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Carolene Products: A Game-Theoretic Approach Difficulties Nevada v. Hicks

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Carolene Products: A Game-Theoretic Approach

Jeffrey A. Roy[*]

This article proposes a game-theoretic model of the Carolene Products *notion of a "discrete and insular" minority. It analyzes the democratic process as a bargaining game in which players can form coalitions with other players. When the game is repeated, players have an incentive to maintain a stable majority coalition to seek a long-term advantage for themselves at the expense of an excluded minority. The article applies this model to several issues in Equal Protection doctrine, particularly the definition of a suspect classification. A suspect class is likely to be formed around a trait that is a natural focal point for the formation and maintenance of stable majority and minority coalitions. The article identifies several qualities that such a trait is likely to possess and argues that these provide a means of determining whether discrimination based on a certain trait warrants heightened scrutiny.*

I. INTRODUCTION

An important idea underlying Equal Protection doctrine is the notion that certain groups of people are not able to rely on the democratic process to protect themselves from exploitation by a majority. This idea was articulated in the famous footnote 4 of *United States v. Carolene Products Co.*:

> [P]rejudice against discrete and insular minorities may be a special condition, which tends seriously to curtail the operation of those political processes ordinarily to be relied upon to protect minorities, and [so] may call for a correspondingly more searching judicial inquiry.[1]

The *Carolene Products* approach recognizes that certain groups, because they are in some sense separate from the political majority, are unable to enter into coalitions with the groups forming the majority and thereby to protect their interests in the political bargaining

1. United States v. Carolene Prods. Co., 304 U.S. 144, 152–53 n.4 (1938).

game. This breakdown in the democratic process provides a role for the judiciary to prevent discrimination against these groups.

Carolene Products, which involved a prohibition on the interstate shipment of "filled milk," was not itself an Equal Protection case. Footnote 4 was simply intended to describe situations in which a presumption that a statute is constitutional might be inappropriate. The Supreme Court first referred to *Carolene Products* in the Equal Protection context in a series of cases applying strict scrutiny to laws discriminating against aliens.[2] Since then, the Court has considered a group's status as a discrete and insular minority when deciding whether that group is a suspect class warranting a heightened level of scrutiny.[3] However, the Court has not articulated a single test for determining whether classification based on a particular trait is suspect. In addition to examining the effect of the trait on political power, the Court has also asked whether the trait is immutable, whether it is relevant to the classification's purpose, and whether those who bear the trait have suffered discrimination in the past.[4] Much controversy exists over the proper place of the *Carolene Products* analysis in this mix, or, indeed, whether it deserves any place at all.[5]

This article suggests that the *Carolene Products* formula is a useful approach to many questions of Equal Protection law and proposes a game-theoretic model of the ways in which discrimination can arise and be perpetuated in a democracy. The model hypothesizes that discrimination—particularly discrimination by the state—persists to a large extent for rent-seeking purposes.[6] That is, laws that

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2. Sugarman v. Dougall, 413 U.S. 634, 642 (1973); Graham v. Richardson, 403 U.S. 365, 372 (1971).

3. *See, e.g.*, City of Cleburne v. Cleburne Living Ctr., 473 U.S. 432, 445 (1985) (arguing that the mentally retarded are not "politically powerless"); Mass. Bd. of Ret. v. Murgia, 427 U.S. 307, 313 (1976) (stating that "old age does not define a 'discrete and insular' group"); San Antonio Indep. Sch. Dist. v. Rodriguez, 411 U.S. 1, 28 (1973) (concluding that residents of poorer school districts were not "relegated to such a position of political powerlessness as to command extraordinary protection from the majoritarian political process").

4. *See infra* notes 115–18 and accompanying text.

5. *See infra* notes 93–95 and accompanying text; *see also* Regents of Univ. of Cal. v. Bakke, 438 U.S. 265, 290 (1978) (finding that status as discrete and insular minority not prerequisite for application of strict scrutiny); *Sugarman*, 413 U.S. at 657 (Rehnquist, J., dissenting) ("It would hardly take extraordinary ingenuity for a lawyer to find 'insular and discrete' minorities at every turn in the road."); Daniel A. Farber & Philip P. Frickey, *Is* Carolene Products *Dead? Reflections on Affirmative Action and the Dynamics of Civil Rights Legislation*, 79 CAL. L. REV. 685 (1991).

6. For the purpose of this article, "rent seeking" is used in a broad sense to encompass any situation in which one group seeks to obtain an economic benefit for itself at the expense

discriminate often provide an economic benefit to a majority at the expense of a minority. Subordination of a particular group can occur if that group is persistently excluded from majority political or economic coalitions, thereby becoming the subject of rent seeking rather than being able to gain benefits for itself.

Following the *Carolene Products* model, the democratic process in a rent-seeking situation can be modeled as a cooperative game in which players can form coalitions, and a coalition with the majority of power can determine how to allocate a pot of money among the players. Under an idealized view of the democratic process, the "players" in a democracy (individuals or interest groups) can bargain on an equal basis with other players. Over time, each group will end up in a majority coalition a fair amount of time relative to its size and political power. The model presented in this article shows that this idealized picture may be less likely to occur in practice than it would seem at first glance. When the game described above is played repeatedly, players have a competing long-term incentive to form a stable winning coalition that votes every round to distribute the entire pot among its members and to maintain the coalition, even against very attractive offers from other players. This strategy gains rent for the majority at the expense of a stable minority. Other factors, like the cost of renegotiating an existing coalition, can make a majority coalition even more stable.

Under this model, persistent discrimination based on a particular trait can be viewed as a *focal point* strategy—an equilibrium strategy that is particularly likely to be selected because of its shared salience. Members of a democracy have a wide variety of majority coalitions to choose from. Coalitions based on certain traits, however, may be particularly likely to form and be stable, because they follow the lines of existing social groups or because they provide a low-cost means to seek rent. Such a trait may serve as a focal point for coalition formation in a repeated rent-seeking game. A focal point that persists over time may eventually be internalized by society as a social norm to which people thoughtlessly adhere.

A game-theoretic model has several advantages over existing process-oriented and economic theories of discrimination, particularly as a guide to Equal Protection law. First, it describes why dis-

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of another group. As discussed in Part III.A., below, rent seeking can be defined even more broadly to encompass "psychic rents" like status.

crimination against certain groups is likely to occur. When people perceive themselves as competing with others for jobs, public goods, or other benefits, they form coalitions with others in order to obtain benefits for their group and, by extension, for themselves. Second, it provides a potential explanation for the persistence of discrimination over time. To the extent discrimination provides benefits to the members of a majority group, that group has an incentive—albeit an unvoiced one—to continue to discriminate. In particular, if a focal point exists for the distribution of benefits, members of a group favored under the current structure may resist changing the focal point. A focal point that has been internalized as a social norm may be even more stable because people gain value from simple adherence to that norm. Finally, a game-theoretic model can explain why discrimination is particularly likely to be based on certain traits, rather than others. Under this model, a trait is likely to be used for discrimination if it serves as a natural focal point for the formation of a stable majority coalition in a rent-seeking game. A trait is likely to serve as a focal point if it minimizes the costs associated with forming and maintaining a stable coalition and the costs of rent seeking based on that trait. For example, a trait that is visibly evident is more likely to give rise to discrimination than a trait that is discoverable only at some cost.

A game-theoretic model naturally addresses several controversial issues in Equal Protection law. First, it provides guidance regarding the types of traits that should be deemed suspect classifications and thus give rise to heightened scrutiny. Because traits that act as focal points for coalition formation are particularly likely to be used to discriminate, one inquiry in determining whether a classification should be deemed suspect is whether it might be used to form stable rent-seeking coalitions. Certain traits—for example, those that are immutable, are evident, and divide society into well-defined groups—seem particularly likely to be used that way. Second, the model may help explain why Equal Protection law serves a necessary function in a democracy. The Equal Protection Clause can address situations in which normal democratic process has broken down in that certain groups persistently end up in the minority. These situations tend to occur when a particular trait is being used to form a stable majority coalition in order to seek benefits for that coalition at the expense of a minority. Under this model, then, Equal Protection law can serve at least two functions: in the short run, to identify situations in

which this sort of stable rent seeking is occurring and prevent it; and in the long run, to change social norms regarding discrimination by preventing certain types of traits from being used as focal points for rent seeking.

This article is divided into two parts. The first part analyzes the democratic process using cooperative game theory and shows that a group of players has some incentive to play a strategy that discriminates against another group of players. It discusses other reasons for long-term stability of rent-seeking coalitions, including the function of an existing equilibrium as a focal point, the use of punishment strategies, and coalition-formation costs. It also analyzes historical examples of the use of discrimination for rent-seeking purposes. The second part of the article describes the implications of this approach for Equal Protection doctrine, focusing on the definition of a discrete and insular minority and its application to suspect classifications.

II. A GAME-THEORETIC ANALYSIS OF *CAROLENE PRODUCTS*

This section outlines a game-theoretic model of discrimination along the lines of the coalitional bargaining scenario envisioned in *Carolene Products.* The central idea of the model is that in certain situations a democracy can be modeled as a rent-seeking game in which players or groups can form coalitions with other players or groups in order to seek benefits for themselves. In this type of game, players have an incentive to form a majority coalition to seek rent at the expense of a minority and, if possible, to maintain the coalition against any counteroffer by the minority.

For the purposes of this section, I will analyze the democratic process by means of a simple game—"divide-the-dollar"—that has been used by political scientists and economists for many years.[7] The game assumes that a group of people is to divide up a fixed pot of money among its members by majority vote. For simplicity, we will assume that the game has three players—Players 1, 2, and 3—and that the pot is one dollar. This game represents a pure rent-seeking situation because any gain for one player must come at the expense of another player. In other words, it is a zero-sum game.

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7. *See* JAMES M. BUCHANAN & GORDON TULLOCK, THE CALCULUS OF CONSENT: LOGICAL FOUNDATIONS OF CONSTITUTIONAL DEMOCRACY 147–50 (1962); PETER C. ORDESHOOK, A POLITICAL THEORY PRIMER 288–91 (1992).

While this particular example is very simple, it can be generalized to situations involving any number of players and to situations in which players have varying amounts of power. In applying this model to real-world situations, the "players" may represent individuals or groups. For example, a political situation might be represented as a multiplayer game in which each player is a member of a legislative body. A three-player game might capture a labor negotiation in which the players are the employer, majority employees, and minority employees. In real-world situations, players may have varying amounts of "votes," which generally represent power to influence the outcome of the game. Sources of power may include actual numbers of votes, economic power, control over media, or ability to retaliate against opponents. Thus, a group may lack a majority of power in the sense of being able to influence political outcomes even if it constitutes a numerical majority. Differing amounts of power can be captured in a game-theoretic model by varying the number of the players' votes in the game.

This simple model has proved useful in addressing a variety of issues relating to the structure of a constitutional democracy. In their groundbreaking work *The Calculus of Consent*, James Buchanan and Gordon Tullock use modified versions of this model to analyze a variety of voting structures and to address issues like the effects of a majority-voting rule and of a bicameral legislature.[8] Coalitional game theory has been used to analyze a variety of other constitutional issues, including privacy and equal protection.[9] The following discussion details how the simple cooperative game described above can be used to model discrimination.

A. Coalition Formation in a Simple Rent-Seeking Game

This section applies the three-person divide-the-dollar game to the problem of discrimination in a democracy. Examining players' incentives in this game can help explain why people might form long-term, stable majority coalitions to seek rent at the expense of a minority. This section first examines the coalitions that are likely to form when the game is played once and then analyzes why these

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8. BUCHANAN & TULLOCK, *supra* note 7, at 209–62.

9. *See* Lynn A. Stout, *Strict Scrutiny and Social Choice: An Economic Inquiry into Fundamental Rights and Suspect Classifications*, 80 GEO. L.J. 1787 (1992).

coalitions are likely to be stable over time when the game is played repeatedly.

The results are intuitively simple. When the game is played once, standard game theory predicts that a minimum winning coalition will form and vote to distribute the entire pot among its members. In the three-player game, for example, Players 1 and 2 could form a coalition and agree to split the pot equally between them. When the game is repeated, a minimum winning coalition formed in one round might at first glance seem unstable, because the excluded players can induce one of the coalition's members to defect by offering her more of the pot than she receives under the existing arrangement. However, a player can maximize her long-run payout by joining a stable winning coalition and refusing any offer to defect, no matter how attractive the short-term benefit. Thus, we might expect players to play a "discriminatory" strategy when the game is repeated, forming a stable majority coalition that wins all of the pot at the expense of a stable minority.

1. Coalitions when the game is played once

When Players 1, 2, and 3 play the divide-the-dollar game, we expect them to form a voting coalition[10] of some sort to vote on an allocation of the dollar among them. If the game is played once, standard game theory and a number of psychological studies show that two players are likely to form a *minimum winning coalition*, that is, the smallest coalition with the power to approve an allocation of the dollar (i.e., the smallest possible majority).[11] In the three-player case, two players are likely to form a coalition and vote to distribute all or most of the dollar between themselves, leaving the third player with little or nothing. For example, Players 1 and 2 could form a coalition and vote for the allocation $(1/2, 1/2, 0)$.[12] A minimum winning

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10. A coalition is a group of players that coordinate their actions so as to bring about an outcome more beneficial to themselves than the outcome if the players do not coordinate. ORDESHOOK, *supra* note 7, at 258.

11. BUCHANAN & TULLOCK, *supra* note 7, at 148–52; *see* Steven G. Cole et al., *Coalition Preference as a Function of Expected Values in a Tetradic Weighted-Majority Game*, 16 BASIC & APPLIED SOC. PSYCHOL. 109 (1995); J. Keith Murnighan et al., *Theories of Coalition Formation and the Effects of Reference Groups*, 13 J. EXPERIMENTAL SOC. PSYCHOL. 166 (1977); Jonathan Segal, *Coalition Formation in Tetrads: A Critical Test of Four Theories*, 103 J. PSYCHOL. 209 (1979).

12. An allocation of the dollar among the three players is represented by a vector (x_1, x_2, x_3), where x_i represents the portion of the dollar allocated to player i. Thus, the allocation ($\frac{1}{2}$,

coalition seems particularly likely because it gives its members a higher average payout than a larger coalition. For example, assume that the players are considering forming the grand coalition and dividing the dollar equally among themselves, yielding the payout allocation (1/3, 1/3, 1/3). Players 1 and 2 together jointly could make themselves better off by forming the coalition {1, 2} and dividing the dollar between themselves, giving Player 3 zero.

However, any two-player coalition appears to be, in a certain sense, unstable. For example, suppose that Players 1 and 2 have proposed splitting the dollar equally between them, resulting in the payout allocation (1/2, 1/2, 0). Player 3 can make a better offer to either Player 1 or Player 2. For example, he could propose the allocation (2/3, 0, 1/3), and Player 1 would have an incentive to accept it. In that case, however, Player 2 could disrupt a potential coalition by making a further offer that is more attractive to Player 1 or Player 3. For example, he could propose (0, 1/2, 1/2) to Player 3. It is not easy to see where this cycle will end, although some coalition must ultimately carry the day if any player is to receive a payout.

Game theorists have developed several solution concepts that attempt to formalize our intuitions about the types of coalitions and resulting payout allocations that are likely to occur. The most important for our purpose is the *main-simple stable set*. For the purpose of the three-person divide-the-dollar game, the main-simple stable set is the set of allocations under which a minimum winning coalition splits the pot equally among its members—that is, the set $V = \{(1/2, 1/2, 0), (1/2, 0, 1/2), (0, 1/2, 1/2)\}$. Political theorists have viewed this as the set of allocations most likely to result when the divide-the-dollar game is played once, and some have gone so far as to call it the "solution" to the game.[13] The reasoning behind this is three-fold. First, a minimum winning coalition is particularly likely to form because it maximizes the joint outcome of its members. Second, an allocation outside of V is unlikely to form because some majority coalition will always prefer an outcome in V. Finally, an allocation in V is likely to be stable because the coalition that supports it

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½, 0) represents an outcome in which Players 1 and 2 split the dollar equally and Player 3 receives zero.

    13. *See, e.g.*, BUCHANAN & TULLOCK, *supra* note 7, at 148–52; *cf.* ORDESHOOK, *supra* note 7, at 290–98 (comparing other solution concepts). Empirical studies of related cooperative games show that players tend to form minimum winning coalitions more frequently than larger coalitions. *See supra* note 7 and accompanying text.

has no better alternative within *V*. The stable set is defined in more detail in Appendix A.

2. Coalitions when the game is repeated

At first glance, a coalition formed when the divide-the-dollar game is played once might seem to be unstable when the game is repeated. For example, suppose that in the first round of the game Players 1 and 2 formed a coalition and voted for the allocation (1/2, 1/2, 0). When the game is played again, Player 3 can make a more attractive offer to Player 1. For example, he can offer to vote for the allocation (2/3, 0, 1/3). But then Player 2 can in turn make a better offer to Player 3, for example (0, 1/3, 2/3). And so on. So our first instinct might be that if the game is played more than once a different coalition will form each time it is played. Over time, each player will be part of a winning coalition a "fair" amount of the time (the amount depending on the player's power and the size of the game).

However, players' long-term interests may lead to coalitions being more stable than we would otherwise expect. For example, suppose that the first time the game is played, Players 1 and 2 form a coalition and agree to divide the dollar (1/3, 1/3, 0). If the players do not maintain this coalition and instead play an opportunistic strategy by taking the best offer they can get each round, we would expect that over time each player would get about one-third of the dollar. Since all of the players are equal—each has one vote and no bargaining leverage that other players lack—we would expect each player to end up in a winning coalition an equal share of the time, and thus end up with a more or less equal share of the pot. Suppose, however, that Players 1 and 2 can come to some sort of tacit agreement that they will remain in their coalition and vote for the allocation (1/2, 1/2, 0) every round, ignoring any counteroffer, no matter how attractive, from Player 3. In the long run, Players 1 and 2 will each end up with half of the pot, which is more than the one-third that they could expect by playing an opportunistic strategy. In essence, Players 1 and 2 are getting a higher payout for themselves by discriminating against Player 3.

The players' decision whether or not to maintain an existing coalition is similar to the decision in a prisoner's dilemma.[14] Assume that

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14. The prisoner's dilemma is a famous scenario in game theory used to illustrate situations in which people's pursuit of their individual interests results in the worst possible joint

Player 1 and Player 2 have proposed forming a coalition and dividing the dollar equally between them, resulting in the allocation (1/2, 1/2, 0). Suppose further that this proposal acts as a focal point in the sense that Player 1 and Player 2, when determining how to proceed, consider only whether to remain in the proposed coalition or to negotiate secretly with Player 3 for a better deal. For the sake of simplicity, we will assume that Player 3, who is excluded from the proposed coalition, is willing to offer a deal to either Player 1 or Player 2 in which Player 3 receives one-third and the other player receives two-thirds. If both Player 1 and Player 2 try to negotiate with Player 3, Player 3 has an equal probability of forming a coalition with either. If only one tries to negotiate, Player 3 has a 100% probability of forming a coalition with that player.

The resulting two-player noncooperative game is as follows:

Player 2

		Stay	Defect
Player 1	Stay	(1/2, 1/2, 0)	(0, 2/3, 1/3)
	Defect	(2/3, 0, 1/3)	(1/3, 1/3, 1/3)[15]

outcome. The scenario involves a criminal prosecutor who is conducting independent interrogations of two criminal suspects. The prosecutor can prove that the prisoners committed a minor offense but requires a confession from one of them to prove that they committed a major one. So he proposes the following deal: If neither prisoner confesses, each will be charged with the minor offense and serve one year in prison. If one confesses and the other does not, the confessor will be set free, but the other will be convicted of the major offense and serve the maximum sentence of ten years. If both confess, each will be convicted of the major offense but will serve a reduced penalty of eight years. Each prisoner, considering only his own self-interest, has an incentive to confess, regardless of what his counterpart does. However, this results in a worse outcome for both prisoners than if neither confesses. *See* ROGER B. MYERSON, GAME THEORY: ANALYSIS OF CONFLICT 97 (1991).

15. If both Players 1 and 2 attempt to negotiate secretly with Player 3, each has a fifty percent chance of forming a coalition and receiving two-thirds and a fifty percent chance of being excluded from the winning coalition and receiving zero. Therefore, each has an expected payout of one-third.

This game is a form of the prisoner's dilemma. If unable to co-ordinate, Players 1 and 2 each have an incentive to defect and nego-tiate secretly with Player 3. If they can coordinate, they maximize their joint expectation by remaining in the proposed coalition. Therefore, we might expect that if the game is repeated, both a "co-operative" strategy (maintaining the existing coalition) and a "com-petitive" strategy (defecting in light of a better offer) will be equilib-ria of the repeated game.[16] Since the cooperative strategy maximizes the payouts of Players 1 and 2, we can expect that they will have some incentive to play this strategy, particularly if they can coordi-nate.

This result can be described more formally by imposing a bar-gaining structure on the repeated divide-the-dollar game—a coop-erative game—and transforming it into a repeated noncooperative game. The players can then be treated as independent of each other, forming coalitions through a negotiation process in which each player acts in his or her own self-interest. We can "solve" the re-peated divide-the-dollar game under the hypothetical bargaining structure. The main result for the purpose of this article is that, as-suming the players do not discount future payouts too much and there are not too many players, a "discriminatory" strategy in which players attempt to form and maintain a stable minimum winning coalition is an equilibrium strategy of the repeated divide-the-dollar game. A more detailed description and proof of this result are pro-vided in Appendix B.

Coalition-formation costs may act to make an equilibrium strat-egy even more stable. For example, suppose that in the three-person, divide-the-dollar game Players 1 and 2 are currently in a coalition together, and each has the option of negotiating a coalition with Player 3. If negotiation with Player 3 imposes costs on the players—which would reduce the value of the new coalition—Players 1 and 2 will have an additional incentive (beyond the strategic interests dis-cussed above) to remain in the existing coalition. In fact, negotiation

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16. When the prisoner's dilemma is played once, we expect self-interested players to play a competitive strategy because they gain by doing so, regardless of the action of their oppo-nent. When the game is played repeatedly, however, cooperative strategies become feasible because a player's defection in one round may induce his opponent to defect in subsequent rounds. *See* ORDESHOOK, *supra* note 7, at 173–80. *See generally* ROBERT AXELROD, THE EVOLUTION OF COOPERATION (1984).

with Player 3 might lead to offers and counteroffers among all of the various players, leading to an extended negotiation that would consume much of the value of whatever coalition ends up forming. This "downward spiral" once negotiations are opened up may act as a strong incentive to play a stable strategy, rather than an opportunistic strategy.[17]

3. Discrimination as a focal point in a repeated game

The above discussion indicates that creating some stable majority coalition is likely to be an equilibrium strategy in the repeated divide-the-dollar game. However, the players have a choice of many other equilibria as well. First, they have a wide variety of majority coalitions from which to choose. Second, they may choose not to form a stable coalition at all, instead playing something akin to an "opportunistic" strategy, renegotiating coalitions as necessary to maximize their short-term payout. Determining which of the above strategy profiles are equilibria does not necessarily tell us which equilibrium is likely to form.

When a game has more than one equilibrium strategy, certain equilibria may be more likely to occur in practice than others. A famous example is the coordination game in which two players know they must meet each other in New York City on a specific day but are otherwise unable to communicate. Each must pick a time and place and hope that the other player shows up. This game has an infinite number of equilibria, in which both players show up at the same time and same location in New York City. Nonetheless, when people were asked about their choice of strategy (the time and place at which they would try to meet), over half selected Grand Central Station as the place, and nearly all selected noon as the time.[18] Participants picked this place and time not simply because it appeared salient to them, but more importantly, because they expected it to be salient to the person they were supposed to meet. An equilibrium that players are particularly likely to adopt because of its mutual salience is called a *focal point*.[19]

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17. *See* Roger D. Congleton & Robert D. Tollison, *The Stability Inducing Propensities of Very Unstable Coalitions: Avoiding the Downward Spiral of Majoritarian Rent-Seeking*, 15 EUR. J. POL. ECON. 193 (1999).

18. THOMAS C. SCHELLING, THE STRATEGY OF CONFLICT 54–56 (1960).

19. *Id.* at 54–57.

Like the meeting-in-New-York game, the repeated divide-the-dollar game has multiple equilibria. In the three-player game, the players have an incentive to form a two-person majority coalition. However, if all players are identical and no coalition existed beforehand, we have no apparent way to predict what coalition will form. Suppose, however, that the players have already played one round, and in the first round Player 1 and Player 2 formed a coalition. This coalition, because it has already formed once, is likely to be more salient than the other two possible coalitions, and, thus, we might expect Player 1 and Player 2 to form the same coalition again.[20]

Similarly, suppose that no coalition existed before this round of the game, but assume instead that Players 1 and 2 share some characteristic that distinguishes them from Player 3. For example, suppose Players 1 and 2 speak English and Player 3 speaks French. This shared trait might provide a way of distinguishing the coalition {1, 2} from the coalitions {1, 3} and {2, 3}, and thus make the coalition between Players 1 and 2 particularly likely to form. As before, the coalition {1, 2} is likely to be a focal point in the coalition-formation game.

A coalition formed around a trait may become salient because it is particularly easy to form and maintain over time. For example, coalitions formed around a trait that divides people into two separate groups with little gray area in between them might be particularly easy to maintain because of the lack of a need to bargain over where to draw the line between the majority and the minority. Also, coalition-formation costs may increase with a coalition's size. Public choice theorists have long recognized that a small, well-organized group finds it much easier to create and maintain a stable coalition than a large, diffuse group.[21] Players' demonstrated preference for a minimum winning coalition, rather than a larger coalition, may be due in part to the higher costs incurred in obtaining the agreement of additional players, as well as the cost of policing the coalition to prevent defection.[22]

A particular shared trait may act as a focal point in a game even

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20. *See* Richard H. McAdams, *A Focal Point Theory of Expressive Law*, 86 VA. L. REV. 1649, 1702 (2000) (explaining that in a repeated game, an equilibrium played in one round may act as a focal point for subsequent rounds).

21. Bruce A. Ackerman, *Beyond* Carolene Products, 98 HARV. L. REV. 713, 724–26 (1985).

22. *Id.*

though it is entirely arbitrary and bears no relationship to any meaningful characteristics of the players. For example, studies have been performed in which students are placed into one of two categories ostensibly based on preference for certain artistic styles. When these students were asked to allocate payouts to members of their own "group"—those with the same artistic preferences—and members of the other group, they consistently allocated more to members of their own group.[23] This result occurred even when students were visibly divided into groups based on no more than the flip of a coin.[24] Arbitrary division into groups can affect coalition formation in bargaining games, as players have been found to prefer coalitions with members of their own group.[25]

All of this suggests that a coalition based around a shared trait may become a focal point strategy for one of two reasons. First, that coalition may simply be a coalition that already exists or that has been used in the past for rent-seeking purposes. Second, the coalition may provide a low-cost or salient way of distinguishing some players from other players. The import of this observation for Equal Protection doctrine will be discussed in more detail below, but it is worth noting that it may describe why a trait like race or gender may operate as a focal point for coalition formation in a rent-seeking game. First, these traits provide a natural and low-cost way to distinguish the players in the majority from the players in the minority because they are obvious and because—at least as they have been societally constructed—they divide society more or less into separate groups. Second, the history of discrimination based on these traits indicates that they have been used in the past for coalition building. Preexisting coalitions based on these traits may function as focal points simply because they already exist.

While the game-theoretic model applies principally to discrimination at the group level (discrimination in the political process), analyzing discrimination based on race and gender as a focal point in a coalitional game may also help explain why discrimination occurs in other contexts. When a game is played repeatedly, a focal point strategy that is adopted by the players may, over time, become internal-

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23. HENRI TAJFEL, HUMAN GROUPS AND SOCIAL CATEGORIES 268–72 (1981).

24. *Id.*

25. James Martinez, The Effect of Social Categorization on Coalition Formation (1985) (unpublished Ph.D. dissertation, University of Michigan) (on file with the Stanford Law School Library).

ized by the players as a *social norm*.[26] Once a social norm has been adopted, players receive utility in the form of reputational benefits by complying with the norm. That is, they comply with the norm in order to receive esteem from other members of their social group. Thus, for example, once a social norm has been established that favors racial discrimination, people might comply with this norm, even when it does not directly provide them with a strategic advantage in a game, but simply because other members of their social group expect them to comply with it. The benefit that people gain from this type of discrimination may take the form of increased intragroup status[27] or a reputation for being faithful to the existing coalitional structure and willing to cooperate with other members of the majority.[28]

B. Discrimination by Individuals

While the above model is intended to explain discrimination by groups against other groups, it may yield some insights into why individuals discriminate against other individuals. Many rent-seeking situations within society are likely to involve small groups of individuals, rather than the entire population. For example, a society-wide social norm favoring discrimination along racial lines might be used in a situation involving a single industry or a single employer. That is, individuals within a larger coalition can be responsible for individual acts of discrimination.[29] Individuals within a larger majority coalition have an incentive to discriminate along established lines.

This can be illustrated using a simple example. We assume that rent-seeking situations in our society occur in situations involving small subsets of the society as a whole. For simplicity, we will assume that each situation involves exactly three players, selected randomly.[30]

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26. Much recent literature has analyzed social norms as focal points in coordination games, although most involves noncooperative games (like the prisoner's dilemma) rather than cooperative games. *See, e.g.*, ERIC A. POSNER, LAW AND SOCIAL NORMS (2000); Cristina Bicchieri, *Norms of Cooperation*, 100 ETHICS 838 (1990); Robert Cooter, *Expressive Law and Economics*, 27 J. LEGAL STUD. 585 (1998); McAdams, *supra* note 20.

27. *See* Richard H. McAdams, *Cooperation and Conflict: The Economics of Group Status Production and Race Discrimination*, 108 HARV. L. REV. 1003, 1023–29 (1995).

28. *See* E. POSNER, *supra* note 26, at 133–47.

29. David H. Swinton, *A Labor Force Competition Model of Racial Discrimination in the Labor Market*, 9 REV. BLACK POL. ECON. 5, 21 (1978), *reprinted in* 1 ECONOMICS AND DISCRIMINATION 334 (W. Farity, Jr. ed., 1995).

30. This is akin to George Akerlof's model of discrimination in random encounters be-

Rent-seeking situations might involve, for example, competition for a scarce job or access to a public good, like education. Assume that our society is divided into two groups: a majority, denoted with a ●, and a minority, denoted with a ○, four groups of three are possible:

(●●●)
(●●○)
(●○○)
(○○○)

Now suppose that the members of the majority have two possible strategies. They can play opportunistically, trying to get the best deal for themselves regardless of the makeup of the participants of the game, or they can play a coordinated strategy in which they agree to form a coalition among their own members whenever possible. If they play opportunistically, they will end up with around one-third of the total rent on the average, since their strategy treats all players equally. If all players use a discriminatory strategy, the payouts in the three situations including at least one member of the majority will be something like the following:

(●●●) = (1/3, 1/3, 1/3)
(●●○) = (1/2, 1/2, 0)
(●○○) = (0, 1/2, 1/2)

If we assume that the society contains m members of the majority and n members of the minority, the odds that an individual player will be in a group with another member of the majority and one member of the minority (●●○) will be proportional to mn. The odds that he will be in a group with two members of the minority (●○○) is proportional to $n^2/2$. It is simple to calculate that, as long as the members of the majority constitute a majority (i.e., $m > n$), they are better off, as a whole, playing a discrimination strategy rather than an opportunistic strategy.

Within an individual game, however, a member of the majority may have an incentive to defect from the coordinated strategy in order to maximize his own payout. Suppose that a member of the majority (call him i) in a group with one member of the minority (●●○) would be able to secure a better deal by bargaining with the member of the minority. For example, assume that i could secure the payout allocation (2/3, 0, 1/3). The majority can dissuade this type

tween agents. George A. Akerlof, *Discriminatory, Status-based Wages Among Tradition-Oriented, Stochastically Trading Coconut Producers*, 93 J. POL. ECON. 265 (1985).

of defection using a simple punishment strategy. If i defects, the next time he is in a group consisting of three members of the majority (●●●), the other two majority members will cut him out, treating him as though he were a member of the minority, and he will get a payout of zero rather than one-third. In this case, i gains one-sixth when he is in a group with one other member of the majority and loses one-third when he is in a group with two other members of the majority. Since the odds of i being in group (●●●) are proportional to $m^2/2$, and the odds of being in group (●●○) are proportional to mn, the ostracism strategy will dissuade defection in this example as long as $m > n$. These types of punishment strategies have been used in real-world examples as detailed in Part II.D, below.

C. Testing the Model: Stability of Coalitions in Empirical Studies

In contrast to the vast literature on both repeated noncooperative games[31] and single-play cooperative games,[32] very little empirical work has studied the stability of coalitions in repeated cooperative games. The few studies that exist, however, demonstrate that players in these games have a long-term incentive to form and maintain stable coalitions, although a competing incentive exists to maximize short-term gains.

A short series of studies in the 1960s and 1970s attempted to measure the stability of coalitions over time in a three-person bargaining game.[33] In the first study, each of the three potential minimum winning coalitions—{1, 2}, {1, 3}, and {2, 3}—was assigned a payout. The grand coalition {1, 2, 3} was not assigned a payout and was, presumably, prohibited. Eight groups of three played this game forty times in succession. Of the eight groups, five appear to have played something akin to a stable strategy, with the winning coali-

31. The seminal work in this area is AXELROD, *supra* note 16. For a sampling of the hundreds of articles analyzing and applying the repeated prisoner's dilemma, see Robert Axelrod & Lisa D'Ambrosio, *Annotated Bibliography on the Evolution of Cooperation* (1994), *available at* http://www.pscs.umich.edu/RESEARCH/Evol_of_Coop_Bibliography.html.

32. *See, e.g.*, Cole et al., *supra* note 11; H. Andrew Michener & Daniel J. Myers, *An Empirical Comparison of Probabilistic Coalition Structure Theories in 3-person Sidepayment Games*, 45 THEORY & DECISION 37 (1998); Segal, *supra* note 11.

33. *See* Bernhardt Lieberman, *Coalitions and Conflict Resolution*, 18 AM. BEHAV. SCIENTIST 557 (1975) [hereinafter Lieberman II]; Bernhardt Lieberman, *i-Trust: A Notion of Trust in Three-person Games and International Affairs*, 8 J. CONFLICT RESOL. 271 (1964) [hereinafter Lieberman I]. The payouts for the three potential coalitions differed, making this game slightly different from the divide-the-dollar game discussed in this article.

tion changing fewer than ten times. In three of these groups, the winning coalition changed only twice.[34] The remaining three groups appear to have played a form of opportunistic strategy, with the winning coalition changing at least twenty times.[35] In a subsequent study, a total of twenty-five groups of three played a similar game, but in addition to receiving a payment each round, the members of a coalition that remained stable through all forty trials received a bonus payment. With this modification, a majority of groups unsurprisingly formed a stable winning coalition that lasted through all forty trials.[36] Of the remaining groups, three appear to have had only one change in the winning coalition.[37]

A separate study by Keith Murnighan explored the reasons for defection from a stable coalition in a repeated five-person bargaining game.[38] In this experiment, forty groups of five played a total of 155 games, each consisting of twelve trials. In almost one-quarter of the games, a single winning coalition remained stable through all twelve trials. In the remaining games, a total of 131 stable coalitions—winning coalitions lasting three or more rounds—formed.[39] When a defection occurred, post-defection and long-run payouts were less than pre-defection payouts for all members of the stable coalition, including both defectors and nondefectors.[40] In this sense, as Murnighan notes, the game was similar to a repeated prisoner's dilemma.[41]

Anecdotes from these studies demonstrate that players recognized the long-term value of a stable coalition. In the Murnighan study, students described their expectation that other coalition

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34. Lieberman I, *supra* note 33, at 276.

35. *Id.*

36. Lieberman II, *supra* note 33, at 573.

37. *Id.* Two important aspects of these studies may have affected the stability of coalitions over time. First, all of the studies repeated a game a finite number of times. During the last few rounds of the game, end-game factors may have given the players an incentive to defect from an existing coalition because the long-term advantage of remaining in a stable coalition would have disappeared. Second, like the model in this paper, Lieberman's studies involved only three players; thus, the costs of renegotiating a coalition were likely to be low.

38. J. Keith Murnighan, *Defectors, Vulnerability, and Relative Power: Some Causes and Effects of Leaving a Stable Coalition*, 34 HUM. REL. 589 (1981). The players in Murnighan's study had varying numbers of votes (they were not equally powerful) because his study was intended to measure the effect of power differences on willingness to defect.

39. *Id.* at 601.

40. *Id.* at 606.

41. *Id.* at 607.

members would continue to be loyal, which increased their own loyalty to an existing coalition.[42] In the Lieberman study, players evinced trust of their current coalition partners and recognized the potential long-term effects of defection: "I *must* trust [Player] 1 and he can trust me. If I leave him, you'll wonder if I might leave you. Then if you two team up, I'll have nowhere to turn."[43] This indicates that players were thinking along the lines described in the discussion of the three-person divide-the-dollar game, above.

D. Testing the Model: Discrimination for the Purpose of Rent Seeking

The history of race and gender discrimination in both the United States and other countries provides many examples of discrimination for the purpose of rent seeking. These situations can be modeled as a cooperative game with coalitions being formed on the basis of race or gender.[44] This section describes three historical examples of discrimination for rent-seeking purposes: (1) racial discrimination in the Jim Crow South; (2) racial discrimination in the labor market; and (3) discrimination against women in the labor market.

1. Rent seeking in the Jim Crow South

The Jim Crow South provides numerous examples of rent seeking on the basis of race. Laws and practices that acted to benefit the white majority at the expense of the black minority fall broadly into two groups. First, a system of labor laws acted to reduce the wages of agricultural laborers. Second, segregation laws enabled whites to obtain more and better public goods than blacks.[45]

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42. *Id.* at 608.

43. Lieberman I, *supra* note 33, at 278.

44. Jennifer Roback, *Racism as Rent Seeking*, 27 ECON. INQUIRY 661, 671–72, 675–79 (1989) [hereinafter Roback II].

45. Segregation laws have been analyzed under an associational preference theory. However, analyzing them as rent seeking eliminates the need to assume an exogenous "taste" for discrimination because it recognizes that a majority may derive direct economic benefit from discriminatory laws. As W.H. Hutt noted with respect to South African apartheid,

> We do not, however, find in colour prejudice as such the main origin—nor, perhaps, even the most important cause—of most economic colour bars. The chief source of colour discrimination is, I suggest, to be found in the natural determination to defend economic privilege (the preservation of "customary economic relationships between the races"), non-Whites simply happening to be the essentially underprivileged groups in South Africa.

The first group of laws acted to depress the wages of black agricultural workers by creating what was essentially a cartel of white employers. These laws included enticement and contract-enforcement laws, which made it difficult for laborers to switch employers; vagrancy laws; emigrant-agent laws; and the convict-lease system.[46] Enticement laws made it illegal for an employer to "entice" a worker who had a contract with a different employer.[47] Contract-enforcement laws criminalized a laborer's breach of an employment contract. Emigrant-agent laws made it illegal to entice workers to leave a city or state and take employment elsewhere.[48] All of these laws were intended to reduce competition for farm labor, thereby reducing wages.[49] Vagrancy laws, which outlawed behavior like "'wandering or strolling about in idleness,'"[50] effectively made it a crime to be out of work.

The punishment for crimes like vagrancy and contract-breach itself served as a form of rent seeking. Convicted vagrants were typically put on chain gangs and forced to work on local public-works projects.[51] Many Southern states employed a convict-lease system under which convicts could be leased by the state or county to private firms.[52] This served not only as a means for the state and private planters to obtain low-cost labor, but also created a strong enforcement mechanism for laws that effectively forced laborers to work for submarket wages.

In addition to laws giving whites an advantage in the labor market, a separate set of laws gave whites increased access to local public goods, like hospitals, libraries, parks, and schools. Beginning with statutes requiring separate train compartments for blacks and whites, Southern states and cities enacted a network of ordinances and regulations that segregated virtually every form of public facility.[53] While

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W.H. HUTT, THE ECONOMICS OF THE COLOUR BAR 27 (1964).

46. Jennifer Roback, *Southern Labor Law in the Jim Crow Era: Exploitative or Competitive?*, 51 U. CHI. L. REV. 1161, 1163–64 (1984) [hereinafter Roback I].

47. *Id.* at 1164.

48. *Id.* at 1169.

49. *Id.* at 1164.

50. *Id.* at 1168 (quoting 1903 Ala. Acts 224).

51. *Id.* at 1168–69.

52. *Id.* at 1170.

53. C. VANN WOODWARD, THE STRANGE CAREER OF JIM CROW 97–100 (2d rev. ed. 1966); *see* GUNNAR MYRDAL, AN AMERICAN DILEMMA: THE NEGRO PROBLEM AND MODERN DEMOCRACY 334–36 (1944).

the laws facially specified "separate but equal" facilities, in reality the practice was much different. Many recreational facilities, built and maintained with public funds, were closed entirely to blacks.[54] Only a fraction of public libraries in the South served blacks.[55] Even when separate facilities existed for blacks, they were of much lower quality than those available to whites. Streets in primarily black areas of cities were not maintained as well as those in white areas.[56] The best government jobs went mostly to whites.[57]

Discrimination in the provision of public goods was particularly obvious in the case of education. Schools were segregated through the South. Per-pupil spending for black students was often a fraction of that for white students.[58] Teachers' salaries in black schools were lower than those in white schools, and the student-teacher ratio was higher.[59] Facilities at black schools were of poorer quality than those in white schools. Thus, education served as a form of direct rent seeking by reserving to whites the vast majority of public funds used for that purpose.[60]

Discrimination in public education also acted as an indirect form of rent seeking by providing whites with a greater opportunity than blacks to develop the human capital required for the best jobs.[61] Seg-

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54. MYRDAL, *supra* note 53, at 346–47.

55. *Id.*

56. *Id.* at 335. A number of cities were at one time separated by law into all-white and all-black blocks. Restrictive covenants performed a similar function. WOODWARD, *supra* note 53, at 100–01.

57. MYRDAL, *supra* note 53, at 335.

58. For example, in Mississippi and Georgia, spending per white pupil was five times greater than spending per black pupil. *Id.* at 339.

59. *Id.*

60. Myrdal notes that spending differentials between black and white students were greatest in counties with large black populations, hypothesizing that those counties had a greater incentive to seek rent through public education:

> State appropriations for educational purposes are usually apportioned on a per capita basis. Counties with a high proportion of Negro children, consequently, have a bigger opportunity than have other counties to deprive Negro schools of money intended for them and to use it for white schools. For, in such counties there is more money to "rob" from the Negroes, and the temptation to do it, therefore, must be particularly great.

Id. at 341 (footnote omitted). *See also* Roback II, *supra* note 44, at 678 ("[C]ounties with relatively large black populations[] distributed the money allocated for black children to the white schools. . . . Thus, white schools in black belt counties were the best funded schools in the South.").

61. Roback II, *supra* note 44, at 667–68.

regation of other types of facilities may also have served an indirect rent-seeking function by reducing contact between racial groups, thus denying blacks networking opportunities available to whites.[62]

The Jim Crow system was supported by a "punishment strategy" that discouraged defection by individual members of the majority. This strategy was similar to the ostracism strategy described above, in which a defecting member of the majority is treated as a member of the minority. Social custom permitted whites to disregard rules of segregation by, for example, using facilities designated for blacks.[63] However, whites who routinely disregarded discriminatory customs effectively "los[t] caste" and were subject to sanctions, including threats, intimidation, and open violence, normally reserved to members of the minority.[64]

2. Rent seeking in the labor market based on race

In addition to the openly discriminatory laws in the Jim Crow South, a separate set of policies operated in the early 1900s to protect skilled, high-paying, or high-status jobs for white workers. At about the same time that the Jim Crow system arose in the South, a policy of Jim Crow unionism arose, and many labor unions began to organize themselves openly around race. In 1900, the American Federation of Labor (AFL), which up to that point had been officially race-neutral, amended its constitution to allow charters to be issued to racially segregated unions.[65] A number of AFL affiliates had official policies barring blacks from membership, while others used practices that had the same effect, like stringent skill requirements, high initiation fees, or refusal to honor travel cards of black work-

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62. For example, as the Supreme Court has noted with respect to segregation in law schools:

> The law school, the proving ground for legal learning and practice, cannot be effective in isolation from the individuals and institutions with which the law interacts. . . . The law school to which Texas is willing to admit petitioner excludes from its student body members of the racial groups which number 85% of the population of the State and include most of the lawyers, witnesses, jurors, judges and other officials with whom petitioner will inevitably be dealing when he becomes a member of the Texas Bar.

Sweatt v. Painter, 339 U.S. 629, 634 (1950).

63. MYRDAL, *supra* note 53, at 575–76.

64. *Id.* at 576.

65. PHILIP S. FONER, ORGANIZED LABOR AND THE BLACK WORKER 1619–1981, at 72–73 (Int'l Publishers 2d ed. 1981) (1974).

ers.[66] Employers followed suit, excluding black workers from industries, particularly skilled industries, in which an adequate supply of white labor existed.[67] As a result, black workers were excluded from many of the most desirable jobs.[68]

Race relations during this period show an element of coalitional bargaining. After Reconstruction, rural whites perceived blacks as competition for increasingly scarce positions as tenants and sharecroppers.[69] The Southern aristocracy encouraged racial tensions in order to prevent political cooperation between poor blacks and poor whites. In fact, prior to 1890, the black vote in the South generally aligned with the white aristocracy.[70] As the nation industrialized, white-dominated labor unions played a role in protecting desirable jobs for white workers. In order to prevent a labor coalition between white and black workers, employers themselves discriminated in hiring, favoring white workers where they were available. The joint support of white workers and white employers for discriminatory norms can be seen as a coalition between those groups to seek rent in the labor market at the expense of black workers.

Race relations in the labor market have explicitly been modeled as a three-player game among employers, majority workers, and minority workers.[71] Each player has some bargaining leverage: The employer has control over hiring and wages and can give a preference to a certain subset of the labor force in hiring for the best jobs. Each set of workers can engage in cost-raising tactics, like a strike, slowdown, boycott, etc.[72] If the two groups of workers cooperate with one another, they gain bargaining power because their cost-raising tactics

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66. *Id.* at 73–74.

67. WILLIAM JULIUS WILSON, THE DECLINING SIGNIFICANCE OF RACE: BLACKS AND CHANGING AMERICAN INSTITUTIONS 67 (2d ed. 1980); *see also* MYRDAL, *supra* note 53, at 294.

68. *See* MYRDAL, *supra* note 53, at 280–96; WILSON, *supra* note 67, at 73–74.

69. WILSON, *supra* note 67, at 54.

70. *Id.* at 55.

71. *See* Swinton, *supra* note 29; *see also* DONALD TOMASKOVIC-DEVEY, GENDER & RACIAL INEQUALITY AT WORK: THE SOURCES & CONSEQUENCES OF JOB SEGREGATION 62 (1993) ("[E]mployers can be understood to be forming coalitions with white male workers to exclude women and minorities from desirable jobs."); Ray Marshall, *The Economics of Racial Discrimination: A Survey*, 12 J. ECON. LITERATURE 849 (1974) (analyzing racial discrimination in employment using a bargaining model with actors including employers, white workers, black workers, unions, and the government).

72. Swinton, *supra* note 29, at 26–27.

will be more effective.[73] Under this model the employer might choose to form a tacit coalition with majority workers, agreeing to restrict high-status, high-paying jobs to members of the majority in exchange for lower average wages, in order to prevent a labor coalition between black and white workers.[74] The employer chooses the majority workers as a bargaining partner because their cost-raising tactics are more effective than those of the minority.[75]

3. Rent seeking based on gender

Discrimination on the grounds of both race and gender has been analyzed using this type of model. In the 1800s and early 1900s, many male-dominated unions tried to protect male workers in skilled jobs from competition from females. Protection took the form of hour restrictions, prohibitions on working out of the home, and prohibition of women from certain types of jobs.[76] For example, laws in the United States at various times prohibited women from practicing law[77] or tending bar.[78] Unions frequently excluded women, either barring them from membership entirely or restricting the positions that they could hold.[79]

Heidi Hartmann cites the cigar-making industry as a prominent example.[80] In 1860, over 90% of workers in the cigar industry were male. In 1869, a wooden cigar mold was introduced, and women began to be employed in their homes, making cigars using the

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73. *Id.*; *see also* MATS LUNDAHL & ESKIL WADENSJÖ, UNEQUAL TREATMENT: A STUDY IN THE NEO-CLASSICAL THEORY OF DISCRIMINATION 50 (1984) (explaining neo-Marxist theory).

74. Swinton, *supra* note 29, at 29.

75. The labor market can also be viewed as a cooperative game among employees only, treating the employer as exogenous to the game. Some Marxist theorists have argued that a nonhomogeneous labor force offers a natural focal point for low-cost coalition formation within the labor force. In this case, self-interested workers can maximize their individual outcomes by forming the smallest possible coalition that can construct an effective threat to the employer. Bruce Talbot Coram, *Spoiling the Class Divide: Struggles Within the Working Class over Distribution*, 43 BRIT. J. SOC. 393 (1992).

76. *See generally* SYLVIA WALBY, PATRIARCHY AT WORK: PATRIARCHAL AND CAPITALIST RELATIONS IN EMPLOYMENT 90–155 (1986); Heidi Hartmann, *Capitalism, Patriarchy, and Job Segregation by Sex*, *in* WOMEN AND THE WORKPLACE 137, 147–69 (Martha Blaxall & Barbara Reagan eds., 1976).

77. *See* Bradwell v. State, 83 U.S. (16 Wall.) 130 (1873).

78. Goesaert v. Cleary, 335 U.S. 464 (1948).

79. Hartmann, *supra* note 76, at 164.

80. *Id.* at 162.

molds. In response, the Cigarmakers International Union, which was male-dominated, successfully sought laws banning home work and also argued for a restriction on the number of hours women could work.[81]

Courts initially upheld laws discriminating against women on the ground that women needed to be protected. In the early case *Bradwell v. State*, the Supreme Court upheld a law prohibiting women from practicing law.[82] In *Muller v. Oregon*, for example, the Supreme Court upheld maximum hours laws for women, saying:

> The two sexes differ in structure of body, . . . in the capacity for long-continued labor, particularly when done standing, the influence of vigorous health upon the future well-being of the race, the self-reliance which enables one to assert full rights, and in the capacity to maintain the struggle for subsistence. This difference justifies a difference in legislation and upholds that which is designed to compensate for some of the burdens which rest upon her.[83]

The openly given rationale for these laws was the protection of male jobs. Proponents of these laws argued that men, as breadwinners for the home, required a higher wage than women, whose income was normally supplemental to that of men.[84]

III. IMPLICATIONS FOR EQUAL PROTECTION

To summarize the discussion up to this point, a simple game-theoretic model shows that people may have an incentive to discriminate in order to seek rent for themselves at the expense of a long-term minority. People or groups are likely to form long-term rent-seeking coalitions along the lines of traits that allow stable coalitions to be formed and maintained, and used to seek rent, at low cost. Once formed, a coalition structure acts as a focal point in future

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81. *Id.*

82. *Bradwell*, 83 U.S. (16 Wall.) 130. The concurrence by Justice Bradley opined:
[T]he civil law, as well as nature herself, has always recognized a wide difference in the respective spheres and destinies of man and woman. Man is, or should be, woman's protector and defender. The natural and proper timidity and delicacy which belongs to the female sex evidently unfits it for many of the occupations of civil life.
Id. at 141 (Bradley, J., concurring).

83. 208 U.S. 412, 422–23 (1908).

84. *See* WALBY, *supra* note 76, at 148–50; Hartmann, *supra* note 76, at 158–59.

rent-seeking situations and can become internalized as a social norm favoring discrimination.

This model provides a means for analyzing Equal Protection doctrine using the political process approach of *Carolene Products*. This section begins with an overview of related theories of Equal Protection, including process-oriented theories and economic theories of discrimination. It then describes the implications of the game-theoretic model for Equal Protection doctrine, focusing particularly on the definition of a suspect classification and on the role of Equal Protection law in remedying discrimination.

A. Existing Theories of Equal Protection and Discrimination

Theories of Equal Protection fall broadly into two categories: antidifferentiation theories, which focus on the rights of individuals, and antisubordination or political-process theories, which focus on the status of groups and the process by which certain groups become subordinated.[85] The *Carolene Products* approach ties naturally to an antisubordination theory because it focuses on a group's lack of power in the political process.

While the model in this article posits an economic explanation for discrimination—or at least one that uses economic analytical tools—it differs from most existing economic explanations for discrimination. Most economic theories of discrimination do not tie naturally to Equal Protection law because they do not explain why certain types of traits (like immutable traits) are particularly likely to be the basis of discrimination or why a particular group can be persistently disadvantaged in the political process. This section gives an overview of existing process-oriented theories of Equal Protection and economic theories of discrimination and then describes the advantages of a game-theoretic approach.

1. Process theories of Equal Protection

Process-oriented theories, following the *Carolene Products* approach, have described Equal Protection doctrine as remedying defects in the political process that can result in the subordination of a minority. John Hart Ely, in *Democracy and Distrust*, accepts that the

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85. Ruth Colker, *Anti-subordination Above All: Sex, Race, and Equal Protection*, 61 N.Y.U. L. REV. 1003, 1005 (1986).

democratic system "does *not* ensure . . . the effective protection of minorities whose interests differ from the interests of most of the rest of us."[86] If representatives rely on the support of a majority coalition to be reelected, they have an incentive to pass laws favoring the majority coalition and ignoring the minority that they do not need. This creates a representation-enforcing role for the judiciary. Under Ely's theory, the judiciary may review laws that classify people based on race and "racelike" characteristics in a way that might be motivated by stereotypes.[87] In particular, when most representatives possess a particular trait, there is a danger that they will engage in "we-they" generalization, "seizing upon the positive myths about [their] own class and the negative myths about" the other, and assuming "that not many of 'them' will be unfairly deprived, nor many of 'us' unfairly benefitted, by the proposed classification."[88]

Ely has difficulty, however, determining which traits should give rise to suspect scrutiny. While maintaining that suspect classifications must be "racelike," he concedes that existing theory does not define this concept.[89] Ely runs through a number of alternatives. Considering immutability, he notes that the list of truly immutable traits is very small, and that even those do not all give rise to suspect scrutiny under current doctrine (intelligence and physical disability, for example, do not).[90] Similarly, while the Supreme Court has suggested that distinctions perceived as "a stigma of inferiority and a badge of opprobrium"[91] should be deemed suspect, it has not described the level of stigma necessary for a class to be suspect or why certain classes that historically have been stigmatized—like homosexuals and the disabled—have not been protected. Ultimately Ely falls back on the notion of "we-they" stereotyping, the idea that distinctions are likely to be for an improper purpose when they work to the benefit of those in power.[92]

More recently, Bruce Ackerman has attacked the use of "discrete

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86. JOHN HART ELY, DEMOCRACY AND DISTRUST: A THEORY OF JUDICIAL REVIEW 78 (1980).

87. *Id.* at 158.

88. John Hart Ely, *The Wages of Crying Wolf: A Comment on* Roe v. Wade, 82 YALE L.J. 920, 933–34 n.85 (1973).

89. ELY, *supra* note 86, at 149.

90. *Id.* at 150.

91. Jimenez v. Weinbeger, 417 U.S. 628, 631 (1974).

92. ELY, *supra* note 86, at 158–59.

and insular minority" as the touchstone for a higher level of scru-
tiny.[93] According to standard public choice theory, he argues, small,
identifiable groups can organize themselves easily and, therefore,
have more political power relative to their size than a large, diffuse
group does. As an example, particular industries are frequently able
to enact protective tariffs that are beneficial to their groups but
harmful to society at large.[94] Accordingly, he concludes, discreteness
and insularity are red herrings. A group's protected status should de-
rive not from the fact that the group is small and easy to identify, but
rather from the existence of prejudice against that group.[95]

2. Economic theories of discrimination

Most existing economic models of discrimination do not tie
naturally to an antisubordination approach to Equal Protection. The
two prevailing neoclassical theories, the associational preferences, or
"taste" theory,[96] and models based on statistical discrimination,[97] fo-
cus on discrimination by individuals, rather than discrimination at
the group level. Moreover, these theories, particularly those that as-
sume a preexisting taste to avoid association with certain groups, fo-

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93. Ackerman, *supra* note 21, at 713.

94. *Id.* at 728.

95. *Id.* at 731.

96. The associational preferences theory, first proposed by Gary Becker, hypothesizes a
"taste" for discrimination that is present in varying amounts in different people. A person with
a taste for discrimination against a certain group will pay, or forfeit income, in order to avoid
contact with the disfavored group. The taste for discrimination imposes a cost on transactions
between members of different groups, which is treated in the same way as other types of costs.
For example, suppose that an employer has a taste for discrimination against a certain group,
and, therefore, when hiring a member of that group acts as though it incurs a cost beyond that
person's wages. That additional cost, which Becker refers to as a "discrimination coefficient," is
a measure of the degree of the employer's aversion to association with the disfavored group.
See generally GARY S. BECKER, THE ECONOMICS OF DISCRIMINATION (2d ed. 1971);
RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 651–53 (4th ed. 1992).

97. A model based on statistical discrimination proposes that membership in a racial or
other group is used as a surrogate for the possession of undesirable qualities that members of
that group are believed to have. For example, a firm with incomplete information about work-
ers' productivity might use race, gender, or some other trait as a surrogate for likely productiv-
ity when hiring workers. If the firm believes that members of a particular race are less produc-
tive, and the cost of determining a worker's productivity ex-post is sufficiently high, the firm
may discriminate against members of that race based on its belief. In the case of so-called racial
profiling, police who believe that members of a certain race are likely to commit crimes may
discriminate against members of that race. *See, e.g.*, LUNDAHL & WADENSJÖ, *supra* note 73, at
41–46; Kenneth J. Arrow, *The Theory of Discrimination*, *in* DISCRIMINATION IN LABOR
MARKETS 3 (Orley Ashenfelter & Albert Rees eds., 1973).

cus on the effects, rather than the causes, of discrimination. Most importantly, they do not explain why discrimination is particularly likely to be based on certain types of traits, like race and gender, and therefore provide little guidance in the area of suspect classification doctrine.

More recently, Richard McAdams has proposed an economic model based on status-seeking, arguing that discrimination is a method of increasing a group's status relative to another group.[98] McAdams notes that individuals have a taste for status derived both from membership within a certain group (intergroup status) and from the esteem in which they are held by other members of that group (intragroup status).[99] Discrimination arises when one social group attempts to increase its own status by portraying members of an out-group as inferior. Discriminatory social norms, under this theory, prevent members of the high-status group from free riding on each other's investment in the status of their group. Individuals who comply with discriminatory norms are held in higher esteem by other members of the in-group, thereby increasing their intragroup, as well as intergroup, status.[100]

McAdams's theory is more useful for policymakers than models based on associational preferences or statistical discrimination because it describes both why discrimination arises and why it persists. In fact, as will be described in more detail, a status-seeking theory is structurally similar to the rent-seeking model described in this article.[101] However, it fails to answer two questions addressed by the rent-seeking model. First, by ignoring the use of discrimination for rent-seeking purposes, it does not describe how one group becomes "high-status" and the other becomes "low-status." In fact, people derive status from membership within a group in a very wide variety of circumstances—for example, groups based in national heritage,

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98. McAdams, *supra* note 27.

99. *Id.* at 1019.

100. *Id.* at 1023–30.

101. Other commentators have proposed models of discrimination with similarities to the game-theoretic model presented here. David Swinton has analyzed racial discrimination in labor markets as a simple three-player (noncooperative) game involving employers, white employees, and minority employees. Swinton, *supra* note 29. Jennifer Roback has proposed a rent-seeking model of discrimination involving "psychic rents" resulting from a taste for discrimination as well as traditional economic rents. Roback II, *supra* note 44. More recently, Eric Posner has analyzed discrimination against an out-group as a means of signaling willingness to cooperate with members of the in-group. E. POSNER, *supra* note 26.

profession, alma mater, etc. The existence of a group does not necessarily cause everyone who is not a member of the group to believe he is low-status. For example, I derive status from being a resident of San Francisco and may believe that San Franciscans are better, more cultured, etc., than, say, Los Angelenos, but Los Angelenos do not therefore believe they are low-status. Status seeking becomes a problem when it is combined with rent seeking by one of the groups and/or an attempt to form economic or political coalitions at the expense of the other group. The out-group becomes "low-status" in large part because it receives a smaller share of the economic pie than the in-group.

Second, McAdams's theory does not, by itself, explain why certain traits—race and gender, for example—are used for status-seeking so frequently. In fact, on its face, McAdams's theory applies only to race. In order to determine whether traits other than race should form the basis for suspect classifications, it is useful to understand why certain types of traits are used as the basis for subordination. The rent-seeking model described in this paper addresses this issue as a function of the cost of building and maintaining stable coalitions and using them for rent-seeking purposes.[102]

3. Relationship of the game-theoretic model to other theories of discrimination

The rent-seeking model implies a slightly different approach from those of Ely[103] and Ackerman.[104] As under Ely's approach, "we-they" distinctions are an important part of the rent-seeking model. Members of the majority coalition ("we") make distinctions that benefit them at the expense of the minority ("they"). Thus, stereotypical generalizations about members of the out-group are likely to be those that support legislation protecting advantages enjoyed by the in-group. For example, a stereotype that women are not constitutionally equipped to engage in certain occupations reduces competition for those jobs and protects the male workers who currently oc-

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102. With those caveats in place, McAdams's theory is similar to that presented in this article. In fact, the game-theoretic model presented here can be applied to any zero-sum bargaining game, so it applies to a status-seeking situation to the extent status is zero-sum—that is, to the extent increased status for an in-group comes at the expense of the status of the out-group.

103. *See supra* notes 86–92 and accompanying text.

104. *See supra* notes 93–95 and accompanying text.

cupy them. However, the rent-seeking model can provide some guidance, which Ely does not, as to what it means for a trait to be "racelike" in the sense that it is used for subordination. The qualities that make a trait racelike are discussed in more detail in Part III.B.1, below.

A coalitional model acts as a partial rebuttal to Ackerman's public choice theory argument. Under ordinary circumstances, small, well-defined interest groups can bargain with other groups and end up in a winning coalition a fair percentage of the time. However, when a trait provides an easy way to distinguish a stable majority from a stable minority, the minority, even if well-defined, may find its attempts to play the democratic bargaining game blocked by the majority. Under these circumstances, a discrete and insular minority can be subject to long-term subordination.

The game-theoretic model presented in this paper is fundamentally different from a model based on taste or on statistical discrimination. Unlike Becker's theory, this model assumes no preexisting taste for avoiding association with members of a particular group. Instead, it assumes that discrimination arises and is perpetuated because it benefits, or appears to benefit, those in the majority. Once coalitions form around a certain trait, discrimination based on that trait becomes a social norm. An apparent "taste for discrimination" beyond one that benefits the majority can be explained either as a taste for compliance with an existing social norm[105] or as a psychological consequence of the formation of an in-group and an out-group.

The game-theoretic model is also different from a model based on statistical discrimination. Under this model, a trait need not be associated with any other undesirable qualities, and in fact, discrimination can arise even if members of the majority and minority are regarded as equally productive. Differences in productivity may arise when rent seeking occurs if, for example, the minority is restricted from opportunities to build human capital through education. As discussed in more detail below, stereotypes about productivity may function as rationalizations for rent-seeking legislation. For example, stereotypes about women's ability to perform certain types of jobs may be a means of protecting from competition the men who hold

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105. *See supra* text accompanying notes 26–28.

those jobs.[106] Stereotypes may also be a psychological consequence of the formation of an in-group and out-group.[107]

Other economic models of discrimination are similar to the game-theoretic model presented here. McAdams's status-seeking model, for example, can be incorporated into a rent-seeking model because status is a form of "psychic rent."[108] To the extent status is zero-sum—that is, status for the majority is gained at the expense of the status of the minority—the cooperative game outlined in Part II applies to status seeking as well as ordinary rent seeking.[109]

More recently, Eric Posner has modeled discrimination as a means of signaling willingness to cooperate in a repeated game.[110] That is, a member of the majority discriminates against a minority in order to signal willingness to cooperate with other members of the majority. Under Posner's theory, people complying with a social norm favoring discrimination receive a benefit in the form of stronger cooperative relationships with desired cooperative partners.[111] While Posner analyzes discrimination as a noncooperative game, in which people act individually rather than as a group, his model has some of the same implications as a coalitional approach. If a majority coalition seeks rent at the expense of a minority, discrimination might signal a willingness to cooperate with the majority rather than defecting and accepting a potentially better offer from the minority. Furthermore, because the existing structure can be supported by a "punishment" strategy that punishes members of the majority that cooperate with members of the minority, people might

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106. *See supra* Part II.D.3. Stereotypes may also simply be a psychological outgrowth of the creation of an in-group and out-group. *See generally* TAJFEL, *supra* note 23.

107. *See* TAJFEL, *supra* note 23, at 143–61.

108. *See* Roback II, *supra* note 44, at 673–75; *see also* McAdams, *supra* note 27, at 1019–20.

109. McAdams himself suggests that status seeking is a zero-sum game and expressly analogizes it to rent-seeking behavior:

[R]acial status preferences inherently conflict. Race discrimination exists because members of (at least) one race seek for their group a status position that is incompatible with the position sought by members of one or more other groups. Even when only one group seeks superiority, if the other group seeks equality, the struggle for social status is zero sum. Consequently, *the appropriation of status by subordinating behavior is, like theft, a mere wealth transfer*; the gain to the discriminator is at least matched by the loss to the victim.

McAdams, *supra* note 27, at 1075–76 (emphasis added).

110. E. POSNER, *supra* note 26, at 133–47.

111. *Id.* at 133–34.

discriminate in order to avoid punishment.[112] In this case, discrimination acts as a signal of compliance with the existing equilibrium.[113]

B. Suspect Classifications Under a Rent-Seeking Model

Current Equal Protection doctrine operates by identifying classifications along certain lines (like race) as suspect[114] and subjecting them to a higher degree of scrutiny than classifications based on other traits. This raises a natural question—what traits other than race invoke heightened scrutiny? A rent-seeking model suggests that some classifications can have the effect of subordinating a particular group by creating a stable majority coalition. At the same time, some degree of rent seeking is inevitable in a democracy and is not constitutionally problematic. This section argues that one purpose of suspect-classification jurisprudence is to identify traits that are particularly likely to be used for subordination—that is, traits likely to be used as a focal point in forming a stable rent-seeking coalition.

The Supreme Court has not articulated a single test for determining whether a trait gives rise to a suspect classification. A group's status as a discrete and insular minority within the meaning of *Carolene Products* is just one of several criteria that the Court has weighed when analyzing suspect classifications in various contexts. First, it examines whether a class is a discrete and insular minority "relegated to such a position of political powerlessness as to command extraordinary protection from the majoritarian political process."[115] Second, it considers whether a class possesses "'an immutable

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112. *See supra* Part II.B; E. POSNER, *supra* note 26, at 138–39 (noting that members of the in-group "often avoid, shun, or even attack" those who cooperate with members of the out-group).

113. Radical theorists have proposed another economic model of discrimination that is akin to a game-theoretic model. For example, Michael Reich has proposed that racial antagonism between white workers and black workers benefits, and is promoted by, employers. Under this model, employers discriminate in order to prevent a coalition between white and black workers. *See generally* MICHAEL REICH, RACIAL INEQUALITY: A POLITICAL-ECONOMIC ANALYSIS (1981); *cf.* David Swinton, *supra* note 29 (analyzing the labor market as a bargaining game involving employer, white employees, and black employees).

114. The Supreme Court has identified both "suspect" classes, which give rise to strict scrutiny, and a separate set of "quasi-suspect" classes, which give rise to an intermediate level of scrutiny. *See* Mass. Bd. of Ret. v. Murgia, 427 U.S. 307, 325 (1976) (Marshall, J., dissenting) (referring to women and illegitimates as "quasi-suspect" classes). For the purpose of the following discussion, I do not distinguish between suspect and quasi-suspect classifications.

115. San Antonio Indep. Sch. Dist. v. Rodriguez, 411 U.S. 1, 28 (1973).

characteristic determined solely by the accident of birth.'"[116] Third, it determines whether the class has been subjected to a "'history of purposeful unequal treatment.'"[117] Finally, it considers whether the trait used to define the class "frequently bears no relation to ability to perform or contribute to society."[118]

These criteria make sense if discrimination is analyzed as a form of long-term coalitional rent seeking. As will be described in more detail, it is difficult to form stable coalitions around a mutable trait because the composition of the majority and minority coalitions would change over time. Because of the strategic incentive to form long-term coalitions where possible, a minority coalition can be relegated to a "position of political powerlessness,"[119] and this lack of power can give rise to the need for judicial intervention. Finally, a history of purposeful unequal treatment can show that a trait is being used as a focal point in a rent-seeking game. Thus, the majority of the Court's criteria for determining when a trait gives rise to a suspect class ties naturally to a rent-seeking model.[120]

The following Part proposes an approach to determining whether a certain group is a "discrete and insular minority" within the sense of being easy to exclude from coalitions with other groups. It argues that a trait's likely use as a focal point for coalition formation should be a central part of the determination of whether that trait should be deemed a suspect classification and identifies several factors that bear on this inquiry. I do not argue that all of these factors must be met for a classification to be suspect; not even race

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116. Frontiero v. Richardson, 411 U.S. 677, 686 (1973); *see* Johnson v. Robison, 415 U.S. 361, 375 n.14 (1974).

117. Kimel v. Fla. Bd. of Regents, 528 U.S. 62, 83 (2000) (quoting *Rodriguez*, 411 U.S. at 28).

118. City of Cleburne v. Cleburne Living Ctr., Inc., 473 U.S. 432, 440–41 (1985) (quoting *Frontiero*, 411 U.S. at 686).

119. *Rodriguez*, 411 U.S. at 28.

120. The final criterion, the relevance of the trait to the purported purpose of the law making the classification, does not relate directly to a rent-seeking model except to the obvious extent that rent seeking can create an incentive to classify based on a trait that is irrelevant to any other purpose. Under a rent-seeking model, the relevance criterion may relate not to whether a trait is a good candidate for rent seeking—and, thus, should invoke a higher level of scrutiny—but rather to the particular *level* of scrutiny the court uses. For example, both race and gender have historically been used as basis for rent seeking. Gender classifications are given intermediate scrutiny, rather than strict scrutiny, because gender is deemed to be more often relevant to legitimate government purposes. *See, e.g.*, Michael M. v. Superior Court, 450 U.S. 464 (1981); Rostker v. Goldberg, 453 U.S. 57 (1981).

clearly satisfies all of them. Instead, they provide a means of determining a group's likely ability to form coalitions with other groups, and they also provide a way to tie this inquiry to other criteria, like a trait's immutability, that courts have used to determine whether a trait is suspect.[121]

1. Qualities of a trait likely to be used to form stable rent-seeking coalitions

A trait is likely to be used for long-term rent seeking if it supports the creation of stable coalitions. It should lend itself to low-cost formation and maintenance of a majority coalition. It should provide a bright line between members and nonmembers and be stable over time. That is, it should be difficult for members of the minority coalition to enter the majority coalition and vice versa. Finally, the coalition should be one that can feasibly be used for rent-seeking purposes. For example, it should be easy to determine whether a person is a member of the majority or minority. These criteria suggest that a trait used for rent seeking—call it a "suspect trait"—is likely to have most of the following characteristics. First, the trait should be *immutable* in the sense that the memberships of the majority and minority should be subject to little change over time. Second, it should be *evident* whether a person is a member of the majority or minority. Third, the trait should be *discrete* in that it divides society into two or more separate groups rather than defining a continuum. Fourth, the *size* of the minority group created by the trait must be large enough that it makes it worthwhile for the majority to seek rent from it. And finally, a *history of discrimination* based on that trait might make that trait more salient and thus more likely to serve as a focal point for future coalition building.

a. Immutable. Courts have long accepted that an immutable trait is particularly likely to be used for invidious discrimination. Under a rent-seeking model, an immutable trait is likely to be used to form a stable coalition for two reasons. First, members of the majority are

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121. I also am not advocating that only laws that actually seek rent from a minority be subject to strict scrutiny. Many laws that classify people may—even if they do not themselves seek rent directly—support a system of subordination that benefits a majority at the expense of a minority. For example, laws that segregate members of different groups do not necessarily seek rent on their face but act in the long run to diminish a minority's educational, career, and political opportunities. *See generally* Brown v. Bd. of Educ., 347 U.S. 483 (1954).

unlikely to become members of the subordinated group. As Lynn Stout points out, "While a white male of English descent born into wedlock in the United States may become poor, old, or handicapped, there is no chance he will become black, female, Greek, illegitimate, or an alien." [122] Thus, discrimination on the basis of race seems more likely than, for example, discrimination against the elderly because everyone (assuming he lives long enough) will one day be a member of the group subject to discrimination based on age.[123]

Second, members of the minority are unlikely to become members of the majority. Indeed, discrimination on the basis of a freely mutable trait would simply cause people to change that trait.[124] Even if a trait were not freely mutable, limited mutability would, over time, dilute the rent available to the majority as members of the minority enter the majority coalition. Thus, long-term subordination of attorneys, for example, would be difficult because eventually no one would choose to become an attorney.

Traits may have several levels of immutability. First, a trait may be completely immutable in the sense that no member of the majority coalition can ever become a member of the minority and vice versa. Race and, for practical purposes, gender are examples of this. Because these traits give rise to extremely stable in-groups and out-groups, they are obvious candidates for the type of rent seeking described in this article. Second, a trait may be *inward-immutable*, meaning that no member of the out-group can become a member of the in-group. Discrimination against the elderly or disabled are examples of discrimination based on inward-immutable traits. Finally, a trait may be *outward-immutable*, meaning that no member of the in-group can become a member of the out-group. Youth and alienage are examples of outward-immutable traits. Traits that are completely immutable would seem like more natural candidates for rent seeking than traits that are immutable in only one direction. Traits that are immutable in neither direction are less likely to be used for rent seeking.

Some traits that are not truly immutable in any of these senses

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122. Stout, *supra* note 9, at 1817; *see also* Roback II, *supra* note 44, at 675.

123. *See* Mass. Bd. of Ret. v. Murgia, 427 U.S. 307, 313–14 (1976) ("[E]ven old age does not define a 'discrete and insular' group in need of 'extraordinary protection from the majoritarian political process.' Instead, it marks a stage that each of us will reach if we live out our normal span." (citation omitted)).

124. E. POSNER, *supra* note 26, at 134.

may have some degree of immutability because they are difficult to change in practice due to societal barriers or because they are important to a person's identity. For example, poverty is not immutable in a strict sense, but socioeconomic forces may make it difficult for the poor to break out of the cycle of poverty. Religion and sexual orientation may be difficult to change because they are so important to a person's identity.[125] A trait that is mutable only at a cost could be used as the basis for rent seeking to a limited extent. If the cost of changing a trait is sufficiently high—higher than the difference between the rent accruing to a member of the minority and a member of the majority—a member of the minority will not have sufficient incentive to alter that trait and will remain the subject of rent seeking.

Finally, a trait that is not inherently immutable can be made functionally immutable by imposing legal barriers on change. For example, social class is not inherently immutable, but a legal regime like hereditary nobility or a strict caste system can operate to make it so. Similarly, wealth is not immutable, but a legal regime can make it difficult to change by, for example, restricting access to human capital through education. By adopting legal rules that stabilize traits that are the basis for coalition formation, a majority coalition can increase its stability.

b. Evident. A trait is easier to use for coalition formation if it is evident, that is, if it is easy to determine who has the trait and who does not. An evident trait makes it easy to determine who is a member of the in-group and who is a member of the out-group, allowing coalition formation at low cost. An evident trait also may tend to provide a psychological focal point for coalition formation, making a coalition based on that trait more stable.[126] An evident trait is easy to use for rent seeking because it is easy to determine who to favor and who to disfavor. For example, employment discrimination based on race is easier than employment discrimination based on legitimacy because a job candidate's race is evident and his legitimacy or illegitimacy is not. Finally, an evident trait might make a punishment strategy more effective because it makes it easy to see when a mem-

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125. *See* Watkins v. United States Army, 847 F.2d 1329 (9th Cir. 1988) (homosexuality), *vacated and aff'd on other grounds*, 875 F.2d 699 (1989) (en banc). Discrimination based on these types of traits could be analyzed under the fundamental rights branch of Equal Protection analysis even if these traits do not give rise to suspect classifications.

126. *See* E. POSNER, *supra* note 26, at 135; Roback II, *supra* note 44, at 676.

ber of the majority defects and cooperates with a member of the minority.

For these reasons, courts have recognized that a trait's observability may make it more likely to be used for invidious discrimination. For example, in *Frontiero v. Richardson*, the Supreme Court held that classifications based on gender, like those based on race, are inherently suspect, in part because of gender's obviousness: "[I]t can hardly be doubted that, in part because of the high visibility of the sex characteristic, women still face pervasive . . . discrimination in our educational institutions, in the job market and . . . in the political arena."[127]

Like immutability, a trait's evidence can be manipulated through law. Historically, members of a majority have occasionally tried to make unobservable traits evident in order to accord reduced status to people with those traits. For example, in Nazi Germany prisoners were marked with colored triangles corresponding to the reasons for their incarceration. A green triangle marked its wearer as a regular criminal, and a red triangle denoted a political prisoner. Jewish prisoners were marked with two overlapping yellow triangles forming a star of David, and homosexuals were marked with a pink triangle. Homosexuals bearing a pink triangle were assigned to the most difficult labor.[128] Similarly, while wealth is not inherently observable, in the past, law and/or social custom dictated the clothing and behavior of different classes of society, making them readily identifiable.[129]

c. Discrete. A trait is a good candidate for coalition formation if it divides society into separate groups, rather than forming a continuum. There are two reasons for this. First, discreteness eliminates the

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127. 411 U.S. 677, 686 (1973); *see also* Lyng v. Castillo, 477 U.S. 635, 638 (1986) (examining whether class composed of parent, children, and siblings "exhibit[s] obvious, immutable, or distinguishing characteristics that define them as a discrete group").

128. Erwin J. Haeberle, *Swastika, Pink Triangle, and Yellow Star: The Destruction of Sexology and the Persecution of Homosexuals in Nazi Germany*, *in* HIDDEN FROM HISTORY: RECLAIMING THE GAY & LESBIAN PAST 365, 376 (Martin Bauml Duberman et al. eds., 1989).

129. For example, sumptuary laws in medieval and renaissance Europe reserved certain types of clothing materials, like silk, ermine, and pearls, to certain classes of nobility. In nineteenth-century Turkey, different ethnic and religious groups were required to wear different styles of hat: Greeks wore dark caps; Armenians, balloon-shaped headdresses; Jews wore brimless caps; and Turks, a red fez. Even stricter laws existed in Japan, regulating in detail the dress and behavior of people at all levels of society. Elizabeth B. Hurlock, *Sumptuary Law*, *in* DRESS, ADORNMENT, AND THE SOCIAL ORDER 295–301 (Mary Ellen Roach & Joanne Bubolz Eicher eds., 1965).

need to negotiate where the line should be drawn between the in-group and out-group, making coalition formation more straightforward and, presumably, less costly. Second, like an evident trait, a discrete trait allows easy determination of who is a member of the in-group and who is in the out-group, making it easier to discriminate based on that trait.[130]

Gender, alienage, and illegitimacy are examples of discrete traits. Disability, on the other hand, is not discrete because a wide range of types and degrees of disability exist. Race is not a discrete trait because many people—Tiger Woods being a notable example—are a mixture of different ethnicities in various proportions. However, law and custom have functioned historically to keep race discrete. For example, the "one-drop rule" in the United States essentially reduced the spectrum of mixtures of European and African-American ethnicities into two categories: white and non-white.[131] Laws banning interracial marriage served a similar purpose.[132] Even today, controversy rages about how to categorize people of mixed race, with many arguing for a limited number of categories.[133]

d. Group size. The size of a minority group may bear on its likely use as a focal point for rent seeking. First, a group is unlikely to be the subject of subordination if it has a majority of political power. While a group with the majority of power may be the subject of some rent seeking—by a small, well-organized lobby, for example—it can flex its political muscle if a political minority tries to deprive it of significant benefits. As described above, however, a group can be a numerical majority and still lack the majority of power in the sense of ability to affect political outcomes. For example, a numerical minority within a jurisdiction could control the majority of the wealth—and thus form a majority of the tax base, spend more money on advertising and lobbying, etc.—and, therefore, have more power than simple numbers would indicate.

Second, a trait is likely to be used for long-term rent seeking if

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130. Eric Posner has noted this phenomenon in relation to a signaling model of discrimination. *See* E. POSNER, *supra* note 26, at 136.

131. Lawrence Wright, *One Drop of Blood*, THE NEW YORKER, July 24, 1994, at *3, *available at* http://www.afn.org/~dks/race/wright.html.

132. *See* Janet E. Halley, *The Politics of the Closet: Towards Equal Protection for Gay, Lesbian, and Bisexual Identity*, 36 UCLA L. REV. 915 (1989) (discussing miscegenation laws).

133. *See* Nathaniel Persily, *Color by Numbers: Race, Redistricting, and the 2000 Census*, 85 MINN. L. REV. 899 (2001).

the minority coalition it creates is large enough that the rent that can be extracted from it is larger—or at least not significantly smaller—than the amount of rent that can be gained by forming coalitions around different traits. This is akin to the observation that an optimal strategy in the divide-the-dollar game is to form a minimum winning coalition so that the maximal amount of rent can be extracted and distributed to the smallest possible majority. For example, as noted above, discrimination in the allocation of school funds in the Jim Crow South was particularly severe in the counties with the largest minority population.[134] On the other hand, institutionalized rent seeking against a very small minority—people more than seven feet tall, for example—is unlikely because the percentage of people in the minority coalition would be so small that the cost of forming and maintaining coalitions around this trait would be greater than the amount of rent that could be obtained.[135]

e. History of discrimination. Finally, since the equilibrium strategy that players will choose depends on the coalitional structure that exists at the beginning of a game, a history of discrimination based on a certain trait can make that trait more likely to be used for rent seeking. As described above, a prior division of people into groups—even a completely arbitrary one—can affect subsequent decisions about preferred coalition partners. Members of an identifiable group tend to prefer forming coalitions with other members of that group and distributing resources to members of that group.[136] If, for example, race has been used in the past as a means of categorizing people, it is more likely to serve as a natural focal point for coalition formation in the future. Because race, ethnicity, and gender have long been used as means of distinguishing people from one another, these traits are likely to serve as natural focal points.[137]

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134. *See supra* notes 44–60 and accompanying text.

135. A minority of significant size may also suffer a higher degree of discrimination because it is seen as greater competition for scarce resources—like jobs—than a small minority. *See* HUBERT M. BLALOCK, TOWARD A THEORY OF MINORITY-GROUP RELATIONS 143–73 (1967).

136. *See supra* notes 23–25 and accompanying text.

137. Other factors may bear on the likelihood of a trait being used as a focal point for coalition formation. For example, the proximity of members of the majority and minority to one another may also have an effect on coalition formation. People may be more likely to enter into coalitions with people with whom they have regular contact, like family, friends, and geographic community. Similarly, to the extent rent seeking is intergenerational, a trait that is inherited might tend to support coalitions that are stable from generation to generation.

2. Application to selected traits other than race and gender

a. Alienage. Alienage has been recognized as a suspect classification,[138] although the Court has applied strict scrutiny more deferentially in cases involving aliens than in those involving race.[139] Alienage seems like a good candidate for formation of rent-seeking coalitions. Alienage is inward-immutable because a citizen is extremely unlikely to become an alien. Alienage is outward-mutable only with the consent of the state, so the majority coalition can control the extent to which aliens join the majority by becoming citizens. Alienage is discrete because a person either is or is not a U.S. citizen. Although alienage is not inherently evident, citizens of other countries can sometimes be identified by language or ethnicity. Furthermore, proof of citizenship is required for jobs, so alienage is made evident in the labor market, a principal arena for rent seeking. Finally, aliens have no vote, making them especially vulnerable to political rent seeking.

Furthermore, alienage has been used historically, and is used today, for rent seeking. Under current law, aliens can be prohibited from certain types of jobs[140] and are ineligible for certain government benefits.[141] Undocumented aliens are routinely hired to work long hours for subminimum wages.[142] In certain cases they have been held in virtual slavery, held on an employer's premises, subjected to physical abuse, and threatened with serious harm if they leave their jobs.[143]

b. Illegitimacy. Illegitimacy has also been recognized as a quasi-suspect classification giving rise to an intermediate level of scru-

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138. Graham v. Richardson, 403 U.S. 365 (1971).

139. *E.g.*, Foley v. Connelie, 435 U.S. 291 (1978) (holding that state may bar employment of aliens as state troopers); Mathews v. Diaz, 426 U.S. 67 (1976) (finding that Congress may impose conditions on alien's participation in Medicare).

140. *See Foley*, 435 U.S. 291.

141. *See Mathews*, 426 U.S. 67.

142. *See, e.g.*, *Hidden in the Home: Abuse of Domestic Workers with Special Visas in the United States*, 13 HUMAN RIGHTS WATCH No. 2(G) (June 2001), *available at* http://www.hrw.org/reports/2001/usadom/usadom0501.pdf [hereinafter *Hidden in the Home*]; U.S. Dep't of Justice, *Inspection Report: Immigration and Naturalization Service Efforts to Combat Harboring and Employing Illegal Aliens in Sweatshops*, Rep. Num. I-96-08 (May 1996), *available at* http://www.usdoj.gov/oig/i9608/i9608toc.htm; U.S. Dep't of State, *International Information Programs: Motivation of Chinese Illegal Aliens*, *available at* http://usinfo.state.gov/regional/ea/chinaaliens/why.htm.

143. *See* U.S. Dep't of Justice, *supra* note 142, at *3; *Hidden in the Home*, *supra* note 142, at 19–22.

tiny.[144] However, unlike alienage, illegitimacy does not seem like a good candidate for rent seeking. Legitimacy is immutable, because it is determined by accident of birth, and is discrete. However, it is not evident, so it is unlikely to serve as a focal point for coalition building and is also difficult to use as a means of seeking rents. For example, an employer ordinarily has no way to determine whether an applicant was born in wedlock. Finally, while nonmarital children have been the subjects of rent seeking—for example, some states have prohibited them from inheriting by intestate succession[145]—they have not been the persistent targets of discrimination in the same way as women and racial minorities.

c. Religion. The Supreme Court has not held religion to be a suspect classification, although lower courts have occasionally assumed in dicta that it is one.[146] On its face, religion does not appear to be a likely candidate for rent seeking. Religion is mutable at will, although changing religion may involve very high costs since religion is often central to a person's identity. Religion is not evident. It may be discrete to the extent most people are not members of more than one religion, although religious beliefs can exist in various degrees among members of a given religion. Therefore, religion does not look like an obvious candidate for coalition formation.

Yet religion plainly has been used for this purpose throughout history, and religious minorities have been the subject of rent seeking. Why has religion been used in this way? Several potential explanations exist. First, in some cases religion may be used as a surrogate for other truly immutable traits, like national origin or ethnicity. For

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144. Clark v. Jeter, 486 U.S. 456 (1988).

145. *See* Lalli v. Lalli, 439 U.S. 259 (1978).

146. *See, e.g.*, Ball v. Massanari, 254 F.3d 817, 823 (9th Cir. 2001) ("If the statute employs a suspect class (such as race, religion, or national origin) . . . ."); Williams v. Scott, 142 F.3d 441, No. 97-1223, 1998 U.S. App. LEXIS 6556, at *7 (7th Cir. Mar. 26, 1998) ("The placement of Williams in medical segregation on the basis of his religion, a suspect classification, would require that it be analyzed under the strict scrutiny standard."); Pinnacle Nursing Home v. Axelrod, 928 F.2d 1306, 1317 (2d Cir. 1991) ("Since suspect classifications such as race, religion, or national origin are not involved here, we apply the 'traditional' equal protection analysis."); *see also* United States v. Carolene Prods. Co., 304 U.S. 144, 152 n.4 (1938) ("Nor need we enquire whether similar considerations enter into the review of statutes directed at particular religious, or national, or racial minorities." (citations omitted)). *But see* Johnson v. Robison, 415 U.S. 361, 375 n.14 (1974) (holding conscientious objectors on religious grounds not a suspect class). Courts have not been required to address whether religion is a suspect classification under the Equal Protection Clause because suits involving religious discrimination have ordinarily been brought under the Free Exercise Clause.

example, prejudice against Muslims may be a surrogate for prejudice against people of Arab ancestry. This is not true for all discrimination based on religion. For example, stable coalitions have formed around religion in Ireland even though Irish Catholics and Protestants share a common ethnicity. Second, although formation of coalitions around religion involves higher transaction costs than formation around, say, race, in societies that are racially homogeneous, religion may simply be the most efficient basis for stable, long-term rent seeking. Since social groups in those societies may already form around religion, religion may provide an easy focal point for coalition formation.

Finally, some discrimination based on religion may be due to factors other than rent seeking. Laws or practices that discriminate based on religion can occur for several reasons. Some practices, like public funding of parochial schools, teaching about a majority religion in public schools, or allowing public religious displays, may provide a benefit to a favored religion.[147] These are akin to classic rent seeking. Others may be intended to discourage the practice of a minority religion—or at least have that effect—without providing a benefit to other religions.[148] These have an entirely different function, as they simply attempt to discourage the practice of a disfavored religion. The latter type of discrimination does not fit within a rent-seeking model and so is beyond the scope of this article, although it could be subject to heightened scrutiny under an antidiscrimination or individual rights analysis.[149]

d. Age and disability. In *Kimel v. Florida Board of Regents*,[150] the Supreme Court reiterated its earlier holding that age is not a suspect classification. The Court noted explicitly that age is inward-mutable because all of us, assuming we live long enough, will experience old

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147. *See, e.g.*, County of Allegheny v. ACLU, 492 U.S. 573 (1989) (examining display of nativity scene in public courthouse); Edwards v. Aguillard, 482 U.S. 578 (1987) (concerning teaching "creation science" in public schools); Mueller v. Allen, 463 U.S. 388 (1983) (involving tax deduction for spending on parochial school). All of these cases were decided under the Establishment Clause, rather than the Equal Protection Clause.

148. *See, e.g.*, Church of the Lukumi Babalu Aye, Inc. v. City of Hialeah, 508 U.S. 520 (1993) (involving law banning animal sacrifice); Employment Div. v. Smith, 494 U.S. 872 (1990) (scrutinizing law banning use of peyote). These cases were decided under the Free Exercise Clause, rather than the Equal Protection Clause.

149. This is particularly easy in the case of religion, because a specific Constitutional guarantee makes the free exercise of religion a fundamental right.

150. Kimel v. Fla. Bd. of Regents, 528 U.S. 62 (2000).

age.[151] Age is evident, but is not discrete, because age forms a spectrum rather than dividing people into separate categories. Thus, coalitions formed around age are likely to be less inherently stable than coalitions formed around race and gender. The elderly have not suffered a "history of purposeful unequal treatment" akin to discrimination based on race or gender.[152] Finally, as a practical matter, the elderly have not shown any difficulty forming coalitions in political bargaining situations. In fact, the American Association of Retired Persons is regarded as one of the most powerful lobbies in the United States.[153]

Disability has been held not to be a suspect classification for similar reasons.[154] Disability is inward-mutable, because any person might unexpectedly become disabled. Disability may be (but is not always) evident and is not discrete because many types and levels of disability exist.[155] Finally, as the Supreme Court noted in *City of Cleburne v. Cleburne Living Center*, the disabled are not "politically powerless in the sense that they have no ability to attract the attention of the lawmakers."[156]

e. Homosexuality. Although the Supreme Court has not addressed the issue directly, circuit courts have held homosexuality is not a suspect classification.[157] The extent to which homosexuality is immutable has been the subject of much scientific and academic debate; the prevailing view being that it is immutable in some people but not others.[158] Homosexuality is neither evident nor does it divide

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151. *Id.* at 83; *see* Mass. Bd. of Ret. v. Murgia, 427 U.S. 307 (1976).

152. *Kimel*, 528 U.S. at 83.

153. *See, e.g.*, *The Power 25: Top Lobbying Groups*, FORTUNE, May 2001, *available at* http://www.fortune.com/lists/power25/.

154. Heller v. Doe, 509 U.S. 312, 321 (1993); City of Cleburne v. Cleburne Living Ctr., Inc., 473 U.S. 432, 441–47 (1985).

155. The *Cleburne* court noted this with respect to the mentally retarded: "Nor are they all cut from the same pattern: . . . they range from those whose disability is not immediately evident to those who must be constantly cared for." *City of Cleburne*, 473 U.S. at 442.

156. *Id.* at 445.

157. *See, e.g.*, Able v. United States, 155 F.3d 628, 632 (2d Cir. 1998); Richenberg v. Perry, 97 F.3d 256, 260–61 (8th Cir. 1996); Thomasson v. Perry, 80 F.3d 915, 928 (4th Cir. 1996); *cf.* Watkins v. United States Army, 847 F.2d 1329 (9th Cir. 1988) (holding homosexuality to be a suspect classification), *vacated and aff'd on other grounds*, 875 F.2d 699 (1989) (en banc). *Compare* Romer v. Evans, 517 U.S. 620 (1996), *with* Bowers v. Hardwick, 478 U.S. 186 (1986).

158. *See, e.g.*, Janet E. Halley, *Sexual Orientation and the Politics of Biology: A Critique of the Argument from Immutability*, 46 STAN. L. REV. 503 (1994). As noted above, however, a trait that is mutable only at great cost might still be used for rent-seeking purposes.

people into discrete groups, since hetero- and homosexuality may exist in varying degrees in different people. Homosexuality does not appear to be a likely basis for formation of stable rent-seeking coalitions.

Why then, does discrimination based on homosexuality occur? Homosexuality might be analyzed in a similar way to religion, another trait that is not necessarily evident, is not always immutable, but is important to individual identity. Discrimination based on homosexuality may have one (or both) of two causes: It may provide a benefit to a favored sexual orientation that is denied to homosexuals, or it may impose a penalty on the practice of homosexuality in order to discourage it. Laws barring same-sex marriage or prohibiting homosexuals from serving in the military fall into the first category. These laws and other laws, such as those prohibiting sodomy, fall into the second. However, the principal effect of even laws in the first category, like those prohibiting identified homosexuals from serving in the military, is to drive homosexual behavior underground. Thus, discrimination based on homosexuality probably is not explained well by a rent-seeking model and might be better analyzed under an antidifferentiation theory or theory of fundamental rights.[159]

C. Affirmative Action and "Reverse Discrimination"

So-called "reverse discrimination" occurs when a suspect trait (race, for example) is used to provide benefits to the minority, rather than the majority. To date, the Supreme Court has invalidated racial classifications that benefit a minority as well as those that benefit the majority.[160] This area, though, remains very controversial. How would the question be analyzed using a game-theoretic model?

The straightforward answer is the same answer dictated by other process-oriented theories of Equal Protection—that discrimination against a stable majority should not be subject to strict scrutiny. However, the reasoning behind this conclusion depends on how we characterize the political process leading to affirmative action-type

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159. *See* Pamela S. Karlan, *Some Thoughts on Autonomy and Equality in Relation to Justice Blackmun*, 26 HASTINGS CONST. L.Q. 59, 63–64 (1998) (proposing "double-barreled" judicial review tying together liberty and equality interests).

160. *See* Adarand Constructors, Inc. v. Pena, 515 U.S. 200 (1995) (race-based preferences in hiring contractors); Richmond v. J.A. Croson Co., 488 U.S. 469 (1989).

results. Under one view—probably the most supportable—affirmative action is essentially the opposite of rent seeking; that is, it occurs when the majority itself agrees to provide a benefit to the minority. Under a view that the purpose of the Equal Protection Clause is to prevent a stable political majority from subordinating a stable political minority, this does not present a problem. Laws that are intended to aid a minority do not subordinate it.

Under another view of the political process, affirmative action is the result of a minority successfully creating a majority coalition that supports affirmative action by recruiting some of the (historical) majority coalition. Under this view, not only is the minority not being exploited by the majority, it *is* part of the majority. Assuming that the minority is a racial minority, this indicates that coalitions are forming along the lines of some factor other than race and, thus, that the political process is working as intended. In this case, as before, no reason exists to subject this sort of law to strict scrutiny.[161]

D. The Role of Equal Protection Law

A game-theoretic model of discrimination provides important lessons for the role of Equal Protection law in remedying specific acts of discrimination and in making discrimination less likely to occur in the long run. This model makes more explicit the *Carolene Products* notion that the democratic process can break down under certain situations, leaving a minority a persistent loser in rent-seeking situations. In a repeated cooperative bargaining game, players have an incentive, if possible, to form a stable majority coalition to seek rent at the expense of a stable minority. In this sort of situation, the idealized bargaining process envisioned in the *Calculus of Consent*,[162] in which players ordinarily are able to enter winning coalitions a fair percentage of the time, does not work properly. Because a stable minority ordinarily cannot get recourse through the legislative process, the judiciary may appropriately step in and strike down legislation that discriminates against the stable minority. By doing this, the judiciary can reduce the opportunities for the majority to seek rent at

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161. It is worth noting, though, a counterargument that arises from the game-theoretic model. To the extent race (or any other trait) acts as a focal point for coalition formation, any type of discrimination based on race, including reverse discrimination, might reinforce an existing focal point. As described below, eliminating the use of certain traits as focal points for coalition formation is an important function of Equal Protection law.

162. *See* BUCHANAN & TULLOCK, *supra* note 7, at 148–52.

the expense of the minority.

In the longer run, Equal Protection law may have an even more important function. Under a rent-seeking model, discrimination becomes persistent because it becomes a focal point for coalition formation and hence becomes internalized by society as a social norm. By eliminating possibilities for rent seeking, or by at least making rent seeking more difficult (raising transaction costs), Equal Protection law can eliminate the purpose of discrimination as a focal point. If a stable majority cannot seek benefits for itself at the expense of a minority, a strategy that involves forming a long-term stable coalition will not be an equilibrium strategy. Instead, players will likely play something like an opportunistic strategy, entering into whatever coalition seems likely to provide the greatest short-term gain. Under this equilibrium, over time each player is likely to be able to join a majority coalition a fair percentage of the time. Thus, a function of Equal Protection law is to eliminate focal point strategies that subordinate a minority.

Over the even longer run, Equal Protection law can play a role in identifying and preventing new types of discrimination as they arise. Why would we expect new types of discrimination to arise? Equal Protection law can help eliminate the incentive to form a *particular* stable rent-seeking coalition—by prohibiting discrimination along the lines of whatever trait serves as the basis for the coalition—but it does not eliminate the incentive to form a stable majority coalition generally. That is, if discrimination based on a particular trait is eliminated as a focal point, rent-seeking coalitions might arise based on some other trait. For example, a reduction in rent-seeking opportunities based on race could result in people trying to seek rent using other forms of discrimination: on the basis of religion, homosexuality, or some other trait. Thus, over the long run the list of suspect classifications should be treated as flexible and subject to change in the event that traits other than those recognized become the subject of persistent discrimination.

IV. CONCLUSION

This article proposes a game-theoretic model of discrimination that focuses on a group's ability to form coalitions with other groups. It models the democratic process as a cooperative bargaining game in which players can form coalitions with other players. When this game is repeated, players have an incentive to maintain a stable

majority coalition to seek a long-term advantage for themselves at the expense of the excluded minority. The coalition that players will choose to form will likely be a focal point coalition that is particularly salient for some reason.

This model provides a natural way to analyze whether a group is a "discrete and insular minority" within the meaning of *Carolene Products.* A discrete and insular minority is likely to be formed around a trait that is a natural focal point for the formation and maintenance of stable majority and minority coalitions. This article identifies several qualities that such a trait is likely to possess: it is likely to be immutable, to be evident, to divide society into easily separable groups that are each of a significant size, and to have a history of use for discrimination. These qualities provide a means of determining whether a trait constitutes a suspect classification warranting a heightened degree of scrutiny. This article argues that Equal Protection law can not only prevent individual acts of discrimination, but, over time, also change social norms that favor building coalitions around certain traits. Thus, over time Equal Protection can help reduce the amount of discrimination in society.

Appendix A. The Definition of the Stable Set

Given a coalition S, we say that a payout allocation $x = (x_1, x_2, \ldots , x_n)$ is *feasible* for S if S has the power to obtain allocation x. For the purposes of the three-person divide-the-dollar game, an allocation is feasible for a coalition if (1) the coalition has at least two members, so that it constitutes a majority, and (2) the total payout to all three players is no greater than 1. For example, the allocation (1/3, 1/3, 1/3) is feasible for the grand coalition of all players, but the allocation (1/2, 1/2, 1/2) is not.

Allocation y *dominates* allocation x if some coalition S exists such that (1) y is feasible for S and (2) S prefers y to x; that is, the payout to each member of S is greater under allocation y than under allocation x. Intuitively, y dominates x if some group of players can do better by forming coalition S and dividing the resulting payout among themselves. For example, in the divide-the-dollar game, Player 1 and 2 can improve upon the allocation (1/3, 1/3, 1/3) by forming the coalition {1, 2} and dividing the dollar between themselves, yielding the allocation (1/2, 1/2, 0).

Let V be a set of payout allocations for a cooperative game. The set V is *internally stable* if no allocation in V dominates any other allocation in V. The set V is *externally stable* if every allocation outside of V is dominated by an allocation in V. A set that is both internally and externally stable is called a *stable set*, or a *von Neumann and Morgenstern solution*.[163] A stable set has some appeal as the set of likely outcomes of a cooperative game. Any allocation outside of a stable set V will likely be replaced by an allocation within the stable set that dominates it. On the other hand, an allocation within V will not be replaced by any other allocation within V and is unlikely—so the theory goes—to be replaced by an allocation outside of V because that allocation would itself be unstable.[164]

As a simple example, consider the following set V of outcomes of the divide-the-dollar game:

$$\{(1/2, 1/2, 0), (1/2, 0, 1/2), (0, 1/2, 1/2)\}$$

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163. The concept of the stable set as the solution to a cooperative game was proposed by John Von Neumann and Oskar Morgenstern in JOHN VON NEUMANN & OSKAR MORGENSTERN, THEORY OF GAMES AND ECONOMIC BEHAVIOR 263–66 (4th ed. 1972).

164. *See* MYERSON, *supra* note 14, at 453.

It is easy to check that none of these outcomes is dominated by either of the other two outcomes within the *V*. Similarly, any allocation not in *V* must give a payout of less than 1/2 to at least two players, and these players would prefer to form a coalition and switch to the allocation in *V* that gives them both 1/2. Thus, *V* is both internally and externally stable.[165]

However, the stable set is deficient as a predictor of the likely outcome of a cooperative game. First, many games have more than one stable set, and some of these sets may include outcomes that seem very unlikely. For example, in the divide-the-dollar game, given any Player P and any number $\alpha < 1/2$, the set of all allocations that allocates the entire dollar and gives a payout of α to Player P is a stable set.[166] Thus, every allocation that divides the entire dollar is in some stable set, including allocations that seem intuitively unlikely.

We can refine the notion of a stable set in order to capture the intuition that a minimum winning coalition is particularly likely to form. A *main-simple* stable set *V* is a stable set such that each allocation *x* in it can be associated with a minimum winning coalition that prefers *x* at least as much as any other outcome in *V*.[167] The advantage of a main-simple stable set is that it is unique for a game. For example, in the three-person divide-the-dollar game the unique main-simple stable set is {(1/2, 1/2, 0), (1/2, 0, 1/2), (0, 1/2, 1/2)}.[168] Political theorists commonly view this set as the set of allocations most likely to result when the divide-the-dollar game is played once.

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165. BUCHANAN & TULLOCK, *supra* note 7, at 149; MYERSON, *supra* note 14, at 453.

166. MYERSON, *supra* note 14, at 453; *see* ORDESHOOK, *supra* note 7, at 290.

167. ORDESHOOK, *supra* note 7, at 290–91.

168. *Id.*

Appendix B. An Equilibrium Strategy in the Repeated Divide-the-Dollar Game

This section provides a formal analysis of the repeated divide-the-dollar game and a proof of the result suggested in Part II.A.2 of the article—that a discriminatory strategy is a stable equilibrium of the repeated game.

In order to solve the repeated divide-the-dollar game, we impose a plausible bargaining structure onto it, transforming it into a repeated noncooperative game. The bargaining structure takes the form of a *stage game*, which is an *n*-player game divided into *k* stages. At each stage, one or more players may have a set of actions that he or she can take, and the players' actions at one stage may affect the actions available to players at subsequent stages.

The divide-the-dollar game can be represented as a stage game by imposing a simple bargaining process onto it. Assuming that some allocation *x* exists at the beginning of the first stage, negotiation occurs in the following three stages:

(1) "Nature" picks one player *i* at random;

(2) Player *i* proposes an allocation *y* of the dollar among the three players; and

(3) The players vote on whether to adopt *y* in preference to *x*. If *y* is adopted, the players receive payout in accordance with allocation *y*, and *y* becomes the beginning payout for the next round of the game. Otherwise, players are paid in accordance with allocation *x*, and *x* is the starting allocation for the next round.

We can model the repeated divide-the-dollar game by repeating this stage game an infinite number of times. We assume that a discount factor of δ applies between rounds (the players discount future payouts). A strategy s_i for player *i* is simply a rule that for each stage *t*, describes the action that *i* will select—or the probability of player *i* selecting a particular action—depending on the sequence of play up to that point.

When this stage game is repeated an infinite number of times, each player will receive a payout each round of the game. A player's total payout will be the discounted sum of the payouts that he receives each round. If each player *i* is playing some strategy s_i, we can compute the total payout that a player *i* will get if the repeated game begins with a given allocation *x*. That is, beginning with an allocation *x*, the game will follow a fixed path (or will have a determined

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probability of following each of a number of paths), so we can determine the total payout player i will receive by summing the payouts, discounted by probability, that he will receive each round. The total payout to player i when the game starts from the allocation x can be denoted by $v_i(x)$.

As defined so far, this game has many Nash equilibria. For example, given any starting allocation x, the strategy profile under which every player always proposes x and votes only in favor of x is a Nash equilibrium.[169] If the discount factor is high enough, many allocations can be supported as stable equilibria through the use of punishment strategies. For example, a supermajority[170] of m players can play a strategy in which (1) a member of the supermajority always proposes and always votes for an allocation in which each member of the supermajority receives $1/m$ and each member of the minority receives 0, and (2) if any member of the supermajority defects, the remaining majority (the supermajority minus the defector) switches to a strategy that is the same in every respect except that the defecting player is treated as a member of the minority. If the discount factor is high enough, this strategy is a Nash equilibrium.

In the interest of making the solutions to this game more plausible, we will place some—hopefully realistic—restrictions on the strategies that players can adopt. The point here is to make the assumptions that are *least* likely to support discriminatory strategies. That is, we want to determine whether stable discriminatory strategies are likely to emerge even if players have short memories and do not explicitly distinguish among other players.[171] To begin with, we assume that all players play the "same" strategy. That is, Player 1's strategy beginning from the allocation (x_1, x_2, x_3) is the same as Player 2's strategy beginning from (x_2, x_1, x_3), and so forth. This eliminates strategies in which players make distinctions among the other players. Second, we will assume that the strategies are *stationary*, that is, the strategy within any subgame depends only on the subgame's starting allocation. In other words, players have no memory of the history of play prior to the current stage game. This elimi-

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169. This is easy to see. No player can gain by either proposing or voting for an allocation other than x, because such an allocation will never get the majority necessary to be adopted.

170. A supermajority is a majority plus one player. If the game has only three players, of course, the only supermajority is the grand coalition.

171. The assumptions made here parallel those in David P. Baron & John A. Ferejohn, *Bargaining in Legislatures*, 83 AM. POL. SCI. REV. 1181 (1989).

nates the possibility of "punishment" strategies akin to the tit-for-tat strategy in the repeated prisoner's dilemma. Finally, we will assume that the players play *stage-undominated* voting strategies. That is, given a current allocation x, a player i will vote for any proposal y such that $v_i(y) > v_i(x)$. This assumption captures the intuition that players will vote in favor of any proposal that gives them a higher long-term payout than the current allocation.

Since we are assuming that the players' strategies are symmetrical, we can define a strategy profile for the game by defining a strategy for a given Player i. Let V denote the main-simple stable set for the n-person divide-the-dollar game.[172] For a Player i, let V_i be the subset of V consisting of allocations that give Player i a non-zero payout.[173] We define the "discriminatory" strategy as follows, given starting allocation x:

Discriminatory strategy:

Proposal strategy for Player i:

   If $x \in V_i$, propose that allocation. Otherwise, propose a randomly selected allocation in V_i.

Voting strategy for Player i:

   If $x \in V_i$, vote only for that allocation.

   Otherwise,

      Always vote for any proposed $y \in V_i$.

      Always vote against a proposed $y \in V$ such that $y \notin V_i$.

      If $y \notin V$, vote for y if and only if $y_i \geq x_i$.

Proposition 2. The discriminatory strategy is a stationary, subgame perfect equilibrium of the repeated n person divide-the-dollar game, with n odd, if the discount factor $\delta \geq n/(n+1)$.

Proof: The idea of the proof is to compute the value of various allocations and show that no allocation has a higher long-term value to Player 1, under any alternative strategy, than an allocation in V_1. In the remainder of this section, s will represent the strategy profile under which all players play the discriminatory strategy, and $v_1(x)$ will represent the total discounted payout to Player 1 in the repeated stage game assuming that x is the starting allocation and all players play strategy profile s. Since we will be comparing s to other strate-

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   172. This set consists of all allocations under which a minimum winning coalition divides the pot equally among its members. So, for example, the set V for the three-person game is $\{(\frac{1}{2}, \frac{1}{2}, 0), (\frac{1}{2}, 0, \frac{1}{2}), (0, \frac{1}{2}, \frac{1}{2})\}$.

   173. In the three-person case, for example, $V_1 = \{(\frac{1}{2}, \frac{1}{2}, 0), (\frac{1}{2}, 0, \frac{1}{2})\}$.

gies Player 1 might play, we will let s' denote a strategy profile under which all players other than Player 1 play the discriminatory strategy, and Player 1 plays some other strategy. We will denote by $v'_1(x)$ the total discounted payout to Player 1 assuming that x is the starting allocation and the players are using strategy profile s'.

The discriminatory strategy s is a subgame perfect equilibrium of the repeated game if it is a Nash equilibrium of every induced stage game—that is, if Player 1 cannot improve his total payout by changing his strategy in any stage. The discriminatory strategy s requires Player 1 always to propose some $x \in V_1$ and also to vote for any allocation in V_1. Player 1 can improve upon s only if he can improve his total payout by either proposing (and voting for) some $y \notin V_1$ instead of $x \in V_1$ or else by voting down some $x \in V_1$ in order to retain an existing allocation $y \notin V_1$. Thus, Player 1 can improve on the discriminatory strategy only if there exists some alternative strategy profile s' and some allocation y such that $v'_1(y) > v_1(x)$ for any $x \in V_1$.

We begin by calculating $v_1(x)$ for $x \in V_1$. An allocation in V gives an equal payout to each member of some minimum winning coalition. A minimum winning coalition has exactly $(n + 1)/2$ members, so each member receives a payout of $2/(n + 1)$. Therefore, any allocation x in V_1 gives Player 1 a payout of $x_1 = 2/(n + 1)$. If all players play the discriminatory strategy, and $x \in V_1$ is the starting allocation, then x will be adopted every round of the game. Thus, the long term value of x to Player 1 is equal to $v_1(x) = x_1 + \delta x_1 + \delta^2 x_1 + \ldots = x_1/(1 - \delta)$, where δ is the discount factor. So:

$$v_1(x) = \frac{2}{(n+1)(1-\delta)} \text{ for } x \in V_1$$

We also note that if the starting allocation x is in V but not V_1, then x will be adopted every round regardless of what Player 1 does. Player 1 will get a payout of zero every round, and $v_1(x) = 0$.

Now we calculate the maximal value of $v'_1(y)$ under any alterative strategy.

Lemma 1: Let x be any allocation in V_1. Assume there exists some strategy profile s' and some $y \notin V_1$ such that $v'_1(y) > v_1(x)$. Then:

$$v'_1(y) = y'_1 + \frac{\delta}{n}(v'_1(y') + \frac{1}{2}(n-1)v'_1(y))$$

Where y' is Player 1's proposal under strategy s'.

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Proof of Lemma 1: We will compute the value $v'_1(y)$ by analyzing the subgame beginning with y. If y is the starting allocation, Player 1 gets an immediate payout of y_1. The subgame starting with allocation y can proceed in three ways:

(1) Player 1 is selected as the proposer (a $1/n$ chance). Then Player 1 will propose allocation y'. We can assume y' will be approved, because otherwise Player 1 would gain nothing from playing it. The continuation value to Player $1 = \delta v'_1(y')$.

(2) Some other Player i is selected as proposer (a chance of $(n + 1)/n$). Player i will propose an allocation x in V that gives Player i a non-zero payout. There are two possibilities:

(a) $x \in V_1$ (1/2 chance). Then Player 1 will vote against x, since by hypothesis y is better for him than x. So x will be voted down, and y will remain in effect. The continuation value to Player 1 is $\delta v'_1(y)$.

(b) $x \notin V_1$ (1/2 chance). Then x will be approved, since Player 1's vote is not required for its approval. Then, since x will be approved in every subsequent round as well, Player 1 will get a payout of 0 every round. The continuation value to Player 1 is 0.

Adding the continuation values to Player 1 from each of these outcomes, discounted by the probability of each outcome, gives the result in Lemma 1.

Lemma 2: Let $z = (1, 0, 0, \ldots, 0)$ denote the allocation under which Player 1 receives the entire dollar and all other players in the game receive 0. Let x be any allocation in V_1. If there exists y such that $v'_1(y) > v_1(x)$, then $v'_1(z) \geq v'_1(y)$.

Proof of Lemma 2: From Lemma 1 we know that $v'_1(y)$ depends only on y_1 (the payout to Player 1 under allocation y), and $v'_1(y')$ (the value of whatever proposal Player 1 makes if the existing allocation is y and he is selected as proposer). Obviously y_1 is maximized when $y = z$. It is also easy to see that $v'_1(y')$ is maximized when $y = z$. We know that $v'_1(y') \geq v'_1(y)$, or else Player 1 would not propose y'. Thus, $y' \notin V_1$, and a fortiori $y \notin V$. Therefore, a Player i who is playing the "discriminatory" strategy will vote for y' if $y'_i \geq y_i$. Obviously, this will always be the case if $y = z$. So if $y = z$, then y' will be adopted regardless of what it is, and Player 1 can choose the y' that gives him the highest payout. (We can see, of course, that if $y = z$ then $y' = z$ also). Thus, $v'_1(y)$ is maximized if $y = z$, so $v'_1(z) \geq v'_1(y)$.

Proof of Proposition 2: As described above, we need to show that, for any strategy s' that Player 1 might choose, and for any $y \notin V_1$, $x \in V_1$, we must have $v_1(x) \geq v'_1(y)$. From Lemma 2, we know

that the value of y is maximized if $y = z$. Thus, it is sufficient to show that $v_1(x) \geq v'_1(z)$. We can compute the minimal value of $v'_1(z)$ from the formula in Lemma 1, since we know $z_1 = 1$ and $v'_1(z)$ is maximized when Player 1's strategy is always to propose z.

$$v'_1(z) = z_1 + \frac{\delta}{n}\left(v'_1(z) + \frac{1}{2}(n-1)v'_1(z)\right) = 1 + \delta\frac{n+1}{2n}v'_1(z)$$

Thus, $v'_1(z)$ is just equal to a payout stream discounted by the factor $\delta(n+1)/2n$, so:

$$v'_1(z) = \frac{1}{1 - \delta\dfrac{n+1}{2n}}$$

From the above, we know:

$$v(x) = \frac{2}{(n+1)(1-\delta)}$$

Solving for δ, we find that $v_1(x) \geq v'_1(z)$ whenever $\delta \geq n/(n+1)$.

Obviously, this result becomes less meaningful as the number of players in the game becomes large. For example, in the case of the three-person game, the discriminatory strategy is stable whenever $\delta \geq 3/4$. However, as n gets arbitrarily large, the discriminatory strategy appears to be unstable (or at least not stable for purely strategic reasons) unless δ is arbitrarily close to 1. As described in the body of this article, rent-seeking situations may be modeled as bargaining games in which the players are a small number of groups. For example, bargaining in the employment context can be modeled as a three-player game in which the players are the employer, majority employees, and minority employees. Therefore, this result provides meaningful insights into the dynamics of political bargaining situations.

In reality, as the number of players in the game becomes arbitrarily large, coalition-formation costs are likely to become a much more important factor than purely strategic considerations. For example, suppose that some minimum winning coalition currently exists and is dividing the pot equally among its members. Suppose further that Player 1 has the option of proposing some new allocation y supported by a different majority coalition. In the above proof, we assumed that Player 1 had the power to obtain the allocation (1, 0, 0, . . ., 0), under which Player 1 received the entire pot and the re-

maining players received 0. In reality, Player 1 is unlikely to achieve anything close to this, particularly when the number of players is large, because other players are likely to demand at least some minimum payment in order to compensate them for the time and cost of bargaining and for the opportunity cost of giving up the pursuit of other outcomes. This will reduce the value of opportunistic renegotiation and make coalitions more stable once they are formed. In particular, coalition-formation costs can make the discriminatory strategy stable at lower discount factors than indicated above.

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