# Groups, Social Influences and Inequality: A Memberships Theory Perspective on Poverty Traps

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## 1. Introduction

To live in Harlem is to dwell in the very bowels of the city; it is to pass a labyrinthine existence among streets that explode monotonously skyward with the spires and crosses of churches and clutter under foot with garbage and decay. Harlem is a ruin–many of its ordinary aspects (its crimes, its casual violence, its crumbling buildings with littered areaways, ill-smelling halls and vermin infested rooms) are indistinguishable from the distorted images that appear in dreams, and which, like muggers in a lonely hall, quiver in the waking mind with hidden and threatening significance.  Yet this is no dream but the reality of well over four hundred thousand Americans; a reality which for many defines and colors the world.  Overcrowded and exploited politically and economically, Harlem is the scene and symbol of the Negro's perpetual alienation in the land of their birth.

…this is a world in which the major energy of the imagination goes not into creating works of art, but to overcome the frustrations of social discrimination.  Not quite citizens and yet Americans, full of the tensions of modern man but regarded as primitives, Negro Americans are in desperate search of an identity. Rejecting the second-class status assigned to them, they feel alienated and search for answers to the questions: Who am I, Where am I, and Why?  Significantly, in Harlem the reply to the greeting "How are you?" is very often, "Oh man, I'm *nowhere*."

Ralph Ellison, 1948[1]

This essay is intended to describe a perspective on poverty traps in which persistence in economic status is generated by group-level influences on individuals.  What distinguishes this theory from other explanations of poverty is its emphasis on the role of social, as opposed to individual-level characteristics.  One way to see this contrast is in the context of models of intergenerational mobility. One body of research, due to Becker and Tomes (1979) and Loury (1981) explains persistence in relative economic status across generations via the effects of parental income on offspring education.  In these models, parents directly invest in their children's education, the level of which determines (along with random factors such as luck) the income of the next generation.  In such models, inequality is persistent across generations because lower income parents

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[1]From "Harlem is Nowhere," unpublished essay, reprinted in Ellison (1995); quotations take from pp. 295-297.

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invest less in education than their higher income counterparts. In contrast, models such as Bénabou (1993,1996), Durlauf (1996a,b), Fernandez and Rogerson (1997) consider the effects of residential neighborhood on education. In these models, a child's education is determined, at least in part, through factors such as school quality and by characteristics of others in the neighborhood in which he grows up. These interactions mean that relative economic status persists across generations when economic segregation exists. Poor families live in poor neighborhoods, which depress the future economic prospects of their offspring. Of course, individual and group level characteristics are themselves interdependent. Parental income influences this because it determines what neighborhood a child lives in. Nevertheless, individual and group level explanations of poverty have different implications both in terms of understanding the sources of poverty and inequality as well as in terms of the design of public policies.

Outside the confines of academia, the recognition that social factors play a fundamental role in the perpetuation of poverty is a very standard idea. Ralph Ellison is hardly unique in recognizing how space and community influence individual perceptions, aspirations and opportunities. The fact that this perspective has only recently become a key feature of economic reasoning should not be attributed to the insularity of economic reasoning but rather to the success of individual-based models of economic inequality, e.g. models that focus on human capital formation, to elucidate many aspects of income inequality. At the same time, the apparent imperviousness of poverty in places such as inner cities has provided the context in which this new perspective has developed.[2]

In previous work, Durlauf (1999,2001), I have described this perspective as the "memberships theory" of inequality and poverty since the compositions and behaviors of the groups of which a person is a member play such an important role in socioeconomic outcomes. As the neighborhood example illustrates, dynamic versions of these models (i.e. where the distribution of behaviors and outcomes at one point in time affects future distributions of behaviors and outcomes) can explain substantial immobility in economic status across generations. Formally speaking, poverty traps are the limits of such cases of economic immobility as poverty traps are nothing more than socioeconomic environments in which persistence in economic status is arbitrarily long. Hence any set of theories that explains persistent inequality would seem plausible candidates for understanding poverty traps. That being said, the memberships theory possesses features in which the limiting case of a poverty trap seems particularly natural. Why this is so and what implications the memberships theory perspective on poverty traps has for public policy are the subjects of my discussion.

This essay is organized as follows. Section 2 describes the memberships theory of poverty and relates it to the specific question of poverty traps. The role of social factors in individual outcomes, the idea that lies at the heart of the memberships theory, is expanded upon. The relationship between the theory and persistent racial inequality is also addressed. Section 3 discusses evidence in support of the memberships theory. This evidence is organized into three types: studies from history and social psychology that

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[2]As argued in Manski (2000), another reason this perspective has blossomed is the development of mathematical tools that allow for formal modeling of the substantive ideas at its foundations. See Blume and Durlauf (2001) for a discussion of some of these technical advances.

demonstrate the importance of the social factors on which the memberships theory is based, ethnographic studies, and formal statistical analyses. I also identify some important recent advances in empirical work that should prove to be important in assessing the theory. Section 4 considers the implications of a memberships perspective on poverty traps for policy evaluation. This section characterizes the sorts of antipoverty policies the theory seems to suggest and also considers how data analysis for policy evaluation should be conducted in this context. Section 5 provides conclusions.

## 2. The memberships theory of inequality

### Basic ideas

At an abstract level, the memberships theory of inequality is nothing more than an approach to understanding socioeconomic outcomes that focuses on the way in which various socioeconomic groupings affect individuals. Individuals, of course, can be categorized by any number of groupings. The basis of the memberships theory is that at least some of these memberships have powerful influences on individual outcomes.

In addition to a common perspective on the causal determinants of poverty and inequality, the various analyses that fall under the memberships theory embody new ways of understanding individual behavior. Many of these analyses explicitly attempt to integrate the richness of sociological and psychological perspectives with the formal logic and rigor of economics. To be clear, this work does not deviate from the underlying logic of neoclassical economic reasoning. In memberships models, agents make purposeful decisions based on their preferences, their beliefs about the consequences of alternative actions, and constraints that delimit those actions. What the memberships theory does is explore how groups influence preferences, beliefs, and constraints. Blume and Durlauf (2001) argue that the formal theory underlying these models has important implications for the integration of the different disciplines of social science into a unified framework.

As human beings can be categorized in an unlimited number of ways, an important issue in memberships models is the choice of what groups on which to focus. One would not want to argue that the fact that individuals can be identified into distinct grouping by eye color has the same socioeconomic importance as racial groups in understanding inequality. Two forms of groups have received particular attention: residential neighborhoods (Bénabou (1993,1996), Durlauf (1996a,b), Fernandez and Rogerson (1997), Hoff and Sen (2000), Glaeser, Sacerdote, and Scheinkman (1996)) and race (Loury (1977)[3], Lundberg and Startz (1998)). On the other hand, many of the models of group effects (eg. Brock and Durlauf (2001a,b)) have been developed at a sufficiently abstract level that they can be applied to any group whose interaction structure coincides with the social network structure of the environments under study.

In thinking about groups, it is useful to differentiate between those groups whose memberships are exogenously determined with respect to the phenomenon under study as

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[3]Loury (1977) is remarkable in its attention to issues that reemerged well over fifteen years later in the new memberships models.

opposed to those groups whose memberships are endogenously determined. For example, among the important sources of membership effects are gender and ethnic groups. Yet for purposes of understanding these effects, one naturally treats the memberships of these groups as fixed, i.e. exogenous. In contrast, individuals are strongly influenced by groups such as the residential neighborhood in which he grows up, the schools he attends and even the coworkers at his various jobs; in each of these cases the members of these groups are determined as part of the general processes that characterize the evolution of the economy and society. Such groups are best thought of as endogenous. One can even see how the effects that groups generate on their membership may, in the case of endogenous groups, strongly influence the group memberships. This distinction between exogenous and endogenous groups is important in that a complete memberships theory requires both an explanation of how groups form as well as what influences the groups exert on individuals. Thus a model demonstrating that residential neighborhoods have strong effects on the future economic prospects for children cannot explain poverty traps without explaining how children from rich and poor families are exposed to different neighborhoods.[4] Put differently, in the case of endogenous groups, the effects of these groups on individuals must be linked with an understanding of how these groups form. In particular, endogenous groups will generate persistent inequality when they are a manifestation of some form of segregation, so that different groups generate different influences on their members.

Memberships models have in fact addressed issues of social and economic segregation.[5] An important precursor to current models is work by Schelling (1971) on the emergence of segregated communities. Schelling's analysis asked how segregation

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[4]The distinction between exogenous and endogenous memberships may be criticized on the grounds that for exogenous groups, there is a question of why only certain groups are psychologically and socially salient. Eye color and skin color are both exogenous by my categorization, yet only one has any importance in US society. The salience of certain groups seems closely tied up with issues of personal identity. Further, there are good reasons to believe that group salience is malleable, or at least the ascriptions assigned to groups are changeable. One interesting example is the dislike of the "big, blonde, smelly barbarians" of the North" among citizens of the Roman Empire (Wells (1992) pg. 199), which contrasts with contemporary prejudices, though to be clear, Roman prejudices seem to be driven more by customs than physical characteristics (Sherwin-White (1970)). Frederickson (2002) further observes that modern forms of racism against those with dark skin were absent from Europe during the Middle Ages; indeed he argues that parts of Northern and Central Europe exhibited forms of "negrophilia" (Frederickson (2002), pg. 26). For these reasons, recent work by Akerlof and Kranton (2000) is potentially quite important.

[5]In terms of residential neighborhoods, see Massey and Denton (1993) and Jargorsky (1997) respectively for detailed descriptions of the persistently high levels of racial and economic segregation in the United States. Quillian (2002) is an important effort to establish why racial segregation is so persistent, concluding that the unwillingness of whites to move into nonwhite neighborhoods is a primary factor. This is an example of how intergroup interactions have important consequences, which is relevant to understanding racial inequality, an issue to which I will return below.

can emerge in environments in which the individual actors possess "mild" preferences to be in an ethnic majority in their communities. (If one assumes everyone wants segregation, there is really nothing to explain.)  Schelling showed how the sequential neighborhood choices of individuals, combined with such preferences, will lead to segregated outcomes, even if all individuals would ideally want to live in segregated communities.  More rigorous formulations of the Schelling model have been developed by Young (1998) among others, and the basic insight has proven to be robust.

Other memberships models have focused on how economic segregation can arise. Bénabou (1993,1996), Durlauf (1996a,b), Fernandez and Rogerson (1997) have all shown how local public finance and social interactions can lead to segregation of communities by income.  In these models, families prefer affluent neighbors due to their effects on the tax base as well as the role model influences that they produce.  This segregation is not necessarily socially efficient, as shown by Durlauf and Seshadri (2002), hence there is no implication that observed degrees of economic segregation are a corollary of mechanisms that maximize aggregate output or some other measure of economic success.

Within the economics and other social science literatures, a broad range of mechanisms linking group memberships to inequality have been studied. One source of these effects falls under the general category of local public goods provision.  Despite the existence of state and federal programs to assist less affluent school districts, the role of local public finance in education produces large disparities in educational expenditure across school districts; indeed Hussar and Sonnenberg (2001) and Murray, Evans, and Schwab (1998) document that large differences in per pupil expenditures persist across districts in the United States.[6]  While there is considerable controversy over the relationship between school expenditures and inequality, well summarized by the papers in Burtless (1996), there is little dispute that poorer neighborhoods are generally associated with lower quality schools; Kozol (1991) provides an impassioned ethnographic study that describes how schools in very poor districts are hurt by lack of resources.[7]  My own conclusion based on reading both the school expenditures/quality literature as well as ethnographies is that while a general relationship between school expenditures per capita and educational quality has proven hard to establish, schools in

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[6]Murray, Evans and Schwab (1998, pg. 799), find that the ratio of per pupil expenditures for the 95th percentile to the 5th percentile across US schools was 2.72 in 1972, 2.22 in 1982 and 2.40 in 1992. These authors also find that court mandated reduction of educational disparities within states have been efficacious.  Hussar and Sonnenberg (2001) find some overall reduction in expenditure disparities at the district level between 1980 and 1994, but caution that the decreases are not uniform across states and that large differences remain.

[7]An indirect source of evidence of this is Neal (1997) who shows how the benefits of Catholic schools are particularly high for students who would otherwise attend inner city schools.  It is reasonable to conjecture that the gap between public and Catholic schools in poor neighborhoods is especially large due to the poor quality of the public schools, not the unusually high quality of the Catholic ones in poor areas.  At a minimum, Neal's work indicates that there is something very wrong with schools in poor neighborhoods, which is all the memberships theory really needs to rely on.

poor communities probably do suffer because of lack of resources. Hence very poor neighborhoods affect children along this dimension.

Other sources of neighborhood effects are more sociological and/or psychological in nature and such effects fall under the rubric of social interactions. One example of social interactions is role model effects, in which the behavior of one individual in a group is influenced by the characteristics of and earlier behaviors of older members of the group. Another form of social interactions is peer group influences; these differ from role model effects because they refer to contemporaneous behavioral influences and so may be reciprocal. Role model and peer group influences are both usually understood to produce some sort of imitative behavior, either contemporaneous or across age cohorts. This imitative behavior may be due to 1) psychological factors, an intrinsic desire to behave like certain others, 2) interdependences in the constraints that individuals face, so that the costs of a given behavior depend on whether others due the same, or 3) interdependences in information transmission, so that the behavior of others alters the information on the effects of such behaviors available to a given individual.[8] Each of these types of imitative behavior implies that an individual, when assessing alternative behavioral choices, will find a given behavior relatively more desirable if others have or are behaving in the same way. Hence the relative desirability of staying in school is higher when adults in a community are college graduates or when one's peers are also staying in school.

This approach provides a formal analog to the important descriptive work that has been done by sociologists on group effects and persistent poverty. In this work, in which Wilson (1987) is probably the best known modern example, the role of the social isolation of the poor is given primary attention. Wilson (1987, pg. 60-61) writes

> The patterns of behavior that are associated with a life of casual work (tardiness and absenteeism) are quite different from those that accompany a life of regular or steady work (e.g., the habit of waking up early in the morning to a ringing alarm clock). In neighborhoods in which nearly every family has at least one person who is steadily employed, the norms and behavior patterns that emanate from a life of regularized employment become part of the community gestalt. On the other hand, in neighborhoods in which most families do not have a steady breadwinner, the norms and behavior patterns associated with steady work compete with those associated with casual or infrequent work.

While formal memberships theories are far from capturing the richness of studies such as this, they provide a way of understanding how in a social and economic equilibrium, these types of forces can perpetuate themselves and also, via their formal structure, ways of subjecting the primary assumptions that underlie more descriptive work to statistical evaluation.

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[8] Roemer and Wets (1995) and Streufert (2000) show how economic segregation can lead to inaccurate assessments of the economic payoff to education. The basic idea in this type of analysis is that by depriving children in poor neighborhoods of successful role models (which is a necessary consequence of economic segregation), inferences on the benefits to education are made biased.

**Memberships models and poverty traps**

Social interactions of the type embodied in role model and peer group effects can, when strong enough, produce poverty traps in particular contexts. To see the logic behind this claim, suppose that educational investment decisions exhibit strong role model influences, so that the decision to attend college for each high school graduate in a community is strongly (and positively) related to the percentage of college graduates among adults in a community. Such dependence creates the possibility that if one has two communities, one where the adults are all college graduates, and a second where none are, that these communities will converge to different levels of college attendance in a steady state. High and low college attendance rates are each reinforced across time as high (low) attendance rates among the current pool of adults lead to high (low) attendance rates among high school graduates, who in the future will influence the high school graduates to collectively exhibit high (low) rates as well. One way to think about a poverty trap is that a community, if initially comprised of poor members, will remain poor across long time periods, even generations. Intertemporal social interactions (i.e. social interactions in which choices made at one time affect others in the future) provide precisely this sort of dependence.

A related notion of a poverty trap may be identified when one thinks about peer group effects. When the behavior of one member of a group is sufficiently positively dependent on the behaviors of others, this creates a degree of freedom in behavior of the group as a whole. Contemporaneous dependences in behavior mean that the members of a group will behave similarly. At the same time, these effects, when sufficiently strong, mean that the characteristics of the individuals involved will not uniquely determine what the group actually does. Dependence on history, reactions to common influences, etc. may determine which sort of average behavior actually transpires. The key idea, however, is that strong contemporaneous dependences in behavior lead to multiple possibilities for self-reinforcing behavior in groups. Within a given behavioral configuration, each individual is acting "rationally" in the usual sense. That does not mean that each self-consistent configuration is equally desirable from the perspective of the members of the group. Another definition of a poverty trap is a socially undesirable (in the sense of producing poverty across a community) collection of behaviors in which the behaviors are mutually reinforcing and so individually rational.

The value of the formal structure of memberships theories can be seen in considering the conditions under which poverty traps occur. What does it mean for social interactions to be "strong" enough to produce poverty traps? One way to understand this is to ask when social interactions are irrelevant for poverty effects. Consider the question of why high school drop out rates are low in rich communities. One would want to argue that this occurs because rich communities fortuitously have achieved high rates of school completion that reinforce themselves across time. A better explanation is that the economic prospects of students in rich communities are such that they induce high rates of graduation regardless of the social interactions effects that are present. Notice that there is an asymmetry when one considers poor communities. Lesser economic prospects for graduates who reside in poor communities mean that a greater potential role exists for social interactions to produce low graduation rates. In theoretical work (Brock and

Durlauf (2001a,b)) this idea is formalized as it is shown that the possibility of multiple equilibria in average group outcomes depends in a complicated way on the interrelationship between private incentives and social influences. A basic implication of this work is that a given level (i.e. the strength) of social interactions can only produce a poverty trap when the private incentives to choices that avoid poverty are sufficiently weak. This interplay of private and social influences on behavior adds some nuance to conventional claims in public policy debates. Policy debates often seem to dichotomize between those who ascribe the persistence of ghettoes to lack of economic opportunity versus those who believe the explanation lies in a culture of poverty. Formal memberships models such as Brock and Durlauf (2001b) make clear that these are not separate explanations. Socially undesirable equilibria, which seem to correspond to culture of poverty claims, can only exist when economic opportunities are weak. Hence the two explanations are in reality complementary.

It is possible for social interaction effects to reinforce the effects of changes in private incentives. Suppose one is considering whether to provide college scholarships to randomly chosen students across a set of high schools versus concentrating the scholarships among students within a given school. If the objective of the program is to alter high school graduation rates, then the presence of social interactions can, other things equal, mean that the concentration of the scholarships will be more efficacious. Assuming the direct incentive effect of the scholarships is the same for students across schools, the advantage of concentrating the scholarships in one school is that they will induce social interaction effects that affect all students in the school, including those who have not been offered scholarships.[9] More generally, social interaction effects can amplify the effects of altering private incentives; this amplification is sometimes known as a "social multiplier" following Manski (1993). The presence of social multipliers has important implications for the design of policies that have yet to be explored.

While the memberships theory is hardly unique in its ability to produce poverty traps, there are several senses in which the theory makes poverty traps seem particularly plausible. Since poverty traps are so socially undesirable, an obvious question is how the individuals in the trap are precluded from escaping. In memberships models, the various group effects that induce the trap represent externalities, i.e. they constitute effects that because they are collective and lie outside the range of economic contracts, are not amenable to market or collective action solutions. There is no direct market by which good role models can be compensated for the social interactions effects they induce, nor is there any collective action mechanism to coordinate the behavior of peer influences. Instead, markets help facilitate the sorts of economic and social segregation that are necessary for poverty traps. Hence, the basic logic of memberships models suggests why poverty may be perpetuated over long time spans.

**Relationship to racial inequality**

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[9]This discussion is designed to provide intuition, not a formal argument. In order to formally demonstrate the differential effects between the two scholarship scenarios, some (not particularly interesting) auxiliary assumptions are necessary.

An additional important aspect of memberships theories is that they refocus attention to the role of race in persistent poverty in ways that move beyond the simplistic "persistence of discrimination" sorts of arguments that one finds in popular discussions.[10] Without meaning in any way to suggest that existing levels are either unimportant or morally odious, I do not believe that racial differences in socioeconomic attainment can be ascribed to ongoing discrimination. In the case of wages, within the economics literature, there are no strong grounds for supposing that discrimination is a first order factor in explaining black/white wage differences. Neal and Johnson (1996) find that 75% of the wage gap between blacks and whites can be attributed to differences in skills acquired before entering the labor market.[11] For this reason, one needs to identify factors that can explain how a history of discrimination can produce lasting effects, something memberships theories can do.

Similarly, memberships theories give content to arguments that the legacy of slavery explains contemporary socioeconomic problems. By itself, legacy of slavery explanations of current racial inequality are implausible as they fail to explain how adverse initial conditions can persist over long time periods. Memberships models by focusing on the feedback from contemporaneous to future group characteristics and behaviors provide precisely such a link.

The recognition that group-level factors translate a history of discrimination into contemporary inequality does not mitigate the obligations of society to alleviate this deprivation. Nothing in the memberships theory implies that the disadvantaged are morally responsible for their situation. This is true in two senses. First, the memberships models explain how adverse initial conditions can persist; these conditions are by definition not the responsibility of current generations.[12] [13] Second, given the collective

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[10]While most poor people are white, poverty rates are dramatically higher among African Americans. In 2002, 7.5% of all non-Hispanic whites were living below the official poverty line as opposed to 22.1% of African Americans. Among children, the differences are even more dramatic, with 9.4% of white children (under age 18) in poverty versus 30.9% of African Americans. (*US Census, Poverty in the United States: 2000, series P60-214*). These differences, however, do not necessarily bear any causal relationship to ethnic groups. What memberships models can address is whether race per se is a useful explanatory category in understanding these differences.

[11]Heckman (1998) provides a powerful critique of empirical studies purporting to identify racial discrimination as a causal factor in socioeconomic outcomes. A deep problem with many empirical studies claiming to identify discrimination is that they in essence equate discrimination with an unexplained difference in some outcome such as wages between blacks and whites. By unexplained, I refer to a residual difference in average outcomes after controls have been made for group differences such as levels of educational attainment. But such an identification of a residual difference between racial groups as discrimination is question begging since it presupposes all other factors differentiating the groups have been controlled for.

[12]Similarly, the memberships theory makes clear that the economic disadvantage of a given group is not a function of its own failings so much as the arbitrariness of history, especially in terms of undesirable initial conditions; any group could in principle have experienced (or for that matter, at some point in the future could experience) the same

externalities implicit in memberships models, the notion of individual responsibilities is vacuous. As Glenn Loury (2002, pg. 105) has written:

> Consider the so-called black underclass–the poor central-city dwellers who make up perhaps a quarter of the African American population. In the face of the despair, violence, and self-destructive folly of so many of these people, it is morally superficial in the extreme to argue as many conservatives do now that "if those people would just get their acts together, like many of the poor immigrants, we would not have such a horrific problem in our cities." To the contrary, any morally astute response to the "social pathology" of American history's losers would conclude that, while we cannot change our ignoble past, we need not and must not be indifferent to the contemporary suffering issuing directly from the past, for which we must bear some collective responsibility.

The consideration of racial inequality also reveals an important limitation of most memberships models. As described, memberships models rely on the internal generation of group effects. In other words, in most memberships models, the behavior of individuals outside a group typically does not directly affect the members in the group. (Of course, the behavior of outsiders may have determined the group memberships.) In the case of race, this perspective is fundamentally incomplete. In the case of African Americans, what matters is not only within group dynamics, but the attitudes of the rest of society. One cannot discuss the formation of social norms, aspirations, and the like among poor African Americans without accounting for the ways in which these attitudes affect perceptions of self-worth and self-efficacy. Similarly, the ability for African Americans to succeed in the economy and society as whole depends on how they are perceived and assessed by the white majority.[14] One obvious case where social interactions between blacks and whites matter is through the emergence and stability of racial segregation. The effects I focus on now refer less to how race influences other group memberships such as residential neighborhoods, but on how interracial interactions affect African American outcomes.

Some of the ways in which the behavior of those outside the group of African Americans influences African American socioeconomic outcomes are captured in models

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outcomes. As Ralph Ellison's Invisible Man said, after chronicling many of the difficulties of black life in America: "Who knows, but that, on the lower frequencies, I speak for you?" (Ellison (1980) pg. 581).

[13]Memberships models also reveal a fundamental flaw in the periodic efforts by some to at least partly attribute black/white inequality to genetic factors, the most famous recent effort being Herrnstein and Murray (1994). To focus on Herrnstein and Murray, nothing in their empirical work seriously considers the possibility of long run effects on measured academic performance due to adverse initial conditions. In some sense, their failure to properly consider alternative explanations parallels the critique I have made of studies of discrimination.

[14]Notice as well that this form of social interactions, because it locates the source of the interactions outside the disadvantaged group, renders the "blaming the victim" criticism irrelevant.

of statistical discrimination. See Aigner and Cain (1977), Arrow (1973), Lundberg and Startz (1983), and Phelps (1972) for the foundations of this theory. The basic intuitions underlying statistical discrimination models can be clearly seen in the Lundberg-Startz analysis of educational investment. In this model, the incentives for African Americans to invest in education are reduced by the inability of employers to assess the productivity of African American workers as accurately as for white workers. This differential means that the wage effect from investments by African American in education is lower than whites. In equilibrium, blacks and whites with identical native abilities receive different wages because of this discrepancy. Notice that when one moves to more invidious notions of discrimination (i.e. a prejudice that blacks are less productive than whites) one can similarly produce self-confirming equilibria of this type as the unwillingness of employers to hire blacks on the claim they are less productive will similarly reduce incentives for education.

However, whether one considers either ethnographies of the inner city (to be discussed below), or even fictional portrayals of black life in America, be it Richard Wright's *Native Son* or James Baldwin's *If Beale Street Could Talk*, it is clear that there are deeper psychological effects at work. Whether thought of as self-confirming stereotypes, socially conditioned anti-mainstream values, or whatever, the ways in which whites perceive and value African Americans can produce powerful influences on black attitudes and outcomes. Not surprisingly, in the context of American history, these effects are quite harmful. Loury (2002) is a profound analysis of this broad issue of "racial stigma":

> By "racial dishonor" I mean…an entrenched if inchoate presumption of inferiority, of moral inadequacy, of unfitness for intimacy, of intellectual incapacity, harbored by observing agents when hey regard the race-marked subjects…"racial stigma" alludes to this lingering residue in post-slavery American political culture of the dishonor engendered by racial slavery. It is crucial to understand that this is not mainly an issue of the *personal attitudes* of individual Americans…I am discussing *social meanings*… (pg. 70).

Important evidence of how African Americans are affected by the attitudes of others may be found in the work of psychologist Claude Steele. Steele has conducted a series of experiments to evaluate what he terms "stereotype threat" (cf. Steele (1992,1997), Steele and Aronson (1995)). In these experiments, groups of randomly selected black and white students are administered identical tests. Sometimes the students are told that the test measures intelligence, sometimes they are told that they will simply be solving problems. What Steele found is that African American students typically performed much more poorly when told the test measured intelligence. Steele plausibly interprets these performance differences as reflecting the anxieties that stereotypes of racial inferiority impose on its victims.

Arguments such as Loury's and evidence such as Steele's lead me to believe that the mapping of racial stigma into formal memberships models is arguably the most important next step in terms of the development of the theory.

## 3. Evidence of membership effects

### Background studies

With respect to the general question of whether group memberships affect individual behavior, there is a wealth of contexts where this dependence has been established. The best evidence is probably found in the social psychology literature. Large scale experiments such as the celebrated "Robbers Cave" study of Sherif et al (1961) have shown, for example, how the act of assigning arbitrary group memberships among subsets of an essentially homogeneous group, in this case by labeling members of a group of white teenage boys as "rattlers" or "eagles", can produce hostility across group members when none existed before. In other words, this study showed how even the arbitrary labeling of individuals can lead to intergroup prejudices and intragroup solidarity.

Asch (1956) describes another set of experiments that provide insight into the power of groups. In this work, an individual is asked to identify which of three lines is closest in length to a given line. The lines are chosen so that one answer is clearly correct. However, each subject in the experiment is paired with four others each of whom gives what is (just as clearly) the same wrong answer. Asch found that typically, a third of the experiment subjects would give the same wrong answer when their turns came. This finding has proven to be quite robust (Aronson (1999)). One important extension of the original experiment is due to Morris and Miller (1975) who found that the presence of even a single participant who gives the correct answer strongly reduces the likelihood the subject will conform to majority opinion. This suggests how fairly subtle changes in a group's composition can have strong influences on individual behaviors.

Historical studies are another interesting source of information. One cannot read Herodotus or Thucydides without being struck by how the societies of Athens and Sparta were to produce unique and remarkable personality traits among their citizens[15]. The stability of Athenian democracy in the presence of plague, overwhelming defeat in the Peloponnesian War and the emplacement of an oligarchy by occupying troops can only be attributed to something self-reinforcing in the Athenian character; this is part of why Pericles could describe Athens as "the school of Hellas." Similarly, the social interactions in Sparta were able to produce a self-perpetuating martial culture that for centuries was the envy of the ancient world. In a famous exchange, the Persian Great King Xerxes is warned not to underestimate Spartan soldiers because "…fighting together they are the best soldiers in the world. They are free-yes-but not entirely free, for they have a master, and that master is Law, which they fear far more than your subjects fear you. Whatever this master commands, they do..." What is remarkable is how these small geographically proximate city states (Athens was by far the largest with perhaps 25,000 citizens at its peak) were able to generate such different yet internally stable cultures.

Examples closer to our time concern the behavior of troops in battle. It is a commonplace that the willingness of soldiers to risk their lives varies immensely across context and that it is greatly influenced by social interactions. More formal analyses bear

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[15]Herodotus (7.104)

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this out. For example, Costa and Kahn (2001) document how social interactions within regiments influenced how Union soldiers behaved during the Civil War. Other studies of violence, in less defensible contexts, find similar results. Nisbett and Cohen (1996) argue that "Southern exceptionalism" in levels of violence may be understood by "collective manifestations ranging from shared assumptions about the beliefs of others to institutional codes including laws and social policies." (pg. 83).

Finally, there are a range of social science studies that support the importance of social interactions. A particularly interesting case due to the range of available data concerns patterns in first names, something explored by Lieberson (2000). Lieberson documents how fluctuations in the popularity of names reflect a host of social factors including perceptions of class and ethnic identity. Similar findings are common in the sociolinguistics literature. For the United States, dialect differences along class and ethnic lines have been well documented and are generally regarded as containing an important social component as individuals make dialect choices in order to achieve identification with one group and perhaps for differentiation from others.[16] In the case of African American Vernacular English (AAVE) or Black English, I suspect these choices are economically important as it is easy to imagine how AAVE could have strong effects on labor market success (consider the reactions of job interviewers to AAVE).

Of course, one cannot leap to claims about the empirical relevance of social interactions as a source of poverty traps from this type of information. The fact that the communities in Greek city states contained strong enough social interactions to produce unique characters does not imply that rates of nonmarital fertility in inner cities can be explained the same way. My argument, rather, is that the plausibility of memberships as a mechanism for producing poverty traps is enhanced when one recognizes the many contexts in which one can identify social interaction effects. As we will see, the direct statistical evidence on the memberships theory suffers from a number of limitations and interpretation problems. Hence, this type of background information is important in assessing the theory's plausibility.

**Ethnographic studies**

Within the social science literature there is a rich ethnographic tradition in the study of poverty and ghettoes. Classic studies include Lewis (1966), Liebow (1967) and Hannerz (1971); important recent contributions include Anderson (1990,1999) and Duneier (1992). This literature provides a compelling description of many of the social interactions that form the basis of the memberships theory. To be clear, the ethnographic literature is hardly uniform in its descriptions of poor communities or poor people. Duneier (1992), in fact is highly critical of ethnographers who ignore the many positive aspects of the social structure and moral lives of the poor. But these disagreements highlight the importance of carefully accounting for individual heterogeneity in modeling any community, rather than vitiate the importance of social factors in influencing individuals per se. The sorts of insights one can take from these studies is exemplified by how Anderson (1999, pg. 324-325) concludes his study of inner city violence:

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[16]See Labov (2001) and Wolfram and Schilling-Estes (1998) for overviews and references.

13

Neighbors in the inner city are encouraged to choose between an abstract code of justice and a practical code geared toward survival in the public spaces of their community. Increasingly, inner-city residents are opting for the code of the streets, either as a conscious decision to protect themselves and their self-esteem or as a gut reaction to a suddenly dangerous situation. Children growing up in these circumstances learn early in life that this is the way things are, and the lessons of those who might teach them otherwise become less and less relevant. Surrounded by violence and what many view as municipal indifference…the decent people are finding it increasingly difficult to maintain a sense of community.

A vicious circle has thus been formed. The hopelessness many young inner city black men and women feel, largely as a result of endemic joblessness and alienation, fuels the violence they engage in. This violence then serves to confirm the negative feelings many whites and some middle-class blacks harbor towards the ghetto poor, further legitimizing the oppositional culture…

While this type of evidence may not possess the rigor associated with formal statistical analyses, it is nevertheless quite persuasive on its own terms.

**Statistical analyses**

When one moves from ethnographic to formal empirical analyses, the evidence becomes much more problematic. In fact, it has proven relatively difficult to produce statistical evidence in support of memberships explanations of poverty and inequality. This is not to say that there is any shortage of papers that provide empirical evidence of such effects.[17] Well known examples of such studies include Brewster (1994), Brooks-Gunn et al (1993), Corcoran et al (1992), Crane (1991), Datcher (1982), Ginther, Haveman and Wolfe (2000), Plotnick and Hoffman (1999), South and Baumer (2000), South and Crowder (1999), and Topa (2001). These studies are important empirical contributions from the perspective of establishing empirical relationships between individual behaviors and group characteristics and have played an important role in stimulating the memberships theory I have described. However, interpreting these empirical exercises as evidence of a *causal* role for group memberships in explaining individual outcomes is problematic.

To understand the difficulties that exist in empirically identifying a causal role for groups in determining individual outcomes, it is useful to consider a specific example. Suppose that a researcher wishes to evaluate the effect of high poverty neighborhoods on teenage educational attainment, such as completion of high school. The crude fact leading one to believe such an effect is present is a bivariate relationship between high poverty neighborhoods and low educational attainment. In isolation, this fact says nothing about a causal role for neighborhoods in education since it is clear that there are many reasons why such a relationship could exist. Possibilities include

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[17]The standard survey of empirical work on neighborhood effects is Jencks and Mayer (1990). A number of more recent studies are reviewed in Brock and Durlauf (2001b).

1. High poverty neighborhoods are disproportionately composed of adults with low labor market aspirations (as compared to more affluent communities). If parents transmit low aspirations to their own children, and if these low aspirations adversely influence educational attainment, then poor neighborhoods will exhibit lower educational attainment than richer ones, without any causal influence from the neighborhood to the individual.

2. Families in high poverty neighborhoods are less likely to be able to finance post-secondary education, hence the opportunities for further education generated by a high school diploma are not available to many teenagers in these neighborhoods.[18]

3. High poverty neighborhoods possess a relatively high concentration of individuals who, despite graduating from high school, failed to achieve success in the labor market. Hence teenagers observing the economic benefits of graduation will not observe examples where graduation had much of a payoff.

4. Teenagers are influenced by the aspirations of role models in the community where they live. If the role models in a neighborhood have low labor market aspirations, then this will depress the educational achievements of children in the neighborhood.

5. Teenagers in high poverty neighborhoods are, due to local public finance, higher crime, etc. provided lower quality schools than students in other communities.

6. Teenagers are influenced by the behaviors of their peers through a basic desire to conform to others. In a given community, high and low levels of educational attainment are self-reinforcing as the educational effort of a given teenager reflects his preference to seem like "one of the crowd."

Each of these explanations will produce the same correlations between low individual educational attainment and neighborhood poverty, but each is based on a different causal mechanism. The statistical question is whether these different explanations can be disentangled in a given data set.

Manski (1993) provides a valuable decomposition of how within-group correlations can arise. He describes three distinct causal mechanisms: correlated individual characteristics, which refer to the idea that individuals within a group have similar individual-level influences, contextual effects, which refer to the ideas that individuals within a group are exposed to common influences, and endogenous effects, which refer to the idea that individuals in a group make behavioral choices that depend on the choices of others. These different sources of within-group correlations have very different implications both for understanding the determinants of group level deprivation as well as for policy. For example, correlated individual effects indicate that group-level

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[18]Carneiro and Heckman (2002) conclude that about 4% of teenagers are constrained from attending school due to family finances.

differences can arise even when the memberships theory is empirical vacuous. Similarly, contextual and endogenous effects will influence the way one thinks about policy interventions since, as argued earlier, the presence of endogenous effects has particular implications, via social multipliers, for how changes in private incentives affect group behavior. In our poverty/education example, the first and second explanations attribute the correlation of neighborhood poverty and low individual educational attainment to correlated individual effects, i.e. similarities in parental characteristics. Explanations three, four, and five are examples of contextual effects as the distribution of educational levels and incomes among older members of the community are affecting current behaviors. Explanation six is based on endogenous effects as it captures the contemporaneous interdependences in behavior.

A recent literature has begun to develop a statistical framework for disentangling these different sources for correlations between group characteristics and individual outcomes, cf. Brock and Durlauf (2001a,b), Manski (1993), Moffitt (2001). The basic messages of this research are severalfold. One general finding is that for linear behavioral models, one needs prior information on the relationship between individual and contextual effects in order for the three various explanations to be empirically distinguishable. The intuitive problem is that endogenous effects and contextual effects are interconnected because endogenous effects (the behavior of others) are determined by the same contextual effects that affect an individual directly. This creates a possible multicollinearity in the regression description for individual behavior. The presence of some correlated individual characteristics, specifically, characteristics that prevent a perfect correlation between the variable analogues of the endogenous and contextual effects, is needed to achieve identification (Brock and Durlauf (2001a,b)). Another important point (Manski (1993,2000)) is that without prior information on which groups generate causal effects, little can be said. An unfortunate feature of the existing empirical literature on group effects is that it essentially ignores the identification problems addressed in this theoretical work.

Beyond the issue of identification of different sources of group effects, in those contexts where group membership is endogenous, there is the more difficult problem of self-selection. This is most obvious in the case of residential neighborhoods where one naturally would think that the same factors that determine the neighborhood in which an individual lives also influence how an individual behaves once he is in the neighborhood. For the poverty/education example, parental decisions on neighborhood presumably reflect factors concerning parental quality that influence offspring decisions. These factors, further, are at least to some extent going to be unobservable, so the self-selection problem is not simply a matter of including controls for individual characteristics when attempting to uncover group effects. With very few exceptions (e.g. Aaronson (1998), which finds some evidence of neighborhood effects and Evans, Oates, and Schwab (1992), which does not), empirical studies of neighborhood effects based on observational data have failed to deal seriously with the possible statistical biases induced by self-selection into neighborhoods.

**Recent advances: quasi-experiments and new data sources**

An important alternative to the use of observational data such as the Panel Study of Income Dynamics is the use of data in which government interventions into the residential choices of individuals are used to assess the effects of neighborhoods. Such interventions are examples of what in economics are known as "quasi-experiments," the idea being that the intervention at least partially defines groups of individuals who have or have not randomly received a treatment (drawing an analogy from biostatistics), in this case, a new group membership, thereby allowing for the measurement of group effects.

One example of such an intervention is the Gautreaux program. In 1967, Dorothy Gautreaux led a group of plaintiffs to sue the Chicago Housing Authority, claiming that placement of poor families in public housing in poor neighborhoods constituted a form of discrimination. A consent decree between the plaintiffs and the CHA resolved the case and produced a housing program that in essence assigned one group of families to other parts of Chicago and another to suburban communities outside the city. Sociologist James Rosenbaum has organized and conducted interviews with families that had participated in the program in order to determine the effects of living in suburban communities on poor families. In a series of studies (cf, Rosenbaum and Popkin (1991), Rosenbaum (1995)), he showed that families living in suburbs experienced substantially better socioeconomic outcomes along a number of dimensions. As described in Rosenbaum (1995. pg. 242), these differences are particularly pronounced with respect to outcomes for children. For example, the percentage of college attendees among children moved to suburbs was 54% whereas the percentage for children whose moves kept them in the city of Chicago was 21%; when one considers only 4-year colleges the attendance rates are 27% versus 4%. While these data suffer from some self-selection problems that render their causal interpretation problematic (an issue well understood by Rosenbaum), they are extremely suggestive and have greatly helped to stimulate research on neighborhood effects.[19]

The Gautreaux findings, combined with a recognition of the limitations of the program as a source of information led to an important new quasi-experiment. A recent program by the Department of Housing and Urban Development represents an important new source of information on neighborhood effects. This program, the Moving to Opportunity (MTO) demonstration has been underway in five cities, Baltimore, Boston, Chicago, Los Angeles and New York since 1994. The demonstration provides housing vouchers to a randomly selected group of families; within this subsidized group, families in turn were randomly allocated between unrestricted vouchers (users are known as the

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[19]Rosenbaum's analyses compare families that were moved to alternate public housing in Chicago to families that stayed in the suburbs; those that moved and then returned to Chicago are not included. This means the sample of suburban families differs from a random selection of families in that it consists of those families who were willing to forgo the benefits of the city (proximity to family and friends, etc.). Such families might well tend to have parents who place an unusually high value on economic achievement, so the success of their offspring, for example, might be due to this latent variable and not the suburban environment per se. While the differences may be due to neighborhood effects, one simply cannot determine this from the data.

Section 8 group) and vouchers that could only be used in census tracts with poverty rates below 10% (whose users are the Experimental group).[20]

Recent evaluations of the effects of the vouchers include Katz, Kling and Liebman (2001), Ludwig, Duncan, and Hirschfield (2001) and Rosenbaum and Harris (2001). These assessments reveal impressive gains for both Section 8 and MTO movers along several dimensions. Katz, Kling, and Liebman (2001, pg. 648) conclude in the case of Boston area families

> We find that children in both the Experimental and Section 8 Comparison groups exhibit fewer behavioral problems, and that Experimental group children have lower prevalence of injuries, asthma attacks, and personal crimes. In contrast, changes in neighborhoods induced by MTO have not affected the employment rates, earnings or welfare usage by a statistically detectable amount for household heads. However, there do appear to be significant improvements in the general health status and mental health of household heads.

Ludwig, Duncan and Hirschfeld (2001, pg. 674) find even quite striking evidence that neighborhood moves reduce incidents of juvenile crime, finding that moves from high to low poverty neighborhoods reduce juvenile arrests for violent crimes by something from 30% to 50%. Rosenbaum and Harris (2001, pg. 338) also find economic benefits for household heads, with employment rates for Section 8 and MTO families rising from 29.3% and 24.5% to 42.9% and 46.3% respectively. Overall, these are impressive changes.

As important as the MTO demonstration is, there are limitations to the information it has provided. First, the evidence thus far only describes how the vouchers have benefited those who have employed them. Nearly 50% of all eligible families have not used the vouchers. At best (and to be clear this is very carefully discussed by researchers involved with MTO), one cannot extrapolate the findings to the broader population of the poor. Second, one needs to recognize that much of the benefits of the programs may be attributable to the increase in income associated with voucher eligibility as opposed to the shift in neighborhoods per se. The improvements one observed between families that employed vouchers with neighborhood poverty restrictions are much less dramatic when compared with families who were given unrestricted vouchers (which is unsurprising, of course since agents with more options should over all be better off) as opposed to those who did not receive vouchers.[21] Third, it is impossible to determine what aspects of the different neighborhoods led to improved outcomes. To give one example (one that is discussed by Katz, Kling and Liebman (2001)) the reductions in asthma rates may be due to improvements in housing quality (asthma is strongly associated with rat infestations) and nothing about the neighborhood per se. Finally, there is a question of generalizability. Moving large numbers of poor families to more affluent communities will induce general equilibrium effects in terms of the

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[20]See Goering (1999) for a detailed description of the MTO demonstration.
[21]Rosenbaum and Harris (2001, pg. 336) find, for example how among MTO movers, the percentage that said the condition of their housing is good or excellent went from 33.9% to 80.6%.

locational decisions of other families, the ability of schools in these neighborhoods to provide needed services, etc. One can easily imagine that the commitment of affluent families to public schools would be ended by a massive influx of poor families into their communities. Hence, one cannot simply assert that the effects of this program will be replicated if it is implemented on a wide scale; a point forcefully made in Sobel (2002). For these reasons, one cannot blithely use the MTO evidence to advocate large scale housing relocation programs as an antipoverty policy, an error one finds in Fiss (2000), for example.[22]

Finally, it is important to note that the empirical neighborhoods literature has generally provided little insight into the reasons why neighborhoods matter. The typically empirical exercise equates neighborhood effects with the statistical significance of a neighborhood-level variable in explaining individual behavior, controlling for individual characteristics. Crane (1991), for example uses the percentage of managerial and professional workers among adults in a community to measure neighborhood socioeconomic status, finding this variable helps predict teenage pregnancy and high school dropout rates. Such a finding, however, does not reveal anything about causality. It is fair to say that the typical study of group effects treats the effects as a black box. Notice that this problem also pervades those studies of discrimination that equate black white differences that survive the presence of various controls as discrimination.

For this reason, the Project on Human Development in Chicago Neighborhoods (PHDCN) is particularly important. This project consists of an extraordinarily detailed and ambitious gathering of data across several hundred neighborhoods in Chicago; details of the project as well as a number of interesting findings may be found in Sampson, Morenoff, and Earls (1999) and Sampson, Raudenbush and Earls (1997). The data from this project provide a detailed portrait of the social structures in neighborhoods. As described in Sampson, Morenoff, and Earls (1999 pg. 639), the available data include responses to questions such as "About how often do you and people in your neighborhood do favors for each other?" and the likelihood that one's neighbors would intervene if one's child were observed skipping school. The various data collections that comprise this project provide a remarkable range of information about the specific social relations that underlie the general effects assumed in the memberships theory. A consistent finding in this work is that "collective efficacy," which consists of measures of how a neighborhood provides support for its members, be it though assistance in childrearing or trust among neighbors, are an important mediating variable in understanding why poor neighborhoods have adverse effects on their members. Low collective efficacy, in turn, seems associated with social problems such as crime. It is important to recognize that research based on this project has not yet come to grips with

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[22]Perhaps a lesson can be taken from a previous policy designed to alter group memberships, court ordered segregation plans to achieve racial integration. As demonstrated in Smock and Wilson (1991), for example, desegregation orders do not appear to have led to sustained increases in integration in the sense that the negative relationship between white enrollments to the percentage of blacks in a school and associated school district appear the same for schools with and without desegregation orders. This finding means that forces inducing segregation do not seem to have been ameliorated by the desegregation programs.

issues of causality versus correlation, so that one cannot really say whether high crime reduces collective efficacy or whether the reverse is true. Nor have the various identification problems that I have described been addressed. Nevertheless, the sort of detailed micro-level information produced by the PHDCN is an extremely valuable advance towards the eventual goal of uncovering how and why neighborhoods matter.

### Where does the evidence stand?

As this section hopefully has made clear, evidence in favor of the memberships theory is extremely mixed. From the perspectives of the social psychology or history literatures, the proposition that groups causally influence individuals is uncontroversial. Direct efforts to statistically link group effects to poverty or behaviors related to poverty have been far less decisive in terms of making the "case" for the memberships theory.

My own judgment is that the literature on memberships and inequality suffers from sufficiently serious problems of interpretation that it should not strongly influence one's prior beliefs about the memberships theory. I personally find the wealth of ethnographic evidence linking group memberships to poverty, when combined with background evidence from psychology and history, to be persuasive that these effects exist and are important. These beliefs are not weakened and perhaps are marginally strengthened by the econometric and statistical evidence that has been marshaled to evaluate memberships models. However, there is little reason why a skeptic should be persuaded to change his mind by the statistical evidence currently available.

### 4. Memberships, poverty traps and policy

In this section, I want to make three arguments about the implications of group-based poverty traps for public policy analysis. First, I wish to argue that memberships theories of poverty traps have implications for the types of policies that may be required for their elimination. Second, I want to relate policy evaluation and empirical evidence to argue that the nature of poverty traps has implications for how empirical evidence on their existence should inform policy evaluation.

### Associational redistribution

Most discussions of redistribution policies assume that the object available for potential redistribution by society is income. This is hardly surprising since many of the most visible antipoverty programs, via direct aid such as that provided through Temporary Assistance to Needy Families and in-kind programs such as Food Stamps or Medicaid, in essence transfer income to the poor from the taxes (current and future) paid by the rich. However, income redistribution is not the only way in which the government can attempt to achieve more egalitarian outcomes.

Income redistribution policies alter private incentives and opportunities and therefore can affect group memberships such as residential neighborhood. What they do not do is directly alter the group compositions that are the main explanatory components of memberships theories. Memberships models naturally lead one to ask whether group

memberships themselves can be the objects of redistribution. This alternative set of policies fall under the rubric of what I have elsewhere (Durlauf (1996c)) termed "associational redistribution."

Associational redistribution has been an integral part of egalitarian policies throughout the twentieth century. In many ways the most important redistributive policies of the twentieth century have focused on the allocation of group memberships in American society. The Brown versus The Board of Education decision of 1954 and the Civil Rights Act of 1964 fundamentally revolved around the question of how society's memberships in particular schools, employment establishment and communities are to be determined. Busing to achieve integration is also an example of a program designed to alter group (in this case school and classroom) memberships. In other cases, policy decisions have important memberships consequences. The location of public housing projects, shown by Massey and Kanaiaupuni (1993) to have some importance in explaining patterns of concentrated poverty, is one example. Charter and magnet schools similarly have important associational consequences even if their intent is quite different.

While the memberships theory clearly suggests that interventions in the composition of residential neighborhoods or classrooms can be a powerful stimulus for greater equality, it is important to recognize that the political feasibility of such policies is very questionable. This is not to say that all such policies will be doomed by public opposition. The reasons why such policies are more or less likely to engender public support can be best seen when two policies are contrasted.

The judicial and legislative end of overt discrimination in the United States is so much a part of the accepted public philosophy of the country to be beyond serious dispute. The reason for this is not hard to identify. The forms of associational redistribution that produced the breakdown of legal and social discrimination are, in some sense, negative, in that they focused on the elimination of race as a factor in determining outcomes where it is clearly inessential, to use an idea that underlies John Roemer's seminal work on equality of opportunity (Roemer (1998)).[23] Denying a homeowner the right to refuse to sell his home to someone on the basis of ethnicity is easy to defend on the grounds that race is irrelevant to the transaction. Equally important, antidiscrimination legislation has proven (at least ex post) to be ethically unproblematic as it requires decisions in the public and private sector to embody the notions of equality of individuals that underlie the political philosophy of any modern democratic society.

The public consensus surrounding this type of associational redistribution disappears when one considers one of the major contemporary forms of such policies—affirmative action. Affirmative action is nothing more than a class of interventions designed to alter the composition of the collections of personnel at particular schools or workplaces. Without question, affirmative action has remained one of the most unpopular of all government policies. I do not attribute the level of antipathy to affirmative action to underlying racism on the part of the American public. Rather, I believe it is because affirmative action requires the downweighting of factors that are

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[23]Roemer (1998) argues that an appropriate definition of equality of opportunity explicitly distinguishes between differences in opportunities that are based on factors for which a person should be held responsible and factors for which he should be not held responsible.

essential to the activities that are affected. For example, grades and test scores are informative about academic ability and therefore plausibly relevant to the college admissions decision.[24] Given public attachment to various meritocratic ideals, affirmative action quite easily arouses opposition. Similarly, a hypothetical intervention into neighborhood composition similarly interferes with what society regards as a parent's legitimate objective to produce the best environment for his children.

Leaving aside the vital issue of how associational redistribution policies would be designed, my conclusion is that there is little hope that such policies, as currently formulated, will be politically viable in the current political environment. While I think that compelling equality of opportunity defenses can be made for such policies, until there is a shift in public opinion towards a belief in the primacy of such equity considerations and away from other, perfectly legitimate, social desiderata, I am pessimistic about their prospects.

**Supply-side policies for associational redistribution**

My pessimism about the political future of standard forms of associational redistribution, in particular affirmative action, does not constitute pessimism that all types of associational redistribution are doomed to political unpopularity. I believe one can develop an alternative class of policies that are more likely to be politically viable. In particular, I believe it is important to develop what Moskos and Butler (1996) have referred to as a supply-side approach to associational redistribution. What I mean is the following. Policies such as affirmative action are demand-side policies in that they influence who will be demanded for job, school enrollments, etc. An alternative policy would be to alter the supply of individuals in such cases, so that the equilibrium allocation of individuals into memberships will be altered to reflect the same diversity objectives as the demand-side policy. These policies require the targeting of resources towards disadvantaged groups and so are by no means "race-blind." This type of government intervention would, however, occur prior to the stage at which admissions and the like are determined, thereby negating some of the objections to traditional affirmative action policies.

What does it mean to alter the supply of individuals to schools, firms, etc.? An easy way of doing this is to engage in extra search for members of disadvantaged groups so as to raise the quality of the applicant pool. Although actions of this type are certainly

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[24]I use the term plausibly because there is an assumption in debates over affirmative action that there exists a compelling merit-based criterion for group memberships that such policies necessarily violate. The existence of a general meritocratic justification for determining memberships is, in my view, far from obvious. For example, if one regards the objective of publicly funded colleges to be the maximization of human capital in a population, why should students with the highest test score or grades merit highest priority in admissions? Under this objective, one would want to admit the set of students for whom the college will provide the greatest value added in terms of education, which could be a far different set. While meritocratic standards might have some intrinsic ethical justification, I am unaware of any argument that they are sufficient to dominate other factors in determining college admissions.

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laudable, I doubt that additional efforts in this direction will have much effect on levels of black/white inequality.  Rather, the challenge is to raise the qualifications of disadvantaged groups so that under "meritocratic" decisionmaking, their representation reflects their size in the population.  What does this mean operationally? Consider the case of college enrollments.  Suppose one could identify the reasons why test scores among disadvantaged groups lag behind others. Further, suppose that one provided compensatory classes, etc. that are targeted to improve educational attainments in the specific areas associated with the low scores; assume these classes are specifically created at schools with high minority enrollments. This would be a form of supply-side affirmative action.

Such policies have in fact been implemented in the US Army, as described by Moskos and Butler (1996).  In the face of large differential promotion rates between black and white soldiers, the Army's response was not to alter promotion decisions in order to increase diversity. Rather, the Army carefully studied the sources of the differences and implemented programs to address them.  Specifically, differences in basic writing skills proved to be important and so compensatory education programs were developed to allow soldiers to improve these skills.  These programs have been efficacious, yet do not appear to have produced any of the resentments associated with conventional affirmative action programs. As Moskos and Butler (1996) observe, "Although affirmative action does have its tensions, it is not a prescription for…resentment by whites" (pg. 70).

Supply-side affirmative action or other policies are hardly a panacea.  If nothing else, sufficiently little is known about the sources of educational differences between black and white youths to assert that one can identify programs that are certain to reduce these differences.  Further, one suspects that whatever programs appear most efficacious will also be extremely expensive.  Nevertheless, this approach to associational redistribution may be the most politically promising avenue available as it can, at least in principle, retain meritocracy as a standard for group memberships while allowing for government interventions to ensure these memberships reflect the diversity of the greater society.

**Nonlinearities**

A second important implication of memberships models concerns the form of the effects of alterative public policies, whether they redistribute memberships or income. Memberships models strongly suggest that policy effects may be highly nonlinear. What this means is that one cannot evaluate a large policy intervention by a proportional scaling up of the effects found from a small policy intervention.  This nonlinearity can cut in more than one direction.  As argued above, it is possible that a large scale expansion of the MTO demonstration could be far less efficacious than the small scale program has been.  On the other hand, it is possible for large scale interventions to be far more efficacious than small scale ones.  One reason is that a large scale intervention may alter the number of equilibria in a group.  To return to an earlier example, a large enough change in the private incentives to graduate from high school will always eliminate socially inferior equilibria (i.e. multiple equilibria cannot exist when private incentives are strong enough, holding social incentives fixed). As discussed earlier, a key feature of

formal memberships models is the complex interplay of private and social incentives to produce aggregate outcomes. This complexity makes it difficult to forecast the effects of policies.

Nonlinearity is also important in the evaluation of empirical studies. The bulk of statistical analyses of membership effects use linear models, which from the perspective of memberships models are often misspecified. This may help explain some of the weakness of the statistical evidence of group influences.

**Relations between policy analysis and data analysis**

A final argument I wish to make concerns the way in which evidence on memberships models of poverty traps should be used to inform policy discussions.

The conventional approach to the empirical evaluation of group effects in economics and other disciplines is via hypothesis testing. The presence of group effects is evaluated by the statistical significance of some coefficient or set of coefficients given some pre-assigned significance level, e.g. 5%. Such evaluations, it is well known from arguments in the statistics literature, do not have any deep justification. For my purposes, the key issue is that statistical significance is at best indirectly related to the question of how data should inform policy evaluation.

To see this, consider the following thought experiment.[25] A policymaker must assess the effect of a change in private incentives, say a specific college scholarship program, on the high school test scores in a given school. The policymaker has available a linear regression which relates the test score to various factors including the costs of college as well as some function of the test scores of the individual's peers. Assume that a single parameter measures whether this function of the test scores of others affects an individual and that there exist multiple self consistent test scores in a school when this coefficient is greater than 1. Suppose the coefficient is not statistically significant at the 5% level. Should the policymaker therefore assume away the possibility of peer group effects and the possibility of a test score "trap" given this lack of statistical significance when making the policy evaluation?

The answer to this question is "not necessarily." The problem with the use of the 5% level to assess the peer effect is simple: it does not correspond to any decision problem on the part of the policymaker. From the perspective of decision theory, a policymaker should assess a program by computing a distribution of costs and benefits and, based on his particular payoff or utility function; formally speaking, the policymaker should recommend the policy if the net expected payoff of the policy is positive. But such a calculation will depend critically on the payoff function of the policymaker and on the full distribution of the regression coefficients that characterize the uncertainty in the policy's effects. Now, suppose that the policymaker puts very high value on avoiding very low test scores, because they preclude students from pursuing higher education. Then it would be entirely possible that despite the lack of statistical significance to the peer effects, the fact that the available data place some positive probability on a coefficient greater than 1, so a poverty trap exists, might be sufficient to lead to a

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[25]See Brock and Durlauf (2001c) for a formal development of the conceptual framework employed here.

recommendation for the policy. The key intuition, I believe, is that the possibility of poverty traps are something a policymaker will very much wish to guard against, which will implicitly alter the way data are evaluated relative to the conventional practice of ignoring effects where statistical significance has not been established.[26]

This argument, however, should not be exploited to assert that there is some fundamental support for policy interventions in the presence of possible poverty traps. Further, the argument itself is open to abuse in the sense that one can always find a set of prior beliefs over the presence of poverty traps that for a given data set will support redistributive interventions. Nevertheless, my intuition (and one that is motivating some of my current research) is that poverty traps will, relative to conventional empirical analysis, induce a bias in favor of government interventions designed to eliminate them.

## 5. Conclusions

Poverty traps are high on the set of pernicious phenomena any just society will wish to guard against. Yet one message of the renaissance of research on income inequality over the last 15 years is that relatively little is still understood about whether such poverty traps exist and if so, what produces them. The memberships theory of inequality provides a set of models in which poverty traps may occur. These models are appealing as metaphors for poverty traps for several reasons. Because of their emphasis on the ways in which poor neighborhoods create social and psychological damage to their residences, the models capture much of the understanding of persistent poverty derived from the ethnographic literature. From the perspective of social science theory, these models clarify how social determinants of behavior can lead to individually rational but collectively undesirable outcomes. Such socially undesirable equilibria produce a rationale for possible policy interventions.

Yet I cannot help feel that despite the intellectual promise of this approach, we currently understand far too little about the individual level determinants of behavior to have much confidence in particular policy recommendations. The empirical literature on group membership effects is, on its own terms, fairly indecisive. Further, it has provided little guidance on the particular causal mechanisms by which groups influence their members. Further, one necessarily worries about the general equilibrium effects of policies designed to alter group memberships. Certainly the failure of public policy to stop powerful tendencies towards racial segregation (Massey and Denton (1993)) gives one pause. So, while I remain convinced that memberships models do have much to say about the sources of persistent poverty and that forms of associational redistribution should be part of policy debates, I also believe we need better ways to evaluate policies in the presence of immense uncertainty both about the determinants of the problem to be

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[26]In some respects, I am advocating a move away from frequentist approaches to data analysis towards a Bayesian perspective. This is true in the sense that I believe a more appropriate object for statistical exercises is the computation of posterior densities for coefficients of interest rather than the conduct of hypothesis tests per se. On the other hand, I see little importance to many of the philosophical issues that divide frequentists and Bayesians for policy analysis.

addressed as well as the efficacy of the instruments available to affect change. At one level, this is nothing more than a call for a formal decision-theoretical approach to policy evaluation, an approach whose analytical foundations date from Abraham Wald (cf. Wald (1950)).[27] This sort of formal approach has generally not been pursued in policy evaluation, but clearly must be if we are to make consistent progress towards a more egalitarian society. I believe that much of the reaction against the Great Society antipoverty initiatives of the 1960's is due to their failure to meet public expectations of their effects. If nothing else, the political viability of new programs will be enhanced by realistic assessments of the uncertainty that faces any sustained effort of this type.

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[27]A more formal way to express the concerns described here is that there is substantial model uncertainty associated with theories of poverty, including membership theories. This uncertainty must be accounted for in order to do proper expected utility calculations for policy evaluation. See Draper (1995) for a discussion of a number of conceptual issues and Brock and Durlauf (2001c) for a discussion of the implications of model uncertainty for economic policymaking.

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**Bibliography**

Aaronson, D., (1998), "Using Sibling Data to Estimate the Impact of Neighborhoods on Children's Educational Outcomes," *Journal of Human Resources*, XXXII, 915-946.

Aigner, D. and G. Cain, (1977), "Statistical Theories of Discimination in Labor Markets," *Industrial and Labor Relations Review*, 30, 175-187.

Akerlof, G. and R. Kranton, (2000), "Economics and Identity," *Quarterly Journal of Economics*, CXV, 715-754.

Anderson, E., (1990), *Streetwise: Race, Class and Change in an Urban Community*, Chicago: University of Chicago Press.

Anderson, E., (1999), *Code of the Street: Decency, Violence, and the Moral Life of the Inner City*, New York: W. W. Norton.

Aronson, E., (1999), *The Social Animal*, New York: Worth Publishers.

Arrow, K., (1973), "The Theory of Discrimination," in *Discrimination in Labor Markets*, A. Rees ed., Princeton: Princeton University Press.

Asch. S., (1956), "Studies of Independence and Conformity: A Minority of One Against a Unanimous Majority," *Psychological Monographs*, 70, (9, Whole no. 416).

Becker, G. and N. Tomes, (1979), "An Equilibrium Theory of the Distribution of Income and Intergenerational Mobility," *Journal of Political Economy*, 87, 6, 1153-1189.

Bénabou, R., (1993), "Workings of a City: Location, Education, and Production," *Quarterly Journal of Economics*, CVIII, 619-652.

Bénabou, R., (1996), "Equity and Efficiency in Human Capital Investment: The Local Connection," *Review of Economic Studies*, 62, 237-264.

Blume, L. and S. Durlauf, (2001), "The Interactions-Based Approach to Socioeconomic Behavior," in *Social Dynamics*, S. Durlauf and H. P. Young, eds, Cambridge: MIT Press.

Brewster, K., (1994), "Race Differences in Sexual Activity Among Adolescent Women: The Role of Neighborhood Characteristics," *American Sociological Review*, 59, 408-424.

Brock, W. and S. Durlauf, (2001a), "Interactions-Based Models," in *Handbook of Econometrics*, *Vol. 5*, J. Heckman and E. Leamer eds., Amsterdam: North Holland.

Brock, W. and S. Durlauf, (2001b), "Discrete Choice with Social Interactions," *Review of Economic Studies*, 68, 2, 235-260.

Brock, W. and S. Durlauf, (2001c), "Growth Empirics and Reality," *World Bank Economic Review*, 15, 229-272.

Brooks-Gunn, J., G. Duncan, P. Klebanov, and N. Sealand, (1993), "Do Neighborhoods Affect Child and Adolescent Development?," *American Journal of Sociology*, 99, 353-395.

Burtless, G., ed., (1996), *Does Money Matter?*, Washington DC: Brookings Institution Press.

Carneiro, P. and J. Heckman, (2002), "The Evidence on Credit Constraints in Post-Secondary Education," *National Bureau of Economic Research Working Paper 9055*.

Corcoran, M., R. Gordon, D. Laren, and G. Solon (1992), "The Association between Men's Economic Status and Their Family and Community Origins," *Journal of Human Resources*, 27, 575-601.

Costa, D. and M. Kahn, (2001), "Cowards and Heroes: Group Loyalty in the Civil War," *National Bureau of Economic Research Working Paper 8627*.

Crane, J., (1991), "The Epidemic Theory of Ghettos and Neighborhood Effects on Dropping Out and Teenage Childbearing," *American Journal of Sociology*, 96, 1226-1259.

Datcher, L., (1982), "Effects of Community and Family Background on Achievement," *Review of Economics and Statistics*, 64, 32-41.

Draper, D., (1995), "Assessment and Propagaion of Model Uncertainty," *Journal of the Royal Statistical Society, series B*, 57, 45-70.

Duneier, M., (1992), *Slim's Table*, Chicago: University of Chicago Press.

Durlauf S., (1996a), "A Theory of Persistent Income Inequality," *Journal of Economic Growth*, 1, 75-93.

Durlauf, S., (1996b), "Neighborhood Feedbacks, Endogenous Stratification, and Income Inequality," in *Dynamic Disequilibrium Modelling*, W. Barnett, G. Gandolfo, and C. Hillinger eds., Cambridge: Cambridge University Press.

Durlauf, S., (1996c), "Associational Redistribution: A Defense," *Politics and Society*, 24, 391-410.

Durlauf, S., (1999), "The Memberships Theory of Inequality: Ideas and Implications," in *Elites, Minorities, and Economic Growth*, E. Brezis and P. Temin, eds., Amsterdam: North Holland.

Durlauf, S. (2001). "The Memberships Theory of Poverty: The Role of Group Affiliations in Determining Socioeconomic Outcomes," in *Understanding Poverty in America*, S. Danziger and R. Haveman eds., Cambridge: Cambridge: Harvard University Press.

Durlauf, S. and A. Seshadri, (2002), "Is Assortative Matching Efficient?," mimeo, Department of Economics, University of Wisconsin and forthcoming, *Economic Theory*.

Ellison, R., (1980). *Invisible Man*, New York: Vintage. Reprint of 1947 first edition.

Ellison, R., (1995), *Shadow and Act*, New York: Vintage. Reprint of 1964 first edition.

Evans, W., W. Oates, and R. Schwab, (1992), "Measuring Peer Group Effects: A Study of Teenage Behavior," *Journal of Political Economy*, 100, 5, 966-991.

Fernandez, R. and R. Rogerson, (1997), "Keeping People Out: Income Distribution, Zoning, and the Quality of Public Education," *Quarterly Journal of Economics*, 38, 1, 25-42.

Fiss, O., (2000), "What Should Be Done for Those Who Have Been Left Behind," *Boston Review*, September.

Frederickson, G., (2002), *Racism*, Princeton: Princeton University Press.

Ginther, D., R. Haveman, and B. Wolfe, (2000), "Neighborhood Attributes as Determinants of Children's Outcomes: How Robust are the Relationships?" *Journal of Human Resources*, 35, 4, 603-642.

Glaeser, E., B. Sacerdote, and J. Scheinkman, (1996), "Crime and Social Interactions," *Quarterly Journal of Economics*, CXI, 507-548.

Goering, J., (1999), "Moving to Opportunity for Fair Housing Demonstration: Current Status and Initial Findings," Washington DC: Department of Housing and Urban Development.

Hannerz, U., (1971), *Soulside*, New York: Columbia University Press.

Heckman, J., (1998), "Detecting Discrimination," *Journal of Economic Perspectives*, 12, 2, 101-116.

Herodotus, (1972), *The Histories*, A. de Selincourt trans., New York: Penguin Books.

Herrnstein, R. and C. Murray, (1994), *The Bell Curve*: *Intelligence and Class Structure in American Life*, New York: Simon and Schusster.

Hoff, K., and A. Sen, (2000), "Home-Ownership, Community Interactions, and Segregation," mimeo, World Bank.

Hussar, W. and W. Sonnenberg, (2001), "Trends in Disparities in School District Level Expenditures per Pupil," mimeo, National Center on Education Statistics.

Katz, L., J. Kling and J. Liebman, (2001), "Moving to Opportunity in Boston: Early Results of a Randomized Mobility Experiment," *Quarterly Journal of Economics*, CXVI, 607-654.

Kozol, J., (1991), *Savage Inequalities*, New York: Crown Publishers.

Jargowsky, P., (1997), *Poverty and Place*, New York: Russell Sage Foundation.

Jencks, C. and S. Mayer, (1990), "The Social Consequences of Growing Up in a Poor Neighborhood," in *Inner-City Poverty in the United States*, L. Lynn and M. McGreary, eds., Washington D.C.: National Academy Press

Labov, W., (2001), *Principles of Linguistic Change, Volume 2: Social Factors*, Oxford: Blackwell Publishers.

Lewis, O. (1966), *La Vida: A Puerto Rican Family in the Culture of Poverty*, New York: Random House.

Lieberson, S., (2000), *A Matter of Taste*, New Haven: Yale University Press.

Liebow, E., (1967), *Tally's Corner: A Study of Negro Streetcorner Men*, Boston: Little, Brown.

Loury, G. (1977), "A Dynamic Theory of Racial Income Differences," in *Women, Minorities, and Employment Discrimination*, P. Wallace and A. Lamond, eds., Lexington: Lexington Books.

Loury, G., (1981), "Intergenerational Transfers and the Distribution of Earnings," *Econometrica*, 49, 4, 843-867.

Loury, G., (2002), *The Anatomy of Racial Inequality*, Harvard: Harvard University Press.

Ludwig, J., G. Duncan, and P. Hirschfield, (2001), "Urban Poverty and Juvenile Crime: Evidence from a Randomized Housing-Mobility Experiment," *Quarterly Journal of Economics*, CXVI, 655-680.

Lundberg, S. and R. Startz, (1983), "Private Discrimination and Social Intervention in Competitive Labor Markets," *American Economic Review*, 73, 3, 340-247.

Lundberg, S. and R. Startz, (1998), "On the Persistence of Racial Inequality," *Journal of Labor Economics*, 16, 2, 292-323.

Manski, C., (1993), "Identification of Endogenous Social Effects: The Reflection Problem." *Review of Economic Studies*, 60, 531-542.

Manski, C., (2000), "Economic Analysis of Social Interactions," *Journal of Economic Perspectives*, 14, 3, 115-136.

Massey, D. and N. Denton, (1993), *American Apartheid*, Cambridge: Harvard Unviersity Press.

Massey, D. and S. Kanaiaupuni, (1993), "Public Housing and the Concentration of Poverty," *Social Science Quarterly*, 74, 109-123.

Moffitt, R., (2001), "Policy Interventions, Low-Level Equilibria, and Social Interactions," in *Social Dynamics*, S. Durlauf and H. P. Young eds., Cambridge: MIT Press.

Morris, W. and R. Miller, (1975), "The Effects of Consensus-Breaking and Consensus Preempting Partners on Reduction of Conformity," *Journal of Experimental Social Psychological Research*, 11, 215-223.

Moskos, C. and J. S. Butler, (1996), *All That We Can Be*, New York: Basic Books.

Murray, S., W. Evans, and R. Schwab, (1998), "Education-Finance Reform and the Distribution of Education Resources," *American Economic Review*, 88, 789-812.

Neal, D., (1997), "The Effects of Catholic Secondary Schooling on Educational Achievement," *Journal of Labor Economics*, 15,1, 98-123.

Neal, D. and W. Johnson, (1996), "The Role of Premarket Factors in Black-White Wage Differences," *Journal of Political Economy*, 104, 5, 869-895.

Nisbett, R. and D. Cohen, (1996), *Culture of Honor*, Boulder: Westview Press.

Phelps, E., (1972), "The Statistical Theory of Sexism and Racism," *American Economic Review*, 62, 659-661.

Plotnick, R. and S. Hoffman, (1999), "The Effect of Neighborhood Characteristics on Young Adult Outcomes: Alternative Estimates," *Social Science Quarterly*, 80, 1-18.

Quillian, L, (2002), "Why is Black-White Residential Segregation So Persistent? Evidence on Three Theories from Migration Data," *Social Science Research*, 31, 197-229.

Rosenbaum, E. and L. Harris, (2001), "Residential Mobility and Opportunities: Early Impacts of the Moving to Opportunity Demonstration in Chicago," *Housing Policy Debate*, 12, 321-346.

Rosenbaum, J., (1995), "Changing the Geography of Opportunity by Expanding Residential Choice: Lessons from the Gautreaux Program," *Housing Policy Debate*, 6, 231-269.

Rosenbaum, J. and S. Popkin, (1991), "Employment and Earnings of Low-Income Blacks Who Move to Middle Class Suburbs," in *The Urban Underclass*, C. Jencks and P. Peterson, eds., Washington DC: Brookings Institution Press.

Roemer, J., (1998), Equality of Opportunity, Cambridge: Harvard University Press.

Roemer, J. and R. Wets (1995), "Neighborhood Effects on the Distribution of Income," mimeo, UC Davis

Sampson, R., Morenoff, J., and Earls, F., (1999), "Beyond Social Capital: Collective Efficacy for Children," *American Sociological Review*, 64, 633-660.

Sampson, R., Raudenbush, S., and Earls, F., (1977), "Neighborhoods and Violent Crime: A Study of Collective Efficacy," *Science*, 277, 918-924.

Schelling, T., (1971), "Dynamic Models of Segregation," *Journal of Mathematical* Sociology, 1, 143-186.

Sherif, M., Harvey, O., White, B., Hood, W. and Sherif, C, (1961), *Intergroup Conflict and Cooperation: The Robbers Cave* Experiment, Norman: Institute of Group Relations, University of Oklahoma, reprinted by Wesleyan University Press, 1988.

Sherwin-White, A. N., (1970), *Racial Prejudice in Imperial Rome*, Cambridge: Cambridge University Press.

Smock, P. and F. Wilson, (1991), "Desegregation and the Stability of White Enrollments: A School-Level Analysis," *Sociology of Education*, 64, 278-292.

Sobel, M., (2002), "Spatial Concentration and Social Stratification: Does the Clustering of Disadvantage "Beget" Bad Outcomes?," mimeo, Columbia University.

South, S. and E. Baumer, (2000), "Deciphering Community and Race Effects on Adolescent Premarital Childbearing," *Social Forces*, 78, 4, 1379-1408.

South, S. and K. Crowder, (1999), "Neighborhood Effects on Family Formation: Concentrated Poverty and Beyond," *American Sociological Review*, 64, 113-132.

Steele, C., (1992), "Race and the Schooling of Black America," *Atlantic Monthly*, April.

Steele, C., (1997), "A Threat in the Air: How Stereotypes Shape the Intellectual Identities and Performances of African Americans." *American Psychologist*, 52, 613-629.

Steele, C. and J. Aronson, (1995), "Stereotype Threat and the Intellectual Test Performance of African Americans," *Journal of Personality and Social Psychology*, 69, 5, 797-811.

Streufert, P., (2000), "The Effect of Underclass Isolation on School Choice," *Journal of Public Economic Theory*, 2, 4, 461-482.

Topa, G., (2001), "Social Interactions, Local Spillovers, and Unemployment, *Review of Economic Studies*, 68, 2, 261-295.

Wald, A., (1950), *Statistical Decision Functions*, New York: John Wiley and Sons.

Wells, C., (1992), *The Roman Empire*, Cambridge: Harvard University Press.

Wilson, W. J., (1987), *The Truly Disadvantaged*, Chicago: University of Chicago Press.

Wolfram, W. and N. Schilling-Estes (1998), *American English*, Oxford: Blackwell Publishers.

Young, H. P., (1998), *Strategy and Social Structure*, Princeton: Princeton University Press.