

**GROUP INEQUALITY  
IN DEMOCRACIES:  
LESSONS FROM  
CROSS-NATIONAL  
EXPERIENCES**

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## Abstract

Group inequality is a prominent feature of many modern democracies. The purpose of this paper is to take stock of what we know about the ways in which major democracies have viewed social groups and addressed inequalities between them. Countries classify individuals into groups based on race, color, birthplace, language and occupation. These markers have been used in different combinations across space and time. The first part of this survey summarizes these differences and examines their implications. I then discuss significant contributions to the theoretical and empirical literature on the persistence of group inequality. I end with policy implications and important gaps in research that can form the basis for future enquiry.

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## **1 Introduction**

Inequalities across social groups are a prominent feature of many modern democracies. Some of these inequalities, such as those between black and white populations in the United States and South Africa, or between upper and lower castes in India, are the result of historical discrimination and its aftermath. Others are the result of more recent political and economic events such as civil and transnational wars, refugee movements, financial crises or labor mobility across countries. State policies that group inequalities vary have also followed many different trajectories. The most significant policy divide relates to affirmative action for disadvantaged groups. This has been ardently pursued in some countries, while others have focussed on improving access to public schooling and health.

The purpose of this paper is to take stock of what we know about the ways in which major democracies have viewed social groups and addressed inequalities between them. The survey is conceptually divided into three parts. The first of these is descriptive and outlines the ways in which individuals have been classified into groups in different countries and the types data that allow us to track changes in group outcomes. Race, color, birthplace, language and occupation are used in different combinations across space and time. I examine the determinants and implications of these alternative classifications. The second part discusses the theoretical and empirical literature on the most important mechanisms that generate inequality and govern its transmission. A summary of theoretical models is followed by the empirical approaches used to test them. Preference-based and statistical discrimination, inter-generational transmission of wealth, failures in credit and housing markets, neighborhood sorting and social networks have all been put forward as explanations for differences in well-being across groups. I also discuss research that links group inequality to conflict and other aggregate societal outcomes. The third part of the survey draws implications of these mechanisms for public policy and I summarize the evidence on the effectiveness of alternative policies.

A review of the current state of knowledge leads us to gaps in research that need to be filled if social and public policy is to adequately address group inequalities. I argue that our understanding of social inequalities is greatly constrained by state decisions how to categorize a population into groups. We need to better understand how differences in social classification affect our perceptions of inequality between and within countries and the ways in which state policy can create new notions of individual identity. Research in sociology and in social psychology has discussed these questions of categorization but they have largely remained outside the realm of research in economics. Crossing these disciplinary lines effectively can help us relate the deprivation faced by individuals to status differences across groups. Research on group inequalities is also disproportionately concentrated with the United States and this is reflected in this survey. Part of the reason for this is that census data in Europe does not include social classifications and there is limited research capacity in countries where social inequalities and conflict are especially salient. In addition, while there have been a number of experiments on the effectiveness of particular policies but very little work that compares policies within particular regional and social contexts. This is ultimately the kind of knowledge that needs to be generated to guide effective policy.

## 2 Group boundaries

Measuring group inequality requires defining groups. This process is more complex and controversial than commonly perceived. The major source for statistics on group incomes and well-being are national censuses and labor force surveys and while most countries collect social data, they are quite different with regard to the coarseness and nature of categories used, the methods of enumeration and the ways in which their citizens respond to questions on social background. Some idea of the variation in race and ethnic classification is useful in order to interpret differences and trends group inequality.

Morning (2008) examines 138 census questionnaires around the year 2000 and finds that 87 of them collect some type of ethnic information. Race, religion, caste, ancestry, nationality and color are all are used in isolation or in combination at different times and places. Some of the changes we observe over time are appropriate responses to demographic composition. Waves of immigration have fundamentally changed the populations of many countries and new origins and ethnicities appear. Quantitative social science has not, however, accounted for the many ways in which social categorization has been influenced by state politics and national ideologies. New distinctions between people are sometimes created and at other times, plastered over. This makes aggregate measures of social distance time and context-specific.

The United States, with its over 200 year history of census operations is a good illustration of how state goals and demographic composition influence official classifications. The first census in 1790 distinguished white males and females, all other free persons and slaves. The main purpose was to determine representation in the legislature and taxation, so Indians who were not taxed were not enumerated. *Color* appeared in 1850 with the distinctions of white, black and mulatto, *race* appeared in 1870 and in 1890, different mixtures of black, white and Indian blood were separately recorded under various terms until the early twentieth century. New categories such as Chinese, Japanese, Korean, Mexican, Hindu, Cuban, Vietnamese and Asian Indian were slowly added after these groups entered the country. Starting in 1970, racial and ethnic categories were self-reported, although enumerators were asked to pick only one category if more than one was stated. After millions of Americans reported themselves as *Other* in both 1980 and 1990, and multi-racial populations complained about being unable to properly self-classify, a federal directive in 1997 expanded the number of categories and allowed multiple responses in the census of 2000.<sup>1</sup>

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<sup>1</sup>This description is based on Yanow (2015), Chapters 2-4.

Canada, with a similar history of immigration, allowed its population much more flexibility in reporting ethnicity. The census allows individuals to self-identify using multiple categories which include ancestry, nationality, language and ethnicity. It has also experimented with changing the order of the listing, with French before English in some years and vice-versa in others. Yet, *Canadian* is the most popular response to the ethnic question. Brazil and South Africa also provide interesting contrasts to the United States. While the U.S. census defined Black in terms of the one drop rule for most of its history and did not admit multiracial identities until recently, South African censuses recorded the four categories of African, Coloured, European and Asian throughout the twentieth century and therefore officially recognized a mixed blood group even though there were strict laws that governed interactions between Whites and non-Whites. These categories also remained unchanged with the momentous dismantling of apartheid (Khalfani and Zuberi, 2001; Davis, 2001). Brazil recorded color and national identity was defined in terms of mixtures of its three main races of European, African and Indigenous. More recently, and partly as a result of social activism, it has added census questions on African and indigenous descent (Nobles, 2000).

In her recent book *National Colors*, Mara Loveman traces the history of population enumeration in 19 Latin American countries. In the colonial period enumeration was determined by the needs of conscription to forced labor and taxation. After Independence from Spain and Portugal, racial distinctions were condemned by most national leaders, but when census operations began, the four categories of white, black, Indian and mixed were recorded in most countries. Racial mixing and indigenous populations were important features of these nations that distinguished them from their colonizers and recording them in the census asserted the new nationhood. In fact, after the Mexican Revolution of 1910, to emphasize the new balance of power, the order in which racial data was tabulated also changed. Indigenous populations were listed first, followed by Mixed and then White. After 1950, most countries in Latin America stopped recording race and some replaced this with language. By 1970, no country other than Cuba recorded race. Since then, race has once again appeared on census forms, largely in response to local and international pressures to actively bridge racial gaps in income and opportunities. Almost all censuses now have questions on Indigenous and African ancestry. This has generated new data on inequality by race which have formed the basis of a large affirmative action program in public universities in Brazil.<sup>2</sup>

In contrast with the Americas, many European countries have historically taken the position that national identity is best promoted by ignoring ethnicity. France has been especially vehement in this regard. Between 1891 and 1999, official statistics used only three

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<sup>2</sup>See Loveman (2014), Tables 6.1 and 7.1a for a listing of censuses and countries that have recorded race since the early nineteenth century and Figure 5.1 for the tabulation in Mexico

categories of citizenship, the French, “French by acquisition” and Foreigners. British censuses recorded the birthplace of individuals since 1841 but discontinued recording nationality starting in the 1961 census. Both these countries have changed the categories they use since the 1990s, Britain more than France. In France, the Family History, in collaboration with the census, asked survey respondents about the birthplace of their parents, so “descendants of immigrants turned into a statistical category” (Simon, 2008, p. 12). In Britain, although the Census Act of 1920 had permitted the census to inquire about “nationality, race and language”, this was not done until 1991, when an ethnic group question was asked for the first time in British history. The 1991 census asked respondents to assign themselves to one of 9 categories, which distinguished, for example, ‘Black-other’ from ‘Any-other’ and within Black, those of Caribbean and African descent. Asians could be Indian, Pakistani, Bangladeshi or Chinese Fenton (1996). Recording ethnicity appears to be becoming more acceptable.

In many cases, official categories were designed to hide important differences in identity. Israel records religion and birthplace but not ethnicities such as Arab.<sup>3</sup> Rwanda, in its attempt at nation-building after the genocide in 1994, outlawed the use of ethnic labels such as Hutu and Tutsi. These distinctions, it has been argued, were themselves largely occupations turned into ethnicities by the Belgian colonial administration.<sup>4</sup>

The case of classification in India is particularly complex. Classification is done both by religion and by caste. Many thousands of castes and communities are classified into four categories: the Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Classes (OBCs) and a residual category with all others. These were created to administer the country’s affirmative action program. The SCs and STs were given proportional representation in parliament in 1950. There are now quotas for each of the first three categories in state and federal employment and in public universities and they are collectively known as the *Backward Classes*. Because the gains from affirmative action are so substantial, there have been many petitions by caste groups to be classified as “backward” and, in this sense, the categories are fluid. Group inequalities exist within each of these official categories and between them (Galanter, 1984; Sharan, 2003; Somanathan, 2011) .

The purpose of this historical narrative on the official categorization of identity is to emphasize that data on groups is influenced by ideological and political forces. Measured group inequality is the result of both fundamental differences in the well-being of groups and changes in how group boundaries are perceived by individual and state actors.

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<sup>3</sup>See Goldscheider (2002) for comparative analysis of Israel, Canada and the United States.

<sup>4</sup>For Rwanda, Wimmer (2013), (p 53-54) discusses the creation of ethnicity under colonial rule, and Eramian (2014) the changes after 1994.

### 3 Mechanisms: Theoretical Investigations

A variety of theoretical mechanisms relating group membership to incomes have been suggested. This section describes these models and the next section examines whether the empirical evidence allows us to distinguish between alternative theories.

#### 3.1 Discrimination

Preference-based discrimination is a popular explanation for persistent group inequality. Becker (1957) first formalized this within economics as a disutility to employers and consumers from interacting with the discriminated group. He coined the term *discrimination coefficient* to represent the percentage by which money costs and returns are different from the net values that decisions makers take into account and which include the psychic and other non-pecuniary costs of interaction. In Becker's formulation, if discrimination against a factor  $k$  is measured by a discrimination coefficient  $d_k$ , an employer dealing with this factor and paying a money wage  $\pi$ , is assumed to act as if the wage is  $\pi(1 + d_k)$ , an employee offered  $\pi$  by this factor, acts as if the wage rate is  $\pi(1 - d_k)$  and a consumer buying from such a factor at the price  $p$ , acts as if he is paying  $p(1 + d_k)$ .

These preferences can generate differences in market outcomes across groups. Market discrimination exists if the ratio of wages of workers in the two groups is different from what would exist in the absence of discrimination. The market discrimination coefficient (MDC) is the percentage difference in net wages of the non-discriminated and the discriminated group. Becker acknowledged that the relationship between wages, segregation in transactions and the individual discrimination coefficients was mediated by a number of factors such as the organizational structure of the labor market and the degree of substitutability between labor from different social groups. He did not however formalize these connections to relate residential or labor market equilibria to individual preferences.

The emergence of information economics in the seventies focussed attention on the effects of asymmetric beliefs in markets (Akerlof, 1970). It led to new models for understanding discrimination in which prior beliefs on the lower productivity of minorities or women could be self-fulfilling because they result in lower expected returns from education for these groups (Arrow, 1972; Phelps, 1972; Spence, 1973).

Un the next section, I discuss why it is empirically difficult to distinguish statistical



from preference-based discrimination. The theoretical distinction is significant because in the case of statistical discrimination, policies that change beliefs can set in motion hiring process that lead to greater group equality. No such immediate policies suggest themselves for ameliorating preference based discrimination. One might imagine that greater contact in residential and employment spaces may lead to more empathetic relations across groups. Until that happens, constitutional protections legal structures that ensure their application may be the only recourse.

### 3.2 Inter-generational transmission

Even in the absence of discrimination in markets, group inequalities could persist because incomes of different generations within a family are correlated. If the poor are disproportionately of one group and are severely limited in the extent to which they can invest in the education, health or any other aspect of their children's lives that allows them the move out of poverty, group inequality in some initial period will be replicated over time even if equivalent skills for all groups are similarly rewarded. These circumstances provide the strongest case for redistributive transfers which equalize incomes and therefore opportunities across members of different groups.

Loury (1981) is an early model of intergenerational transmission of income and wealth in the face of dysfunctional credit markets. Earnings of any individual depend on ability and education or training and no borrowing is possible. Parents can therefore only invest in the education of their offspring by sacrificing current consumption. With diminishing marginal utility of consumption, poorer parents decide to invest less in a child of equivalent ability. This makes children of initially poor ethnic groups, poorer on average. This paper provides two important insights for the evolution of group inequality. First, if ability is distributed identically across groups, then even in the absence of credit markets, *poverty traps* are unlikely. This is because even the dynasties that are initially the poorest can have high incomes if some generation is able enough. One such breakthrough can lift families out of perpetual poverty. Formally, this involved showing that under reasonable technical conditions, there is a unique distribution of income to which the economy converges, and this does not depend on the initial distribution of income. The second main result is that redistribution can improve efficiency through improving the correlation between ability and investments in training. From the perspective of group inequality, the paper shows that while poorer groups will not remain poor forever, redistribution across groups can improve aggregate incomes while also reducing inequality.

### 3.3 Neighborhoods and networks

Neighborhoods and social networks are an important source of mobility. These have traditionally been the domain of sociologists and much of the work in this area has been focussed on the United States. This is partly due to the greater use of quantitative methods among American sociologists but also because one of the startling features of the urban landscape in the United States is the degree of residential segregation by race and ethnicity, in spite of well functioning land markets and laws that prohibit discrimination in housing. This is especially true of the the older metropolitan cities in the North-East and Midwest. The United States also has a relatively mobile population and schools have traditionally been locally financed. The geographical distribution of the population therefore has direct implications for the quality of schooling.

Within economics, models have focused on how households with given characteristics sort themselves across neighborhoods. Theories of neighborhood sorting began with the work of Charles Tiebout on local public goods. Tiebout (1956) pointed out that households would move to neighborhoods where tax rates and public good quality matched their preferences. Later work pointed out how neighborhoods sorting can create inequalities even with no preference differences. Benabou (1993) shows that even with initially identical individuals, peer effects in local public goods such as education can lead to the ghettoization of certain parts of a city. These types of sorting models have been extended in a number of directions. For example, Epple and Romano (1998) allow for private schools and peer-effects in schooling and show how they increase inequalities in education through segregating high and low ability students. These models do not directly address racial segregation across neighborhoods since they do not explicitly incorporate social groups

The nuanced relationship between preferences over neighborhood racial composition and segregation was studied by Thomas Schelling in the late sixties. Schelling showed that segregated neighborhoods need not reflect strong in-group biases and a preference for some integration by all groups is consistent with equilibria in which there is complete segregation (Schelling, 1969, 1978). Segregation in turn, is related to group inequalities in education and skills. Sethi and Somanathan (2004) incorporate both race and public goods into preferences and show that even when the ideal neighborhood for all individuals is partially integrated, segregation can still be an equilibrium outcome if income disparities between groups or races are either very large or very small. A unique integrated equilibrium only exists for intermediate racial income disparities. The main implication of this research for group inequality is that the skills acquired by a population depend on the interaction of the joint distribution of race and income in society

and not just on individual characteristics since these distributions determine whether segregation or integration (or both) are stable equilibrium outcomes. If, for example, if black populations are on average somewhat poorer than white populations, then high income black households will live in poorer neighborhoods than high income whites and if intergenerational transmission of income is important, disparities of future generations will widen. I will come back to the evidence on this in the next section.

The theoretical relationship between residential segregation and group inequality has been less studied in other countries. Some, such as South Africa, had enforced segregation by race until the end of Apartheid in 1994 so residential choices were limited.<sup>5</sup> Others, such as India had limited mobility because of rigidities in land markets. Although there is a great deal of segregation by caste in India, it typically happens within villages. Lower castes often reside in secluded hamlets within villages and informal norms may limit their access to other groups. They are also concentrated in menial and low paid occupations and in particular hamlets within larger villages. Discrimination in such cases operates directly rather than through housing markets, taxes and spending on public goods. In most European countries mobility was possible, but responded less to the quality of public services such as schools, because public education was often centrally financed and administered.

Neighborhoods are only one setting in which social interactions influence inequality. Jobs are another. Seminal work by Mark Granovetter in the early seventies revealed the importance of networks in labor markets. Using detailed interviews with 100 people who had changed jobs in the Boston suburb of Newton between 1968 and 1969, Granovetter (1974) shows that over half of all new jobs were obtained through personal contacts and many of these were not advertised but rather created upon finding promising potential candidates. Granovetter also found that jobs obtained through contacts had on average, higher pay and prestige and were more satisfying overall, than those obtained through other means. The sample used was white collar jobs in professional, managerial and technical fields. Previous research had already established the importance of referrals in blue collar jobs. The accumulated evidence from these studies shows that models of search in economics that ignore social relations miss important features of market functioning. Granovetter (1985) elaborates on the more general problem of models in neoclassical economics not being sufficiently embedded in the realities of social structure.

Economists have recently started to formalize the ways in which social networks influence the operation of labor markets and this is now an area of active research. Calvo-Armengol and Jackson (2004) present an especially elegant model which can explain

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<sup>5</sup>Restrictions on the location and movement of Africans in South Africa are detailed in the United Nations booklet of Public Information (1969).

divergent unemployment rates across social networks. Since many networks operate along ethnic lines, this type of model speaks directly to the different labor market outcomes we observe across groups. In each period, all individuals receive a signal about a job opportunity with some probability. If unemployed, the person takes the job. If already employed, the signal is passed on to a randomly chosen unemployed person in their network. If everyone in a network is employed, the information is lost. The probability of finding a job is therefore increasing in the number of connections to employed people in a network and contagion effects can result in polarized outcomes across groups. If there is a given cost to staying in the network, those with low prospects of finding a job drop-out, making it less likely that others formally in their network would find a job. Conversely, each additional job for someone in a network, increases the probability of the unemployed in the network finding jobs.

The role played by social networks in the above model is one of information transmission. Within labor markets, this could both help the unemployed find jobs and those already employed move to better jobs. They could also be important in many other market and non-market settings. Apart from information, networks may help trade through reputation-building (Greif, 1993). They may also help enforce norms for repayment in credit markets and encourage participation in new markets (Jackson, 2014). Bowles *et al.* (2014) illustrate how peer effects that operate through social networks can amplify inequality in human capital investments over time.

The features of networks that lead to the fastest dissemination of stimuli is an area of active research. For mobility, there seems to be some support for Granovetter's claim that there is "strength in weak ties". Being loosely connected to multiple networks may be more beneficial than being in the midst of a dense but isolated set of connections (Granovetter, 2005). The study of information within networks seems to be an especially promising area for collaborative research between economists, sociologists and anthropologists, which has been long recognized but remains under-explored (Geertz, 1978). Social networks could also reduce the chances of individual success through the spread of negative stimuli or behaviors. Disease, crime, smoking, substance abuse and fertility are all profoundly influenced by social interactions.

### 3.4 Collective outcomes

The final set of formal models I consider are those relating to the effects of social heterogeneity on collective action and conflict. There are two distinct approaches in this literature. The first focuses on how the demographic composition of an area (village,

town, district or city) affects the propensity of its residents to engage in collective action and thereby obtain public goods. The second is related to the tensions created by social heterogeneity, potentially leading to conflict.

Alesina *et al.* (1999) is early and influential paper in this field. It contains a two stage voting game in which citizens vote over the public budget in the first stage and over the type of public good provided in the second stage. Forward-looking citizens in diverse communities vote for lower taxes because the type of public good provided (by the median voter) is far from one preferred by most voters. Homogeneous communities agree on how taxes are spent and therefore support higher taxation. The model is tested using the classification of race in the 1990 U.S. Census. Counties and cities that are more fractionalized are shown to have lower fractions of their budgets spent on education, roads and trash services. Later work recognizes that some diverse communities may do quite well, but only because a varied set of skills in production compensate for divergent preferences.<sup>6</sup>

There are many other possible channels through which collective action operates. Banerjee *et al.* (2008) provide a framework which incorporates many of the theoretical ideas in the collective action literature and provides a context within which to interpret the many empirical studies in this field from different parts of the world. The collective action game is non-cooperative in that benefits from a public good depend on group membership but costs are privately incurred. Each individual decides on a level of collective effort based on these common benefits and private costs. In equilibrium, the probability of a region getting a public good (this could also be interpreted as the share of the public budget that it receives) depends on the share of total collective effort it exercises. Social groups may differ along many dimensions: their preferences for public goods, their political influence in getting them and their costs of engaging in collective action. All these affect the relationship between the social composition of a region and the type and quality of public goods.

The area of social conflict and racial and ethnic divisions is a huge inter-disciplinary field. Among economists, Joan Esteban and Debraj Ray have focussed on why conflict in which groups of individual seek to control state resources is often organized along ethnic rather than class lines even though the gains state policy has important class-based elements. They argue that organizing a conflict requires both resources and time and the rich within ethnic groups are best suited to provide the former and the poor the latter. The *economic* gains from conflict along ethnic lines is therefore greater than that along class lines (Esteban and Ray, 2008). Caselli and Coleman (2013) use a similar

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<sup>6</sup>See Alesina and Ferrara (2005) for an elaboration of this idea and a comprehensive survey of the literature.

perspective in terms of thinking of conflict as the result of groups trying to control state resources but provide an alternative explanation. They argue that ethnic markers enforce group membership because they are harder to change. Winners and losers in a conflict are therefore more easily distinguished when there is ethnic conflict. With class conflict, losers can pretend to be part of the winning group and this dilutes the gains to winners in a conflict and weakens incentives to engage in conflict.

To operationalize any theory based on social divisions, we need to ask how these divisions should be measured. There are two main issues here, one concerns the marking of social boundaries and the other on constructing measures which capture the propensity for collective action or conflict based on the groups we demarcate. Research in economics has focussed on how to construct measures based on divisions but not on which divisions matter. Political scientists and sociologists have more readily acknowledged the difficulty in thinking of divisions as exogenously determined. Brubaker (2009) and Fearon and Laitin (2000) are surveys of the literature on the construction of identity and good introductions to this field and the many complexities involved.

## **4 Mechanisms: Evidence**

The survey of the evidence in this section follows the order of the theoretical literature on mechanisms discussed above.

### **4.1 Tests for discrimination**

Early studies of discrimination in the labor market used cross-sectional data and regression methods to test whether race and ethnicity affected labor market outcomes such as wages and employment. An indicator variable for race or ethnicity that was negative and statistically significant from zero after controlling for education, region of residence, age, experience, occupation and other such characteristics suggested labor market discrimination. Cain (1986) summarizes this approach and points out obvious difficulties. Most importantly, if discrimination does in fact exist, very few variables that are used as controls in these empirical models are exogenously determined. Race, caste and ethnicity determines where families live, the type of schooling they receive and the occupations they enter. Any effects we find in addition to those that influence these choices are just a small part of the discrimination effect. Also, the use of aggregate data sets can hide segregation at a more disaggregate level. If neighborhoods and firms consisted entirely of either black or white workers and managers, race must be salient,

yet it may not show up in such estimates.

Recognizing that discrimination in labor markets could influence individual investments in education and the assignment of employees to jobs, Blinder (1973) and Oaxaca (1973) independently presented a variant of the regression model to decompose wage differentials by race and gender into those attributable to differences in endowments and in returns to them. This is now popularly referred to as the Oaxaca-Blinder decomposition. The determinants of wages are estimated separately for each of the two groups, call these  $H$  and  $L$  for the high and low paid workers respectively. The difference in coefficients for the two groups multiplied by the endowments of the  $L$  group plus the difference in intercepts represents the role of direct discrimination in labor markets. The remaining component of the predicted mean wage difference is the difference in characteristics, multiplied by the coefficient of the  $H$  group. Blinder (1973) found about one-third of black-white wage differences in the United States in the late 1960s were due to endowments and the rest he attributed to discrimination.

A decomposition of this kind provides useful a summary of sources of wage differences but cannot establish causality unless we are able to convincingly isolate individual background characteristics that are not affected by racial attitudes. We are most interested in group inequality when race and ethnicity is truly salient. In such cases most aspects of life are affected by social identity, including residence, health and parental endowments. These are the types of variables that are often treated as exogenous in wage regressions.

Arrow (1998) points to some limitations of economic models in understanding the sources of discrimination. Becker's taste for discrimination model is plausible in a world in which repeated and voluntary transactions occur among employers and employees, customers and firms. It is harder to reconcile with large corporations and with transactions such as those in housing or credit markets. Employers in big companies have very little contact with employees and those selling houses have no future contact with their buyers. Arrow points out that if we have reasonably accurate measures of individual productivity, they can help us distinguish between preference-based and statistical discrimination, since the former predicts wage differences for equally productive workers while the latter does not. Such productivity data are not often available. Neal and Johnson (1996) use pre-market test score data from the Armed Forces Qualification Test (AFQT) as a proxy for productivity and find that much of the Black-White wage gap of workers in their twenties is explained by this measures. To the extent that discrimination, segregation and social networks could cause disproportionate attrition of potential black workers from the labor force, the sample they use is likely to be unrepresentative of the black population.

Partly in response to the difficulties in identifying the presence of discrimination with secondary data sets, there has been a move towards correspondence and audit studies in labor, housing and other markets. Audit studies use actual individuals who are trained to act alike while correspondence studies use fictitious ones, created by researchers to be identical except for characteristics such as race, caste, ethnicity or gender, often indicated through names that are typical for these groups. Differences in call-back rates provide an estimate of discrimination. In the United States, employers are only entitled to base their decisions on observable characteristics other than race and gender, and the difference in call-back rates therefore measures discrimination in the legal sense. If the characteristics presented to employers are only a subset of those that employers perceive as affecting productivity, these studies do not provide unbiased estimates of the type of taste-based discrimination Becker defines. Only under the implausible assumption that unobservable characteristics have the same distribution across groups of workers do we identify taste-based discrimination from these studies. Heckman and Siegelman (1993) show that even if the expected value of these unobservables is the same across black and white workers, differences in the variances can lead to audit studies either underestimating or overestimating the taste-based discrimination coefficient. Neumark (2012) suggest how audit estimates may be adjusted to arrive at a discrimination parameter under special assumptions. Heckman (1998) summarizes data from both audit and other studies and argues both that audit studies provide much more limited evidence of labor-market discrimination that is often imagined and also that such discrimination is a small part of the difference in wellbeing by race in the United States. More attention is needed on skills and social environments.

## 4.2 Inter-generational mobility

The extent of intergenerational mobility in income and wealth has been estimated for several countries which have high quality longitudinal data. For the United States, the Panel Study of Income Dynamics (PSID) provides a particularly rich source of longitudinal data on earnings for about 5,000 families starting in 1968. Solon (1992) uses 348 father-son pairs of earnings for sons born between 1951 and 1959 in the United States and estimates a regression function of the son's earnings as a function of the father's earnings and age controls. The elasticity of son's earnings with respect to father's earnings is roughly 0.4. Estimated elasticities for other OECD countries are typically much lower. Corak and Heisz (1999) use Canadian tax data for 400,000 father-son pairs and find an elasticity of 0.2 and the higher mobility in Canadian society seems to be especially higher than the United States in the tails of the income distribution (Corak, 2013). Not surprisingly, Scandinavian countries exhibit much more mobility



with elasticity estimates at or below the level for Canada. Britain seems more similar to the United States (Solon, 2002; Atkinson *et al.*, 1978).

There is much less evidence on transmission for particular racial and ethnic groups. Altonji and Doraszelski (2005) use the PSID and find that the explanatory power of income and demographics is much greater for white than for black households in the United States. The racial gap is hard to explain using individual characteristics. George Borjas, in his recent book (Borjas, 2011, chapter 8) summarizes accumulated evidence from his own research on the social mobility of immigrants to the U.S. and finds that there although there is limited persistence between generations of a single family, ethnic differences persist due to the importance of what he terms *ethnic capital*. Groups that are disadvantaged on the labor market are more likely to segregate into ethnic ghettos and explanations of long run group inequality therefore require looking beyond families to neighborhoods.

### 4.3 Segregation and Networks

Following the Civil Rights Act of 1964, the sociologist James Coleman was commissioned by the U.S. Department of Health, Education to study whether children of different racial and ethnic backgrounds had similar levels of access to resources in public schools. The report also investigated the sources of differences in achievement across social groups. The now famous Coleman Report of 1966 found extreme levels of racial segregation across schools which resulted largely from the segregation of residential neighborhoods. Although the goal of the report was to suggest ways in which resources could be equalized across school environments in order to equalize opportunity, the data showed that equalization in funding alone was unlikely to equalize outcomes because neighborhoods and families had large effects on achievement. The report drew attention to the extreme segregation of neighborhoods and its effects on outcomes.

Since the Coleman report, there have appeared a very large number of studies of the extent and the impact of residential segregation in the United States. They show that racial income disparities explain a very small fraction residential segregation by race and that while Hispanics and Asians are less segregated from Whites with higher levels of socio-economic status, Blacks are not. (Denton and Massey, 1988; Farley and Frey, 1994; Massey and Denton, 1987; Sethi and Somanathan, 2009). Such segregation has profound effects on multiple aspects of well-being. Cutler and Glaeser (1997) find that segregation results in systematically lower education and employment outcomes for black households and that it is also associated with higher fractions of unmarried mothers.

Access to health care and health outcomes are also systematically worse. Gaskin *et al.* (2012) find majority African American zip codes have much higher odds of facing a shortage of primary care physicians. Collins and Margo (2000) show that many of the negative effects of racial concentration did not manifest themselves until the 1970s.

Cross-country studies of segregation are complicated by the variations in the classification of groups discussed in Section 2 and the fact that most European countries do not record race. Group inequalities are therefore documented most commonly in terms of skill or educational categories (Bachmann *et al.*, 2014) and the segregation of immigrants is most often discussed, even though this is often synonymous with race. Racial segregation can be studied in both South Africa and Brazil because both these censuses record race or color. Hunter (2007) shows how the rise of AIDS in South Africa was partly an outcome of the patterns of segregation and migration of the African population.

## 5 Policy Implications and Research Gaps

The mechanisms discussed in the previous sections point to policies that can help reduce horizontal inequalities. The least controversial of these is the role of public education. The experience of many nations points to its effectiveness. Goldin and Katz (2009) study the evolution of wage inequality in historical and cross-national perspective. The United States was a pioneer in extending public education to the masses in the nineteenth and twentieth century, a time when school systems in most countries served only the elite. This substantially reduced racial inequality in the United States relative to, for example, England. Some of these equalizing effects have been undone since the last quarter of the twentieth century because new technology has favored workers in the upper tail of the wage distribution. Card and Krueger (1996) use micro data from the U.S. Census for two southern states in the United States and show that the equalization of school resources across black and white students over the twentieth century did contribute to narrower racial wage gaps when these students entered the labor market.

For India, we find that education was an important driver of mobility for historically disadvantaged groups, yet was politically less popular than targeted policies such as affirmative action in government jobs. Kumar and Somanathan (2016) present data from the Indian census over the period 1961-2001 which suggests that disadvantaged castes had the largest gains in educational attainment in states that emphasized public schooling rather than those in which these groups had political influence. As the returns to education increased in the liberalized economy of the nineties, Munshi and Rosenzweig (2006) show that families from the lower ranked castes that invested in education had

high returns in the labor market. In spite of this, Indian states that had more legislators from among these castes had lower budgetary spending on public education (Pande, 2003). Drèze and Sen (2013) provide a historical and comparative account of development for the various regions in India. In their assessment, education spending and quality have been central to effective development in India and states that have followed universalist rather than targeted policies have been the most successful.<sup>7</sup>

In contrast to education spending, affirmative action policies have been very controversial. Affirmative action probably constitutes the most significant ideological divide on policies relating to group inequality. The political economy of India has led to an ever-expanding role for caste-based affirmative action, yet disparities across castes remain very large and the way that castes are classified combined with the low levels of educational attainment of the most disadvantaged makes it unlikely that they can benefit from these policies (Somanathan, 2006). Loury (2016) argues that the condition of African Americans in the United States must be understood in terms of the two fundamental process of *categorization* and *signification* and it unclear that affirmative action policies which attempt to equalize particular outcomes rather than status will do much for the problem of race in the United States.

In cases where groups were not explicitly targeted, but universal policies such as health and education were vigorously pursued, they seem to have influenced group disparities. Andrews (1992) compares racial inequalities among multiple dimensions for the United States and Brazil and finds that while racial differences have remained larger in Brazil historically, mainly due to the expansion of education in the United States, social programs that addressed class differences in Brazil gained momentum in the 1990s and have dramatically racial disparities gaps in life expectancy, infant mortality and educational attainment.

To the extent that inter-generational transmission of wealth and quality of peers influences the ability of poorer groups to acquire skills, policies that improve access to credit and and those that allow racial integration in neighborhoods are likely to be effective. Most countries however have had very little success with racial integration. In spite of the rise of an African American middle class in the United States in the second half of the twentieth century, neighborhoods remain extremely segregated. The ill-effects of such segregation on labor market outcomes by race have become stark since the 1980s and racial differences in crime rates are now astounding (Collins and Margo, 2000; O’Flaherty and Sethi, 2015). In South Africa, even many of the universities which were at the forefront of the struggle to end apartheid have re-segregated (Vergnani,

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<sup>7</sup>See Chapter 5, and the discussion at the end of Chapter 3.

2000). Indian villages have traditionally been segregated by caste and castes themselves have been endogamous. There is no evidence that 65 years of affirmative action have had any significant impact on such segregation.

To summarize what we've need learnt and still need to know: The literature on group inequality has three major research gaps. First, it has largely ignored the differences in the ways in which countries categorize their populations and on the implications of such categorization on the measurement of inequality. We can only study the effects of what we measure and while neo-liberal movements in many European countries have important implications for racial conflict and inequality, these have been little studied because most of these countries do not record race in their official data. In countries such as India, with large affirmative action programs, the classification of caste is coarse and hides many inequalities across groups. In the United States, race has always been recorded but the number of categories has multiplied over the years, so measures of inequality over time are not comparable. Second, and related, classification itself changes identity. This has been demonstrated powerfully in the case of both Brazil. Part of the changes in inequality between groups distinguished by color is the willingness of those classified as *Pardo* or mixed race, to report themselves as Black (Marteleto, 2012). Third, the large number of studies on policies relating to group-inequality have estimated the effects of particular policies, but we do not have enough work that can compare the relative effectiveness of alternatives. This is ultimately the type of information that policy makers need in order to decide how to channel limited budgets in order to achieve their goals of greater equality.

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