for separation (i.e., destroys positive synergistic effects).<sup>71</sup> In short, under the Coasean framework, private ownership serves to reduce socially *inefficient* conflict; under the Fearonian framework, private ownership serves to reduce socially *efficient* cooperation.<sup>72</sup>

### B. The Fearon Corollary

In the Fearon Game, even though shared ownership is not a Nash equilibrium, the existence of a positive cooperative surplus suggests that the disputing parties might bargain around the conflict, foregoing the cost of conflict associated with private ownership.<sup>73</sup> Admittedly, this private bargaining with respect to the exercise of power or brute force could be understood as a logical implication of the Coase Theorem. In particular, consider two parties who have privately negotiated a Coasean contractual agreement to share a contested scarce resource. Suppose that, in the next period, one of the two parties can use a power advantage, in this case a *political power* advantage, to enact a law or regulation that overrides or supersedes the contractual agreement by awarding exclusive possession

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69. See *supra* Table 1.

70. See Robert Cooter, *The Cost of Coase*, 11 J. LEGAL STUD. 1, 12–13 (1982).

71. See Fearon, *supra* note 12, at 395.

72. See Cooter, *supra* note 70, at 19; Fearon, *supra* note 12.

73. Cooperative surplus is defined as the difference in social welfare between shared and private ownership, and is equal to  $V/2 + 2C > 0$  in the Fearon Game set forth in Table 1.

of the scarce resource to the politically advantaged party.<sup>74</sup> The cost of privately bargaining around a future exercise of political power could very well be interpreted as a “transaction cost” in the Coasean framework. Yet, rather than broadly interpret Coasean transactions costs in this manner, the formal international-relations literature on bargaining in the shadow of conflict, arguably, better captures the fundamental dynamics at play here.

In a seminal contribution to this literature, Fearon develops three game-theoretic arguments explaining why state actors at war (or in conflict) might sometimes fail to settle, *ex ante*, for bargains that these same actors would otherwise accept, *ex post*.<sup>75</sup> Specifically, Fearon posits that: (1) conflict can arise because bargains depend upon particular factors about which state actors possess private information, and because state actors, in turn, have incentives to misrepresent this information;<sup>76</sup> (2) conflict can derive from commitment problems (i.e., state actors fight because agreements are not binding, and because actors have unilateral incentives to defect at a future point in time);<sup>77</sup> and (3) state actors may be unable to bargain, short of conflict, because the issues in dispute are

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74. Assume that the individual parties cannot subsequently privately negotiate or contract around the law once enacted (e.g., individual private parties typically cannot contractually agree to ignore a statewide regulation passed by the state environmental agency).

75. See Fearon, *supra* note 12, at 380; see also Robert Powell, *Bargaining in the Shadow of Power*, 15 GAMES & ECON. BEHAV. 255, 258 (1996) (showing that the equilibrium distribution of benefits is given by the satisfied bargainer’s constrained optimal take-it-or-leave-it offer and that the probability of settlement breakdown is zero if the allocation of benefits expected from an imposed settlement is the same as the Nash solution).

76. See Fearon, *supra* note 12, at 395–96 (noting that states have an incentive to exaggerate resolve/capabilities (i.e., to bluff) and to hide weakness (i.e., to persuade the other to submit)); see also Robert Jervis, *War and Misperception*, in THE ORIGIN AND PREVENTION OF MAJOR WARS 101, 104 (Robert Rotberg & Theodore Rabb eds., 1989); cf. Eric Gartzke, *War Is in the Error Term*, 53 INT. ORG. 567, 574 (1999) (“Given uncertainty and incentives to bluff, there are no factors that lead the mechanisms explaining the occurrence of war to systematically produce one outcome over another. Properly understood, the causal mechanisms that explain the occurrence of war from crises in large samples are stochastic.”).

77. Fearon identifies the following three commitment problems: (1) states possess a “first-strike advantage” akin to confessing first in the well-known Prisoner’s Dilemma; (2) if one state is declining relative to the other, then the rising power cannot credibly commit to benign hegemony once it is dominant over the declining power, and thus, the declining power has an incentive to wage “preemptive war” against a rising power (as long as the expected costs of war are lower than the expected costs of further decline); and (3) neither state, when bargaining over resources—the root of military capability—in an effort to avoid war, can credibly commit to use these resources exclusively for peaceful purposes, and not to increase its respective military power—and thus, the zero-sum nature of these resources lowers the probability of peace via bargaining. See Fearon, *supra* note 12, at 402–03; see also Powell, *supra* note 75 and accompanying text.

not readily divisible.<sup>78</sup> Further, Fearon shows that scholars who attempt to link conflict with mutual optimism, in effect, offer two distinct hypotheses: (1) a *weak* mutual optimism hypothesis, which states that it is possible for conflict to result from optimism in the form of conflicting expectations, and (2) a *strong* mutual optimism hypothesis, which states that conflict cannot occur in the absence of such optimism.<sup>79</sup> Fearon demonstrates that the strong mutual optimism hypothesis is false by constructing a formal ultimatum bargaining game in which conflict occurs, in equilibrium, as a result of private information about the costs of conflict, despite consistent and complete information about the relative probabilities of victory in conflict (i.e., in the absence of mutual optimism).<sup>80</sup>

Equating private ownership to conflict—choosing Hawk, not Dove, the question considered here is: Assuming that pre-conflict shared ownership is socially optimal, under what conditions will disputing parties privately bargain around conflict, agreeing not to fight for private ownership, and divide the cooperative surplus resulting from shared ownership such that both parties are better-off relative to post-conflict private ownership? That is, assuming that shared use of the scarce resource is socially preferred to exclusive use, the question is: When will parties in conflict over possession of a scarce resource fail to implement the socially optimal shared-use outcome? The Fearon Corollary is introduced as the answer to this question:

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78. Fearon dismisses this third explanation as empirically trivial because states can almost always make side payments or take other actions that resolve the problem and allow ex ante bargains to be struck. *See* Fearon, *supra* note 12, at 390; *see also id.* at 381 (contending that bargaining indivisibilities are better conceptualized as commitment problems).

79. *See id.* at 391–93 (citing GEOFFREY BLAINEY, *THE CAUSES OF WAR* 246 (1988); Donald Wittman, *How a War Ends: A Rational Model Approach*, 23 *J. CONFLICT RESOL.* 743, 757 (1979)).

80. *See id.* at 393–95. The weak hypothesis that it is possible for war to result from mutual optimism in the form of conflicting expectations has also come under attack. *See, e.g.*, Mark Fey & Kristopher W. Ramsay, *Mutual Optimism and War*, 51 *AM. J. POL. SCI.* 738, 750–52 (2007) (arguing that weak hypothesis explanation is mistaken on logical grounds, and that war cannot occur between two actors because of mutual optimism about the likelihood of victory). The crux of the argument is that inconsistent beliefs about the probability of victory cannot survive the self-evident, public, common-knowledge producing event of war itself; i.e., if a rational actor perceives that the opponent is willing to engage in conflict, then this actor must infer that the opponent knows something that she does not—and thus, so the argument goes, it is necessary to look elsewhere for rationalist explanations of war. *See id.*

**Fearon Corollary:** In the absence of transaction costs, the distribution of private ownership and shared ownership is efficient.<sup>81</sup>

Observe that the term “transaction costs” in the above statement of the Fearon Corollary has a natural interpretation. Such costs can be readily linked to the three rationalist explanations for war identified by Fearon.<sup>82</sup> Under this interpretation, provided that shared ownership is socially optimal, private ownership can be understood as a *failure to settle for the efficient bargain*. Rather than agree to the socially optimal shared use of a scarce resource, the parties, instead, choose to remain in conflict (e.g., because of commitment problems) and engage in a costly fight to acquire exclusive possession of the scarce resource.<sup>83</sup> Hence, in the

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81. W.C. Bunting, *The Fearon Corollary: Private Property Rights as War 5* (Feb. 13, 2014) (unpublished manuscript), [http://works.bepress.com/william\\_bunting/2/](http://works.bepress.com/william_bunting/2/) [<https://perma.cc/ZP2U-MYWB>].

82. Observe that this definition of a transaction cost does not naturally correspond to either of the two competing definitions of transaction costs that emerge in the vast literature on property rights: (1) the property rights definition, and (2) the neoclassical definition. See Allen, *supra* note 6, at 898–904. Under the property rights approach to transaction costs, as Steven N.S. Cheung has stated, transaction costs can be understood as precisely those costs that do not exist in a Robinson Crusoe world—although Crusoe faced a myriad of “informational costs,” he did not confront “transaction costs” until Friday arrived and created the need to establish and enforce a particular set of bilateral agreements. See Steven N.S. Cheung, *On the New Institutional Economics*, in *CONTRACT ECONOMICS* 48, 51 (Lars Werin & Wijkander Hans eds., 1992); see also Henry E. Smith, *Governing Water: The Semicommons of Fluid Property Rights*, 50 *ARIZ. L. REV.* 445, 447 (2008). Although our definition is related to this latter, more expansive property rights definition of transaction costs insofar as both can be defined in terms of the need for credible contract enforcement, there is an important difference in that transaction costs arise under our definition when Crusoe chooses to exclude Friday from the island, i.e., it is a cost created not by the arrival of Friday but by just the opposite—by the departure of Friday. In other words, under the property rights approach, transaction costs are the costs of establishing and maintaining private ownership. See Allen, *supra* note 6, at 898. By contrast, transactions costs here are defined as the costs incurred in negotiating *not* to establish or maintain private ownership.

83. In addition to the three rationalist explanations for war identified by Fearon, there is possibly an additional behavioral explanation for conflict (i.e., the absence of shared ownership) in the specific context of private property rights. Specifically, conflict may be viewed as the direct result of a longstanding social norm or “privacy ethic” that leads to a collective “overvaluation” of private property rights. See Jack Hirshleifer, *Privacy: Its Origin, Function, and Future*, 9 *J. LEGAL STUD.* 649, 657–58 (1980) (depicting the emergence of private property rights as the result of a “privacy ethic,” defined as an evolutionarily “‘hard-wired’ defensive belligerence into proprietors together with the complimentary traits of reluctance to intrude and willingness to retreat on the part of potential challengers”); see also Richard A. Epstein, *Transaction Costs and Property Rights, Or, Do Good Fences Make Good Neighbors?* (Coase-Sandor Institute for Law & Economics, Working Paper No. 38, 1996) (“[T]he simple and most profound influence that drives us in the direction of private property is the sense that

presence of *Fearonian transaction costs*, the final distribution of private ownership in society may reflect not necessarily the efficient outcome of mutually beneficial private exchange but the inefficient outcome of certain conflict dynamics, such as the existence of a first-strike advantage.<sup>84</sup> That is, even if Coasean transaction costs—narrowly defined here *not to include the costs of privately bargaining around the future exercise of power or brute force*—are zero, the distribution of private ownership in society may not represent the final outcome of rational, self-empowered individuals trading private property rights free of centralized state intervention, but may instead be the product of state-sponsored violence, or some other means of brute force, used to secure exclusive possession of valuable scarce resources by parties who are otherwise incapable of credible commitment to shared ownership.<sup>85</sup>

As an important caveat, note that unlike war, which is rightly characterized by Fearon as an unambiguously socially wasteful reallocation of scarce resources,<sup>86</sup> the reallocation of resources that occurs in the transition from shared ownership to private ownership will generally be Pareto-*improving* for a set of reasons that are well-known at

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we would prefer to have more neighbors and fewer partners in this world. Only by drawing boundaries and creating separate spaces is it possible to do this.”), <http://ssrn.com/abstract=36840> [<https://perma.cc/KQ5N-4CE2>]. Arguably, this privacy ethic is evidenced in the formal institution of private property rights itself and, in particular, in various defense-of-premises statutes, known as “Castle Doctrine” laws, which, under varying circumstances, permit the use of lethal force in defense of real property. See, e.g., *People v. Eatman*, 91 N.E.2d 387, 390 (Ill. 1950) (“As a matter of history the defense of habitation has been the most favored branch of self-defense from the earliest times.”); see also *Rowan v. U.S. Post Office Dep’t*, 397 U.S. 728, 737 (1970) (“The ancient concept that ‘a man’s home is his castle’ into which ‘not even the king may enter’ has lost none of its vitality.”). See generally Denise P. Boots, Jayshree Bihari & Euel Elliott, *The State of the Castle: An Overview of Recent Trends in State Castle Doctrine Legislation and Public Policy*, 34 CRIM. JUST. REV. 515 (2009); Stuart P. Green, *Castles and Carjackers: Proportionality and the Use of Deadly Force in Defense of Dwellings and Vehicles*, 1999 U. ILL. L. REV. 1, 5 (1999) (identifying four basic types of defense-of-premises statutes).

84. See, e.g., Fred S. McChesney, *Government as Definer of Property Rights; Indian Lands, Ethnic Externalities, and Bureaucratic Budgets*, 19 J. LEGAL STUD. 297, 318 (1990) (“That whites gained from allotment is undeniable.”).

85. See, e.g., DAVID D. FRIEDMAN, *THE MACHINERY OF FREEDOM* 112 (1973) (“Government is an agency of legitimized coercion. The special characteristic that distinguishes government from other agencies of coercion (such as ordinary criminal gangs) is that most people accept government coercion as normal and proper. The same act that is regarded as coercive when done by a private individual seems legitimate if done by an agent of the government.”).

86. See Fearon, *supra* note 12, at 383, and accompanying text.

this point.<sup>87</sup> Unlike war, the pre-conflict state of the world—shared ownership—is *not* unambiguously socially preferred to the post-conflict state of the world—private ownership; in fact, in most cases this will not be true. The point is simply that *if* shared ownership is socially preferred to private ownership, then, assuming that Fearonian transaction costs are sufficiently high, parties in mutual conflict over the possession of a scarce resource will fail to implement the socially optimal shared-use outcome and will instead engage in a costly conflict where some parties gain and others lose relative to shared ownership.

Interestingly, under this framework, the lower the cost of conflict, the less likely scarce resources will be shared. Although a state-enforced system of private property rights tends to reduce the overall level of violence in society related to the enforcement of private property rights, compared to a state of anarchy, for example, in which conflict tends to be resolved by means of physical violence,<sup>88</sup> this relatively lower cost of conflict resolution also makes shared possession of scarce resources less likely. The violent resolution of conflict in the state of anarchy implies a relatively larger pre-conflict cooperative surplus and, in turn, a higher probability of cooperation in the form of shared ownership.<sup>89</sup>

To clarify this connection between conflict costs and the likelihood of shared ownership, consider the payoff structure summarized in Table 3:

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87. See, e.g., Harold Demsetz, *Toward A Theory of Property Rights*, 57 AM. ECON. REV. PAPERS. & PROC. 347, 354–59 (1967) (stating that private property (1) concentrates the risks and rewards of individual asset-specific investment, increasing the incentive to exert effort in order to maximize private returns, and ensures a proper correspondence between investment and returns, (2) reduces, or eliminates altogether, rent dissipation associated with open-access regimes by allowing private property right-holders to determine the optimal timing and degree of consumption, and (3) reduces the high transaction costs incurred when communal owners seek to devise rules to reduce the externalities of their own mutual overuse); see also Thomas W. Merrill, *Introduction: The Demsetz Thesis and the Evolution of Property Rights*, 31 J. LEGAL STUD. S331, S331 (2002); see generally Elinor Ostrom, *Private and Common Property Rights*, in 2 ENCYCLOPEDIA OF LAW AND ECONOMICS: CIVIL LAW AND ECONOMICS 332, 333 (Baudewijn Bouckaert & Gerrit De Geest eds., 2000).

88. See, e.g., Terry L. Anderson & Fred S. McChesney, *Raid or Trade? An Economic Model of Indian-White Relations*, 37 J.L. & ECON. 39 (1994); Bates, Greif & Singh, *supra* note 15, at 599; Leeson, *supra* note 33, at 474.

89. See Bates, Greif, & Singh, *supra* note 15, at 610.

**Table 3: Cooperative Surplus Under Shared and Private Ownership**

<b>Conflict Resolution Mechanism</b>	<b>Property Ownership</b>		<i>Cooperative Surplus</i>
	Shared	Private	
Physical Violence	$\frac{V}{2}, \frac{V}{2}$	$\frac{V}{2} - C, \frac{V}{2} - C$	$2C > 0$
Random Coin Flips	$\frac{V}{2}, \frac{V}{2}$	$\frac{V}{2}, \frac{V}{2}$	0

The two parties are more likely to cooperate if the cooperative surplus is positive rather than zero (because the gains from cooperation are, of course, larger). By failing to cooperate and choosing, instead, to engage in a socially wasteful conflict for exclusive possession of the scarce resource, the parties forego an amount equal to  $2C$  if the cooperative surplus is positive and zero if the cooperative surplus is zero.<sup>90</sup> This variation in cooperative surplus may derive from differences in the underlying conflict resolution mechanism and corresponding ex ante investments in conflict technology.<sup>91</sup> If conflict is resolved by means of random, state-enforced coin flips, for example, then no investment in conflict technology is required, and the cooperative surplus is zero. On the other hand, if conflict is resolved by means of physical violence, then a substantial ex ante investment in conflict technology is required—equal to  $C$  in our hypothetical example—and the cooperative surplus is now positive. Thus, to the extent that a relatively larger pre-conflict cooperative surplus implies a higher probability of cooperation in the form of shared ownership, decreasing the cost of conflict (e.g., by implementing a state-enforced system of private property rights) may result, compared to a state of total anarchy, in a less cooperative society in which scarce resources are relatively less likely to be shared in a socially optimal manner.<sup>92</sup>

90. *Id.*

91. The variation in cooperative surplus may also derive from innate differences in the characteristics of the scarce resources at issue; for instance, the cooperative surplus may be positive when the scarce resource at issue is a *non-rival* good, such as a large lake in a small town, whereas the cooperative surplus may be zero when the scarce resource at issue is a *rival* good, such as an apple. See Paul A. Samuelson, *The Pure Theory of Public Expenditure*, 36 REV. ECON. & STAT. 387, 387–89 (1954).

92. Unlike in the Fearon Game, note that in the case of a common-pool resource, decreasing the cost of exclusion *increases* efficiency. In the standard common-pool resource framework, private ownership is assumed to be socially optimal, but is not feasible because the

But, even if the cooperative surplus is positive, parties will still fail to settle for the efficient bargain if Fearonian transaction costs are sufficiently high.<sup>93</sup> For example, the parties' respective threat points, and the magnitude of the cooperative surplus, may be private information asymmetrically held by the disputing parties, creating an incentive for the parties to misrepresent or distort their true capabilities and valuations.<sup>94</sup> Alternatively, the disputing parties may be "quasi-sovereign" entities insofar any agreement between the two parties is not actually binding in the future.<sup>95</sup> So, for example, one party might offer, in a perfectly valid market transaction, some amount of money (or value) in exchange for shared use of the scarce resource only to see this party later defect on the agreement by forcibly seizing exclusive control of the resource (i.e., plays Hawk, and not Dove as agreed), without inviting any type of sanction or punishment as a result.

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cost of exclusion is too high relative to the benefits of private ownership. Here, by contrast, decreasing the cost of exclusion *decreases* efficiency because shared ownership, unlike for a common-pool resource, is socially optimal relative to exclusive use. Specifically, the scarce resources considered here should be shared and do not face destruction in the long run because of collective action problems that lead to the socially suboptimal overuse and depletion of the core resource.

93. See, e.g., Helmut Bester & Karl Warneryd, *Conflict and the Social Contract*, 108 SCAND. J. ECON. 231, 233 (2006).

94. See, e.g., *id.* (showing that "asymmetric information about relative strengths in an outside option conflict may cause agreement to be impossible *even if it always efficient*"); see also Kathy E. Spier, *Pretrial Bargaining and the Design of Fee-Shifting Rules*, 25 RAND J. ECON. 197, 206 (1994) (proving that if the exogenously given costs of litigation are sufficiently small, then there is no incentive-compatible and individual-rational mechanism for pretrial bargaining that results in settlement with probability one).

95. See Robert Powell, *War as a Commitment Problem*, 60 INT. ORG. 169, 170 (2006) (arguing that conflict is, in fact, *best* understood as a commitment problem and that informational explanations of conflict suffer from at least two major limitations: "They often provide a poor account of prolonged conflict, and they give a bizarre reading of the history of some cases."). Note that this particular rationalist explanation for conflict is closely related to the view that incomplete contracting (e.g., due to the cost of monitoring, constructing, and enforcing contracts) can make vertical integration (i.e., shared ownership) more efficient than competitive contracting. See Benjamin Klein, Robert G. Crawford & Armen A. Alchian, *Vertical Integration, Appropriable Rents, and the Competitive Contracting Process*, 21 J.L. & ECON. 297, 298–307 (1978) (assuming that as assets become more specific, more appropriable quasi rents are created, thereby increasing the gains from opportunistic behavior, and the costs of contracting increase relative to the costs of vertical integration and concluding that, *ceteris paribus*, as appropriable specialized quasi rents increase, vertical integration (i.e., shared ownership is, therefore, more likely); see also DAVID J. TEECE, VERTICAL INTEGRATION AND DIVESTITURE IN THE U.S. OIL INDUSTRY 31 (1976) (arguing that regardless of the degree of specificity of provisions, there will always be room for opportunistic behavior and contract renegotiation)).

Finally, certain types of contested scarce resources, such as rival goods, may not be readily divisible.<sup>96</sup> In addition to the claim that side payments are always possible,<sup>97</sup> however, the payoff structure of a rival good is unlikely to match the payoff structure in the Fearon Game described above.<sup>98</sup> Unlike a large lake in a small town, for example, that is non-rival and can be relatively easily shared among a sufficiently small number of individuals, it is unlikely that the shared use of a baby boy, which is a rival good and not divisible in the same manner, represents the socially optimal use of this precious resource.

#### IV. IMPLICATIONS FOR THE LEGAL SYSTEM

This final section presents an argument in favor of settlement.<sup>99</sup> Assuming that disputing parties cannot bargain around socially suboptimal conflict, the claim set forth here is that uncertain or unpredictable judicial resolution of private property law disputes can provide the requisite nudge, compelling the parties to settle the conflict—the ongoing civil litigation—and to share the contested scarce resource in a socially optimal manner.<sup>100</sup> Notably, the claim that courts should define private property rights that are complicated or uncertain stands in sharp

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96. Rival means that the enjoyment of the good by one consumer diminishes its availability for other consumers to enjoy. See Samuelson, *supra* note 91.

97. See Powell, *supra* note 95, at 177, and accompanying text.

98. *Id.*

99. It should be noted that there exists an important literature that argues *against* the value of settlement, originating with the seminal work of Professor Owen Fiss. See, e.g., Owen M. Fiss, *Against Settlement*, 93 YALE L.J. 1073, 1085–87 (1984) (arguing that settlement is unable to promote and, indeed, is likely to undermine, popular commitment to public values, defined as moral ideas about justice, rights, and social cohesion that the public should want to uphold, and which the state should be (or, alternatively, is, in fact,) obligated to enforce); see also Foreword: *The Forms of Justice*, 93 HARV. L. REV. 1, 44 (1979) (stating that adjudication exists “to give meaning to public values, not merely to resolve disputes”). By resolving conflict according to individual preferences as opposed to state law, Fiss argues that extrajudicial dispute resolution stands to replace public values with “individual interests or at best individual morality” and to replace state power with private social orderings. Owen M. Fiss, *The Social and Political Foundations of Adjudication*, 6 LAW & HUM. BEHAV. 121, 128 (1982). In his view, adjudication is principally about “justice, not peace,” and thus, Fiss declares himself for adjudication, and against settlement. Owen M. Fiss, *The History of an Idea*, 78 FORDHAM L. REV. 1273, 1273 (2009).

100. Employing a related framework, Schmitz demonstrates that in the presence of private information (as opposed to commitment problems), the efficiency of Coasean bargaining may be strictly enhanced if no private property rights are assigned. See Patrick W. Schmitz, *The Coase Theorem, Private Information, and the Benefits of Not Assigning Property Rights*, 11 EUROPEAN J.L. & ECON. 23, 23 (2001).

contrast to the commonly understood normative implications of the Coase Theorem.<sup>101</sup>

*A. The Normative Implications of the Coase Theorem*

The normative implications of the Coase Theorem are made clear by Cooter.<sup>102</sup> As part of his account, Cooter posits the Hobbes Theorem as the polar opposite case of the Coase Theorem:

**Hobbes Theorem:** Parties will always carry out their worst threats and never reach efficient bargains, unless a Leviathan-like entity controls strategic behavior.<sup>103</sup>

The Hobbes Theorem contemplates a world in which greediness and individual self-interest leads people to quarrel and fight constantly, and in which individuals are capable of productively working, in concert, *only if* a powerful, third-party entity—the Leviathan—compels them to do so.<sup>104</sup> Although not intended as a positive description of reality, the Hobbes Theorem is enormously useful as a conceptual tool and serves to clarify the *normative* implications offered by the Coase Theorem as to how the law should be structured given the likely configuration of Coasean transaction costs.<sup>105</sup>

Specifically, Cooter contends that in a sufficiently low or zero-transaction costs environment, the law should be structured to remove impediments to private exchange or trade.<sup>106</sup> Courts can accomplish this objective by enforcing simple and well-defined private property rights—a result that Cooter terms the *normative Coase Theorem*.<sup>107</sup> By defining clear and simple private property rights that enable parties to engage in mutually beneficial private exchange, the law relieves centralized government of the costly informational task of having to allocate scarce resources in an efficient manner.<sup>108</sup> On the other hand, if transaction costs

101. See Cooter, *supra* note 70, at 13–14.

102. See *id.* at 17–19.

103. See *id.*; see also Cento G. Veljanovski, *The Coase Theorem and the Economic Theory of Markets and Law*, 35 KYKLOS 53, 60 (1982) (“Direct bargaining has an inherent tendency to dissipate the gains-from-trade through strategic behavior.”).

104. See Cooter, *supra* note 70, at 18. See generally THOMAS HOBBS, *LEVIATHAN* 95–96 (J.C.A. Gaskin ed., Oxford Univ. Press 1996) (1651).

105. See ROBERT COOTER & THOMAS ULEN, *LAW AND ECONOMICS* 89–90 (2nd ed. 1996).

106. See *id.* at 89.

107. See *id.*

108. See *id.*; see also Hayek, *supra* note 29.

are sufficiently high, such that private exchange is unlikely or not feasible, then the law should be structured to minimize the harm caused by failures to negotiate, and, in particular, the law should be designed to minimize the costs of private disagreement and to limit strategic behavior—a result that Cooter terms the *normative Hobbes Theorem*.<sup>109</sup> Under this normative prescription, if disputing parties fail to bargain in an efficient manner, then courts are encouraged to allocate a clear, well-defined private property right to the party that the court perceives as most highly valuing the contested resource.<sup>110</sup> In other words, the court should award a simple, clearly defined private property right to the party who would have otherwise acquired the right in a hypothetical zero-transaction cost state of the world.<sup>111</sup>

### B. *The Normative Implications of the Fearon Corollary*

This final subpart introduces the *normative Fearon Corollary*, which states that the law should be structured to encourage shared ownership of scarce resources.<sup>112</sup> Contrary to the normative principles of property law described above, courts can accomplish this particular normative prescription by defining private property rights that are *not* simple and clear, but, rather, that are uncertain or unclear. To see how exactly, the discussion begins with a simple, stylized model of civil litigation and settlement.<sup>113</sup>

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109. See COOTER & ULEN, *supra* note 105, at 90 (“According to the [normative Hobbes Theorem], the law should be designed to prevent coercive threats and to eliminate the destructiveness of disagreement.”).

110. See *id.* at 90; see also Richard A. Posner, *Utilitarianism, Economics, and Legal Theory*, 8 J. LEGAL STUD. 103, 108 (1979).

111. See COOTER & ULEN, *supra* note 105, at 90. Note that courts relieve the parties of the transaction costs of trading legal rights but, at the same time, also incur the information costs of determining each party’s respective valuation of the private property right. See *id.*

112. An interesting correspondence exists between the three normative principles of property law described here (namely, Fearon, Coase, and Hobbes) and the three social ethics outlined by Hirshleifer: (1) the Golden Rule of “communal sharing,” (2) the Silver Rule of “private rights,” and (3) the Iron Rule of “dominance.” See Hirshleifer, *supra* note 83, at 655 (“These structures and ethics have evolved, each only in particular ecological contexts, because individuals so organized turned out to have a survival advantage (through group selection) over those expressing different behavioral traits.”).

113. Our simple, stylized model of civil litigation and settlement is loosely based on a formal economic model that has been expanded upon by a number of economists and legal scholars. See generally Alan E. Friedman, *An Analysis of Settlement*, 22 STAN. L. R. 67 (1969); John P. Gould, *The Economics of Legal Conflict*, 2 J. LEGAL STUD. 279 (1973); William M. Landes, *An Economic Analysis of the Courts*, 14 J.L. & ECON. 61 (1971); see also POSNER, *supra* note 65 (formalizing these idea); Lucian A. Bebchuk, *Litigation and Settlement Under*

### 1. Status Quo: Private Ownership

In a civil lawsuit, if no answer is forthcoming by the defendant in response to a complaint filed by the plaintiff, then the defendant opens herself up to the possibility of an adverse default judgment rendered against her, and the likelihood that the court will direct the surrender of the private property right to the plaintiff.<sup>114</sup> Thus, the defendant cannot ignore a complaint filed with the court as she might an offer to acquire the private property right in the open marketplace. One of several actions typically undertaken by a rational defendant in response to the filing of a lawsuit, where the civil lawsuit represents a credible threat by the plaintiff to the defendant's private property right, is to enter into formal settlement negotiations with the plaintiff.<sup>115</sup> In this way, the filing of a lawsuit compels the rational defendant to the bargaining table.

What about the incentives faced by a rational plaintiff? There are certain fixed costs incurred in filing a civil lawsuit, such as the payment of filing fees and attorneys' fees.<sup>116</sup> If there is zero probability that the court will transfer the property right from the defendant to the plaintiff, then, generally speaking, a rational plaintiff will have no incentive to file the lawsuit in the first place, as the expected payoff of costly litigation is negative.<sup>117</sup> In other words, in this simple model of civil litigation and

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*Imperfect Information*, 15 RAND J. ECON. 404 (1984) (introducing formal theoretical models of bargaining and asymmetric information); Jennifer F. Reinganum & Louis L. Wilde, *Settlement, Litigation, and the Allocation of Litigation Costs*, 17 RAND J. ECON. 557 (1986) (same); Steven Shavell, *Suit, Settlement, and Trial: A Theoretical Analysis Under Alternative Methods for the Allocation of Legal Cost*, 11 J. LEGAL STUD. 55, 56–58 (1982) (same); Kathryn E. Spier, *The Dynamics of Pretrial Negotiation*, 59 REV. ECON. STUD. 93 (1992) (same).

114. See, e.g., FED. R. CIV. P. 55, 60.

115. The disposition of the majority of civil cases is settlement. See Theodore Eisenberg & Charlotte Lanvers, *What Is the Settlement Rate and Why Should We Care?*, 6 J. EMPIRICAL LEGAL STUD. 111, 146 (2009) ("If a single settlement rate is to be invoked, it should be that about two-thirds of civil cases settle . . ."). See generally Marc Glanter, *Reading the Landscape of Disputes: What We Know and Don't Know (and Think We Don't Know) About Our Allegedly Contentious and Litigious Society*, 31 UCLA L. REV. 4, 28–30 (1983) (contending that the high rate at which suits are settled prior to trial provides empirical support for the Coase Theorem).

116. There are also harder-to-measure psychic costs in terms of emotional energy and well-being, where involvement in litigation, even at the outset, is often laborious, stressful, and sometimes a source of personal embarrassment.

117. In particular, the plaintiff's expected payoff,  $\pi$ , from filing the lawsuit can be represented as  $\pi = pV - C$ , where  $p$  denotes the probability that the plaintiff is victorious at trial,  $0 \leq p \leq 1$ ;  $V$  denotes the plaintiff's valuation of the resource; and  $C$  denotes the expected costs of litigation. This analysis abstracts away from the possibility of asymmetric litigation costs and/or unequal bargaining power among the litigants.

settlement, litigation is unprofitable for the plaintiff if the probability of litigation success is zero.<sup>118</sup> But, if no lawsuit is filed by the plaintiff, then the credible threat to the defendant's property right required to bring the defendant property right holder to the bargaining table is obviously missing.<sup>119</sup>

The analysis is different, however, if judicial outcomes are random or unpredictable to some degree.<sup>120</sup> In this final subpart, the Article explores the implications of non-trivially random or unpredictable judicial outcomes on the distribution of private property ownership.

To start, suppose that the defendant is the socially optimal holder of the property right. In this case, the plaintiff's random, non-zero probability of victory at trial provides the plaintiff with a legal means by which to "tax" or "extort" the defendant property right holder. Specifically, in response to the filing of a lawsuit by the plaintiff, a rational defendant may attempt to settle the case in order to insure against the possible loss of the contested private property right at trial, paying to the plaintiff a monetary payment<sup>121</sup> in exchange for an agreement by the plaintiff to drop the lawsuit.<sup>122</sup> If the defendant is the socially optimal property right holder, however, then this payment is socially suboptimal and, in the limit, might result in a social welfare-decreasing reassignment of the private property right by the court to the plaintiff if the defendant decides that the property right is not sufficiently valuable to hold onto if continuously "put up for grabs" like this and, in turn, chooses not to

118. Specifically, if  $p = 0$ , then  $\pi = pV - C = -C < 0$ .

119. See generally Eisenberg & Lanvers, *supra* note 115.

120. This randomness or uncertainty can be represented formally by setting the probability that the plaintiff is victorious at trial such that the following inequality holds true:  $\pi = pV - C > 0$ . Here, the probability of litigation success,  $p > 0$ , is now sufficiently large to induce the plaintiff to incur the expected costs of litigation,  $C > 0$ .

121. The transfer payment,  $t$ , must satisfy the following inequality:  $t \geq pV - C > 0$ .

122. See STEVEN SHAVELL, FOUNDATIONS OF ECONOMIC ANALYSIS OF LAW 415 (2004) ("Hence it may be said that an important justification for society's having established the legal apparatus for the holding of trials is, paradoxically, not actually to have trials occur. Rather, it is to provide victims with the threat necessary to induce settlements." (emphasis omitted)). See generally Avery Katz, *The Effect of Frivolous Lawsuits on the Settlement of Litigation*, 10 INT. REV. L. & ECON. 3, 3-4 (1990) (explaining strike suits as the direct consequence of defendant's uncertainty as to the merits of plaintiffs' claims); David Rosenberg & Steven Shavell, *A Model in Which Suits Are Brought for Their Nuisance Value*, 5 INT. REV. L. & ECON. 3, 3 (1985) (showing that even where the defendant fully realizes that a claim is frivolous, plaintiff may still obtain a positive settlement because the defendant is willing to pay a settlement up to the amount of his defense costs in order to avoid having to respond to the plaintiff's complaint).

defend the private property right against this particular type of coercive legal attack.<sup>123</sup>

Now, suppose that shared ownership of the scarce resource is socially optimal. In this case, somewhat counter-intuitively perhaps, randomness (or error) with respect to future judicial outcomes might actually serve to increase total social welfare.<sup>124</sup> The argument for this runs as follows: Random or unpredictable judicial outcomes create an incentive for plaintiffs to incur the costs of initiating and pursuing a civil lawsuit. The harm threatened by the lawsuit—the loss of the private property right—posed to the defendant is credible (albeit potentially coercive as well) and compels the defendant property right holder to enter into settlement negotiations, resulting, to the extent that such an outcome exists, in a cooperative agreement to *share* the scarce resource in a socially optimal manner. Modeled here as the product of uncertain judicial outcomes, settlement provides a formal negotiation structure that allows parties in conflict to overcome an inability to contract-out of a state-enforced private property right,<sup>125</sup> and to agree—to the extent that a cooperative surplus exists—to share the scarce resource in ways not possible absent an external threat to the defendant's property right.<sup>126</sup> When assembled

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123. See Carol M. Rose, *Crystals and Mud in Property Law*, 40 STAN. L. REV. 577, 591 (1988) (“Hard-edged rules define assets and their ownership in such a way that what is bought stays bought and can be safely traded to others, instead of repeatedly being put up for grabs.”).

124. Uncertainty or error is, to some extent, an inevitable aspect of any human endeavor. See generally KENNETH R. HAMMOND, *HUMAN JUDGMENT AND SOCIAL POLICY: IRREDUCIBLE UNCERTAINTY, INEVITABLE ERROR, UNAVOIDABLE INJUSTICE* (1996); see also *United States v. Hastings*, 461 U.S. 499, 508–09 (1983) (stating that there is basically no such thing as an error-free trial given human fallibility).

125. The Coase Theorem has been criticized for failing to offer a negotiation method. See Hal Varian, *A Solution to the Problem of Externalities When Agents Are Well Informed*, 84 AM. ECON. REV. 1278, 1278 (1994) (describing a class of simple two-stage mechanisms that implement efficient allocations as subgame-perfect equilibria for economic environments involving externalities). See generally Stewart J. Schwab, *Coase's Twin Towers: The Relation Between The Nature of the Firm and The Problem of Social Cost*, 18 J. CORP. L. 359 (1993).

126. Generally speaking, empirical tests of the Coase Theorem have provided relatively weak support for its general applicability, especially in the context of real property. See, e.g., Nick Hanley & Charles Sumner, *Bargaining over Common Property Resources: Applying the Coase Theorem to Red Deer in the Scottish Highlands*, 43 J. ENVTL. MGMT. 87, 93 (1995) (failing to find instances of Coasean bargaining between owners of deer estates and neighboring landowners harmed by stray deer); Kenneth R. Vogel, *The Coase Theorem and California Animal Trespass Law*, 16 J. LEGAL STUD. 149, 186–87 (1987) (examining the response of farmers and ranchers to changes in California animal trespass laws and finding that, contrary to the predictions of the Coase Theorem, alterations in the law had a statistically significant effect upon the allocation of resources); see also John J. Donohue III, *Diverting the Coasean River: Incentive Schemes to Reduce Unemployment Spells*, 99 YALE L.J. 549, 600–02 (1989)

face-to-face in a settlement negotiation, certain power imbalances that preclude shared ownership of scarce resources do not apply with equal force.<sup>127</sup> The prospect of unpredictable judicial interference transforms the nature of the conflict, swaying the balance of power away from status quo property right holders and, at the same time, provides a credible means of commitment otherwise unavailable to these “quasi-sovereign” disputants, to the extent that any mutually-agreed-upon shared use of the scarce resource is now enforceable by judicial mandate in the form of a consent decree/stipulated judgment or legally binding settlement agreement.<sup>128</sup> Compared to litigation, formal settlement negotiations allows for a more creative and dynamic conflict resolution, wherein the disputing parties, soberly advised by counsel and facilitated by a professional mediator, work together to develop and establish a novel, socially optimal shared-use outcome that potentially leaves all parties no worse off than if the litigation had proceeded forwards (or, for that matter, if the status quo exclusive-use outcome had endured).<sup>129</sup>

To connect these observations more directly to our discussion of the Fearon Corollary in Part III,<sup>130</sup> consider the payoff structure summarized in Table 4.

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(finding divergence from Coasean predictions in the decision to participate in an incentive payment scheme designed to reduce the length of time that unemployed workers remained on unemployment compensation).

127. See, e.g., Trina Grillo, *The Mediation Alternative: Process Dangers for Women*, 100 YALE L.J. 1545, 1581 (1991).

128. Note that a consent decree (or stipulated judgment) and a settlement agreement differ with respect to the mode of enforcement. Specifically, if the party against whom the judgment is rendered violates the terms and conditions of a consent decree, then the non-breaching party may seek enforcement through a contempt action, where ensuing enforcement actions may include judicially sanctioned wage garnishment and/or property lien(s). Failure to comply with a settlement agreement, however, is enforced simply as a breach of contract action. See Anthony DiSarro, *Six Decrees of Separation: Settlement Agreements and Consent Order in Federal Civil Litigation*, 60 AM. U. L. REV. 275, 279–88 (2010).

129. The present Article concedes that it is possible for individuals to act *irrationally* in the settlement context out of personal animus for the other side in which case our results are, of course, less likely to apply. The possibility of this sort of irrational behavior, however, is mitigated by the presence of a professional mediator and the intervening influence of legal counsel.

130. See *supra* Part III.

**Table 4: Asymmetric Two-Player Fearon Game**

		Weak Contestant	
		<i>Hawk</i>	<i>Dove</i>
Strong Contestant	<i>Hawk</i>	$V - C, -C$	$V, 0$
	<i>Dove</i>	$0, V$	$\frac{3V}{4}, \frac{3V}{4}$

There exists a unique pure strategy Nash equilibrium in this asymmetric two-player Fearon Game: (Hawk, Dove).<sup>131</sup> In this equilibrium, the strong contestant—the party who wins the conflict with probability one—establishes a private property right in the contested scarce resource. The weak contestant—the party who loses the conflict with probability one—chooses *not* to fight—plays Dove—because Hawk is a dominant strategy for the strong contestant. Specifically, given that the strong contestant always chooses to play Hawk, the weak contestant’s expected payoff from choosing to engage in conflict—playing Hawk—is negative, and is equal to  $-C < 0$ . By contrast, the weak contestant’s expected payoff from choosing not to engage in conflict—playing Dove—when the strong contestant plays Hawk is equal to  $0 > -C$ . Importantly, in this way, the distribution of private ownership is established as the product of underlying, exogenously determined conflict dynamics, where the strong contestant acquires possession of the contested resource solely by virtue of an asymmetry (or relative expertise) in conflict capability.<sup>132</sup>

Now, assume that the conflict over the scarce resource is determined, not by a conflict resolution mechanism that is strongly biased in favor of one party (e.g., unequally distributed political power), but by a perfectly unbiased conflict resolution mechanism—a random, state-enforced coin flip. In this hypothetical conflict scenario, each party has an *equal probability* of acquiring the private property right—the probability of success in the conflict is entirely random and equals one-half for both parties.<sup>133</sup> For the sake of illustration, suppose that legal conflict is the

131. Use a process called iterated elimination of strictly dominated strategies. See, e.g., OSBORNE & RUBINSTEIN, *supra* note 64, at 58–61.

132. See Haddock, *supra* note 3, at 178; Umbeck, *supra* note 1, at 46.

133. Recall that this nexus between private property rights and random conflict resolution was first introduced in Part II.A, where it was suggested that a system of private property rights in which possession is legally transferred by means of random, unbiased coin flips is, in the limit, equivalent to a system of shared property ownership.

operative conflict resolution mechanism and that judicial outcomes can be modeled as the product of random coin flips. In this case, judicial conflict resolution transforms the asymmetric Fearon Game described in Table 4<sup>134</sup> into the symmetric Fearon Game described in Table 1.<sup>135</sup> Specifically, if judicial conflict resolution is essentially the same as a random, unbiased coin flip, then the expected payoff of legal conflict (or private ownership) is the same for both parties, and is equal to  $V/2 - C$ . Because the expected payoff of shared ownership (or peace) is also the same for both parties, and is equal to  $3V/4$ , which is larger than  $V/2 - C$ , the strong contestant now has an economic incentive to cooperate and agree *not* to fight and risk defeat in a future legal conflict that, if lost, implies total exclusion from deriving any benefit from the contested scarce resource.<sup>136</sup>

In the absence of unbiased, random judicial conflict resolution, the strong contestant is assumed to bear no risk in any ensuing conflict over the scarce resource.<sup>137</sup> Thus, there exists a relatively weak incentive for the strong contestant to voluntarily come to the bargaining table. Random judicial resolution of the conflict strengthens this incentive, however, as the strong contestant must now work with the weak contestant to avoid an external risk or future threat to her private property right.<sup>138</sup> That is, the strong contestant is more willing to cooperate because her threat point is now lower.<sup>139</sup> As discussed in Part II, successfully bargaining around conflict, however, depends upon the presence and magnitude of Fearonian transaction costs. The key claim

134. See *supra* Table 4.

135. See *supra* Table 1.

136. See *supra* note 5 (defining conflict to mean excluding others, by means of power or force, from deriving a utility benefit from a scarce resource).

137. See *supra* Table 4.

138. See *supra* Table 4.

139. Specifically, her threat point is equal to  $V/2 - C$ , and not  $V$ . The contention is that parties are more likely to cooperate if enforcement of private property rights is uncertain (or does not exist). Disputing parties can, in theory, contract around any conflict resolution mechanism. In practice, the ability to do so might depend upon the mechanism itself. Thus, conflict resolution is significant in two ways. *First*, often parties will *not* be able to contract around conflict as suggested by the Fearon Corollary. So, the conflict resolution mechanism will be implemented by the state, and it should work well (e.g., there should be no transaction costs in a Coasean sense if the conflict resolution mechanism is a random grant of private property rights). *Second*, the conflict resolution mechanism will itself shape *ex ante* bargaining around conflict. Parties may be more or less likely to cooperate depending on the characteristics of the resolution mechanism—different conflict resolution mechanisms may imply different payoffs and, in turn, different probabilities of success in terms of successfully bargaining around conflict.

set forth in this part is that such transaction costs are sufficiently low in the context of a settlement negotiation to allow for a credible commitment to cooperation. In particular, settlement provides the disputing parties with a credible commitment mechanism in the form of a consent decree/stipulated judgment or a legally binding settlement agreement. These legal technologies lower Fearonian transaction costs and, in turn, allow the disputing parties to voluntarily choose to commit to shared ownership of an otherwise contested scarce resource.<sup>140</sup>

## 2. Status Quo: Shared Ownership

To see the benefits of random, unbiased judicial decision making somewhat differently, consider the opposite baseline or status quo. Instead of one party leveraging a favorably biased conflict technology to acquire socially suboptimal private ownership of a scarce resource, suppose that the parties profitably share possession of a scarce resource under the status quo. In particular, recall the case of the contested copyright examined in Part III.A. Suppose that in the initial status quo equilibrium, the two musicians share royalties on the popular song, but have not formalized this cooperative arrangement in a binding, legally enforceable contract. What happens if the legislature alters existing copyright law to allow one of the two musicians to establish a clear, well-defined private property right in the popular song?

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140. The final cooperative outcome is agreed to *voluntarily* by the individual parties themselves, who are free not to settle the case and are in no way obligated to share the scarce resource if exclusive use is preferred by any of the individual disputants—settlement is a voluntary choice. See Grillo, *supra* note 127, at 1581 (1991) (contending that mandatory settlement destroys the benefits created by allowing parties to make their own voluntary decisions); see also FOLBERG & TAYLOR, *supra* note 66, at 34 (describing the “basic assumption” of settlement as “[e]quity and joint interests are best served through cooperative techniques of conflict resolution and guided negotiation resulting in the maximum degree of individualization and self-determination”); Scott H. Hughes, *The Uniform Mediation Act: To the Spoiled Go the Privileges*, 85 MARQ. L. REV. 9, 72 (2001) (“Self-determination, which arises from voluntary and informed decision-making, represents the cornerstone of all mediation. To this proposition, there is no debate.”). But see Timothy Hedeem, *Coercion and Self-Determination in Court-Connected Mediation: All Mediations Are Voluntary, but Some Are More Voluntary Than Others*, 26 JUST. SYS. J. 273, 280 (2005) (“Evidence drawn from recent caselaw and legal education events suggests that many mediators engage in coercion to keep disputants at the table. Such coercion may be exercised through acts of commission or of omission.”). In addition, the specific terms and conditions of the agreement are fashioned by the parties themselves, implying that the best use of the scarce resource at issue is determined, not by the legislature or by the judiciary, but, rather, by the individual disputants themselves who will often be the actors best positioned to make this particular assessment.

As the preceding analysis suggests, seizing exclusive control of the popular song may now represent a strategic best-response given the payoffs of the new, underlying conflict game, despite the fact that shared ownership is in the collective long-run best-interests of the group.<sup>141</sup> The two musicians are more likely to cooperate, agreeing to share the proceeds from the song in some mutually-agreed-upon proportion, if neither is more likely to succeed at trial—or is made to believe this by a mediator or legal counsel. If the realization of an event alters this status quo, however, triggering copyright law to now strongly favor one of the two musicians (e.g., a reference in the media to one of the musicians as the “song writer for the band” can now be used to establish a valid copyright), the presently advantaged musician now has an incentive to use or leverage the legal system to establish and maintain exclusive possession of the popular song—and, by assumption, terminate the joint enterprise.

If Fearonian transaction costs are sufficiently high, then these disputing parties will not be able to successfully contract, or privately bargain, around this socially suboptimal future legal conflict.<sup>142</sup> Thus,

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141. See *supra* Part III.A.

142. Recall that Fearonian transaction costs are defined as the costs of bargaining around the future exercise of power or brute force, which, in this particular hypothetical, corresponds to the future use of judicial power. The view of the judiciary set forth here differs markedly from the standard law and economics conception. Under the standard law and economics view, courts gravitate towards efficiency. See *supra* note 85; see also RICHARD A. POSNER, *OVERCOMING LAW* 109 (1995) (contending that judicial outcomes closely approximate the outcomes that would obtain in a world of zero transaction costs). Here, by contrast, the judiciary is viewed, not as an independent institution expected to implement efficient outcomes, but as a coercive tool that can be used by a given privileged class to define property rights in ways that tend to benefit the privileged class to the detriment of other less privileged classes. See, e.g., R. Gordon Lowe, *Racial Restrictive Covenants*, 1 ALA. L. REV. 15, 24 n.40 (1948) (noting that, as of 1948, courts in nineteen states, as well as the District of Columbia, had upheld “racial restrictive covenants” as valid and enforceable); see also *Corrigan v. Buckley*, 271 U.S. 323 (1926) (rejecting a legal challenge to racially restrictive covenants); see also *Plessy v. Ferguson*, 163 U.S. 537 (1896) (upholding the constitutionality of state laws requiring racial segregation in public facilities under the doctrine of “separate but equal”). That is, private property rights in this Article are about having the power to forcibly exclude others from deriving a benefit from a scarce resource. Hypothetically, if the court always grants this privilege to a particular group no matter the factual circumstances of the case, then this group will maintain possession of the scarce resource until some other group finds some other means (e.g., political power, military power) to overcome this coercive use of judicial power. Alternatively, the parties might attempt to privately contract or bargain around the future exercise of judicial power, which, in most cases, will require enforceability of private contract—something that might not be available to the parties. Any impediments or costs incurred in this private contracting around conflict—for example, a legal conflict in which one party always wins—is defined as a *Fearonian transaction cost* and is distinguished from a *Coasean transaction cost*.

while often reducing conflict over valuable scarce resources, the assignment of clear, well-defined private property rights can also disrupt otherwise peaceful arrangements, creating an incentive to capture private property rights before others do and, in the process, destroy positive pre-existing synergies. In our admittedly over-simplified hypothetical, copyright law should admit some measure of uncertainty, or lack of clarity, with respect to the allocation of copyright protection among parties in a joint enterprise, and *not* create or define certain contingencies that, if realized, allow or empower certain parties within the joint enterprise to appropriate scarce resources presently shared by the joint enterprise (e.g., a popular song). The resulting shift in the internal balance of power has a destabilizing effect upon the enterprise, introducing strategic considerations that can potentially lead to the discontinuation of an otherwise profitable venture, and that are not present to the same extent if judicially enforced private property rights are relatively more uncertain or less well defined.

A court might create this socially beneficial uncertainty, intentionally and deliberately, viewing the definition of complicated and unclear property rights as one of the important normative implications of the Fearon Corollary, muddling the contours of private ownership precisely because the court believes that the facts of the case strongly suggest that shared ownership of the scarce resource at issue would be socially optimal. Or, alternatively, this uncertainty may simply evolve organically, over time, with the equilibrium level of judicial randomness, holding all else constant, equal to that value that equates the expected marginal social costs of decreased private ownership with the expected marginal social benefits of increased shared ownership. However, the exact manner by which this randomness or uncertainty is injected into the legal system, in this way, *less secure claims to private property promote cooperation and increase social welfare*—a result that the present Article terms the *normative Fearon Corollary*.

## V. CONCLUSION

The present Article has offered uncertain judicial interference as a potential counterweight to the commitment problems that can typify private ownership and, in particular, has argued that courts can create de facto shared ownership by rendering the judicial resolution of conflict over private property rights random or unclear to some extent. This unpredictability serves to weaken private property rights, increasing the level of costly conflict in society and, in turn, creates an incentive for disputing parties to cooperate and agree to the socially optimal shared

use of a contested scarce resource—to the extent that such exists. In this way, greater conflict in society may, in fact, increase total social welfare. Identifying the optimal level of conflict in society—the optimal tradeoff between the expected costs of decreased private ownership and the expected benefits of increased shared ownership—is an interesting empirical question left open as a topic for future scholarly research.