Group Loyalty and the Taste for Redistribution

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Abstract

Interpersonal preferences – preferences that depend on the characteristics of others – are typically hard to infer from observable individual behavior. As an alternative approach, this paper uses survey data to investigate interpersonal preferences. The General Social Survey contains self-reported preferences for welfare spending, which I validate with voting behavior on cuts in welfare benefits. Using this preference measure, I show that preferences for income redistribution are not only determined by financial self-interest but also by interpersonal preferences. These interpersonal preferences are characterized by a *negative exposure effect* – individuals decrease their support for welfare if there are more welfare recipients in their area – and *racial group loyalty* – individuals increase their support for welfare spending if a larger fraction of welfare recipients in their area belongs to their racial group. My results hold when areas are defined as states, metropolitan areas or census tracts and are robust to various specification checks. Direct evidence that individuals' preferences for redistribution are partly determined by the effects of redistribution on the utility or lifestyle of others in their community is valuable for the development of more accurate theoretical models and for the design of redistributive policies. The results also help to explain why welfare benefit levels are relatively low in racially heterogeneous states.

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1 Introduction

Accurate economic models and effective policy advice both depend crucially on knowledge about the structure of individual preferences. Given the importance of this knowledge, it is not surprising that economists expend much effort investigating individual preferences. Economists regard observed behavior as the most reliable source of information regarding individual preferences. However, observed behavior is not equally informative about all aspects of individual preferences. Hence, by relying primarily on observed behavior to infer preferences, we may have unwittingly ignored important aspects of individual preferences.

One class of preferences that are hard to observe are interpersonal preferences, or preferences that depend on the characteristics, behavior, utility or opinions of others.[1] One may view them as "psychological externalities" such as altruism, stigma or envy. Interpersonal preferences are relatively hard to measure for two reasons. First, the estimation of interpersonal preferences requires variation in the characteristics of those around you that is independent of unobserved components of your own utility function. Second, interpersonal preferences often reveal themselves through choices on collective actions rather than through observed market behavior. For example, purely altruistic preferences may manifest themselves more clearly in voting behavior for redistributive taxation than in observed charitable giving, because the free-rider problem may prevent pure altruists from giving to charity.[2] When interpersonal preferences cannot be inferred from naturally-occurring observable individual behavior, it may nevertheless be possible to make inferences about them by studying political decisions or by using experimental methods. Both methods have yielded important

[1] See Becker (1974) for a general theoretical treatment of such preferences as well as for references to an older literature, dating from 18th to early 20th century, that discusses such preferences at a more informal level.

[2] Of course, there are many instances when interpersonal effects can be studied using observable behavior. This approach has been very fruitful as is evident from extensive literatures on inter-vivos transfers and charitable giving. See, for example, Altonji, Hayashi and Kotlikoff (1997), Cox (1987) or Rose-Ackerman (1996). Frank (1984) finds evidence for status preferences using intra-organization wage distributions.

evidence about interpersonal preferences but both also have some drawbacks.[3]

This paper seeks to complement the existing knowledge about interpersonal preferences using an alternative approach. It uses self-reported preferences from the General Social Survey (GSS) to examine what factors influence preferences for income redistribution.[4] Psychological research has shown that, while people are able to report *what* they prefer, they are often not able to accurately report *why* they prefer something.[5] Hence, rather than using self-reported reasons for welfare support or self-reported welfare support in hypothetical situations, I estimate how individuals' preferences for welfare spending depend on their own characteristics as well as on the characteristics of others around them. To address legitimate concerns about the validity of self-reported preferences, I compare self-reported welfare preferences to voting behavior on a ballot proposition for welfare cuts in California. I find that the same demographic characteristics that make one more likely to vote against welfare cuts in California also make one more likely to report a preference for more welfare spending. This provides a confirmation of the self-reported preferences.

The GSS provides repeated cross-sections over a twenty year period with information on respondents' demographic characteristics as well as their opinions on the right level of welfare spending. I match the data with information from the decennial censuses including the level and composition of welfare recipiency in the individual's area, where an area may be a state, metropolitan area (MSA) or census tract.

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[3] There is a large empirical literature examining determinants of state and local spending. See, e.g., Borcherding and Deacon (1972), Orr (1976), Case, Hines and Rosen (1993), Cutler, Elmendorf and Zeckhauser (1993), Ribar and Wilhelm (1996) or Alesina *et al.* (1997). Many of these studies find evidence suggestive of interpersonal preferences, but alternative explanations usually cannot be ruled out. In general, inferring individual preferences from aggregate outcomes is difficult because it relies on assumptions about the aggregation mechanism (Bergstrom and Goodman, 1972). Experimental studies have shown that subjects do not act purely selfishly, but it is often hard to determine whether this is due to confusion, characteristics of the experimental setting or due to interpersonal preferences. See, e.g., Andreoni (1995) and references therein.

[4] Self-reported preferences for redistribution have previously been used to describe support for antipoverty programs (e.g. Heclo,1986 or Kull, 1994), to determine the optimal level and structure of unemployment benefits (Di Tella and MacCulloch, 1997), to identify the median voter (Moffitt *et al.*, 1998) or as an explanatory variable for state-level expenditure (Ribar and Wilhelm, 1996). Husted (1989) uses self-reported preferences on welfare spending from the American National Election Study . His study is based on cross-sectional variation and does not provide direct estimates of interpersonal effects.

[5] See Nisbett and Wilson (1977a,b).

The empirical results show that interpersonal effects are an important determinant of individual tastes for redistribution. While the finding that individuals who are more likely to receive welfare are also more likely to support welfare spending confirms that support for welfare is partly determined by financial self-interest, two other findings show that financial self-interest is not the only determinant of support for welfare spending. First, financial self-interest cannot explain why support for welfare spending depends on the race of the welfare recipients in one's area. Second, financial self-interest cannot explain why, conditional on state-level welfare recipiency, support for welfare depends on the local recipiency level. Welfare is financed at the state and federal level, so only state-level or national welfare recipiency affects the cost of the welfare system to taxpayers.

Interpersonal effects in the taste for redistribution are characterized by two main properties. The first property is a *negative exposure effect* — individuals decrease their support for welfare if there are more welfare recipients in their area. The second property is *racial group loyalty* — individuals increase their support for welfare spending if a larger fraction of welfare recipients belongs to their own racial group. Both findings hold for recipiency rates at the state, MSA and tract level, indicating that interpersonal effects operate at several geographic levels. It is hard to determine the precise mechanism though which these interpersonal effects operate. Racial group loyalty may arise because of altruism towards nearby members of one's own racial group.[6] However, such altruism is unlikely to be the only mechanism because then we would not expect a negative exposure effect. I provide results suggesting that interpersonal effects arise from negative externalities that individuals experience when welfare encourages others to behave in ways that conflict with the values of these individuals. Examples of such behavior are idleness or bearing children out of wedlock.

To mitigate concerns that the results are driven by omitted variables, all specifications

[6] See Bobo and Kluegel (1993) or Bobo and Smith (1994) for a sociological discussion of the role of race in support for redistribution. Brewer and Norman (1996) report experimental research in social psychology that supports *ingroup favoritism*, which is positive affect (liking, trust) for fellow ingroup members but not to outgroup members.

include individual demographic controls, MSA and year fixed effects. Moreover, individual-level data allow one to perform further specification checks. Specifically, racial group loyalty is equally strong among richer individuals who are extremely unlikely to be welfare recipients themselves. This rules out that the own-race bias simply reflects that individuals surrounded by many welfare recipients of the same race are more likely to receive welfare themselves and therefore have more support for welfare spending. The results are also robust to a procedure that is equivalent to instrumenting for welfare recipiency rates in an individual's census tract using the interaction between individual characteristics and the pattern of race and income segregation in the MSA.

The results have several important implications. First, the existence and characteristics of interpersonal effects are relevant for theoretical models of redistribution and local interactions.[7] Theoretical models of redistribution have used a wide range of assumptions about the characteristics of individual preferences. Empirical evidence on the shape of individual preferences can help improve the accuracy of such models. Second, the findings provide useful insights for the design of redistributive government programs. In particular, the findings suggest that programs will lose support if they induce idleness or other behaviors that conflict with mainstream values. This may be a rationale for making work requirements part of redistributive programs. Finally, the results indicate that racial heterogeneity is an important determinant of welfare benefits in the United States. About 30 percent of the variation in welfare benefit levels across states can be explained by applying my estimates of interpersonal preferences to the differences in the demographic composition of states. If the qualitative findings of this paper are also relevant outside the United States, this confirms that one needs to take into account the demographic heterogeneity of countries when trying to understand differences in their levels of redistribution.

[7] These results are especially relevant for the growing literature relating stratification, income inequality and local public spending. See, e.g., Bénabou (1996), Durlauf (1996) or Fernandez and Rogerson (1996).

2 A Basic Model of Redistributive Preferences

This section presents a model that explains how an individual's support for redistribution is affected by her own characteristics and by characteristics of others in her community.[8] The model both motivates the specifications in the empirical analysis and helps to interpret the empirical findings.

2.1 Financial Self-Interest

This model considers redistribution in the form of government transfers that are based on some measure of poverty such as income and family composition. Redistribution may be performed at several levels of government, and the model applies to any of these levels. The model allows poverty to be affected by luck, effort and personal characteristics. For simplicity, poverty is modeled as a binary variable. Individuals without income are considered poor, and receive a welfare benefit of B.[9] Non-poor individuals earn an income of Y_i and pay a lump-sum tax of T. The probability of being poor is a function of individual effort e_i and demographic characteristics X_i, and is given by $p(e_i,X_i)$ where $p_e<0$ and $p_{ee}>0$. Individuals receive disutility from effort that equals e_i and utility $u(.)$ from income where $u'>0$ and $u''<0$. Individuals choose an effort e_i^* that maximizes their expected utility for a given tax of T and benefit level B. Let the expected utility from self-interest for individual i be denoted by:

$$V_{Selfish}(B,T|X_i,Y_i) = \max_{e_i} \; p(e_i,X_i)u(B) + (1-p(e_i,X_i))u(Y_i-T) - e_i \qquad (1)$$

[8] The model follows a large theoretical literature on interpersonal preferences and the demand for redistribution. See, e.g., Hochman and Rodgers (1969), Thurow (1971), Becker (1974), Buchanan (1975), Orr (1976), Meltzer and Richard (1981) and Coate (1995).

[9] The model, as well as the empirical analysis, focuses on redistribution in the form of welfare benefits. I focus on welfare benefits rather than more general methods of redistribution (such as income taxation) because it is a relatively well-defined form of redistribution for which characteristics of beneficiaries can be measured comparatively easily.

Higher benefit levels reduce the return to effort. Hence, they lower effort, which increases the fraction of poor living in the jurisdiction where the redistribution is performed. This fraction, $\bar{p}(B)$, is therefore an increasing function of B.[10] Welfare benefits and any costs involved with raising taxes or paying benefits are financed by taxes:

$$T(B) = (1+\lambda)\frac{\bar{p}(B)}{1-\bar{p}(B)}B \tag{2}$$

where λ could be positive, representing the deadweight loss from taxation, or negative representing federal matching of state welfare expenditures. It can be shown that $T'(B)>0$, and I assume that $T''(B)>0$.[11] An individual's preferred level of benefits, B_i^*, is found by maximizing $V_{Selfish}(B, T(B)|X_i, Y_i)$ with respect to B.

The first order condition for this problem is:

$$p(e_i^*, X_i)\,u'(B_i^*) - (1-p(e_i^*, X_i))\,u'(Y_i - T(B_i^*))\,T'(B_i^*) = 0 \tag{3}$$

Comparative statics yield the expected results. The preferred level of welfare is increasing in the individual's risk-aversion and probability of receiving welfare. Preferred benefits are decreasing in the cost of financing benefits (λ) and in both the level and derivative of tax *T(B)*. A higher recipiency rate, $\bar{p}(B)$, raises the tax, and thus reduces preferred benefits. Similarly, if the recipiency rate is more responsive to benefits (higher $\bar{p}'(B)$), the derivative of the tax with respect to benefits is larger, and preferred benefits are lower. A positive individual income shock has an ambiguous

[10] Another channel might be interstate migration in response to differences in benefit levels. See, for example, Blank (1988) or Feldstein and Vaillant Wrobel (1998).

[11] The sign of $T''(B)$ depends on the distribution of X_i and the shape of *p(e,X)*. Without special restrictions on this distribution and on this function, cases can be constructed in which *T"* is negative over some range. However, in practice, it seems likely that taxes are a convex function of benefits.

effect on welfare support. It reduces the marginal utility of income if the individual is non-poor, which increases support for redistribution for standard insurance reasons. But it also raises the return to effort which increases effort and reduces the probability of becoming poor and thus the preferred level of *B*. The net effect is ambiguous. A positive shock to the income of others unambiguously raises welfare support because the income shock increases effort and reduces recipiency rates. This reduces the marginal cost of raising benefits, which will therefore increase benefits.

2.2 Interpersonal Effects

Individuals may also support redistribution because they care about the behavior or utility of others, even though this does not affect their own consumption opportunities. Such interpersonal effects might manifest themselves as altruism, i.e. individuals including the utility of others in their objective function. However, other types of interpersonal effects are also possible. For example, individuals may derive negative utility from behavior of others, such as idleness or having out-of-wedlock births, that conflicts with their own "values."[12,13] Let a behavior or condition of individual *j* that gives rise to an interpersonal effect be denoted by $W(B,X_j)$. Depending on the type of behavior, *W* may be an increasing or decreasing function of welfare benefits *B*.

The magnitude of interpersonal effects may depend on group loyalties or location. Individuals may, for example, display group loyalty by being more altruistic towards members of their own race, or less bothered by idleness in their own ethnic group. This variation in the magnitude of interpersonal effects is modeled by a weight $\omega(X_i, X_j)$ that an individual with

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[12] Bowles and Gintis (1998) extensively document evidence on the role of reciprocity in human behavior and argue that the revolt against the welfare system can be understood by its violation of deeply held reciprocity norms. Reciprocity provides a compelling interpretation of interpersonal effects.

[13] Because values are endogenous, it is not obvious that interpersonal effects based on values are independent determinants of redistribution in the long run. It is possible that some values summarize society's knowledge on the desirability of certain actions. For example, a value that condemns out-of-wedlock births may ultimately be based on society's self-interest and the costs to society of out-of-wedlock births. To address the endogeneity of values, one would need to model the determinants of values, which lies beyond the scope of this paper.

characteristics X_i places on the behavior or condition of an individual with characteristics X_j.[14] The interpersonal effects in individual *i*'s objective function are modeled as:

$$V_{interpersonal}(B|X_i, X_{-i}) = \sum_{j \neq i} \omega(X_i, X_j)\, W(B, X_j) \tag{4}$$

where X_{-i} is vector with the characteristics of all individuals except those of individual *i*. Including interpersonal effects in the basic model yields the following first order condition for the level of welfare benefits preferred by individual *i*:

$$\left[p_i\, u'(B_i^*) - (1-p_i)\, u'(Y_i - T(B_i^*))\, T'(B_i^*) \right] + \sum_{j \neq i} \omega(X_i, X_j) \frac{\partial\, W(B_i^*, X_j)}{\partial B} = 0 \tag{5}$$

The first term between brackets reflects direct self-interest and the second term reflects interpersonal effects. The first order condition implies that not the absolute level of *W* matters but only its sensitivity to benefit levels, $\partial W/\partial B$. The extent to which behavior W leads to different levels of support for welfare spending across individuals depends on differences across individuals in the correlation between $\omega(X_i, X_j)$ and $\partial W(B_i^*, X_j)/\partial B$. In particular, welfare support is higher among individuals for whom this correlation is larger. Suppose, for example, that *W* reflects utility of others and that altruism is larger for nearby individuals. Because *W* is utility, $\partial W(B_i^*, X_j)/\partial B$ is largest for those individuals *j* who are welfare recipients and $\omega(X_i, X_j)$ is greatest for nearby individuals. Hence, welfare support should increase with the number of recipients living close by, controlling for the overall number of recipients in the jurisdiction that determines welfare benefits. Similarly, if people are more altruistic to those who are similar to them in other ways such as race, religion or ethnicity,

[14] Will (1993) uses the GSS welfare vignettes to analyze how characteristics of hypothetical welfare recipients influence the extent to which respondents judge them as deserving. He finds that respondents are more generous towards hypothetical recipients with more children and those who would like to work but are unable to due to disabilities or unemployment. The hypothetical recipients unfortunately do not vary by location or in racial characteristics.

welfare support should increase with the number of similar recipients, again controlling for the overall number of recipients.

3 Data

The General Social Survey has been conducted nearly annually since 1972 and is designed to be representative of the non-institutionalized population of English speaking persons 18 years or older living in the United States.[15] Each year's sample is an independent cross-section of this population and contains about 1500 observations. In addition to standard demographic information, the survey asks a wide variety of questions concerning opinions, attitudes and behavior.

The GSS question used in this paper as a measure for individuals' tastes for redistribution comes from a module that asks respondents whether they think that government spending on various programs is too low, about right or too high.[16] Support for welfare spending ("*WelfPref*") is coded as 0 if the answer is "too high", ½ if the answer is "about right" and 1 if the answer is "too low". The question is not specific about the level of government for welfare spending, but because the introduction to the question mentions the "problems in this country", respondents may have been cued to think about the Federal government.

The demographic controls in the GSS are relatively standard. The geographic information consists of the state and MSA or county group of each respondent. Of the 32,380 observations in the GSS, 21,763 were asked about their support for welfare spending and 20,716 respondents answered the question. This paper uses 18,764 respondents after dropping those with missing demographic information. If the sample is restricted to those living in an MSA, the sample size

[15] See Davis and Smith (1994) for more information about the GSS. There is oversampling of black persons in 1982 and 1987. All GSS data used in the paper are unweighted in order to fully exploit available variation across individuals.

[16] The exact wording is: *"We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money on it, or about the right amount"*. A list of items follows, including: *"Welfare: Are we spending too much, too little or about the right amount on welfare?*"

becomes 11,502. Table 1 shows cross tabulations of welfare support with individual characteristics.[17] The table shows that 51.4% of the respondents think that welfare spending is too high, but that there is a large racial divide. While more than 46% of blacks think welfare spending is too low, less than 16% of whites agree. Based on the correlations with demographic characteristics, it seems that those respondents who are more likely to receive welfare themselves (low income, low education, single or single mother, living in a large household) support welfare more. There is no clear geographic pattern in the level of satisfaction with current welfare spending, which suggests that differences in benefit levels across states reflect voter preferences. Figure 1 shows the pattern of welfare support over time. While there are swings in support, there is no clear trend. This too suggests that the fall in real welfare benefits over time reflects voter preferences.

Because there is no administrative data on the rate and racial composition of AFDC recipiency for my complete sample period and for geographical areas smaller than states, I rely on proxies based on the Summary Tape Files (STF) or the Public Use Micro Sample (PUMS) of the decennial censuses.[18] The STF provides detailed geographical information (tract level), but the STF proxy for AFDC recipiency is relatively coarse because it is based on the rates of poverty and single motherhood for each race. The PUMS, on the other hand, provides coarser geographical information (MSAs), but asks respondents whether they received any public assistance. Together with information about age, marital status and the presence of own children, a much more accurate proxy for AFDC recipiency can be formed. Because only information for 1970, 1980 and 1990 is available in the census, the values for the proxies between the census years are computed by linear

[17] Appendix table A.1 shows the summary statistics for the main sample, both unconditional and conditional on the response to the welfare spending question.

[18] AFDC stands for Aid for Families with Dependent Children, the former welfare program run by both state and federal governments. In 1996, the U.S. decided to replace AFDC by a system that gives greater freedom to states to design their own welfare programs. States now receive block grants from the federal government for their welfare programs.

interpolation.[19] The proxies for years after 1990 are equal to the values in 1990. Appendix B describes the construction of these proxies in detail and provides summary statistics of welfare recipiency by race at different geographical levels. It also validates the proxies using administrative data available at the state level for 1990.

4 Self-Reported Preferences and Voting Behavior

If self-reported preferences on welfare spending accurately reflect underlying preferences, then these self-reported preferences should correspond closely to voting behavior. I examine the validity of the self-reported preference measure by testing whether it predicts the voting outcomes on California's proposition 165 from the 1992 primaries. This proposition, drafted by governor Wilson, proposed both cuts in welfare generosity and changes in the state budget process. The summary of the proposition in the California Journal reads: *"An initiative constitutional amendment that grants the governor the power to declare a 'fiscal emergency' when the budget is not adopted or the deficit exceeds specified percentages. It also reduces aid to families by dependent children (AFDC) by 10 percent, then by an additional 15 percent after six months on aid"*.[20] Public information on proposition 165 emphasized its importance for welfare. For example, when describing the outcomes of propositions, the California Journal listed that "Proposition 165 (*welfare*)" was rejected by 54% of the voters (italics added).

Election outcomes of proposition 165 are available for the thirty thousand election precincts in California. The Institute for Governmental Studies at the University of California at Berkeley

[19] Appendix D shows that the main results are robust to removing those years from the sample that rely most heavily on the linear interpolation.

[20] In addition, the proposition specified that AFDC benefits could not increase due to the birth of a child that was conceived while the family was receiving aid and that, during the first 12 months of residency in California, recipients could not receive higher benefits than what they would have received in their former state. It also specified an elimination of all special benefits to pregnant women and $50 reward for AFDC parents under age 19 attending high school if they had no more than 2 unexcused absences and no more than 4 total absences per month. Those who had more absences would face a $50 penalty.

merged precinct-level voting returns to census blocks, and then aggregated the data into about 20,000 block groups. While the match is not perfect (voting precinct and census block group borders do not coincide perfectly), the voting outcomes assigned to each block group should be a fairly good indicator of voting in that block group. The voting data is matched to demographic information from the 1990 Census Summary Tape File. The demographic variables are constructed such that they correspond closely to the ones available in the GSS.[21]

The data do not allow one to match individual self-reported preferences from the GSS to individual voting outcomes. However, it is possible to test whether the relationship between demographic characteristics and preferences is similar in the GSS and the voting outcomes. The first column of table 2 shows the correlations of the demographics with the measure of welfare support for the GSS. The second column shows the correlation at the block group level of the same demographics with the percentage of votes *against* proposition 165. All correlations have the same sign in both columns except in one case where the correlation is not significant. Moreover, the 4 highest correlations in each column occur for the same demographic characteristics (black, single motherhood, never married and the income measure). The third column shows a regression of the percentage of votes against proposition 165 and these demographics while the fourth column shows the equivalent regression using the response to the GSS question on welfare support. The demographics generally show the same pattern in the regressions, but the similarity is not as strong as in the raw correlations.

I predict voting outcomes in each block group by multiplying the block group demographics (from the Census) with the corresponding coefficients in the regression of GSS welfare support on demographics (see column 3 in table 2). It is important to note that this predictor is constructed

[21] The demographic information consists of 3 race dummies, gender, single motherhood, 5 marital status dummies, 4 education dummies, 5 household size dummies, age, age squared, a linear trend for income below 200% of the poverty line and a dummy for income above 200% of the poverty line. The income specification was chosen because the Summary Tape Files contain a relatively fine breakdown of income as a percentage of the poverty line until 200% of the poverty line, but no breakdown of incomes above 200% of the poverty line.

without using any information from the voting outcomes. Column 1 of table 3 shows that actual voting outcomes can be explained extraordinarily well by predicted welfare support. Columns 2, 3, and 4 show that the results remain strong and highly significant when county fixed effects, tract fixed effects, or the fraction black in the block group are added as controls.[22] In figure 2, block groups are aggregated according to the percentile of predicted support for welfare. For each block group percentile, the average fraction of votes against proposition 165 is plotted on the Y-axis and average predicted welfare support is plotted on the X-axis.[23] As the figure shows, there is a strong positive relationship between actual voting and predicted support for welfare. These results suggest that self-reported preferences are a useful measure of underlying preferences.

5 Empirical Strategy

5.1 Estimation of Interpersonal Effects

The basic empirical specification for the welfare spending preferences, $WelfPref_{ikt}$, of individual i living in area k at time t is given by:[24]

$$\begin{aligned} WelfPref_{ikt} = {} & \frac{(black\ welfare)_k}{population_k} black_i \omega_{BB} + \frac{(black\ welfare)_k}{population_k} nonblack_i \omega_{BN} + \\ & \frac{(nonblack\ welfare)_k}{population_k} black_i \omega_{NB} + \frac{(nonblack\ welfare)_k}{population_k} nonblack_i \omega_{NN} + \\ & X_i \alpha + Z_{kt} \beta + \delta_k + \delta_t + \varepsilon_{ikt} \end{aligned} \tag{10}$$

[22] At first, the standard errors in the regressions may seem implausibly low, but one should keep in mind that the regressions are based on nearly 10 million votes. To the extent that populations within block groups are fairly homogeneous, aggregating the votes and the demographics to the block group level only mildly reduces variation in demographics but greatly reduces noise due to idiosyncratic preferences.

[23] I make these percentile groups, because a plot with a dot for each of the 20,000 block groups is much harder to read. Note, however, that each dot represents about 200 block groups, and that a lot of idiosyncratic noise is smoothed out in this procedure. Hence, the plot accurately shows *average* voting outcome conditional on predicted welfare support, but does not show the *variance* of voting outcomes conditional on predicted welfare support.

[24] Although areas are indexed by a single subscript k, the reader should be aware that area characteristics in the same regression may be measured at different geographical levels. Some area characteristics (e.g. welfare benefit levels) are by definition only measured at the state level. Area fixed effects are always measured at the MSA level because this is the most detailed level possible. Welfare recipiency may be measured at the tract, MSA or state level.

where the error term is denoted by $\varepsilon_{ikt.}$ To examine the importance of interpersonal effects on individual tastes for welfare spending, the level and composition of welfare recipiency are interacted with the characteristics of the individuals. In the basic specification, the composition of welfare recipiency as well as the individual characteristic are expressed in terms of race.[25] This interaction yields four terms in the regression: $\frac{(black\ welfare)_k}{population_k} black_i$, $\frac{(black\ welfare)_k}{population_k} nonblack_i$, $\frac{(nonblack\ welfare)_k}{population_k} black_i$ and $\frac{(nonblack\ welfare)_k}{population_k} nonblack_i$, where $black_i$ and $nonblack_i$ are dummy variables for the race of the respondent, $(black\ welfare)_k$ and $(nonblack\ welfare)_k$ denote the number of black and non-black welfare recipients in the area of the respondent, and $population_k$ denotes the total population in that area. Welfare recipiency may be measured at the level of the census tract, MSA or state, and in some specifications welfare recipiency at various levels are included simultaneously.[26] Support for welfare spending may be affected by individual demographic characteristics, X_i, either because these demographics proxy for the individual's expected own benefit from redistribution, or because they are correlated with underlying parameters of the individual's utility function. Next, the regression includes Z_{kt}, characteristics of area k at time t. These characteristics include the state welfare benefit levels because the *WelfPref* measures respondents' preferred level of welfare spending relative to the current one. Finally, the regression includes δ_k, a set of MSA fixed effects, and δ_t, a set of year fixed effects.

The parameters ω_{BB}, ω_{BN}, ω_{NB} and ω_{NN} measure the effect of changes in welfare recipiency on welfare support by race. For example, if non-black welfare recipiency increases by 10 percentage points, support for welfare among black respondents changes by 0.10 ω_{NB}. To interpret ω_{BB}, ω_{BN}, ω_{NB} and ω_{NN} as the effects of welfare recipiency on respondents' preferences, variation in welfare

[25] Race is used because it is a salient aspect of American society, and because much data is available by racial categories. However, other characteristics are interesting as well, and are included in some specifications.

[26] Census tracts are areas that on average have a population of about 4,000. Even though the census tract of a GSS respondent is not known, it is possible to predict welfare recipiency in the respondent's census tract with information about the race and income of the respondent as well as information about the pattern of race and income segregation in the MSA. The procedure is described in detail in appendix C.

recipiency needs to be uncorrelated with omitted determinants of respondents' welfare preferences. Ideally, local recipiency rates vary for exogenous reasons such as changes in the demographic composition of areas due to industry location choices or infrastructural development. However, lacking explicit exogenous shocks to welfare recipiency, I include a large set of controls to absorb potential endogenous variation as much as possible. Section 6.3 discusses potential biases and performs several specification checks that indicate that the results are unlikely to be driven by these biases.

5.2 Predicted Tract-Level Welfare Recipiency

The extent to which individuals have own-race bias in their welfare support can be estimated by (ω_{BB}-ω_{NB}) for black respondents and (ω_{NN}-ω_{BN}) for non-black ones. These estimates, however, could be spurious if welfare recipiency is measured at the MSA level and the MSA is racially segregated. In this case, a non-black individual may react stronger to additional non-black welfare recipients (ω_{NN}) than to additional black recipients (ω_{BN}) because segregation makes it more likely that the individual comes into contact with non-black recipients than with black recipients. Estimates based on welfare recipiency in census tracts would be much less susceptible to this bias because the relatively small size of tracts makes it much harder to avoid contact with the other race. Moreover, it is independently interesting to estimate how individuals react to welfare recipiency in areas smaller than MSAs.

While the GSS does not provide more detailed information about the location of respondents than their MSA, it is possible to use a procedure similar to two stage least squares to estimate whether individuals respond to the rate and composition of welfare recipiency in their neighborhood. Instead of using the actual welfare recipiency in the census tract of an individual, I use the expected tract-level welfare recipiency conditional on the individual's characteristics and the pattern of race and income segregation in the MSA. The calculation of these expected welfare recipiency rates is

described in detail in appendix C, but the intuition is simple. From the census it is possible to calculate the number of individuals in each tract that fall in the same income bracket and are from the same racial group as the respondent. This information is used to calculate for each tract the probability that the respondent lives there, given that the individual lives in a particular MSA. Multiplying tract-level welfare recipiency rates by these probabilities yields the expected welfare recipiency rates in this respondent's census tract. The expected welfare recipiency rates can be interpreted as the result of a first stage regression, where the main instrument is the interaction of the race and income of the respondent with contemporaneous race and income segregation in the MSA of the respondent. Only the interaction term is an instrument because the direct effects of the respondent's income and race are absorbed by the demographic controls and because the direct effects of segregation are largely absorbed by the MSA fixed effects.[27]

6 Results

6.1 Effects of Demographics and Tract-Level Welfare Recipiency on Support for Welfare

Table 4 reports the baseline regression explaining individual support for welfare spending.[28] Unless otherwise noted, the independent variables in all regressions consist of measures of welfare recipiency, characteristics of the respondent's area, demographic characteristics of the respondent, year fixed effects and MSA fixed effects. In the regression of table 4, the non-metropolitan part of each state is treated as if it were a single MSA.[29] All three columns in table 4 come from a single regression. The first column shows coefficients on variables that are not interacted with a race

[27] The direct effects of segregation are only fully absorbed if the MSA fixed effects are allowed to vary over time. I allow time-varying MSA fixed effects in a specification check in table 7.

[28] For ease of interpretation all regressions are estimated by OLS. As a specification check, the regression in table 4 is estimated as an ordered probit in appendix D. This does not affect the significance of the main results.

[29] The rationale for treating the non-metropolitan part of a state as an MSA is that observations outside MSAs can be included in the sample. Appendix D shows that the results are robust to excluding all observations outside MSAs from the sample.

dummy while the second and third columns show coefficients on variables that are interacted with a black and non-black dummy. The regression includes two measures of tract-level welfare recipiency: the expected ratio of black welfare recipients to the tract population, and a similar ratio for non-black welfare recipients. The other area characteristics include the expected racial composition in the respondent's tract, measured as the number of black persons as a fraction of the tract population, the log of the population in the town or city of the respondent, the maximum real AFDC benefits for a family of 4 in the respondent's state in real 1990 dollars and the 25th percentile of the earnings distribution in the respondent's state. The demographic characteristics consist of the respondent's race, gender, age, income, education, marital status and household composition. Because the regression includes MSA and year fixed effects, it is driven by differential variation over time across MSAs. The regression has 18,764 observations in 138 MSAs, and these observations occur in 1,447 MSA*year cells.

The regression results show that, at the sample mean, blacks are 12% more likely to respond that welfare spending is too low compared to whites with the same characteristics living in the same area.[30] The response from people who are neither black nor white is not significantly different from the white response, which is reassuring since they are grouped with whites in race-based interaction terms. Gender seems to have little effect on welfare support. Both black and non-black respondents are less likely to support welfare at higher incomes levels. The effects of additional income are especially strong for the lowest income quintile, where non-blacks are 17.5% more likely to respond that welfare spending is too high (compared to thinking it is too low) if their income rises by the amount of the poverty line ($15,029 for a couple with 2 children in 1994). For higher income levels, the effect of income is less strong, and seems to disappear completely for the highest income quintile. Education shows a similar pattern. For low education levels, an increase in education

[30] The race dummy can be interpreted like this because all variables that are interacted with race are expressed in deviation from the sample mean.

decreases support for welfare spending, but beyond "some college" support for welfare spending rises with education.[31] The increase is especially strong for respondents with a graduate or professional degree, whose support for welfare spending even exceeds the support by high school dropouts. The income and education results support the notion that support for welfare spending can be partly explained by direct self-interest. People with higher incomes are less likely to receive welfare benefits themselves, and they would therefore be less likely to support welfare spending if they consider only the costs and benefits of redistribution to themselves. The marginal effect of income on the likelihood of welfare receipt is especially strong at the lowest income levels, which is consistent with the regression results. Education also lowers the likelihood of welfare receipt, which explains the decrease in support for welfare spending for initial education increases. The higher levels of welfare support among the most highly educated respondents cannot be easily explained by self-interest. Other results consistent with self-interest are the decline of support for welfare with age (until the age of 75), and higher support among single women relative to married women. Contrary to the predictions of self-interest, welfare support is lowered by the presence of children and by ever having had children. If welfare recipients tend to live in larger households, finding increased support for welfare among respondents in larger households is consistent with self-interested motives for supporting welfare spending.

The expected fraction of black persons in area *k* is included as a control to ensure that the findings on welfare recipiency are driven by the race of welfare recipients, and not merely by the racial composition of the area. The positive effect of city or town population on welfare support may indicate that residents of larger cities are more likely to receive welfare after controlling for observables. Higher state AFDC benefits reduce welfare support, which one would expect since the question asks respondents about welfare spending relative to the current level. The magnitude of

[31] This finding is also present in the California voting data (see table 2) and also holds when a score on a word test, that is administered in the GSS, is used instead of education.

the coefficient is relatively small, a $100 increase in monthly welfare benefits reduces support by 1 percentage point, but this may be explained by the fact that much of the cross-sectional and time-series variation is absorbed by the fixed effects. The coefficient on the 25th percentile of the earnings distribution in the state, which Moffitt *et al.* (1998) use as a proxy for potential labor market earnings for welfare recipients, is positive but insignificant. This indicates that, as Moffitt *et al.* argue, respondents may take into consideration that welfare becomes relatively more attractive if labor market earnings are low. Hence, under adverse labor market conditions for the potential welfare population, there is an incentive to lower welfare spending to avoid large increases in the caseload.

The most striking result is how welfare support is affected by the number and race of welfare recipients in the respondent's area. These estimates are indicated in bold face in table 4, and establish two main characteristics of interpersonal effects. First, they show a clear pattern: the off-diagonal estimates are strongly negative. In other words, an additional black welfare recipient in one's tract reduces support for welfare by non-black respondents but has little effect on black respondents. Conversely, an additional non-black welfare recipient reduces black support for welfare but has little effect on non-black support. This bias in the support for welfare spending towards one's own race indicates that individuals exhibit racial group loyalty. Second, simultaneously increasing black and non-black welfare recipiency by one percentage point reduces support for welfare both by black and non-black respondents.[32]

An instructive way to evaluate theses effects is to decompose the coefficients on recipiency rates into four interpersonal effects: (i) an "exposure effect", which is the effect of an additional welfare recipient regardless of race, (ii) an "own-race bias", which is the incremental effect of the additional recipient belonging to the same race, (iii) a "black recipient effect", which is the incremental effect of the additional recipient being black and (iv) a "black respondent effect", which

[32] This is the relevant variation because there are roughly as many black as non-black welfare recipients.

is the incremental effect of a black respondent reacting to the additional recipient. Schematically, this decomposition is given by:

Decomposition of Effect of Welfare Recipiency Rates on Support for Welfare Spending

	Black Respondent	Non-black Respondent
Effect of additional Black Recipient	ω_{BB} = exposure effect + own-race bias + black recipient effect + black respondent effect	ω_{BN} = exposure effect + black recipient effect
Effect of additional Non-black Recipient	ω_{NB} = exposure effect + black respondent effect	ω_{NN} = exposure effect + own-race bias

The four effects can be expressed as linear function of ω_{BB}, ω_{BN}, ω_{NB} and ω_{NN}.[33] This decomposition is reported as decomposition A in table 5. As the table shows, there is a significantly negative effect of an increase in the level of welfare recipiency, and there is a strong and significantly positive own-race bias. Neither the black recipient nor the black respondent effect is significant.[34] By restricting the black recipient effect to zero, one can obtain a separate estimate for the black and non-black own-race bias. As shown in column B of table 5, the black and non-black own-race bias are both positive and the hypothesis that they are equal can not be rejected. Alternatively, the black respondent effect can be restricted to zero in order to obtain separate black and non-black own-race biases. Again, the own-race biases are both positive, and their equality cannot be rejected. In the remainder of the paper, I will report the decomposition that is based on an equal own-race bias for blacks and non-blacks.

[33] Specifically:

Exposure effect	$= (\omega_{BN} + \omega_{NB} + \omega_{NN} - \omega_{BB})/2$
Own-Race Bias	$= (\omega_{BB} + \omega_{NN})/2 - (\omega_{BN} + \omega_{NB})/2$
Black Recipient Effect	$= (\omega_{BB} + \omega_{BN})/2 - (\omega_{NB} + \omega_{NN})/2$
Black Respondent Effect	$= (\omega_{BB} + \omega_{NB})/2 - (\omega_{BN} + \omega_{NN})/2$

[34] The black recipient effect may be measuring differences in the accuracy of the black and non-black proxy for welfare recipiency. Hence, caution is warranted in interpreting this effect.

6.2 The Effect of Geographical Proximity to Welfare Recipients

The previous section presented evidence of interpersonal effects at the census tract level. This section explores how respondents' welfare support is affected by the race and prevalence of welfare recipients at different geographical levels. The first line of table 6 replicates the regression with expected tract-level recipiency measures that was reported in full in table 4. The second and third rows show the same regression, but with MSA- and state-level recipiency measures respectively. At the MSA level, the exposure effect is significantly negative and more than twice as large as at the tract level. At the state level, the exposure effect is large and negative as well, but not significant. Both at the MSA and state level, the estimate for the own-race bias is significant and slightly larger than at the tract level. The black respondent effect is significantly negative at both the MSA and the state level. These regressions indicate that interpersonal preferences operate at each of the three geographic levels considered. Interpersonal preferences consistently show an own-race bias and a negative exposure effect, but seem to depend on the geographical level for the black recipient and black respondent effect.

In regressions (4), (5) and (6), recipiency measures of two geographic levels are included in each regression to sort out better at which level interpersonal preferences operate most strongly. In the regression with both tract- and MSA-level measures, the negative exposure effect and the own-race bias operate at both levels, but the standard errors are relatively large due to multicollinearity. The comparison of tract- to state-level measures shows that the exposure effect and own-race bias operate more strongly at the tract level than at the state level, but these differences are not statistically significant. The final regression shows that these two interpersonal effects also operate more strongly at the MSA level than at the state level. It seems therefore that the exposure effect and own-race bias are mostly determined at the tract level and at the MSA level, but are hardly affected by state-level recipiency after tract- and MSA-level measures are included.

The table provides two insights. First, the negative exposure effect and racial group loyalty

seem to be affected most by local welfare recipiency rates. Second, these two interpersonal effects are still significant at the tract and MSA level after controlling for state-level recipiency rates. Given that welfare policy is determined at the state level, state-level recipiency rates determine the effective cost to taxpayers of a dollar of redistribution. Hence, the effect of state-level recipiency rates on support for welfare spending could partly reflect financial self-interest. However, when controls for state-level recipiency are included, any effect of local recipiency rates on support for welfare indicates the presence of interpersonal effects.[35]

6.3 Specification Checks

This section investigates the possibility of omitted variable biases driving the results. One might believe that a higher local welfare recipiency rate signals that the respondent has unobservable traits that increase the respondent's welfare support due to self-interest. In this case, one would expect to find a spurious positive relationship between local recipiency rates and welfare support. However, the negative exposure effect shows that higher local recipiency rates decrease welfare support. Table 7 provides three additional types of evidence against the omitted variable bias explanation.

First, if a variable were omitted that is both correlated with the likelihood of the respondent receiving welfare and local welfare recipiency, one would expect such an omitted variable to be much more important for respondents who are potential welfare recipients than for respondents who are very unlikely welfare recipients. To test this, I allow a different effect of tract-level welfare recipiency on respondents with incomes below 200% of the poverty line and those with incomes above 200% of the poverty line. Because respondents with incomes above 200% of the poverty line are very unlikely to be welfare recipients, one would expect the effect of recipiency to be much

[35] If individuals' perceptions of the state-level welfare recipiency rate are influenced by the local recipiency rate, their support for welfare spending depends on the local recipiency rate even in the absence of interpersonal effects. I test this perceptions hypothesis table 8, and find no support for it.

smaller if the results were driven by omitted variable bias.[36] As regression (1) shows, the exposure effect and the own-race bias are at least as strong for respondents with incomes above 200% of the poverty line as for poorer respondents.[37]

Second, one might worry that the difference between black and non-black unobservables varies across cities. In regression (2), I include MSA fixed effects separately by race. The results remain significant and the magnitudes of the exposure effect and the own-race bias increase slightly compared to table 5.

Third, MSA fixed effects might not be adequate if the unobservables of the population in an MSA change over time in a way that is correlated with welfare recipiency. Because the welfare recipiency measures are based on linear interpolations between decades, a set of MSA-specific linear splines with knots at the decades can fully absorb any correlation between MSA-specific time variation in unobservables and welfare recipiency measures. In regression (3), such as set of MSA specific splines is included, and the results are essentially the same as shown earlier. This regression is fully driven by the interaction of the race and income of respondents with the pattern of race in income segregation in the MSA. It can therefore be interpreted as an instrumental variables regression, where the instrument is this interaction term.

While, as in any non-experimental approach, it is impossible to completely rule out omitted variable biases, it is possible to test whether the results change in a way predicted by omitted variable bias if additional controls are introduced. This is not the case in any of the regressions in table 7. Hence, it seems unlikely that the results are driven by omitted variable bias.

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[36] Of course, people with incomes above 200% of the poverty line could have close relatives on welfare. As long as we would expect them to be less likely to have such relatives than individuals with incomes below 200% of the poverty line, this check for omitted variable bias remains valid.

[37] This also holds when welfare recipiency is measured at the MSA level.

7 Mechanisms for Interpersonal Effects

The findings above provide clear evidence that both financial self-interest and interpersonal effects are important determinants of support for welfare spending. The finding that support for welfare spending is high among individuals with socioeconomic factors that make them likely recipients follows directly from financial self-interest. But interpersonal factors must play an important role too. In particular, the own-race bias cannot be readily explained by financial self-interest. This section examines mechanisms that may give rise to these interpersonal effects.

One explanation of the effect of local recipiency rates on welfare support is that individuals use local welfare recipiency to estimate state or national recipiency rates. In this case, individuals who observe a higher local recipiency rate lower their support for state or national welfare spending because they infer that welfare is relatively costly. If the local exposure effect were purely driven by individuals using local recipiency to estimate state-level recipiency, one would expect the local exposure effect to be strongest for those who are least informed about state-level welfare recipiency. While the GSS contains no direct measure about individuals' knowledge about the recipiency rate in their state, it is plausible to assume that more educated individuals have better knowledge of the recipiency rate in their state than less educated ones. In this case, the exposure effect at the local level should be stronger for less educated individuals than for more educated ones, but the exposure effect at the state level should not depend on the individual's educational attainment.

This prediction is not confirmed by table 8. In table 8, the effects of welfare recipiency are interacted with the education of the respondent. The table shows that the exposure effect at the tract level is weaker for respondents without a college degree than for college graduates, but that at the state level the exposure effect hardly varies with education. While this difference is not statistically significant, the difference is of the opposite sign than would be expected if individuals based their estimate of state recipiency rates on local recipiency rates. Similarly, if the own-race bias at the tract

level merely arose because individuals use racial composition of welfare recipients in their tract to estimate the racial composition of welfare recipients at the state level, one would expect the own-race bias at the tract level to be strongest for the least educated. Again, this is not borne out by the table.[38]

Alternatively, the negative recipient effect may arise because welfare recipients exert negative externalities on their neighbors. One can interpret the outrage that some people feel in response to out-of-wedlock births as an example of such a negative externality. Panel A of table 9 examines whether we can find empirical evidence for this psychological externality. I use the response to the GSS question asking whether it is wrong "if a man and a woman have sexual relations before marriage" as a proxy for the extent to which respondents experience a negative externality from out-of-wedlock births. The extent to which the welfare system encourages out-of-wedlock births is proxied by the fraction of never-married mothers in an MSA who receive welfare.[39] The regression in panel A is similar to the baseline regression, except that the regressors also include the respondent's attitude to premarital sex, the fraction of never-married mothers on welfare and the interaction between these two terms. The coefficient on this interaction term (in bold face) is negative which shows that welfare support indeed falls most for those who are against premarital sex if the fraction of never-married mothers who receive welfare increases. While the coefficient is only borderline significant, this finding indicates that welfare recipients may exert a psychological externality by behaving in a way that conflicts with the "values" of others.

Panel B of the same table examines the effect of "idleness," another behavior of welfare recipients to which individuals may take offense. In this panel, I compare the effect of "idle" welfare recipients on support for welfare spending to the effect of working welfare recipients on the support

[38] The same results are obtained if, instead of education, one uses newspaper readership as a proxy for the degree to which the respondent is informed about state-level welfare recipiency.

[39] This analysis is only possible at MSA level because the PUMS data, which has information about out-of-wedlock births, is not available for census tracts.

for welfare spending, by including both recipiency rates of idle and working welfare recipients in the regression.[40] In column 2, recipients who did not do any paid work during the year are classified as "idle" and in column 3 those who worked 13 weeks or less during the year are classified as "idle." The panel shows that individual support for welfare spending only responds to the number and racial composition of "idle" welfare recipients.[41] This is another indication that conflicts between behavior encouraged by the welfare system and individuals' values may be an important determinant of welfare support.

The results also provide some insight into own-race bias. The most straightforward interpretation of own-race bias is that individuals are loyal to their own racial group. This loyalty could mean that they weigh the utility of individuals of their own race more heavily than the utility of others or that they experience less of a negative externality if members of their own racial group behave in a way that conflicts with their values than if other groups do so.[42] The latter possibility is consistent with the finding in panel B of table 9 that individuals do not have an own-race bias with respect to working welfare recipients. If racial group loyalty is stronger for nearby individuals, this would also explain why individuals respond to the racial composition of welfare recipiency at local levels (tracts, MSAs), when state-level recipiency is included as a control.

The second interpretation of own-race bias relies on biases in perceptions. A well-known finding from social psychology is the "ingroup/outgroup effect" (Brown, 1986). It states that the

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[40] Hence, the regression has 4 recipiency rates: (black idle recipients)/(total pop.), (black working recipients)/(total pop.), (non-black idle recipients)/(total pop.) and (non-black working recipients)/(total pop.). Each of these recipiency rates is interacted with the race of the respondent. The decomposition of the effects of recipiency rates into a exposure effect and own-race bias is the same as before.

[41] Of course, working welfare recipients are also more likely to be part-year recipients, and hence less costly to tax payers. However, if this were the only factor differentiating them form idle welfare recipients, one would expect the effects of working welfare recipients on support for welfare spending simply to be a fraction of the effect of idle recipients. This does not seem to be the case.

[42] Using PUMS data, it is also possible to investigate group loyalty along other dimensions than race. I ran regressions (not reported) to examine group loyalty based two other characteristics: (1) whether welfare recipients are foreign born, (2) whether welfare recipients lived in the same state 5 years ago. At the MSA level, these characteristics do not significantly affect support for welfare spending.

factors to which an individual attributes somebody else's success or failure depend on the groups to which the persons belong. Specifically, failure of members of the own group and success of members of the other group tend to be attributed to environmental factors or luck while success of members of the own group and failure of members of the other group tend to be attributed personal factors such as effort or ability. If individuals use race as a basis for these groups, they may attribute welfare recipiency to bad luck or opportunities for welfare recipients of their own race but to lack of effort for recipients from the other race. Hence, they would perceive the responsiveness of welfare recipiency with respect to benefits to be higher for members from the other racial group than for members of their own race. If a larger fraction of welfare recipients is from the other race, the average responsiveness is perceived to be higher, which lowers support for welfare according to the self-interested model.

The results in this section indicate that individual values are part of the mechanism by which local welfare recipiency rates affect support for welfare. However, the own-race bias could also be explained by certain biases in perceptions. Hence, further research exploring mechanisms underlying interpersonal effects remains worthwhile.

8 Implications

8.1 Implications for Welfare Policy

In 1996, the United States decided to change its welfare system substantially. States obtained much more freedom in determining their welfare policies. Most state welfare programs now include time limits, job training and work requirements. Moreover, the federal government no longer matches state welfare expenditures, but instead provides them with block grants. This has more than doubled the cost to states of spending an extra dollar on welfare.[43] The empirical results provide two

[43] See, for example, Baicker (1997b) for an empirical analysis of states' reactions to changes in federal matching rates.

insights on the effects of these changes.

First, the negative exposure effect implies an additional incentive for states to engage in a "race to the bottom" in welfare generosity. If welfare recipients move into a state, they not only impose a financial cost to taxpayers, but they also cause voters to reduce support for welfare due to the negative exposure effect.

Second, the findings suggest that the negative exposure effect is caused by individuals objecting to idleness induced by the welfare system. This implies that support for welfare spending will be higher when recipients are required to work for their benefits. Many expected states to drastically cut welfare benefits when AFDC was replaced by block grants because this eliminated federal matching grants for state welfare spending. Perhaps the reason why these predicted cuts have not materialized is that states' efforts to make welfare recipients work have had a sufficiently positive impact on individuals' support for welfare to counteract the negative effect from the elimination of federal matching.

8.2 Racial Heterogeneity and Redistribution

The generosity of redistribution varies tremendously across states and countries, and many have noted that relatively homogeneous areas tend to have more income redistribution.[44] Compared to many western European countries, the United States has a racially, ethnically and religiously heterogeneous population and does relatively little redistribution. Also within the United States, there are great disparities in state welfare spending, with the more racially homogeneous states

[44] Using cross-sectional data, Orr (1976) finds that welfare benefits are lower in states where a larger fraction of AFDC recipients are nonwhite. Levine and Easterly (1997) show that, in a cross-section of countries, ethnic diversity leads to less education, less public infrastructure and a reduction in other factors that enhance GDP growth. Alesina, Baqir and Easterly (1997) find that the magnitude and composition of city, MSA and county spending is strongly affected by the ethnic fragmentation in each area. In particular, they find that spending on productive public goods and on welfare declines with ethnic fragmentation. Poterba (1997) finds evidence that support for education spending declines if it mainly benefits people who belong to a different racial group than voters. Baicker (1997a) finds that states reduce welfare spending more strongly in response to mandated Medicaid spending if the population is more racially fragmented.

providing higher welfare benefits.[45] As figure 3 shows, southern states in the U.S. tend to both have the highest racial heterogeneity and the lowest welfare benefits.

While the correlation between demographic homogeneity and generosity of redistribution has been well established, there is little evidence on the mechanisms underlying this correlation. The preferred explanation of Easterly and Levine (1997) and Alesina, Baqir and Easterly (1997) is that demographic fragmentation affects redistribution because it influences how the political process aggregates individual preferences. Interpersonal preferences provide an alternative explanation. If individuals primarily value redistribution to their own racial, ethnic or religious group, they prefer less redistribution when members of their own group comprise a smaller share of the beneficiaries of redistribution. In demographically more heterogeneous areas, typically a smaller share of beneficiaries belongs to one's own group, and average support for redistribution is therefore smaller.

To judge the importance of interpersonal effects for the relation between demographic homogeneity and redistribution, I examine to what extent differences in state-level welfare benefits can be explained by a predictor of welfare support based only on interpersonal preferences and the demographic composition in each state's census tracts. More specifically, I use the estimates of table 4 to calculate support for welfare spending in each census tract.[46] The first column of table 10 shows that this predictor can explain 30% of the variation across states in the log real AFDC benefits

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[45] For example, the maximum AFDC grant in 1996 for a single mother with 2 children was $650 in Vermont but only $120 in Mississippi. In Alaska, Hawaii and some parts of New York, AFDC benefits are higher than in Vermont. If food stamp benefits are included, the differences across states become somewhat less extreme but remain considerable. Including food stamps, benefits are $882 in Vermont but only $433 in Mississippi.

[46] Based on the estimates of table 4, I calculate for each census tract:
(Black Support for Welfare) = α - 0.60*(Black Recipients / Population) - 3.53*(Nonblack Recipients / Population)
(Nonblack Support for Welfare) = β - 5.36*(Black Recipients / Population) + 1.82*(Nonblack Recipients / Population)
where the constants α and β are chosen such that in each year average black and non-black support for welfare equals zero. This prevents the predictor from being driven simply by the state-wide proportion of blacks. Average support for welfare spending in each tract is calculated as a weighted average of black and non-black support.:
(Support for Welfare) = (Black Support for Welfare)*(Fraction Black) + (Nonblack Support for Welfare)*(Fraction Nonblack)
The state-level welfare support is calculated as a population-weighted average of welfare support in the census tracts. To avoid that the predictor is driven by a possible bias in the welfare proxy that varies across states, I rescaled the welfare proxy for each state such that the caseload/population ratio according to the proxy equals the caseload/population ratio from administrative data. This rescaling slightly reduces the statistical significance of the predictor.

if we pool 1970, 1980 and 1990. This figure is more impressive if one takes into account that coefficient estimates used for this prediction are based on variation *within* states because of the inclusion of MSA fixed effects. Column (2) shows that the predictor remains significant if the state-level welfare caseload, the state poverty rate and the fraction black in the state are added as controls. This indicates that the predictor indeed captures how individuals react to exposure to welfare recipients of another race, and not merely the fraction blacks, poverty rate or the average level of welfare recipiency. Columns (3) to (5) show that the predictor is also significant for each year separately. Figure 4 shows the scatter plots of predicted state-level welfare support and state welfare benefits. The plots show that there is a clear positive relationship and that the relation is not driven by outliers.

These results indicate that racial heterogeneity is an important determinant of the level of welfare benefits in the United States. A simple simulation based on the estimates of interpersonal effects in table 4 suggests that, compared to current levels of segregation, welfare support would be 3.2% lower under complete racial integration and 2.6% higher under complete segregation.[47] However, besides welfare support, segregation has many other important effects (Cutler and Glaeser, 1996) that should be taken into account in any policy affecting segregation. Because welfare support is specified as a linear function of welfare recipiency, the regressions cannot predict whether segregation between welfare recipients and others affects average welfare support.

While the data only allow me to examine the effects of racial heterogeneity, heterogeneity in other dimensions, such as ethnicity or religion, are likely to be important as well. Similarly, it seems plausible that the effects of racial, ethnic or religious group loyalty apply to a wider range of redistributive programs than just welfare. If, as conjectured, the findings of this paper indeed have

[47] A one percent increase in welfare support, as measured by *WelfPref*, means that one percent of the population switches from thinking that welfare spending is too high to thinking that welfare spending is too low. It is hard to translate a percentage point change in *WelfPref* into a dollar change in welfare benefits. The coefficient of state welfare benefit levels (measured in $100) in the regression in table 4 is -0.0104. Taken at face value, this coefficient implies that an increase in benefits of $96 (=1/0.0104) will offset a 1% increase in *WelfPref*.

a broader applicability, the relative heterogeneity in the U.S. population compared to western European countries is a likely explanation for the relatively low levels of redistribution in the United States.

9 Conclusions

This paper demonstrates that survey data can provide valuable information about the characteristics of individual preferences. The use of self-reported preferences is especially valuable in settings when these preferences do not translate into naturally-occurring observable individual behavior, as is often the case for preferences about income redistribution, public goods or the behavior of others. In such cases, one can infer individual preferences from policy decisions, but this typically requires strong assumptions about how the political process aggregates individual preferences. Alternatively, one can investigate individual preferences by examining behavior in experimental settings, but this requires assumptions about the realism of the experimental setting. Both of these approaches have yielded important insights. However, because they also have drawbacks, it is valuable to complement these approaches with the use of self-reported preferences. Of course, the use of self-reported preferences has some substantive drawbacks of its own – it requires that individuals understand the question and respond truthfully. I address these concerns by showing that self-reported welfare preferences correspond closely to voting behavior on a ballot proposition about welfare cuts.

This paper uses survey data to examine preferences for welfare spending. I find that individual support for welfare spending is not only determined by individuals' financial self-interest, but also by interpersonal preferences — individuals including the utility or behavior of others in their objective function. These interpersonal effects are characterized by two properties: a negative exposure effect – individuals decrease their support for welfare if there are more welfare recipients

in their area – and racial group loyalty – individuals increase their support for welfare spending if a larger fraction of welfare recipients in their area belongs to their own racial group. While the mechanisms that give rise to the interpersonal effects are hard to determine with certainty, my results imply that altruism towards one's own racial group and externalities from behaviors that conflict with one's values are plausible mechanisms. In particular, individuals seem to react to idleness induced by the welfare system. However, the mechanisms behind interpersonal effects merit further research.

These findings have several important implications. First, the empirical evidence for interpersonal preferences provide justification for theoretical models based on utility functions that include the behavior or utility of others. Second, the findings provide useful insights for the design of redistributive government programs. In particular, the findings suggest that programs will lose support if they induce idleness or other behaviors that conflict with mainstream values. This may be a rationale for making work requirements part of redistributive programs. Third, the findings provide an explanation for differences in the generosity of redistribution across states and countries. When individuals value redistribution to their own group most, they prefer less redistribution when members of their own group comprise a smaller share of the beneficiaries of redistribution. In more heterogeneous areas, typically a smaller share of beneficiaries belongs to one's own group, and average support for redistribution is therefore smaller. About 30 percent of the variation in welfare benefit levels across states can be explained by applying my estimates of interpersonal preferences to the differences in the demographic composition of states. Interpersonal preferences also provide a motivation to take into account the demographic heterogeneity of countries when trying to understand differences in their levels of redistribution.

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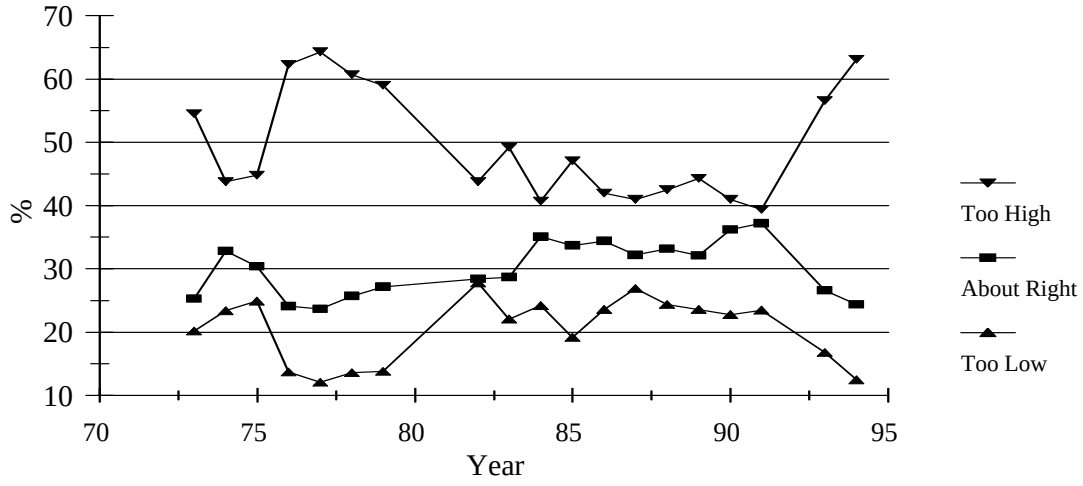
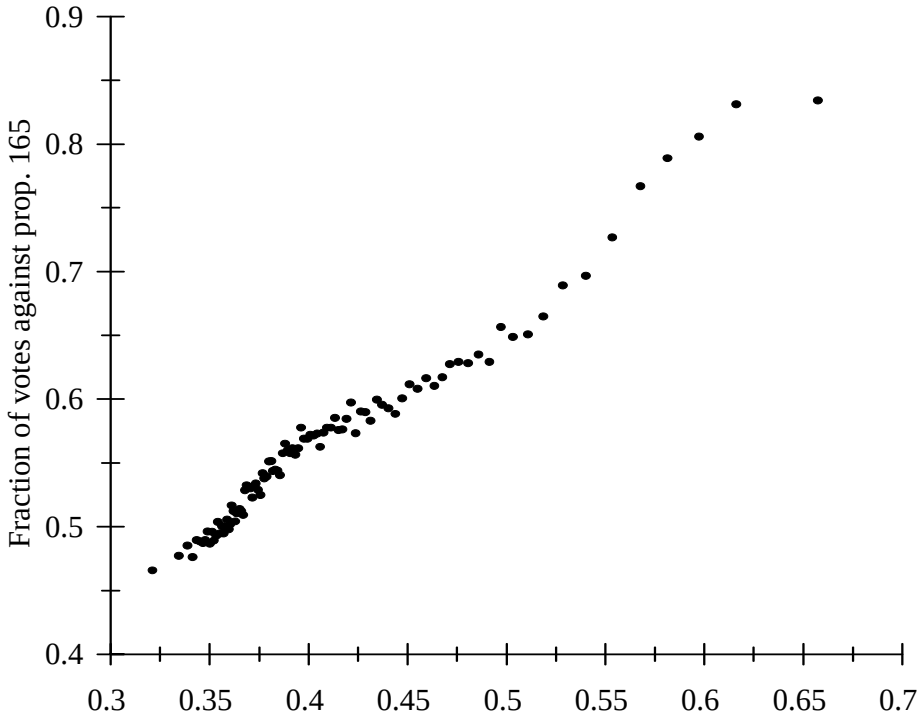
Figure 1: Opinion of Welfare Spending



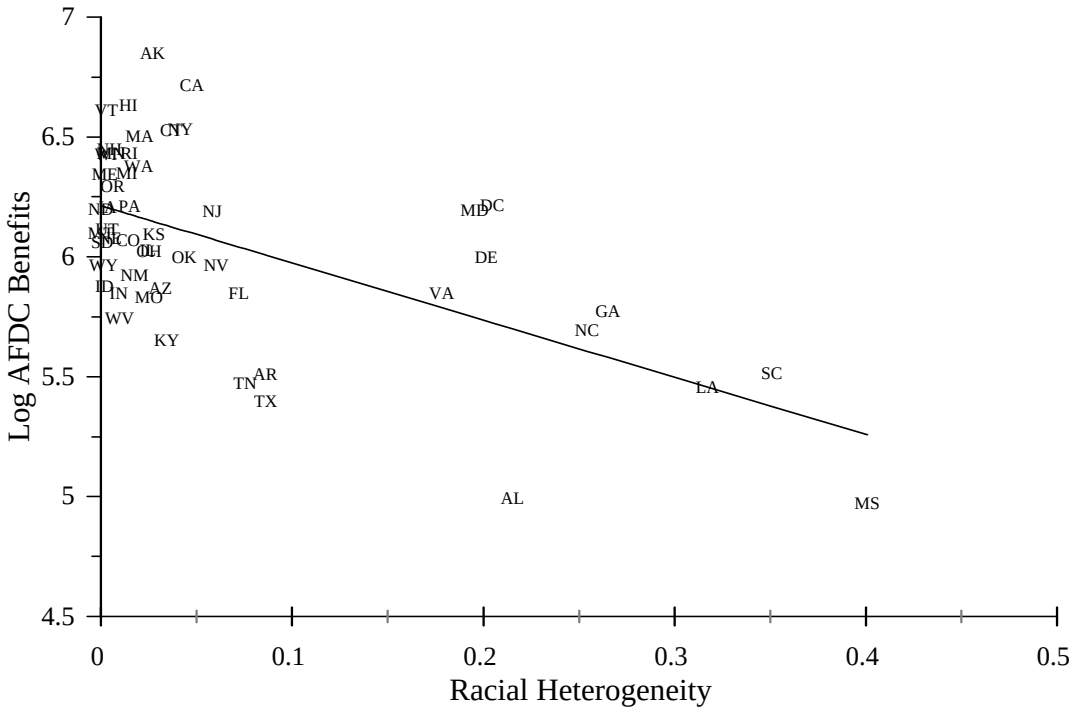
Notes:
1) The graph plots the percentage answers to the question in the General Social Survey: "Are we spending too much, too little or about the right amount on welfare?".
2) The sample size is 18,764 respondents.

Figure 2: Predicted and Actual Votes Against Welfare Cuts (Proposition 165)



Predicted welfare support based on Census and GSS information.

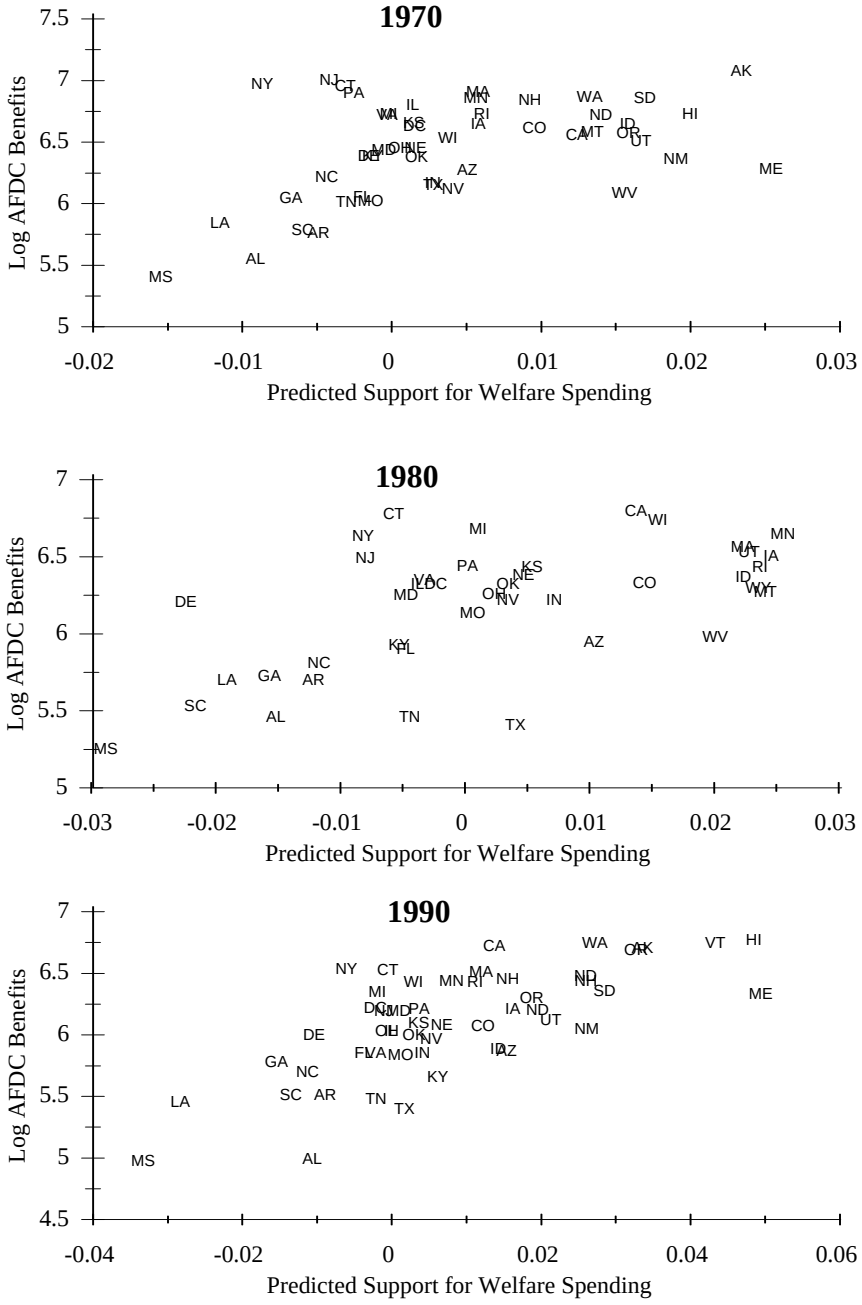
Figure 3: Correlation between AFDC Benefits and Racial Heterogeneity (1990)



Notes:

1) Racial Heterogeneity is defined as the probability that two randomly selected persons belong to a different racial group, where the racial groups are black and non-black:
   $Racial\ Heterogeneity = 1 - (fraction\ black)^2 - (fraction\ nonblack)^2$
2) AFDC benefits are the maximum benefits in each state for a family of four.
3) The regression line is given by:
   Log AFDC Benefits = 6.21 - 2.39 *Racial Heterogeneity* (Adjusted $R^2 = 0.35$)
   (0.06) (0.46) (Nr. Obs. = 51)
4) The correlation remains negative and significant if Mississippi and Alabama are dropped.

Figure 4: Predicted Welfare Support and AFDC Benefits



Notes:

1) AFDC benefits are the maximum AFDC benefits for a family of 4.
2) Support for welfare spending is predicted using the following steps. For each census tract, the four bold-faced regression coefficients of table 4 are multiplied by the appropriate welfare recipiency rates by race in the census tract. This gives the support for welfare spending in that census tract. Predicted state-level welfare support is a weighted average of tract-level support, where the tracts are weighted by population. To avoid that the prediction is driven by a possible bias in the welfare proxy that varies across states, I rescaled the welfare proxy for each state such that the caseload/population ratio according to the proxy equals the caseload/population ratio from administrative data.
3) In 1970, Vermont and Wyoming are excluded because they did not yet have census tracts.

Table 1: Cross Tabulations of Support for Welfare Spending and Demographics

Characteristic:	% of Respondents with Characteristic X Who Believe Welfare Spending is: Too High (*WelfPref*=0)	About Right (*WelfPref*=1/2)	Too Low (*WelfPref*=1)
All Respondents	**51.4**	**28.9**	**19.8**
Black	25.2	28.3	46.6
White	55.3	28.9	15.8
Other	44.7	32.5	22.8
Household Income in Quintile 1	32.1	31.9	36.0
Household Income in Quintile 2	49.6	30.4	20.0
Household Income in Quintile 3	55.1	28.7	16.3
Household Income in Quintile 4	58.6	27.0	14.3
Household Income in Quintile 5	61.4	26.3	12.3
Female	49.8	29.2	21.1
Married	56.0	27.4	16.6
Widowed	45.9	33.6	20.4
Divorced	48.4	28.5	23.1
Separated	37.4	27.9	34.7
Never Married	41.5	32.1	26.4
High School Drop-out	44.7	29.1	26.2
High School Degree	54.5	28.0	17.5
Some College	56.3	27.4	16.3
College Degree	53.8	30.2	16.0
Graduate or Professional Degree	46.6	34.4	19.0
1 Person Household	48.0	31.6	20.4
2 Person Household	53.3	29.1	17.6
3 Person Household	52.3	28.1	19.6
4 Person Household	52.7	28.2	19.2
5 or More Person Household	48.7	26.8	24.5
Has had Child/Children	52.8	28.0	19.2
Child Present at Home	51.2	27.4	21.4
Single Mother	36.4	29.2	34.4
New England	51.3	30.1	18.7
Mid-Atlantic	53.8	28.8	17.5
East North Central	52.4	28.7	19.0
West North Central	49.7	31.2	19.1
South Atlantic	52.0	27.2	20.9
East South Central	45.0	29.7	25.4
West South Central	50.3	27.8	21.9
Mountain	51.6	30.8	17.6
Pacific	50.7	29.5	19.9
Number of Observations	9,635	5,419	3,710

Notes: 1) Data from the General Social Survey, 1973-1994.

2) Support for welfare spending is measured by the answer to the question: *"We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money on it, or about the right amount"*. A list of items follows, including: *"Welfare: Are we spending too much, too little or about the right amount on welfare?"*

Table 2: Demographics, Votes against Welfare Cuts and Tastes for Welfare

Variable:	Correlation with: Welfare Support by Individuals (GSS Survey)	Correlation with: % Votes against CA Prop. 165 by Block Group	OLS with Dependent Variable: Welfare Support by Individuals (GSS Survey)		OLS with Dependent Variable: % Votes against California's Proposition 165 by Block Group	
	Correlation	Correlation	Coefficient	(S.E.)	Coefficient	(S.E.)
Black	0.2559*	0.5890*	0.2201	(0.0110)	0.3040	(0.0035)
Other	0.0163*	0.2647*	0.0378	(0.0211)	0.0393	(0.0038)
Female	0.0406*	0.0423*	0.0078	(0.0054)	0.1018	(0.0089)
Single Mother	0.1064*	0.3638*	-0.0058	(0.0146)	0.0193	(0.0165)
Widowed	0.0258*	0.1010*	0.0297	(0.0132)	0.0834	(0.0149)
Divorced	0.0263*	0.1283*	0.0314	(0.0132)	0.1243	(0.0103)
Separated	0.0700*	0.3013*	0.0481	(0.0187)	0.1081	(0.0196)
Never Married	0.0923*	0.4227*	0.0553	(0.0102)	0.1690	(0.0065)
High School Degree	-0.0722*	-0.0377*	-0.0487	(0.0072)	-0.0336	(0.0071)
Some College	-0.0207*	-0.2743*	-0.0642	(0.0152)	-0.0911	(0.0062)
College Degree	-0.0303*	-0.2032*	-0.0264	(0.0102)	-0.1134	(0.0079)
Graduate or Prof. School	0.0123	-0.1402*	0.0470	(0.0138)	0.0294	(0.0094)
2 Person Household	-0.0362*	-0.2827*	0.0247	(0.0114)	-0.0532	(0.0066)
3 Person Household	-0.0067	-0.0970*	0.0237	(0.0125)	-0.0710	(0.0073)
4 Person Household	-0.0111	-0.1654*	0.0227	(0.0129)	-0.1095	(0.0075)
5+ Person Household	0.0392*	0.1845*	0.0368	(0.0137)	-0.0327	(0.0066)
Age	-0.0464*	-0.1875*	-0.0041	(0.0010)	-0.0028	(0.0008)
Age^2 / 100	-0.0330*	-0.1604*	0.0032	(0.0010)	0.0017	(0.0008)
(Income/Poverty Line)* Income $\leq$ 200% poverty	-	-	-0.1281	(0.0097)	0.0191	(0.0065)
Income > 200% poverty	-0.2020*	-0.4005*	-0.2726	(0.0139)	-0.0283	(0.0079)
Year Fixed Effects?			Yes		N/A	
Area Fixed Effects?			MSAs (138)		Counties (55)	
Adjusted R^2			0.1468		0.7085	
Number of Observations	18,764	20,668	18,764		20,668	

Notes: 1) A star indicates significance at 5% level.
2) Welfare Support in the GSS is 1 for respondents who think welfare spending is too low, ½ for those who think it is about right, and 0 for the those who think it is too high.
3) Proposition 165 proposed cuts in welfare benefits as well as changes to the Californian budget process. It was rejected in the 1992 primaries in California.

Table 3: Regressions of California Vote on Proposition 165 (Welfare Cuts)

Dependent Variable: % Votes against Proposition 165 (Cuts in Welfare Spending)

Independent variables:	(1)	(2)	(3)	(4)
Predicted Support for Welfare (GSS)	1.112 (0.009)	1.082 (0.008)	0.709 (0.011)	0.783 (0.013)
% Black in Blockgroup				0.201 (0.005)
County Fixed Effects?	No	Yes	No	No
Tract Fixed Effects?	No	No	Yes	No
Adjusted R^2	0.4071	0.6567	0.7549	0.4480
Number of Observations	20,668	20,668	20,668	20,668

Notes: 1) Standard errors in parentheses.
2) Predicted support for Welfare is formed by multiplying the coefficients from the GSS regression (see table 2) with the corresponding demographics of each block group in the 1990 census Summary Tape File.

Table 4: Baseline Regression

Dependent Variable: Self-Reported Support for Welfare Spending

Note: All coefficients in this table come from a single OLS regression

	Independent Variable (Not Interacted)		Independent Variable * Black Respondent Dummy		Independent Variable * Nonblack Respondent Dummy	
	Coeff.	(S.E.)	Coeff.	(S.E.)	Coeff.	(S.E.)
Expected Welfare Recipiency in Tract:						
Black Recipients / Population			**-0.60**	(0.32)	**-5.36**	(1.62)
Non-black Recipients / Population			**-3.53**	(1.26)	**1.82**	(0.92)
Tract Characteristics						
Expected Fraction Black in Tract			0.27	(0.07)	0.64	(0.22)
MSA and State Characteristics						
Log Population in Town/City	0.0079	(0.0018)				
Missing Town/City Population	-0.0305	(0.0197)				
Max. Real AFDC Benefit in State / 100$	-0.0104	(0.0051)				
25th Percentile of Earnings in State / 100$/wk	0.0300	(0.0267)				
5-Point Income Spline (marginal effects):						
Income/Poverty Line (quintile 1)			-0.1222	(0.0302)	-0.1752	(0.0187)
Income/Poverty Line (quintile 2)			-0.0393	(0.0341)	-0.0636	(0.0140)
Income/Poverty Line (quintile 3)			-0.0196	(0.0395)	-0.0203	(0.0122)
Income/Poverty Line (quintile 4)			-0.0743	(0.0257)	-0.0200	(0.0068)
Income/Poverty Line (quintile 5)			-0.0038	(0.0067)	0.0001	(0.0016)
Other Demographics						
Black	0.1209	(0.0512)				
Other Race	0.0276	(0.0211)				
Female	0.0058	(0.0054)				
High School Degree	-0.0419	(0.0072)				
Some College	-0.0563	(0.0153)				
College Degree	-0.0131	(0.0104)				
Graduate or Professional Degree	0.0667	(0.0141)				
Age	-0.0025	(0.0010)				
Age^2 / 100	0.0016	(0.0010)				
Widowed	0.0231	(0.0132)				
Divorced	0.0174	(0.0132)				
Separated	0.0353	(0.0188)				
Never Married	0.0329	(0.0114)				
Has had Child/Children	-0.0238	(0.0086)				
Child Present at Home	-0.0279	(0.0105)				
Single Mother	0.0164	(0.0157)				
2 Person Household	0.0265	(0.0115)				
3 Person Household	0.0458	(0.0134)				
4 Person Household	0.0497	(0.0149)				
5 or More Person Household	0.0617	(0.0162)				
Year Fixed Effects	Yes (18)					
MSA Fixed Effects	Yes (138)					
Adjusted R^2	0.156					
Nr. of Observations	18,764					

Notes: 1) The dependent variable is support for welfare spending as measured by the General Social Survey. This variable is 1 for respondents who think welfare spending is too low, ½ for those who think it is about right, and 0 for the those who think it is too high.
2) Standard errors (in parentheses) are corrected for group error terms in MSA*year cells.
3) All variables that are interacted with race have been demeaned by their overall mean.

Table 5 : Decompositions of Effect of Recipient Race

Dependent Variable: Self-Reported Support for Welfare Spending

Restriction in the decomposition:	Decomposition A Black Own-Race Effect = Non-Black Own-Race Effect		Decomposition B Black Recipient Effect = Zero		Decomposition C Black Respondent Effect = Zero	
	Coefficient	(S.E.)	Coefficient	(S.E.)	Coefficient	(S.E.)
Effects of Welfare Recipiency:						
Exposure Effect	-3.24	(1.14)	-5.36	(1.61)	-3.53	(1.26)
Black Own-Race Bias	5.05	(1.19)	2.93	(1.38)	4.76	(1.59)
Non-Black Own-Race Bias			7.17	(2.04)	5.35	(1.35)
Black Recipient Effect	-2.12	(1.28)	-	-	-1.82	(1.98)
Black Respondent Effect	-0.30	(0.88)	1.82	(1.98)	-	-
P-value of F-test:						
Black and Non-black own-race effects are equal	-		0.0963		0.7368	
Black and Non-black own-race effects are jointly zero	-		0.0001		0.0001	

Notes: 1) The decompositions in this table are decompositions of the level and racial composition of welfare recipiency on support for welfare spending. The estimates are based on the regression reported in table 4. In that regression, welfare recipiency is measured as the expected number of recipients divided by the population in the tract.
2) Standard errors (in parentheses) are corrected for group error terms in MSA*year cells.

Table 6: Effect of Welfare Recipiency at Different Geographical Levels

Dependent Variable: Self-Reported Support for Welfare Spending

	Effects of Welfare Recipiency:				All effects jointly zero (p-value)	Nr. Obs.
	Exposure Effect	Own-Race Bias	Black Recipient Effect	Black Respondent Effect		$\bar{R}^2$
(1) Expected Tract Recipiency	-3.24	5.05	-2.12	-0.30	0.0000	18,764
	(1.14)	(1.19)	(1.28)	(0.88)		0.1559
(2) MSA Recipiency	-6.72	5.36	3.50	-3.86	0.0000	18,764
	(2.49)	(1.46)	(2.29)	(0.88)		0.1554
(3) State Recipiency	-4.21	5.76	-0.22	-4.78	0.0000	18,764
	(3.14)	(2.09)	(3.14)	(1.14)		0.1550
(4) Tract and MSA Recipiency						
Expected Tract Recipiency	-2.37	3.76	-3.01	1.24	0.1169	18,764
	(1.45)	(1.82)	(1.69)	(3.42)		0.1560
MSA Recipiency	-4.76	2.76	3.80	-2.85	0.2816	
	(2.99)	(2.23)	(2.84)	(1.71)		
t-statistic on coefficient difference	[0.61]	[0.27]	[-1.74]	[1.41]	0.3427	
t-statistic on coefficient sum	[-2.78]	[3.78]	[0.31]	[-1.36]		
(5) Tract and State Recipiency						
Expected Tract Recipiency	-2.97	3.71	-1.38	0.57	0.1120	18,764
	(1.23)	(1.48)	(1.50)	(1.21)		0.1562
State Recipiency	-1.06	1.67	-1.59	-3.29	0.1026	
	(3.21)	(2.46)	(3.18)	(1.91)		
t-statistic on coefficient difference	[-0.51]	[0.60]	[0.05]	[1.34]	0.4207	
t-statistic on coefficient sum	[-1.29]	[2.46]	[-1.00]	[-1.90]		
(6) MSA and State Recipiency						
MSA Recipiency	-9.40	6.05	8.17	-1.82	0.0207	18,764
	(2.96)	(2.04)	(2.90)	(2.00)		0.1558
State Recipiency	3.17	-0.36	-6.80	-2.99	0.0196	
	(3.69)	(2.77)	(3.64)	(2.53)		
t-statistic on coefficient difference	[-2.16]	[1.43]	[2.55]	[0.27]	0.0728	
t-statistic on coefficient sum	[-1.94]	[2.73]	[0.46]	[-4.15]		

Notes: 1) Only the decomposition of the recipiency coefficients is reported. All regressions contain the same controls as in table 4. The controls include 138 MSA and 18 year fixed effects.
2) Standard errors (in parentheses) are corrected for group error terms in MSA*year cells.
3) Welfare recipiency variables are based on census Summary Tape File information and defined in detail in appendix B.

Table 7: Investigation of Omitted Variable Biases

Dependent Variable: Self-Reported Support for Welfare Spending

	Effects of Welfare Recipiency:				All effects jointly zero (p-value)	Nr. Obs.
	Exposure Effect	Own-Race Bias	Black Recipient Effect	Black Respondent Effect		$\bar{R}^2$
Splitting Effect at 2 x Poverty Line						
(1) Expected Tract Recipiency						
Income $\leq$ 2 x Poverty Line	-2.83	4.37	-2.03	-0.03	0.0009	18,764
	(1.16)	(1.24)	(1.28)	(0.75)		0.1562
Income > 2 x Poverty Line	-3.34	6.86	-2.75	-1.30	0.0000	
	(1.69)	(1.55)	(1.80)	(0.98)		
t-stat. on coefficient differences	[0.37]	[-1.76]	[0.48]	[0.96]	0.3016	
*Including MSA*Race Fixed Effects*						
(2) Expected Tract Recipiency	-3.68	5.13	-1.79	-0.36	0.0001	18,764
	(1.55)	(1.65)	(1.63)	(1.24)		0.1578
*IV ($Segregation_{kt}$*$Demographics_i$)*						
(3) Expected Tract Recipiency	-2.68	4.74	-1.46	-1.05	0.0003	18,764
	(1.28)	(1.48)	(1.64)	(1.01)		0.1580

Notes: 1) Only the decomposition of the recipiency coefficients is reported. All regressions contain the same controls as in table 4. The controls include 138 MSA and 18 year fixed effects.
2) Standard errors (in parentheses) are corrected for group error terms in MSA*year cells.
3) Welfare recipiency variables are based on census Summary Tape File information and defined in detail in appendix B.
4) Regression (3) includes MSA fixed effects that are allowed to vary linearly between decades. The regression is identified because predicted tract-level welfare recipiency rates vary across individuals within an MSA at a given point in time. This variation depends on the pattern of race and income segregation in the MSA and the race and income of the respondent. As explained in detail in appendix C, the regression can be interpreted as an instrumental variables regression where the instrument is the interaction of the respondent's income and race with the pattern of income and race segregation in the MSA.

Table 8: Support for Welfare Spending by Educational Attainment

Dependent Variable: Self-Reported Support for Welfare Spending

	Effects of Welfare Recipiency:				All effects jointly zero (p-value)	Nr. Obs.
	Exposure Effect	Own-Race Bias	Black Recipient Effect	Black Respondent Effect		$\bar{R}^2$
Effect by Respondent's Education						
(1) Expected Tract Recipiency						
No College Degree	-3.04	4.83	-2.04	-0.38	0.0000	18,764
	(1.14)	(1.19)	(1.27)	(0.88)		0.1559
College Degree or More	-6.16	8.88	-2.86	0.29	0.0003	
	(2.35)	(2.45)	(2.55)	(2.04)		
t-stat. on coefficient differences	[1.47]	[-1.77]	[0.35]	[-0.34]	0.1292	
(2) MSA Recipiency						
No College Degree	-6.66	5.06	3.46	-3.86	0.0000	18,764
	(2.50)	(1.50)	(2.34)	(0.93)		0.1552
College Degree or More	-7.64	7.15	4.16	-3.38	0.0090	
	(3.24)	(2.60)	(3.03)	(2.24)		
t-stat. on coefficient differences	[0.38]	[-0.80]	[-0.27]	[-0.20]	0.5344	
(3) State Recipiency						
No College Degree	-4.13	5.46	-0.08	-4.86	0.0000	18,764
	(3.17)	(2.12)	(3.06)	(1.18)		0.1549
College Degree or More	-4.84	7.05	-0.39	-4.33	0.0007	
	(4.22)	(3.75)	(4.04)	(3.40)		
t-stat. on coefficient differences	[0.21]	[-0.44]	[0.09]	[-0.15]	0.7440	

Notes: 1) Standard errors (in parentheses) are corrected for group error terms in MSA*year cells.
2) Welfare recipiency variables are based on census Summary Tape File information and defined in detail in appendix B.
3) 17.0% of the respondents have a college degree or more.

Table 9: Support for Welfare Spending and the Role of Values

Dependent Variable: Self-Reported Support for Welfare Spending

Panel A: Out-of-Wedlock Births & Moral Attitude

	(1)
Effects of Welfare Recipiency:	
Exposure Effect	-10.48
	(3.46)
Own-Race Bias	6.55
	(2.03)
Black Recipient Effect	5.27
	(4.62)
Black Respondent Effect	-0.27
	(1.29)
Effects of Respondent Attitudes and Out-of-Wedlock Births	
Against Premarital Sex	0.063
	(0.055)
Against Premarital Sex * Welfare Recipiency Rate	1.437
	(1.472)
Fraction of Never-Married Mothers Who Are on Welfare	0.041
	(0.138)
Against Premarital Sex * Fraction of Never-Married Mothers Who are on Welfare	**-0.254**
	(0.133)
Adjusted R^2	0.1724
Nr. Observations	11,502

Panel B: Effects of Working Activities of Welfare Recipients

	(2) "Idle" = Did no work	(3) "Idle" = Worked $\leq$ 13 wks
Effects of "Idle" Welfare Recipiency:		
Exposure Effect	-8.80	-10.73
	(4.57)	(4.07)
Own-Race Bias	7.72	7.47
	(2.99)	(2.57)
Black Recipient Effect	0.82	5.64
	(5.95)	(5.12)
Black Respondent Effect	-1.43	-1.23
	(1.65)	(1.58)
Effects of "Working" Welfare Recipiency:	"Working" = Did some work	"Working"= Worked > 13 wks
Exposure Effect	-6.37	0.92
	(10.46)	(13.52)
Own-Race Bias	-3.70	-4.97
	(8.84)	(11.76)
Black Recipient Effect	11.62	-5.73
	(15.04)	(18.23)
Black Respondent Effect	7.21	8.47
	(5.33)	(6.82)
Adjusted R^2	0.1712	0.1710
Nr. Observations	11,502	11,502

Notes: 1) Each column reports selected coefficients of the OLS regression of support for welfare spending on welfare recipiency measures and all the other controls listed in table 4. These controls include demographic characteristics of the respondent, MSA fixed effects and year fixed effects.

2) Observations outside MSAs are not included in the regressions because recipiency measures based on the PUMS are not available outside MSAs. Appendix D discusses the effects of using PUMS recipiency measures and excluding observations outside MSAs.

3) Standard errors (in parentheses) are corrected for group error terms in MSA*year cells.

4) Welfare recipiency measures are based on the census Public Use Micro Samples and defined in detail in appendix B.

5) *Against Premarital Sex* is a dummy variable that is 1 if the respondent answered "always wrong" or "almost always wrong" to the following question: *There's been a lot of discussion about the way morals and attitudes about sex are changing in this country. If a man and woman have sexual relations before marriage, do you think it is always wrong, almost always wrong, wrong only sometimes or not wrong at all?* This question was asked of 7,602 of the respondents in the regression and 31.6% of them thought it was always wrong or almost always wrong while 66.1% though it was wrong only sometimes or not wrong at all.

6) The dummy variable *Against Premarital Sex* has been demeaned, and respondents who were not asked this question were assigned the mean value of zero.

7) The variable *Fraction of Never-Married Mothers Who are on Welfare* has a mean of 40.6% and a std. dev. of 10.2%.

8) The fraction of all welfare recipients who did some work in the past calender year is 35% and the fraction who worked more than 13 weeks is 24%. For black welfare recipients these fractions are 32% and 21%, and for non-blacks they are 37% and 27%.

Table 10: Explaining State Welfare Benefit Levels

Dependent Variable: Log Real State Maximum AFDC Benefits for a Family of 4

Time Period:	Pooled 1970, 1980 & 1990	Pooled 1970, 1980 & 1990	1970	1980	1990
	(1)	(2)	(3)	(4)	(5)
Predicted Support for Welfare Spending	14.78	7.88	18.69	13.03	16.04
	(3.01)	(2.51)	(5.49)	(2.41)	(3.09)
Welfare Caseload / Population	-	26.78	-	-	-
		(5.80)			
Fraction Below the Poverty Line	-	-7.29	-	-	-
		(0.65)			
Fraction Black	-	-0.14	-	-	-
		(0.40)			
Dummy for 1970	0.44	0.45	-	-	-
	(0.03)	(0.04)			
Dummy for 1980	0.18	0.10	-	-	-
	(0.03)	(0.02)			
Nr. of Observations	151	151	49	51	51
$\bar{R}^2$	0.408	0.783	0.181	0.367	0.342
$\bar{R}^2$ (excluding explanatory power from year dummies)	0.301	0.746			

Notes: 1) Standard errors in parentheses. Standard errors are corrected for group effects within states in the pooled regressions.
2) Support for welfare spending is predicted using the following steps. For each census tract, the four bold-faced regression coefficients of table 4 are multiplied by the appropriate welfare recipiency rates by race in the census tract. This gives the support for welfare spending in that census tract. Predicted state-level welfare support is a weighted average of tract-level support, where the tracts are weighted by population. To avoid that the prediction is driven by a possible bias in the welfare proxy that varies across states, I rescaled the welfare proxy for each state such that the caseload/population ratio according to the proxy equals the caseload/population ratio from administrative data. This predictor has a standard deviation of 0.015.
3) In 1970, Vermont and Wyoming are excluded because they did not yet have census tracts.
4) T explanatory power of the year dummies is excluded by demeaning both the dependent and independent variables in each year.

Appendix A: Summary Statistics

Table A.1: Summary Statistics for GSS Sample

	All Observations		Respondent Believes Welfare Spending is:					
			Too High (Support=0)		About Right (Support=0.5)		Too Low (Support=1)	
Variable:	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Support for Welfare Spending	0.342	0.391	0.000	0	0.500	0.000	1.000	0.000
Black	0.125	0.331	0.061	0.240	0.122	0.328	0.294	0.456
White	0.858	0.349	0.924	0.265	0.858	0.349	0.686	0.464
Other	0.017	0.130	0.015	0.121	0.019	0.137	0.020	0.139
Household Income in Quintile 1	0.199	0.399	0.124	0.330	0.220	0.414	0.362	0.481
Household Income in Quintile 2	0.203	0.402	0.196	0.397	0.213	0.410	0.205	0.404
Household Income in Quintile 3	0.201	0.401	0.216	0.411	0.200	0.400	0.165	0.371
Household Income in Quintile 4	0.201	0.401	0.229	0.420	0.188	0.391	0.145	0.353
Household Income in Quintile 5	0.196	0.397	0.235	0.424	0.179	0.383	0.122	0.328
Female	0.541	0.498	0.525	0.499	0.547	0.498	0.577	0.494
Married	0.613	0.487	0.669	0.471	0.582	0.493	0.514	0.500
Widowed	0.095	0.293	0.085	0.278	0.110	0.313	0.098	0.297
Divorced	0.095	0.293	0.090	0.286	0.094	0.292	0.111	0.314
Separated	0.035	0.183	0.025	0.157	0.033	0.180	0.061	0.239
Never Married	0.162	0.369	0.131	0.338	0.181	0.385	0.217	0.412
High School Drop-out	0.280	0.449	0.244	0.429	0.282	0.450	0.371	0.483
High School Degree	0.514	0.500	0.546	0.498	0.499	0.500	0.454	0.498
Some College	0.036	0.185	0.039	0.194	0.034	0.181	0.029	0.169
College Degree	0.117	0.321	0.123	0.328	0.122	0.328	0.094	0.293
Graduate or Professional Degree	0.053	0.224	0.048	0.214	0.063	0.243	0.051	0.220
Age	44.2	17.2	44.7	16.6	44.9	18.1	42.1	17.3
1 Person Household	0.187	0.390	0.175	0.380	0.205	0.403	0.193	0.394
2 Person Household	0.315	0.464	0.327	0.469	0.317	0.465	0.280	0.449
3 Person Household	0.181	0.385	0.184	0.388	0.176	0.381	0.179	0.384
4 Person Household	0.168	0.374	0.173	0.378	0.164	0.371	0.163	0.369
5 or More Person Household	0.149	0.356	0.142	0.349	0.138	0.345	0.185	0.388
Has had Child/Children	0.732	0.443	0.752	0.432	0.709	0.454	0.710	0.454
Child Present at Home	0.440	0.496	0.438	0.496	0.417	0.493	0.476	0.500
Single Mother	0.073	0.261	0.052	0.222	0.074	0.262	0.127	0.333

Note: Table continues on the next page.

Table A.1 Continued

	All Observations		Respondent Believes Welfare Spending is:					
			Too High (Support=0)		About Right (Support=0.5)		Too Low (Support=1)	
Variable:	Mean	SD	Mean	SD	Mean	SD	Mean	SD
AFDC Benefit in State $100s	5.643	2.260	5.754	2.282	5.618	2.209	5.390	2.240
25th %-ile of Earnings $100/wk	2.298	0.251	2.306	0.249	2.290	0.252	2.287	0.254
Log Population in Town/City	3.312	2.233	3.111	2.159	3.326	2.218	3.815	2.360
Missing Town/City Population	0.023	0.150	0.027	0.161	0.024	0.154	0.012	0.111
Not in an MSA	0.358	0.479	0.375	0.484	0.357	0.479	0.316	0.465
New England	0.046	0.209	0.046	0.209	0.048	0.214	0.043	0.203
Mid-Atlantic	0.157	0.364	0.164	0.370	0.156	0.363	0.138	0.345
East North Central	0.206	0.405	0.210	0.408	0.205	0.404	0.198	0.398
West North Central	0.077	0.266	0.074	0.263	0.083	0.276	0.074	0.262
South Atlantic	0.184	0.387	0.186	0.389	0.173	0.378	0.194	0.395
East South Central	0.065	0.247	0.057	0.232	0.067	0.250	0.083	0.277
West South Central	0.086	0.280	0.084	0.277	0.083	0.275	0.094	0.293
Mountain	0.051	0.220	0.051	0.221	0.055	0.227	0.045	0.208
Pacific	0.130	0.336	0.128	0.334	0.132	0.339	0.130	0.336
Number of Observations	18,764		9,635		5,419		3,710	

Notes: 1) Income is household income as a percentage of the poverty line. Household Income Quintiles are determined relative to all observations in the GSS with non-missing household income data. The breakpoints between the quintiles occur at 131%, 228%, 332% and 506% of the poverty line.

2) AFDC benefits are the maximum AFDC benefits for a family of 4 in $1990.

3) The 25th percentile of the earnings is based on the distribution of real weekly earnings of privately employed workers (excluding self-employed workers) measured in hundreds of $1990 (Source: May CPS for 1973-1980 and the CPS Merged Outgoing Rotation Groups for 1980-1994).

Appendix B: Construction and Validation of Welfare Proxies

B.1 Construction of Welfare Proxies

Based on information from the census Summary Tape Files (STF), the proxy for the number of black AFDC recipients as a fraction of the tract population is calculated as:

$$\textit{STF proxy for black welfare recipiency in tract} = \left(\frac{\textit{Black female headed families}}{\textit{Total families}}\right)\left(\frac{\textit{Black persons below poverty}}{\textit{Total black persons}}\right)$$

where all counts are performed at the tract level.[1] The proxy for non-black welfare recipiency is formed analogously. Because the STF is only available for 1970, 1980 and 1990, the proxies for the years in between are formed by linear interpolation, and the 1990 proxies are used for 1991 to 1994. The STF proxy for MSA-level welfare recipiency is formed by taking a weighted average of the proxies of the tracts that constitute the MSA where the weights are given by the number of families in the tract divided by the total number of families in the MSA. The aggregation for the state level is done similarly.

Based on information from the census Public Use Micro Sample (PUMS), the proxy for black welfare recipiency at the MSA level is given by:

$$\textit{PUMS proxy for black welfare recipiency in MSA} = \left(\frac{\textit{Single black females aged } 16\text{–}55 \textit{ with a child under } 18 \textit{ who recieve public assistance}}{\textit{Total persons aged } 16 \textit{ and over}}\right)$$

where the counts are performed at the MSA level. The proxy for non-black welfare recipiency is formed analogously. The values between the Census years are computed by linear interpolation and values for years after 1990 are those of 1990. To facilitate comparisons of regression using PUMS and to those using STF proxies, I scale the PUMS proxies such that the average level of total welfare recipiency is the same for the PUMS and STF proxy. The same scaling factor, 2.11, is used for black and non-black recipiency rates. In appendix D, I show that estimates of the effect of welfare recipiency based on PUMS proxies are very similar to estimates based on STF proxies. Starting in 1987, there is publicly available administrative data on AFDC recipiency by race at the state level, which is used in the next section to validate the proxies. Table B.1 reports summary statistics for welfare recipiency measures.

B.2 Validation of Welfare Proxies

This section uses administrative data from 1990 to check whether welfare proxies based on the PUMS and the STF are reasonable good predictors for actual welfare recipiency. The state-level PUMS proxy for this validation is formed analogously to the PUMS proxy at the MSA level. Table B.2 shows cross-section regressions of administrative recipiency measures for 1990 on the STF and PUMS proxies for the same year. Regressions (1) and (2) show that the STF proxies for black and

[1] The 1980 summary tape file only gives a racial decomposition for female headed households instead of female headed families. In that year, I use households instead of families.

non-black recipiency are both strongly significant, but that the explanatory power of the non-black proxy is markedly lower. Regression (3) shows the regression of total recipiency on black and non-black recipiency. As should be the case, the coefficients on the black and non-black proxy are roughly the same. For regression (4), a proxy for fraction of welfare recipients who are black is formed by taking the ratio of the proxy for black welfare recipiency to the sum of the proxies for black and non-black recipiency. This proxy predicts the actual caseload composition remarkably well, as is also shown in the top panel of figure B.1.

The equivalent regressions for the PUMS proxy are given in regressions (5) to (8). As would be expected from the construction of the PUMS and STF proxies, the PUMS proxy is generally more accurate. The coefficients on the PUMS proxy , before the rescaling, should approximately equal the average family size because the denominator in the PUMS proxy is persons rather than families. The relatively high level of the coefficients after rescaling is somewhat puzzling, but does not critically affect the later results, because these are mainly driven by differences over time within states in the level and composition of welfare recipiency. The bottom panel of figure B.1 shows that also the PUMS proxies are an excellent predictor of the composition of welfare recipiency.

Table B.1: Summary Statistics for Measures of Welfare Recipiency

	All respondents		Black Respondents		Non-black Respondents	
	Mean	Std.Dev.	Mean	Std.Dev	Mean	Std.Dev.
MSA+ Sample (18,764 Observations)						
STF measures of welfare recipiency						
Black welfare recipiency in expected tract	0.0120	0.0248	0.0633	0.0414	0.0046	0.0053
White welfare recipiency in expected tract	0.0094	0.0077	0.0094	0.0097	0.0094	0.0074
Black welfare recipiency in MSA	0.0104	0.0102	0.0170	0.0123	0.0095	0.0095
White welfare recipiency in MSA	0.0091	0.0063	0.0082	0.0056	0.0093	0.0063
Black welfare recipiency in State	0.0097	0.0082	0.0142	0.0113	0.0091	0.0074
White welfare recipiency in State	0.0081	0.0048	0.0076	0.0043	0.0081	0.0048
Measures of the fraction black						
Fraction black in expected tract (STF)	0.1230	0.1867	0.5716	0.1774	0.0589	0.0498
Fraction black in MSA (STF)	0.1136	0.0859	0.1762	0.0839	0.1046	0.0824
Fraction black in State (STF)	0.1198	0.0752	0.1663	0.0907	0.1131	0.0703
MSA Sample (11,502 Observations)						
STF measures of welfare recipiency						
Black welfare recipiency in expected tract	0.0148	0.0290	0.0701	0.0423	0.0048	0.0046
White welfare recipiency in expected tract	0.0092	0.0081	0.0096	0.0101	0.0091	0.0077
Black welfare recipiency in MSA	0.0125	0.0097	0.0173	0.0111	0.0116	0.0092
White welfare recipiency in MSA	0.0089	.006185	0.0081	0.0057	0.0090	0.0063
Black welfare recipiency in State	0.0099	0.0080	0.0136	0.0115	0.0092	0.0070
White welfare recipiency in State	0.0083	0.0048	0.0078	0.0045	0.0084	0.0049
PUMS measures of welfare recipiency						
Black welfare recipiency in MSA	0.0104	0.0064	0.0136	0.0062	0.0098	0.0062
White welfare recipiency in MSA	0.0110	0.0066	0.0093	0.0063	0.0113	0.0066
Measures of the fraction black						
Fraction black in expected tract (STF)	0.1495	0.2158	0.6329	0.1357	0.0619	0.0416
Fraction black in MSA (STF)	0.1343	0.0794	0.1822	0.0758	0.1256	0.0769
Fraction black in MSA (PUMS)	0.1263	0.0787	0.1740	0.0802	0.1176	0.0752
Fraction black in State (STF)	0.1206	0.0730	0.1585	0.0934	0.1137	0.0664

Notes: 1) The MSA+ sample treats the non-metropolitan parts of each state as if it were a single MSA, whereas the MSA sample excludes non-metropolitan areas.

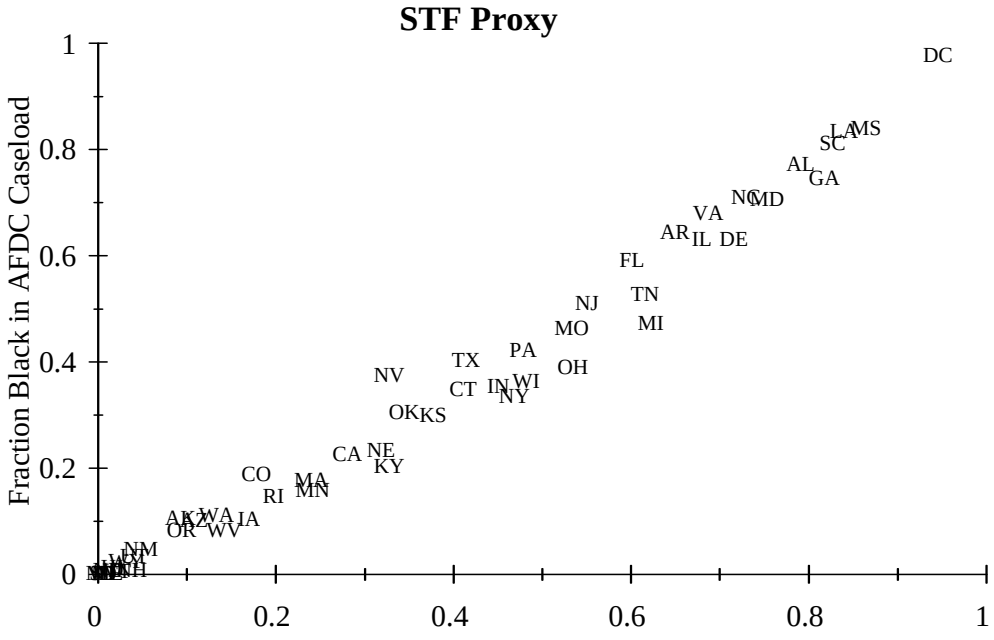
2) Based on comparisons with administrative data, these proxies are fairly accurate for the caseload by race divided by the total population. This is rate is about 3 times as low as the number of welfare recipients divided by the total population because each welfare case has on average 3 recipients (one mother and 2 children).

Table B.2: Validation of STF and PUMS Proxies with Administrative Data

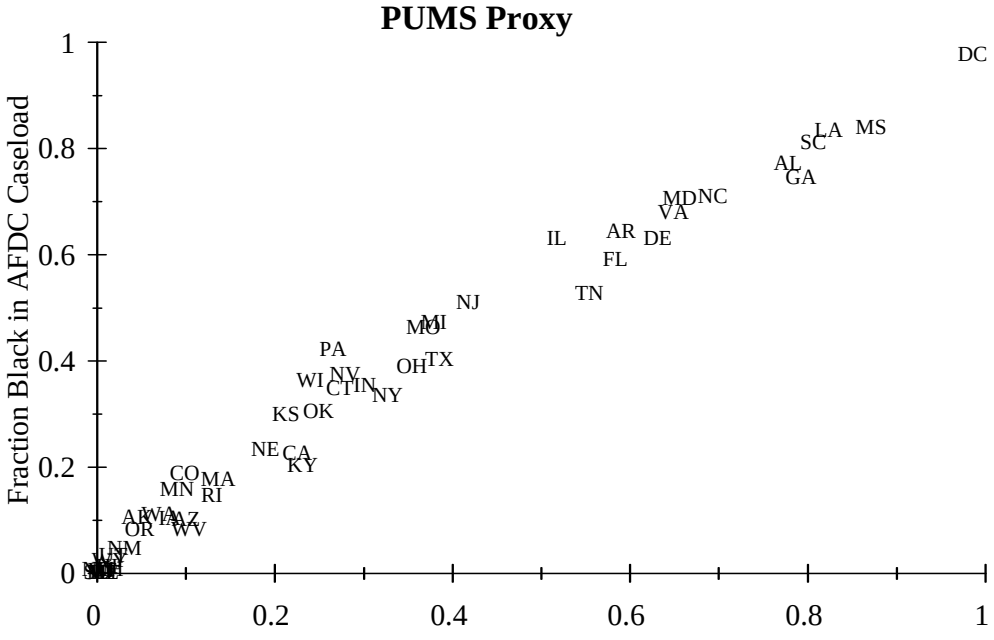
Administrative Measure of AFDC Recipiency:	First Proxy		Second Proxy		$\bar{R}^2$	Nr. Obs.
	Coefficient	(S.E.)	Coefficient	(S.E.)		
Using STF Proxies						
(1) Black caseload/total families	Black caseload/population (stf)					
	1.34	(0.07)			0.884	51
(2) White caseload/total families	White caseload/population (stf)					
	1.85	(0.31)			0.406	51
(3) Total caseload/total families	Black caseload/population (stf)		White caseload/pop. (stf)			
	0.92	(0.15)	1.06	(0.44)	0.429	51
(4) Fraction black in caseload	Fraction black in caseload (stf)					
	0.965	(0.022)			0.975	51
Using PUMS proxies:						
(5) Black caseload/total families	Black caseload/population (pums)					
	2.93	(0.18)			0.847	51
(6) White caseload/total families	White caseload/population (pums)					
	2.69	(0.18)			0.822	51
(7) Total caseload/total families	Black caseload/population (pums)		White caseload/pop. (pums)			
	2.75	(0.45)	2.99	(0.32)	0.631	51
(8) Fraction black in caseload	Fraction black in caseload (pums)					
	0.983	(0.022)			0.975	51

Notes: The construction of the proxies is described in detail in the text.

Figure B.1: Accuracy of Proxies for Racial Composition of Welfare Caseload



STF Proxy: Based on Race*Poor and Race*SingleMother in Census Tracts



PUMS Proxy: Based on Receipt of Public Assistance and Household

Appendix C: Predicting Tract-Level Welfare Recipiency

C.1 Construction of Expected Recipiency Rates

While the GSS does not provide more detailed information about the location of respondents than their MSA, it is possible to use a procedure similar to two stage least squares to estimate whether individuals respond to the rate and composition of welfare recipiency in their neighborhood. Instead of using the actual welfare recipiency in the census tract of an individual, I use predicted tract-level welfare recipiency based on the individual's characteristics and the pattern of race and income segregation in the MSA. Race and income segregation in an MSA *m* at time *t* is denoted by $Segr_{mt}$, which is not a one-dimensional number but reflects the full distribution of race and income across the tracts in this MSA. Conditional on the race and income segregation in MSA *m* of individual *i*, the probability that this individual lives in tract *n* is given by:

$$\pi_{ni} = Pr(i \text{ lives in tract } n \mid inc_i, race_i, Segr_{mt}) = \left(\frac{\sum_{j \in \text{tract } n} I(inc_j = inc_i \wedge race_j = race_i)}{\sum_{j \in MSA\ m} I(inc_j = inc_i \wedge race_j = race_i)} \right) \quad \text{(C.1)}$$

where *I(.)* is an indicator function that equals one if the expression between parentheses is true (and zero otherwise), inc_i and $race_i$ denote the income bracket and race of individual *i*, and inc_j and $race_j$ denote the income bracket and race of all other individuals. Hence, the numerator gives the number of individuals with the same characteristics as individual *i* living in tract *n*, and the denominator gives the total number of individuals with the same characteristics as individual *i* living in the MSA. Using these probabilities, black and non-black welfare recipiency in individual *i*'s tract are predicted by:

$$\left(\sum_n \pi_{ni} \frac{(black\ welfare)_n}{population_n} \right) \quad \text{and} \quad \left(\sum_n \pi_{ni} \frac{(nonblack\ welfare)_n}{population_n} \right), \quad \text{(C.2)}$$

where *n* indexes Census tracts.

C.2 IV Interpretation of Expected Recipiency Rates

The expected welfare recipiency rates can be interpreted as the result of a first stage regression, where the main instrument is the interaction of the race and income of the respondent with contemporaneous race and income segregation in the MSA of the respondent. The main instrument is the interaction term because the direct effects of the respondent's income and race are absorbed by the demographic controls and the direct effects of segregation are largely absorbed by the MSA fixed effects. To fully absorb the direct effects of segregation, the MSA fixed effects need to vary over time. The second stage regression is the regression of welfare support on the expected welfare recipiency measures. This estimator is a version of a 2-sample 2 stage least squares estimator because the sample used to predict welfare recipiency rates (all observations in census tracts) is different from the sample in the second stage (18,764 GSS respondents).

To show this more formally, suppose that the true model of welfare preference is given by:

$$y = X_1\beta_1 + X_2\beta_2 + X_3\beta_3 + \varepsilon = \boldsymbol{X}\beta + \varepsilon \tag{C.3}$$

where y is support for welfare spending, X_1 are tract-level welfare recipiency rates, X_2 contains income, race, year and time-varying MSA fixed effects and X_3 consists of the remaining demographic controls. The error term ε has mean zero and is uncorrelated with the X-variables. The problem is that the tract-level recipiency measure, X_1, is not observed (and may be endogenous). To overcome this problem, I predict X_1 with X_2 and race & income segregation as described in the previous subsection:

$$\hat{X}_1 = \mathrm{E}[X_1 \mid X_2, \textit{Segr.}] \tag{C.4}$$

where $\hat{X}_1$ is the expected tract-level recipiency measure and *Segr*. contains the income and racial composition of all census tracts in each MSA. Any conditional expectation, like equation (C.4), can be rewritten as:

$$X_1 = \hat{X}_1 + \eta \tag{C.5}$$

where the error term, η, has mean zero and is uncorrelated with the predictor. Hence, $\mathrm{E}[\hat{X}_1'\eta] = 0$. Moreover, the error term is not correlated in expectation with those variables used in predicting the expected recipiency rate. This implies that $\mathrm{E}[X_2'\eta] = 0$. However, the information in X_3 was not used to calculate the expected recipiency rates.[2] There is no guarantee that $\mathrm{E}[X_3'\eta]=0$, but there is also no compelling reason to believe that this correlation is large.

Because the expected welfare recipiency measures are only calculated for a sample of the total population, they are not exactly orthogonal to the error term due to sampling variation. Hence, $\hat{X}_1'\eta$ only equals zero in expectation, but in any sample $\hat{X}_1'\eta$ differs from zero. For the same reason, $X_2'\eta$ is not exactly zero. This differs from the regular two stage least squares (2SLS), where the error term of the first stage is exactly orthogonal to the predicted variables and the exogenous variables in the second stage. This is the case because in the regular 2SLS the same sample is used for the first and second stage.

In the second stage, the missing (or endogenous) variables are replaced by their predicted values. Hence, the coefficient estimates are given by:

$$\hat{\beta} = (\hat{X}'\hat{X})^{-1}\hat{X}'y = (\hat{X}'\hat{X})^{-1}\hat{X}'((\hat{X}+\eta)\beta+\varepsilon) = \beta+(\hat{X}'\hat{X})^{-1}\hat{X}'(\eta\beta+\varepsilon) \tag{C.6}$$

where $\hat{X} = (\hat{X}_1 \vdots X_2 \vdots X_3)$. From equation (C.6), it is clear that two key requirements for the consistency of $\hat{\beta}$ are that $\mathrm{E}[\hat{X}'\varepsilon] = 0$ and that $\mathrm{E}[\hat{X}'\eta] = 0$. The first requirement is the standard condition that the instrument must be uncorrelated with error term. The second requirement is fulfilled by construction in the regular 2SLS, but relies on $\mathrm{E}[X_3'\eta]$ being zero in my application.

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[2] This was not possible because the Census Summary Tape Files do not contain *n*-way cross tabulations by census tract of all n demographic characteristics contained in X_2 and X_3.

The asymptotic variance-covariance matrix of $\hat{\beta}$ is given by:

$$E(\hat{\beta}-\beta)(\hat{\beta}-\beta)' = (\hat{X}'\hat{X})^{-1}\hat{X}'(\eta\beta+\varepsilon)(\eta\beta+\varepsilon)'\hat{X}(\hat{X}'\hat{X})^{-1} = (\hat{X}'\hat{X})^{-1}\sigma^2_{\eta\beta+\varepsilon} \quad \text{(C.7)}$$

and the standard errors can be estimated by the diagonal elements of $(\hat{X}'\hat{X})^{-1}\,\hat{\sigma}^2_{\eta\beta+\varepsilon}$. This means that, unlike the regular 2SLS, the standard errors of the second stage do not need adjustment by the factor $\sqrt{\hat{\sigma}^2_{\varepsilon} / \hat{\sigma}^2_{\eta\beta+\varepsilon}}$. The standard errors only need adjustment if η drops out of (C.6) because $X'\eta = 0$. As noted earlier, $X'\eta = 0$ holds by construction for regular 2SLS, but not for the 2-sample 2SLS used in this paper.

Appendix D: Robustness checks

Table D.1 replicates the first three regressions of table 6, but estimates them using an ordered probit instead of OLS. As the table shows, this does not affect the significance of the results. The probit coefficients are not directly comparable to OLS coefficients, so no inferences about the size of the effect can be drawn from table D.1.

To rule out the possibility that the results are driven by some peculiarity of the STF proxies of welfare recipiency, table D.2 replicates the results using more accurate proxies based on the census Public Use Micro Sample (PUMS). Because the PUMS proxy is only available for MSAs, regressions (1) and (2) replicate the first two regressions of table 6, but unlike table 6, a non-metropolitan part of a state is no longer treated as if it were an MSA. Regression (1) shows that, at the tract level, the exposure effect and own-race bias are somewhat stronger and more significant if the non-metropolitan parts of states are excluded. This might be explained by the difficultly of accurately predicting tract-level recipiency for large areas such as non-metropolitan parts of states. Hence, dropping these parts from the regression increases the size and significance of the estimates. Regressions (2) and (3) show that the recipiency measure based on the PUMS yields essentially the same results as the one based on the STF. Regression (4) indicates, however, that STF recipiency measures are more significant than the ones based on the PUMS if both are included at the same time. Hence, table D.2 shows that the main results do not depend crucially on the choice of welfare proxy or the inclusion of non-metropolitan parts of states.

The welfare recipiency measures are based on a linear interpolation between the decennial census years. One would expect the interpolation to bias the results towards zero if the difference between the interpolated and true welfare recipiency rate is uncorrelated with the true rate. This conjecture is tested in table D.3 by changing the number of years in the sample that rely heavily on interpolation. The regressions in this table are the same as the baseline specification (table 4), except for the sample selection based on years. Column 1 replicates the baseline results. Column 2 just uses the decade years. Because the Census applies to the previous calender year, it would have been nicer to use 1979 and 1989, but unfortunately the GSS was not administered in 1979. Column 3 uses the three years around each census year. This enlarges the sample sufficiently that the exposure effect and own-race bias are both significant. Column 4 uses those years that rely *most* on the interpolations. Perhaps not surprisingly, both the exposure effect and the own-race bias seem to be biased towards zero. Based on the results in columns 3 and 4, it seems that I could generate more significant results by removing the years that require a lot of interpolation from my sample. Hence, the inclusion of some years with interpolated recipiency measures appears to have biased the results in the baseline regression towards zero. The true interpersonal effects may therefore be stronger than estimated.

Table D.1: Ordered Probits

Dependent Variable: Self-Reported Support for Welfare Spending

	Probit Coefficients of the Effects of Welfare Recipiency:				Nr. Obs.
	Exposure Effect	Own-Race Bias	Black Recipient Effect	Black Respondent Effect	Pseudo R^2
(1) Expected Tract Recipiency	-11.05	15.58	-6.38	-0.22	18,764
	(3.15)	(3.29)	(3.82)	(2.44)	0.0842
(2) MSA Recipiency	-19.65	16.57	8.98	-11.71	18,764
	(7.25)	(4.13)	(6.65)	(2.55)	0.0839
(3) State Recipiency	-10.89	17.13	-3.12	-14.63	18,764
	(9.23)	(5.79)	(4.60)	(3.19)	0.0837

Notes: 1) Only the decomposition of the recipiency coefficients is reported. All regressions contain the same controls as in table 4. The controls include 138 MSA and 18 year fixed effects.
2) Standard errors (in parentheses) are not corrected for group error terms in MSA*year cells.
3) Welfare recipiency measures are based on census Summary Tape File information and defined in detail in appendix B.

Table D.2: Results with Welfare Recipiency Measures Based on PUMS

Dependent Variable: Self-Reported Support for Welfare Spending

	Effects of Welfare Recipiency:				All effects jointly zero (p-value)	Nr. Obs.
	Exposure Effect	Own-Race Bias	Black Recipient Effect	Black Respondent Effect		$\bar{R}^2$
(1) Expected Tract Recipiency (STF)	-5.22	7.25	-4.34	1.57	0.0000	11,502
	(1.43)	(1.63)	(1.63)	(1.15)		0.1725
(2) MSA Recipiency (STF)	-8.27	6.08	3.85	-3.50	0.0000	11,502
	(2.85)	(1.67)	(2.73)	(1.01)		0.1718
(3) MSA Recipiency (PUMS)	-9.99	6.65	5.20	-0.24	0.0026	11,502
	(3.42)	(2.04)	(4.60)	(1.41)		0.1710
(4) PUMS and STF Recipiency						
MSA Recipiency (PUMS)	-6.35	1.91	4.27	1.06	0.5306	11,502
	(4.64)	(3.41)	(6.19)	(1.58)		0.1717
MSA Recipiency (STF)	-5.63	5.20	2.11	-3.53	0.0235	
	(3.78)	(2.78)	(3.70)	(1.44)		
t-statistic on coefficient difference	[-0.09]	[-0.56]	[0.24]	[1.80]	0.4368	
t-statistic on coefficient sum	[-3.35]	[3.42]	[1.34]	[-1.51]		

Notes: 1) Only the decomposition of the recipiency coefficients is reported. All regressions contain the same controls as in table 4. The controls include 91 MSA and 18 year fixed effects.
2) Observations outside MSAs are excluded from the sample.
3) Standard errors (in parentheses) are corrected for group error terms in MSA*year cells.
4) Welfare recipiency variables are based on information from the census Summary Tape Files (STF) or the census Public Use Micro Samples (PUMS). The welfare recipiency variables are defined in detail in appendix B.

Table D.3: Robustness to Interpolation of Recipiency Measures

Dependent Variable: Self-Reported Support for Welfare Spending

	(1)	(2)	(3)	(4)
Years in sample:	All Years	80, 90	78, 80, 88, 89, 90	74, 75, 84, 85, 93, 94
Effects of Welfare Recipiency:				
Exposure Effect	-3.24	-6.07	-4.65	-0.76
	(1.14)	(3.54)	(2.23)	(1.85)
Own-Race Bias	5.05	6.04	5.29	3.10
	(1.19)	(3.41)	(2.06)	(1.98)
Black Recipient Effect	-2.12	1.16	0.27	-3.56
	(1.27)	(4.30)	(2.40)	(2.07)
Black Respondent Effect	-0.30	-1.23	-1.71	0.67
	(0.88)	(2.66)	(1.57)	(1.55)
Number of Observations	18,764	1,832	4,469	5,581

Notes: 1) Only the decomposition of the recipiency coefficients is reported. All regressions contain the same controls as in table 4. The controls include MSA and year fixed effects.
2) Standard errors (in parentheses) are corrected for group error terms in MSA*year cells.
3) Welfare recipiency measures are based on census Summary Tape File information and defined in detail in appendix B.