

WHY DO PEOPLE DISCRIMINATE?

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Introduction

There are several possible explanations for racial and ethnic discrimination: one is sheer irrationality (and on this neither economists nor other social scientists have anything to say), another is exploitation, still another the desire to limit competition. Probably a widely accepted explanation among economists is that discrimination today in the U.S. can be explained by the scarcity of information on the characteristics of individuals. Then, a substitute channel of communication (color, sex, or race) is used to ascribe to each individual in a certain group the characteristics of that group, and thus prejudice or discrimination results.¹

The information cost to which economists have referred in various studies is the cost of making individual distinctions (within racial, ethnic or sex groups) concerning characteristics like manners, taste, education, work habits and so forth.² The purpose of this study is to present one general model which explains the meaning of discrimination against Jews, against blacks, or against women. The model shows the exact meaning of exploitation, limiting competition, and the nature of information costs. In both the theoretical and empirical sections I concentrate the discussion on discrimination which comes as a result of high information costs to discover an individual's intentions. It would be misleading to confuse these costs with the costs involved in discovering already existing information. Unless we have professional mind-readers, there is no policy that can be advocated for eliminating discrimination which stems from this source. Moreover, the empirical evidence shows that the worst symptoms of discrimination always occurred when governments intervened. The evidence also suggests that the best policy for improving the economic situation

of once-discriminated against groups in an economy where there is no major government intervention is to let the market work.

In the first section the model (which is an application of the Prisoner's Dilemma) and its implications are discussed. It is emphasized that the taste for discrimination is an outcome of rational utility maximization against groups which are relatively more mobile. The second section presents the empirical evidence which supports the predictions of the model, and this evidence concentrates on mobile groups. The third section briefly presents the application of the model for blacks and women, and the conclusions follow.

I. Discrimination and the
Prisoner's Dilemma

One well-known game in game theory is the Prisoner's Dilemma. This is a two person, non-zero-sum game characterized by the following payoff matrix:³

$$(1) \quad \begin{array}{cc} & \begin{array}{cc} \text{Prisoner 2} \\ \beta_1 & \beta_2 \end{array} \\ \begin{array}{c} \text{Prisoner 1} \\ \alpha_1 \\ \alpha_2 \end{array} & \left[\begin{array}{cc} (5, 5) & (-4, 6) \\ (6, -4) & (-3, -3) \end{array} \right] \end{array}$$

The lines and columns represent the payoffs for the two strategies $\alpha_i, \beta_i, i = 1, 2$ that each prisoner may choose.⁴ The conditions of the game are that each player chooses his strategy without knowing what strategy will be chosen by the other player. It can then be shown that the outcomes of rational utility maximization are the strategies α_2, β_2 , or the payoff $(-3, -3)$.⁵ Thus, since no prisoner trusts the other, both lose. But if we assume that this game is expected to be played many times in the future, then Luce and Raiffa [1966] show that if: (a) the discount rate of future games is not too small (so that the sum of the expected payoffs converges or (b) the repeat probability of facing the same game in the future is not too small, or (c) the conditional probability of exactly facing "n" more trials to occur, given that "k" have already occurred, is independent of "k," then the equilibrium pair is the repeated use of the first strategies of both players, i.e. the players behave as if they trust one another, and the outcome of the game is then (5, 5).

Luce and Raiffa, however, also note that there is an alternative strategy for this supergame: for one player it is profitable to play initially as if he does not know the long-run equilibrium of the game, and let the opponent teach him. In this way, the "dumb" player can temporarily obtain the benefits of playing the second strategy while the other is playing the first strategy.

This becomes particularly tempting when the payoff matrix is:⁷

$$(2) \quad \begin{bmatrix} (5, 5) & (-50, 50) \\ (50, -50) & (-3, -3) \end{bmatrix}$$

Again, in the long run the conversion of the game is to the first strategies, when the aforementioned conditions of the repeated game are fulfilled.

The empirical phenomena that I shall try to explain with this game requires exact specification of its assumptions. The game refers to situations where one player faces information costs when discovering the strategy (or the intent) chosen by the other. Thus, this game cannot be applied to either the game between a buyer and a seller in perfect competition or in a monopolistic market. For, by definition, these two markets are characterized by perfect information on price and other qualities of the goods exchanged. Thus there is only one strategy chosen by the seller. Markets which can be characterized by this game are those where the ability of one prisoner, the buyer of the service, to evaluate the quality of the service he buys is limited without additional costly information. Medical services, auto repair, non-mechanized jobs, political and military appointments, or jobs where the employee's performance is hard to be assessed are some examples which fit the game.⁸ Another meaning of the limited amount of information is that if one participant is known to be a member of a relatively more mobile group, the other participant has limited information on this individual's intentions. Therefore he does not know whether one transaction or repeated transactions will be carried out in the future, and I shall return to this point below.

The payoff matrix can thus be interpreted:⁹ both the buyer and the seller know that the quality of the good or service exchanged cannot be assessed without additional costly information. Suppose that the two strategies open to the seller are either to produce a high or a low quality good. The strategy

chosen by the buyer is to pay a price P_1 for a high quality and P_0 for a low quality good or service. The outcome (5, 5) means that the high quality good was produced and purchased at the price P_1 . (6, -4) means that the buyer paid P_1 for a low quality good, and since producing a low quality good is cheaper, "6" is the outcome for the seller and "-4" for the buyer. (-4, 6) means that the high quality good was produced, but the price P_0 was paid. The outcome (-3, -3) means that a low quality good was produced and paid for. That this is the equilibrium when both sides maximize their utility, expecting the game to be played only once, is clear: since both the buyer and the seller are rational, i.e. they know the game, they take its consequences into consideration. The seller's incentive to sell the low quality good for a high price to a customer with whom no repeated transactions are expected is greater than if future transactions were expected.¹⁰ But the buyer, knowing the game, expects this strategy and he is therefore willing to pay P_0 only. The seller knows that this will be his buyer's strategy, and so the (-3, -3) outcome is the stable equilibrium in the market when the game is only expected to be played once.¹¹ In particular, this is the expected outcome when the seller of the service is relatively more mobile, and the other participant does not expect repeated transactions in the future. The information costs in this case refer to discovering the intentions of market participants, whether they intend to carry out future transactions or not.¹²

However, knowing the supergame implies that there are incentives in the market to arrive at the (5, 5) solution which would make both the buyer and the seller better off. There are various strategies the sellers may play which permit this outcome: (a) to sign long-term contracts;¹³ (b) to enter into impersonal markets (i.e. markets in perfect competition), and (c) to live in cities where anonymity is cheaper.¹⁴ For, a

group which is expected to be relatively more mobile is expected to have (as mentioned above) a one-play orientation in contrast to the rest of the population. The buyer in our game has some information on the identity of the seller (his sex, race, or religion) although he does not have information on his intentions. This leads to efficient discrimination against members of mobile groups. But the mobile group knowing the game has the incentive to enter impersonal markets and avoid the (-3, -3) outcome. Impersonal markets are those where the identity of the producer is unknown, and all the information on the quality of the good is provided through the price mechanism. We would then expect mobile minorities to be concentrated in perfectly competitive markets and thus eliminate from the market the one-play optimal strategy. These same reasons leads to their preference for living in cities, where the concealment of information is cheaper.

It follows that the incentives of mobile minorities (or discriminated ones) to concentrate as entrepreneurs in perfectly competitive markets are greater than for the rest of the population. Also, these groups will avoid markets characterized by a one-play orientation, like the military or politics,¹⁵ since in these markets they do not expect to achieve the long run (5, 5) outcome. These arguments also imply that discrimination and nepotism (i.e. trade based on personal relationships) are two sides of the same model and both prejudices save on exactly the same type of information costs.¹⁶ They are both efficient and they substitute for the costs of using the price mechanism in discovering the qualities of the goods and services in the markets. Only when the full price of getting the commodity through the price mechanism (the full price being the price of the good plus the value of time spent searching) is lower than the full price of getting the same commodity through personal acquaintance with the seller, will these prejudices disappear. The prediction that this

argument makes is that the discriminated groups have greater incentives to innovate¹⁷ than do the rest of the population: while members of the discriminated group may achieve the (5, 5) outcome only through the price mechanism, the rest of the population achieves it through personal acquaintance (call it "trust").¹⁸

The incentives to enter into a long-term contract, or the amount of "trust" in the market also depends on expectations as to the variability of relative prices in the economy. Changes in relative prices change the payoff matrix. When changes in relative prices are perceived to be permanent rather than temporary, each game is expected to be played only once. In such conditions the incentives either to enter into a long-term contract or to trust other people decreases.¹⁹ On the other hand, if stationary conditions are expected, i.e. fluctuations in relative prices are perceived to be temporary, greater incentives exist to enter into a long-term contract.²⁰ This argument also implies that when the majority faces stationary conditions the mobile minority will be discriminated against more than during periods when circumstances start to change (i.e. periods where the payoff matrix is expected to change). Members of the minority have greater experience and skill in dealing with changing circumstances, which as shown above in particular implies their better understanding of markets. Thus, the value of their skills was relatively low in stationary conditions, but it increases when the majority also starts to face a changing payoff matrix.

In other words, in stationary conditions the relatively mobile minority is accused of playing a different game than the majority is playing in having a single-play orientation. Whether the minority is actually playing a different game is another question: if they expect to be mobile, they probably do

play a different game. But if the mobile minority intends now to settle down, then it plays the same game the majority is playing by producing high quality goods and services. But if the majority does not believe them, and playing "dumb" by letting the minority teach them can be rational in the short run (see the second payoff matrix), the (6, -4) outcome, "-4" for the minority, results in the short run in stationary conditions.²¹ Two conclusions follow from these arguments: (a) whether the group is actually discriminated against or not is difficult to determine since it depends on the groups intentions; (b) all the aforementioned analysis applies only when the choice of the short run and the long run strategies is given to both participants. I shall later analyze the case where some strategies are forced on one of the players.

In addition to the lack of trust of mobile people, their concentration in perfectly competitive markets, in innovative activities and in cities, the simple game and the supergame make the following predictions as to the topic of discrimination:²² (a) during changing circumstances the majority's taste for discrimination against mobile groups should decrease, in comparison to what it is in stationary conditions; (b) a smaller discrimination against mobile groups should be found in countries where the population as a whole is relatively more mobile.

It is worth pointing out that the model presented here, while having some general implications for many minorities, also shows why the majority's reaction toward various minorities was different. If the payoff matrix is (2) rather than (1) (referring to monetary payoffs rather than utilities, or assuming that utility functions are linear in money transfers), the majority has greater incentive in the short run to force the second strategy on the minority. This happens when either the minority is wealthier, or has emigrated in relatively great numbers. In the first case the majority may confiscate the

physical wealth, in the second it may restrict competition through minimum wage legislation.²³ In all these situations the (6, -4) or the (50, -50) outcomes result in the short run. Another interpretation given to these outcomes is this: if production is based on mechanical, low quality jobs where performance can be easily judged and enforced, the majority has greater incentive to force the second strategy on the minority, and exploitation or slavery result. Notice that the benefits of forced compliance depend on the nature of the production function. When the production function changes and the work requires initiative, the expected payoff matrix changes (in particular the enforcement cost change), and exploitation or slavery become less profitable.²⁴ Also, if the payoff matrix is (2) rather than (1) the majority may be allowed to teach the minority the rules of the game, by which strategy the minority can receive the transfer "50" from the majority and only later converging to the (5, 5) long run equilibrium.²⁵ This happens when either the majority is wealthier and has some guilt feelings, or through the political market. The empirical evidence in the later sections shows how these processes take place. Also, the minority's reaction to the game depends on their initial conditions: their culture, education, number and so forth. A group with a higher level of education will realize more quickly than a less-educated group that entering perfectly competitive markets allows the (5, 5) outcome of the long run. This requires, of course, a thorough understanding of the market mechanism, a skill which like any other must be learned.

The implications of these arguments are confronted in the next section with the empirical evidence on Jews, Parsees, Palestinians, Japanese Americans, Gypsies, and other relatively mobile and discriminated against groups. How the discrimination against Blacks as slaves fits into this model was indicated above and I shall deal with it briefly in the third section. I also show there how the discrimination against women fits this model.

II. Discrimination against Mobile Groups

Mobility became relatively cheaper for several groups due to historical reasons, e.g. family ties or legal restrictions. By legal restriction I refer here only to acts which were promulgated before the groups were actually perceived as mobile. If my hypothesis is correct then it can be expected that these groups will be and less trusted, and socially or otherwise discriminated against.²⁶ The Jews, the Parsees, the Armenians, the Gypsies, the Chinese merchants in Indonesia and Southeast Asia, the Indian merchants in Africa, and so forth, are the groups which come immediately to mind. These groups were relatively more mobile and were discriminated against socially, in the market and harassed mainly through the government. In order to show the usefulness of the analysis I concentrate the discussion first on two groups, Palestinians and Japanese Americans, which are not in general associated with the previous examples of mobile groups.²⁷ Since their experiences are relatively recent and relatively well-documented the causation--mobility/discrimination--can be seen more clearly. For the rest of the groups one may argue that an exogenous taste for discrimination exists, and the mobility is a result, rather than a cause.

Several legal restrictions were imposed on the Palestinians in 1948 by the host Arab countries. Initially, the purpose of these restrictions was not to discriminate against the Palestinians, but rather caused by the perception of their condition as temporary and expectations of their imminent return to Palestine. But since these expectations were not fulfilled, and the initial constraints were unchanged, their effect was to make mobility (here to leave the host Arab countries) cheaper for them than for the rest of the population. The adaptation process: acquiring education in easily transferable professions, concentrating in vocations in which self-employment is more feasible and so forth, is documented in Brenner and Kiefer (1980). Thus, instead of settling for the

(-3, -3) solution, i.e. staying in camps or within the restrictions imposed by the Arab governments, members of this group responded rationally by trying to achieve the (5, 5) solution of the long run.

Today, thirty years later, aside from the initial legal constraints, Palestinians face new ones strikingly similar to those faced by Jews in various European countries or by Japanese Americans in the U.S. In all the Arab countries they are either excluded from the army or excluded from major roles in the nation's defense.²⁸ In Kuwait, where Palestinians are 25% of the population, there is a "numerus clausus" giving them 10% of the places in the universities, although out of the top 50 high school students 48 are Palestinians. Also, Palestinians are not allowed either to buy shares in Kuwaiti companies, purchase property or open stores without a Kuwaiti partner, and cannot vote in Kuwaiti unions. In Jordan, although they hold citizenship and constitute 50% of the population, they are excluded from important roles in the army. In Abu Dhabi they are kept out of the armed forces and police.²⁹ In addition, they also face social discrimination, opposition to marriage with someone who may be "here today, gone tomorrow," contempt for landless people, and so forth.³⁰

The model points out the reasons for these particular restrictions: since Palestinians are more mobile than the rest of the population they are less trusted. In particular, mobile people are expected to be less patriotic.³¹ If members of these groups intend to enlist in the army and since those in the military often have a single play orientation, the model predicts that the non-mobile population will be suspicious of the mobile groups' intentions. The reason is that a member of the mobile group is perceived to have two strategies: either to be a good soldier or to be a saboteur, a spy. Since the intentions of individuals cannot be discovered cheaply through the market, the exclusion of these groups from the military is a substitute for the (-3, -3) expected equilibrium.

(changing at the same time the expected payoff matrix). The (-3, -3) outcome is expected if a private army exists: since members of the mobile group are less trusted they would receive lower wages than similarly qualified citizens (thus discrimination, although efficient, would result).³² One difference between the two outcomes, one being legally excluded and the other resulting from the price mechanism, is that through the latter the mobile group could disclose its intentions more efficiently. For example, if its members enlisted in the army and fought decently they could signal more about their patriotism to the population than they could by being excluded.³³

A similar argument holds for the "numerus clausus" restriction. Since education in the Arab countries is subsidized a disproportionate representation of Palestinians in educational institutions will be perceived as a waste of the taxpayer's money. Thus, some restriction on the Palestinians' education is demanded by the majority. If there was a private market in education the restriction would appear through the price mechanism, education costing more when the Palestinians increase their demand for it. But when education is subsidized the local population's demand is directed toward the government, and the restriction against Palestinians is achieved through the political mechanism. This argument does not imply that a "numerus clausus" restriction should result: a payment for education demanded only from Palestinians would be more efficient. That "numerus clausus" was introduced can be explained either by the fact that governments, like people, learn by imitation and these restrictions were imposed in the past on mobile groups, or that Arab governments, like many others, are not in particular concerned about efficiency.³⁴

For education, as for the military, the price mechanism would be more efficient than arbitrary restrictions. The "numerus clausus" changes the Palestinians' intentions (i.e. the expected payoff matrix changes) and either

increases the probability of immigration or increases the group's cost of signalling their intentions, should they decide to remain within the nation.³⁵ The sequence of events described here emphasizes then the causation: mobility to discrimination (rather than the other way around), while the government's harassment shows why discrimination through the political mechanism leads to greater mobility. To further support my hypothesis, I turn now to the case of the Japanese Americans.

Today, the Nisei are the most successful non-white immigrant group in America, whether success is measured by income, education or the low rates of crime, illness, or other measures.³⁶ When they first came to the U.S., however, at the end of the nineteenth century and continuing through the beginning of the twentieth, they worked at hard and menial jobs and were paid lower wages than native Americans.³⁷ At the beginning of the twentieth century, when their income started to increase relative to other groups, various restrictions--legislation barring them from a number of professional and white-collar occupations which required licensing, from access to agricultural land (an important factor in the Pacific Coast where they settled) and other discriminatory practices--were imposed on them.³⁸ Moreover, they were denied citizenship in the early twentieth century. While part of the restrictions the Nisei faced were similar to those other waves of immigrants experienced and can be explained by attempts to restrict competition (i.e. the (6, -4) outcome of the short run), these restrictions are not typical of other groups. Following my hypothesis I have looked at the return migration of Japanese to their homeland. The data shows that the Japanese American had the largest return migration in the early decades of their life in America.³⁹ This greater mobility, together with their relative success in wars at the beginning of this century explain why this group was more discriminated against.⁴⁰ In terms of the model, the Japanese Americans' condition

fitted the second type of payoff matrix and the (50, -50) outcome: by being viewed as aggressive competitors their restriction allowed in the short run a greater monetary transfer to the rest of the population. If, in addition, they were perceived as posing a security threat, we may interpret the payoff matrix in terms of utility or security.⁴¹ The internment of the Nisei during World War II and the confiscation of their wealth (but not that of Germans, Italians, or the Japanese Americans in Hawaii, where they had lived for generations) stems from these same reasons. Once, however, the Japanese succeeded in persuading the rest of the population of their patriotism by being one of the most decorated combat units in Europe and by other signals of loyalty, the discrimination against them vanished.⁴²

This evidence on both Palestinians and Japanese Americans, as well as the taste for discrimination against other mobile groups earlier mentioned, support the first prediction of the model, that the taste for discrimination is a rational response of relatively less mobile groups to more mobile ones.

The second prediction of the model refers to the disproportionate representation of discriminated minorities (in particular those who are mobile) in markets characterized by perfect competition, and in innovative activities. These consequences stem from the greater incentives these groups have to achieve the long run (5, 5) outcome through the market. Before presenting the empirical evidence it is useful to give an answer to the frequently-asked question, "Why can't the others do it?", a question referring to the success of some discriminated against minorities in contrast to others. The model and the following empirical evidence provide one answer.

The meaning of slavery in terms of the model is the forced (6, -4) (or (50, -50)) outcome. To achieve the (5, 5) equilibrium of the long run, the strategy of entering markets in perfect competition must be feasible. When the

minority is kept ignorant, it may be either unaware of the existence of such a strategy or, having no expectation of using it, does not develop the appropriate skills. Formally the meaning of this statement is this: let P_i be the cost of investing in developing a skill and U_i be the marginal benefit. Then the marginal conditions are $U_i - P_i = \mu_i$, for all i , where μ_i is an error term. The difference between actual and expected benefits depends on the dispersion in the anticipated errors μ_i . This dispersion can be divided into two parts: one that results from the knowledge that estimates (of expected benefits, for example) are imperfect because of ignorance, and one that results from purely random fluctuations.⁴³ The first type of error indicates how much is profitable to invest in information. The second type of error, however, is not subject to control and we may assume that for slaves in America the harassment by their masters or by the government which determined their well-being was not subject to their control.⁴⁴ The long run strategy of entering perfectly competitive markets being closed to them, the slaves had no incentive to develop skills in dealing with market activities, and being kept ignorant they could not perceive the various strategies that could be played. The difference between the economic structure of West Indian blacks and blacks in America shows the implications of this situation and provides one answer to the question asked above.

The West Indian blacks are disproportionately represented among black professionals; their education and income are higher than those of Afro-Americans, and their rate of involvement in crime is lower.⁴⁵ Their history of slavery seems at first sight similar to that experienced by other blacks. There are, however, two differences: the West Indian blacks were allowed to grow most of their own food on land and time set aside for this purpose, in contrast to blacks on American plantations, who were either given food by the owners or supplied through the market.⁴⁶ It can then be assumed that since they were also allowed

to sell their surpluses (so their well-being depended partly on their effort), West Indian blacks acquired greater skills related to market activities. Also, escape and survival were more feasible in the West Indies than in America, because of blacks being 90% of the population and the geographical pattern.⁴⁷ These differences imply that we would expect West Indian blacks to possess a greater stock of skill in dealing with the market, and in particular to be more aware of the various strategies that could be played. But, while the development of these abilities was profitable and feasible for West Indian blacks, whose well-being was in part under their own control, it was not profitable for the blacks brought to America, for whom the expected randomness in their well-being was entirely exogenous, subject to their owners' mood or the government's legislation. Thus, the initial skills as well as the nature of expectations that different groups had imply that variations in the reactions of different discriminated groups may result. Just being discriminated against is not sufficient to have greater incentive to become entrepreneurs: in addition, the discriminated group should view the strategy of achieving the (5, 5) long-run equilibrium through competitive markets as being feasible to them.

The concentration of Jews in innovative activities and as entrepreneurs was frequently noted in the literature. This model shows why this was more profitable for Jews than for the rest of the population: they had a greater incentive to innovate and to be entrepreneurs in perfectly competitive markets.⁴⁸ The recognition that these two strategies in the long run permit the efficient (5, 5) solution implies that the demand of these groups for education (a precondition for being both innovators and entrepreneurs) will be greater than that of the rest of the population. The higher level of education, the disproportionate participation in perfectly competitive markets and as entrepreneurs among Jews, Parsees, and Palestinians were documented in detail in two recent

researches.⁴⁹ The higher level of education of Japanese Americans and of West Indian blacks relative to groups which had been similar before facing some particular patterns of discrimination was already mentioned.⁵⁰ Also, the prediction of the model that these groups would be concentrated in cities is supported by the empirical evidence: 96% of the Jews in the U.S. and similar proportions in Western Europe, as well as 100% of the Parsees lived in cities.⁵¹ Unfortunately no data could be found on the other groups.

An observation on the sequence of events of one more group should be noted: the Scotch during the seventeenth and eighteenth centuries. While in the seventeenth century the Scotch were absent from the leading European intellectual activity and the mass of Scottish people were "illiterate and so lacking in culture that [they] were regarded by many as hopelessly savage",⁵² a century later they had better schools and a higher rate of literacy than the English.⁵³ The Scotch were a minority, and a discriminated one: Adam Smith complained to the Oxford administration about continuing discrimination against Scottish students, while James Mill tried hard to conceal his Scottish origin.⁵⁴ This additional evidence is thus similar to that previously given, and shows that where the majority leaves the long run strategy open to the discriminated group they achieve the (5, 5) type outcome of the long run in a relatively short period of time--and without government intervention. I shall return in the last section to discuss briefly the role of government; meanwhile notice that all the groups mentioned in these sections, Jews, Japanese Americans, Parsees, Scots, and those mentioned in the next paragraph succeeded without any aid from government.⁵⁵

The prediction of the model as to the disproportionate number of entrepreneurs among discriminated groups refers also to groups being discriminated against for reasons other than greater mobility (religion, for example).⁵⁶ A study by Hagen [1975] shows that in the 17th and 18th centuries, French economic

innovation was correlated with the Huguenots, a discriminated minority which was ultimately thrown out of France. In the English Industrial Revolution the Protestant Dissenters provided ten times as many innovating entrepreneurs than the Anglicans: 43% of the entrepreneurs were Protestant Dissenters, who were only 7% of the population.⁵⁷ A detailed study of Colombia showed that the Antioqueños, a socially (but not legally) discriminated group, provided a disproportionate number of entrepreneurs (70% of the total number, while their number in the population was 40%). This in spite of the fact that they had previous to this period lower incomes and lower levels of formal education than the rest of the population.⁵⁸ This same evidence was found in Japan: following the restoration of 1868, the organization of Japan was in great measure the work of samurai of the lower grade, who were discriminated against.⁵⁹

The timing of the success of these groups supports the additional prediction of my hypothesis: they all occurred when the economies in which the minorities were discriminated against began to face changing circumstances, i.e. the expected payoff matrix changed and also the majority began to have a one play orientation. Thus, the use of the price mechanism to provide information rather than personal acquaintance with the seller became cheaper. As the discriminated minorities had greater experience than the rest of the population in market activities, their income during such periods increased relative to the rest of the population, and their legal status changed. Jews concentrated in commerce even during the Medieval Ages but their skill in understanding the market only acquired a greater value in the seventeenth and eighteenth centuries, with the rise of mercantilism in Western Europe. It is during this period that their income rose relative to that of the rest of the population and their legal status changed. Sachar [1977] writes: "[I]t was inevitable that Christian Europe should begin to view its Jews in a completely new light. Here was a people

who understood commerce, a people uninhibited by feudal ties of ecclesiastical traditions" (p. 37). Kahan [1978a] describes the same process later in Russia, arguing that although Jews were concentrated in trade "this change in economic conditions, the new technological possibilities...made it possible for [Jews] to embark upon entrepreneurial activities " (pp. 18-20). The rise of Parsees in wealth and influence in India coincides with the arrival of the Europeans: while before the 17th century Parsees are mentioned as a caste whose traditional occupation was trade, later documents emphasize their increased wealth.⁶⁰ The success of Protestant Dissenters during the Industrial Revolution, of the Antioqueños at the turn of the 20th century (when an acceleration in growth rates occurred in Colombia), and of Jews in the U.S. during this century support the prediction of the model.⁶¹

III. Women, Blacks and the Idea of Discrimination

In order to show the generality of this application of the Prisoner's Dilemma to explain the taste for discrimination, I apply it now briefly to another group which claims to be discriminated against--women--and also repeat the meaning of slavery and the conditions which were necessary to sustain it. Then the idea of discrimination, in general, is shortly discussed.

Let the two players of the game be the employer and the employee. The information that the employer has on his employees are their qualifications but not their intentions, which include the length of time they expect to work. Both the employer and the employee are rational; they both know the game and take its consequences into consideration. When the game is only expected to be played once, the employee knows that his employer will be unable to measure his productivity (or effort) and, expecting to be fired, he responds rationally by making a small effort. The employer also knows what human nature is, and thus pays the appropriate wage. Of course, knowing the game and its consequences implies that there are incentives to enter into long term contracts⁶² which permit the (5, 5) outcome. The application of this argument for women is now straightforward: women have a greater job turnover than men.⁶³ Since the employer cannot discover cheaply the intentions of each individual, he expects a lower effort from women than from men, and invests less in specific training for women. We would therefore expect women to receive lower wages than equally qualified men. The right of "equal pay for equal jobs" is meaningless unless the term "equal" also applies to the expected length of time various groups are expected to stay at one job.⁶⁴

The meaning of slavery in this model was discussed in the two previous sections. In order for the outcome (6, -4) to be feasible and profitable

several conditions must be fulfilled: (a) the range of work that can be performed is limited by costs of enforcement, both for surveillance at work and for guarding against escape; (b) the work requires no individual initiative, trust, or dispersion of the work force; (c) if slaves are a substantial proportion of the population, posing a potential threat, they must be kept ignorant. All these initial conditions were fulfilled in the South: agriculture was based on a one-crop, simply routine mass-scale method, and it was illegal to teach slaves to read and write.⁶⁵

There is one major point which should be emphasized: all the previous explanations for the incentives of one group to discriminate against another exists when a group is relatively more mobile or when the production functions are of such a nature (especially the production of information) that it is efficient either to enslave a group or to use a characteristic of a group as a source of information (like women having less attachment to their jobs). But the evidence shows that years after some groups have settled or the production functions have changed the taste for discrimination does not disappear. It is not my purpose here to enter into this question in detail, but it is useful to mention one reason for this phenomenon, and support it with some preliminary empirical evidence. Whenever a group is discriminated against, ideas appear in the market which justify discrimination. Indeed, Coase [1974] argued that the market for ideas is not basically different from the market of goods: intellectuals whose trade is to sell ideas will produce those which are demanded. It is not surprising then that since the groups discussed in this study were different from the majority and it was profitable to discriminate against them (in the short run,⁶⁶ or when the sources of the difference were not understood), several theories were offered to justify discrimination, theories that claimed the inferiority of races, nations, or women. Where Jews were less mobile they were less

discriminated against, and the idea of anti-Semitism was less visible: Jews in India, China, the Sephardic Jews who lived for centuries in North Africa, were all less persecuted and more assimilated.⁶⁷ Sowell [1975] describes in detail the relationship between ideologies and economics with respect to the attitude toward racism in the South:

"The land most suitable for cotton production became the land where plantation slavery was most concentrated. In turn, the attitudes and ideologies of this region...were those providing the strongest justification for slavery in terms of the most degraded picture of the Negro race. Those parts of the South least adaptable...to plantation slave crops, were those in which racism did not achieve the same degree of fervor in word and deed. This is a difference not only between the Deep South and other parts of that region, but reflected even in more localized differences, as in the contrast between eastern North Carolina, where cotton plantations flourished, and western North Carolina, where few plantation slave crops were grown, and which became the center of the state's liberalism."⁶⁸

When people are growing up learning the ideas of racism, anti-Semitism from their parents, in schools and so forth, even if circumstances change and new information is provided in the market on their lack of accuracy, we do not know how long it takes for memories (just one form of human capital) to be erased. This may be one reason why the taste for discrimination once acquired will not immediately disappear when the conditions which led to their development start to change;⁶⁹ additional reasons are mentioned in the next section.

IV. Conclusions

A question which frequently rises with the problems discussed in this study is whether government intervention can improve the allocation of resources by intervening in issues related to discrimination. At least for the major symptoms of discrimination the answer is clear-cut: genocides and great pogroms were always initiated by governments. Although the groups discussed in this study were sometimes subject to violent threats and violent local outbursts, these outbursts never reached a major magnitude without the generous aid of the government. As to slavery, early American colonists opposed slavery, Virginia and Georgia passed laws prohibiting it, while South Carolina put increasingly heavy duties on the importation of slaves. These laws were nullified by the British government under the influence of special interest groups who profited from the slave trade.⁷⁰ Even in South Africa in the early twentieth century ethnic barriers eroded when black workers acquired skills to replace European workers. But once the government intervened, requiring quotas for European workers and finally through minimum-wage legislation, the trend was reversed.⁷¹ The recent events in Viet Nam, where the "Chinese" (it is enough that one grandfather be of Chinese origin) were thrown out of the country is consistent both with the predictions of the model and these conclusions.

As to the more minor symptoms of discrimination, the conclusion seems to be the same: when governments do not dominate the economy, their intervention cannot improve the allocation of resources but actually accomplishes the contrary. It was already pointed out that all the mobile minorities discussed here succeeded without the government's intervention,⁷² and in relatively short periods of time. Even when their wealth was confiscated (and later compensated 10¢ for \$1), the Japanese Americans succeeded in a short time to achieve incomes and educational structures similar to whites--without political support.⁷³ Sowell [1975] mentions

this phenomenon: "In the late nineteenth and early twentieth centuries, northern urban Negroes began to achieve a level of acceptance...prestigious black businesses serving white customers, housing integration even in Chicago... not to be reached again.... Yet they were achieved without campaigns, programs or 'moral leadership.' They were destroyed precisely when race became a public and political issue."⁷⁴ In terms of the model the meaning of the political mechanism is the enforced (6, -4) or the (50, -50) outcome instead of the efficient (5, 5), the transfer from one group to another being the sign of political success (albeit transitional and with unpredictable results).⁷⁵

When governments already regulate the economy the conclusions are different, and similar to those discussed when the "numerus clausus" type rules or restriction on participation in military forces Palestinians faced were described. For example, when profits are externally controlled, the opportunity cost of hiring members of discriminated groups (whose wages are lower than their productivity) is zero, making a taste for discrimination extremely cheap. It is thus not surprising that in 1963 Kiester reported that Jews were absent from public utilities and railroad industries.⁷⁶ The railroad industry, which is also tightly regulated by the ICC hired blacks only as porters for decades, while until the middle of the 19th century (before regulation) blacks dominated railroad occupations in the South, except for conductors. The telephone industry also had a low percentage of black employees, even in jobs which did not require skills.⁷⁷ Minimum-wage legislation leads to the same result: again, the opportunity cost for discriminating at this skill level becomes zero.⁷⁸ Therefore, once either of these legislations exist, another legislation will be demanded--quotas, "reverse discrimination" and so forth--in order to correct for the unexpected results of some initial interventions.⁷⁹

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Footnotes

¹Notice the meaning of discrimination: if someone finds fat people repulsive and avoids contact with them, he does not discriminate. But if he thinks that all fat people are lazy, he does discriminate. See Posner [1974].

²See Becker [1957], Arrow [1971], Phelps [1972] and Posner [1974].

³See Luce and Raiffa [1966], pp. 94-104.

⁴The numbers in the matrix may either indicate monetary payments or utilities, and the results of the game are unchanged. See Luce and Raiffa [1966], pp. 95-96.

⁵Later, an explanation is given for this outcome, applied to the situation investigated in this paper. For formal proof see Luce and Raiffa op. cit., and for various comments on this game and its solution see Davis [1973], ch. 5.

⁶For various applications of the single and the repeated game see Davis, op. cit., ch. 5.

⁷See footnote 4 on the meaning of the payoff matrix.

⁸Darby and Karni [] have analyzed some similar problems in another framework to shed light on the optimal amount of fraud in the market.

⁹For other interpretations see the works mentioned in footnotes 3 and 6.

¹⁰This argument is also made in Darby and Karni, op. cit.

¹¹This condition must not be confused with impersonal perfect competition, which shares the expectation that games are to be played once, since as already emphasized perfect competition does not fit this game. In these markets there is only one strategy chosen by the sellers.

¹²This simple model may explain why tourists are more frequently cheated. Also see Darby and Karni, op. cit.

¹³There are various forms this contract may take: service contracts promised on durable goods, leasing arrangements, extensive warranties, or more informal client relationships. Also see Darby and Karni, op. cit. The implication of this game for long-term contracts in the labor market are investigated in Brenner [1979d].

¹⁴Another implication of this same model is that if all the population is mobile, there are incentives to develop national chains. This is also the implication of Darby and Karni's model (op. cit.). Also notice that the less mobile population has less incentives to invest time getting acquainted with the mobile minority.

¹⁵In politics and the military, the participants are mainly interested in the forthcoming election or wars. See Luce and Raiffa, op. cit., p. 101.

¹⁶Goldberg [1978] argued that taking nepotism into consideration rather than discrimination leads to a more consistent model. This does not seem correct--both prejudices save on exactly the same type of information costs. Also, notice that long-term contracts may be viewed as a technological innovation saving on information costs.

¹⁷That is, to produce the same goods that the majority is producing, but at a lower price.

¹⁸Maybe it is not an accident of history that Adam Smith, who experienced discrimination as a student at Oxford, advocated the price mechanism in allocating resources and the benefits of perfect competition.

¹⁹For the relationship between long-term contracts and cyclical policy, and in particular inflation and productivity, see Brenner [1979 c].

²⁰For an application of this argument explaining the structure of market and some institutions of primitive societies see Brenner [1979b].

²¹In the long run, the minority will start to play the strategy enabling it to arrive at the (5, 5) outcome, entering perfectly competitive markets. Unfortunately, this model cannot tell us how long the short run is, i.e. how long it takes to persuade the majority that being mobile in the past does not mean being a "flying Dutchman."

²²Other implications as to the subject of inheritance, insurance in primitive societies and so forth are discussed in Brenner [1979b, 1979c].

²³Both steps can be carried out by collusion through the political market. However, if governments did not consider as being their role to reallocate resources in the economy, the enforcement of these steps would probably be impossible. If at the same time the long run strategies are left open, then concentration in perfectly competitive markets, greater mobility or greater aggressiveness as competitors may result. See the empirical evidence presented in the second section.

²⁴See Sowell [1975], chs. 1, 2; Conrad and Meyer [1958]; and Fogel and Engerman [1974].

²⁵Also this can be done through the political market.

²⁶Notice, this discrimination is efficient, which must not be confused with being "good," or "bad." See Posner [1974].

²⁷Becker [1957] does mention the discrimination against Japanese Americans. But his analysis is not concerned with the incentive to discriminate, but rather the implications of an already existing taste.

²⁸See the UNRWA reports for the restrictions imposed on Palestinians quoted in Brenner and Kiefer [1980].

²⁹See also footnote 21.

³⁰See Brenner and Kiefer [1980], and Ben Porath [1968]. Notice that these are all typical elements of discrimination against Jews and other minorities.

³¹It is not accidental that in a recent letter to the editor of the New York Review of Books we find: "Since the beginning of the year there has been a sharp rise in anti-Semitism in Spain. Growing anti-Semitism can be connected with the proliferation of extremist groups.... Meanwhile the heavy influx into the Spanish job market of highly skilled Latin American refugees--some of them Jewish--has also helped to revive Spanish xenophobia. ...[I]n June the respected liberal newspaper El Pais published an article suggesting that Spain's small number of Jews might eventually become a sinister force connected to the Rothschild financial empire [and] one caption read: Israel the real mother; Spain the adopted mother" (p. 53, August 16, 1969).

³²Or, what is equivalent, they would work in lower quality jobs.

³³And the actual outcome could be (5, 5) but it is the expected (-3, -3) that matters. Notice that also the price mechanism excludes members of the minority: if they are offered very low wages or if they are required to pay for the privilege of serving in the army, they would be less than proportionately represented in the army, unless they wanted to prove their loyalty.

³⁴These two examples show that when the government already plays a major role in the economy, additional regulations are needed to imitate the results of the price mechanism.

³⁵Making both the Palestinians and the rest of the population worse off.

³⁶See Kitano [1969], pp. 1, 2, 47-48; Sowell [1975], pp. 92-96.

³⁷See Sowell, op. cit. Notice that lower wages for new groups are a typical phenomenon. See Chyswick [1978].

³⁸See Light [1972], p. 9; Jones [1972], p. 265; and Sowell, op. cit.

³⁹The Italians also had a large return rate, but many of them came without their families and worked only in low paid jobs. Thus they can be viewed as playing just one strategy. In contrast, the Japanese were perceived as playing two strategies. See Sowell, op. cit., pp. 80-92, and p. 93. Also see footnote 31.

⁴⁰In addition, probably, to their relatively small number, which did not allow much political power.

⁴¹This was the period of the "yellow peril" hysteria. See Sowell, op. cit., p. 93.

⁴²See Sowell, op. cit., and notice that the Japanese were reimbursed 10 cents for \$1. After the war the discriminatory laws against Japanese Americans were abolished in a referendum in California, 1946.

⁴³See Welch [1978] and Brenner [1979a, b].

⁴⁴This also depends on the already emphasized nature of production functions. See footnote 24.

⁴⁵See Sowell, op. cit., pp. 96-102; Dr. A. Reid [1939], pp. 168-9, 227; Rosenthal [1967], pp. 610-11.

⁴⁶Sowell, op. cit., pp. 96-102.

⁴⁷Sowell, op. cit., pp. 96-102.

⁴⁸In general, in the literature on discrimination the concentration of discriminated minorities as employees in perfectly competitive industries was emphasized. Here their concentration as employers in these industries follows. See Becker [1957], Alchian and Kessel [1962], Brenner and Kiefer [1980] and Brenner [1979a].

⁴⁹See Brenner and Kiefer [1980] and Brenner [1979a]. In Brenner [1979a] the relationship between education and discrimination is emphasized, pointing out the role education plays in allowing a more efficient reallocation of resources.

⁵⁰To further support the view that the differences in economic structure are not due to religion or genetics the following evidence should be noted: the Sephardic Jews, who lived for centuries along the fringe of North Africa, were not as persecuted by the Moslems as their European counterparts were by Christians, and were more assimilated. They never produced the intellectual leaders European Jewish communities have produced, and today they claim to be a discriminated minority in Israel. See Sowell, op. cit., p. 216. For other examples, see Brenner [1979a].

⁵¹See Brenner [1979a] and Ellman [1970].

⁵²Sowell, op. cit., p. 217. Also see Leyburn [1962], pp. 20-21, 70-74, 320.

⁵³A list of intellectuals from 1750 to 1850 is already full of men of Scottish origin: David Hume, Adam Smith, T. R. Malthus, James Mill, John Stuart, Sir Walter Scott and so forth. (Other outstanding British intellectuals at that time were Edmund Burke, an Irish convert from Catholicism, and Disraeli). Also, Leyburn writes that even the ordinary farmer respected education and made sacrifices to get it for his children. See Sowell, op. cit., p. 217. Notice this same attitude of Palestinian parents in Brenner and Kiefer [1980].

⁵⁴See Sowell, op. cit., p. 218.

⁵⁵On the contrary, the U.S. government confiscated the Nisei wealth, and later they were reimbursed only 10 cents for \$1. But as Sowell writes, "The Japanese Americans did not put their...emphasis on getting justice, but rather on trying to go ahead" (p. 96). In other words, they relied on the price rather than the political mechanism, and as the evidence in this study indicates--with good reason. Notice, however, that this happened when the government's role in the economy was smaller.

⁵⁶The theory of the "marginal man" seems to be the most popular among sociological studies as an explanation for the discriminated group's success. See Hoselitz [1960], and for a summary of the various entrepreneurial theories, Brenner [1979a].

⁵⁷See Hagen [1975], pp. 268-299.

⁵⁸There were no differences in this case in religion. See Hagen, op. cit. In Hagen [1975] he writes: "Antioquia, which is paved with gold is the poorest and most miserable of all...until the end of the colonial period... observers were struck by the general backwardness, illiteracy and poverty of the province" (p. 205). Notice the similarity with the Scottish experience.

⁵⁹See Hagen [1975] and a summary in Brenner [1979a].

⁶⁰See detailed description in Brenner [1979a].

⁶¹See footnote 60.

⁶²Notice that risk aversion is not necessary to justify their existence. Long term contracts can simply be viewed as a technological innovation which saves information costs. See Brenner [1979c] on this subject.

⁶³See Phelps [] and Beth Niemi [1975]; Niemi investigates the macro implications of women having less specific training.

⁶⁴If in addition to this "right" the government introduces quotas and enforces them, two predictions can be made: (a) the productivity in the economy will decrease, and (b) since the enforcement costs must be paid, government expenditures will increase. If instead of these interventions the price system would be allowed to work, then if there really was a structural change in the participation of women, and they have now the same job attachment as men, firms would discover this change and offer the higher real wage. The two regulations would make sense only if a world where the government has more information on the intentions of people than the market has--a very unlikely possibility.

⁶⁵Elkins [1969], p. 60; Sowell, op. cit., chs. 1 and 2; and footnote 24

⁶⁶It is not accidental that anti-Semitism revived and grew stronger in the last quarter of the nineteenth century, coinciding with the new wave of emigration. It is simply a substitute for restricting competition.

⁶⁷Actually, the Jewish community in China disappeared by being assimilated. Also see footnote 50.

⁶⁸Pp. 29-30. Sowell explains by these same arguments the differences in the attitude toward slaves in Latin America, Cuba and so forth. Also the experience of the Japanese Americans in the text support this hypothesis.

⁶⁹A similar point is made in Stigler and Becker [1977] explaining tastes as various acquired consumption capitals.

⁷⁰See Sowell, op. cit., ch. 5; and Franklin [1969], p. 83. Once legislation is introduced and left unchanged, both the majority and the minority adapt to it, and play the most profitable strategies. This was the point made in the Palestinian example, and the previous section.

⁷¹See Sowell, op. cit., ch. 7; he writes: "Some indication of the strength of this trend [in the early twentieth century] is that the white supremacist governments had to threaten many firms and industries with various reprisals" (p. 186).

⁷²The Gypsies did not, but they always lived in very small groups so that in contrast to all the other mobile groups discussed, it was impossible to provide a sheltered market in which they could specialise as businessmen or professionals serving first their ethnic community. The ethnic groups in the U.S. all have started through ethnic markets. See Kahan [1978b]; Sowell, op. cit., ch. 5.

⁷³See footnote 36.

⁷⁴p. 192. Sowell also attributes the lack of success of Irish-Americans in comparison to Italians and Poles, who had similar backgrounds, to the fact that they relied on the political mechanism. See Sowell, op. cit., ch. 3 and ch. 9.

⁷⁵The problem is that the political market is often one-play oriented.

⁷⁶As quoted by Ellman [1970], p. 132.

⁷⁷Sowell, op. cit., pp. 166-167.

⁷⁸And this leads to the high percentage of unemployed black teenagers.

⁷⁹With some predictable high enforcement costs and some unpredictable outcomes.

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