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**MOVING AT-RISK TEENAGERS OUT OF HIGH-RISK NEIGHBORHOODS:  
WHY GIRLS FARE BETTER THAN BOYS**

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ABSTRACT

The Moving to Opportunity (MTO) experiment offered over 4,000 public housing residents in five U.S. cities the opportunity to move to very low poverty neighborhoods. Results from a survey conducted four to seven years after random assignment showed that boys in the experimental group fared no better or worse on measures of risk behavior than their control-group counterparts, while girls in the experimental group demonstrated better mental health and lower risk behavior relative to control group girls. We seek to understand these differences by analyzing data from the survey and from in-depth interviews conducted with a random subsample of 86 teens 14 to 19 years old in Baltimore and Chicago. We find that control group boys, especially in Baltimore, deployed conscious strategies for avoiding neighborhood trouble, in contrast to many experimental boys who had subsequently moved back to higher poverty neighborhoods. Second, experimental group girls' patterns of activity fit in more easily in low-poverty neighborhoods than boys', whose routines tended to draw negative reactions from community members and agents of social control. Third, experimental boys were far less likely to have strong connections to non-biological father figures than controls, which may have contributed to behavioral and mental health problems.

Keywords: neighborhood effects; social experiment; mixed methods; youth risk behavior

JEL classifications: H43, I18, J18

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## INTRODUCTION

Young people who grow up in high-poverty urban neighborhoods experience crime and violence, resource-poor schools, restricted labor markets, and other forms of deprivation at a much higher level than teenagers who grow up in middle income or affluent neighborhoods. These contextual factors, in addition to the difficulties presented by their own family environments, can place teens at risk. Numerous studies have found a correlation of some socio-economic neighborhood-level variables with adolescent sexual behaviors (Hogan and Kitagawa 1985; Crane 1991; Billy and Moore 1992; Coulton and Pandey 1992; Brewster et al. 1993; Brooks-Gunn et al. 1993; Ku, Sonenstein, and Pleck 1993; Billy, Brewster, and Grady 1994), the home environment (Klebanow, Brooks-Gunn, and Duncan 1994), child maltreatment (Coulton et al. 1995), crime (Sampson and Groves 1989), school drop out (Crane 1991; Coulton and Pandey 1992; Brooks-Gunn et al. 1993), and delinquent and risk behavior (Johnstone 1978; Kowaleski-Jones 2000; Wikstrom and Loeber 2000). Young people who grow up in public housing developments may be at particular risk for these adverse outcomes, as families who live in public housing units are typically in neighborhoods with higher poverty than families who receive welfare but no housing subsidy (Newman and Schnare 1997).<sup>1</sup>

Beginning in 1994, a large federally-operated housing mobility demonstration used a special Section 8 voucher to help relocate a randomly selected group of program applicants living in very high-poverty public housing projects in five U.S. cities into communities where fewer than 10 percent of their neighbors were poor. This demonstration, called Moving to Opportunity (MTO), was inspired in part by the apparent success of the Gautreaux housing mobility program launched in Chicago two decades earlier (see Rubinowitz and Rosenbaum

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<sup>1</sup> These vouchers were mainly distributed through the Section 8 program which has been changed to the Housing Choice Voucher program. We will be using the “Section 8” terminology throughout this paper, since this was the name of the program throughout the MTO intervention, and the study participants use this terminology.

2000 for a history of this program). Between 1976 and 1998, the Gautreaux program moved almost 6,000 low-income African-American families out of Chicago's inner-city neighborhoods, with a majority moving to the suburbs (Rubinowitz and Rosenbaum 2000).

In Gautreaux, suburban movers relocated to places that were predominantly middle class and nearly all white. Another group of Gautreaux applicants ended up in more disadvantaged city neighborhoods. In a 1989 survey, researchers found that teenagers who remained in the city were four times more likely to have dropped out of high school than those who moved to the suburbs. Those who moved to the suburbs as children were also more than twice as likely to enroll in college and had almost double the employment rate as teens who remained in the city (Rubinowitz and Rosenbaum 2000).

MTO incorporates several elements of Gautreaux, but has distinctive features as well. Like many of the Gautreaux households, low-income residents in public housing located in extremely poor neighborhoods in Baltimore, Boston, Chicago, Los Angeles, and New York voluntarily applied to participate in MTO. However, Gautreaux was fashioned as a court-ordered remedy rather than a research experiment and thus did not select families to participate on the basis of random assignment, as did MTO.<sup>2</sup> In the MTO demonstration, the experimental group received a special voucher that could only be used in census tracts with 1990 poverty rates of less than 10 percent.<sup>3</sup> A second treatment group, one which will not be considered in this paper, received a regular voucher with no geographic restrictions.

MTO experimentals also received housing counseling to assist them in relocating. The control group received no voucher through MTO, though they were permitted to remain in their public housing units or to apply for other housing assistance that became available to them

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<sup>2</sup>MTO applicants who were deemed eligible for the program were actually a more economically-disadvantaged population than the remaining public housing families in the five cities, so it is not subject to allegations of "creaming" as the Gautreaux program has been (Goering, Feins, and Richardson 2002).

<sup>3</sup> Unlike Gautreaux, there were no restrictions based on the racial composition of the neighborhood.

outside of the MTO demonstration (usually a regular Section 8 voucher). Across all five cities, 47% of the experimental group managed to use their program vouchers to make a move (Kling, Liebman, and Katz 2005).<sup>4</sup> Due to other federal and local initiatives in the last half of the 1990s, many of the public housing developments in the five sites have been demolished or redeveloped. Thus, control group members have been quite mobile in the years following random assignment: 70 percent of all control group families across the five cities had moved at least once by 2002.

For those in the experimental group who managed to move using an MTO program voucher, whom we refer to as “compliers”, two thirds had made subsequent moves (Kling, Liebman, and Katz 2005). This is not too surprising, as those who used the voucher were only required to stay at the address of their initial move with the MTO voucher (their “program move” to a low-poverty tract) for one year, at which time their special voucher reverted to a regular Section 8 voucher. However, four to seven years after random assignment, experimental group families were still living in significantly less poor neighborhoods, on average, than families in the control group (Kling, Liebman, and Katz 2005).

In 2002, researchers surveyed all of the household heads in the experiment, as well as their school-aged children and teens to determine what effect the MTO demonstration had on a variety of adult and youth outcomes. This research revealed sharply divergent treatment effects for male and female adolescents (Kling, Liebman, and Katz 2005). While there were positive mental health effects for experimental girls, who scored significantly lower than control girls on psychological distress and generalized anxiety, there were no beneficial mental health effects for boys. Experimental girls were also less likely to report smoking marijuana in the past month than control girls. However, there was no improvement for experimental boys relative to controls in

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<sup>4</sup> In this paper, we refer to those who used their MTO voucher to make a move as “movers,” even though by the Interim Evaluation Survey, a majority of all MTO households, regardless of their program group, had moved from their baseline unit.

this regard. In fact, experimental boys were more likely to report smoking cigarettes or drinking alcohol in the past month. Experimental male teens were also more likely to self-report behavior problems relative to controls; furthermore, administrative records revealed that MTO experimental males 15 – 25 years old had been arrested more often for property crime relative to controls (Kling, Ludwig, and Katz 2005).<sup>5</sup>

These results were surprising for two reasons. First, given the non-experimental findings of decades of research on neighborhood effects, researchers expected that moving low-income teenagers to low-poverty neighborhoods would have a positive impact on their well-being. Second, the differential impact of the MTO treatment by gender was not anticipated by theories of how neighborhoods might yield influence on the behaviors of their residents. These unexpected findings motivate this mixed-methods analysis of the gender difference of the MTO treatment on adolescent risk behavior. In the analysis we use both survey data from the MTO Interim Evaluation Survey, administered 4 to 7 years after random assignment, and in-depth qualitative interview data from a study with MTO families. Because the qualitative data are limited to two cities, both analyses focus on Baltimore and Chicago.

## **CONCEPTUAL FRAMEWORK**

The MTO intervention fits solidly within a neighborhood effects framework, introduced by William Julius Wilson in 1987, which argues that neighborhoods affect their residents above and beyond residents' individual or family characteristics. Wilson (1987) hypothesized that the extreme social isolation, concentrated poverty, and joblessness that characterized many urban

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<sup>5</sup> The administrative arrest data, as well as earlier studies of MTO in Baltimore (Ludwig, Ladd, and Duncan 2001) and Boston (Katz, Kling, and Liebman 2001), indicated that the gender differences in effects were not evident during the first two years after random assignment.

neighborhoods were especially deleterious to children. Such neighborhoods have sharply elevated rates of infant mortality, child maltreatment, and social and physical disorder, and the teenagers living in them are more prone to school dropout, delinquent behavior, and adolescent childbearing (see reviews by Ellen and Turner 1997; Leventhal and Brooks-Gunn 2000; Sampson, Morenoff, and Gannon-Rowley 2002). We review four arguments that have been advanced to explain how the effects of a neighborhood are transmitted to children and adolescents: adult neighbors, peer effects, relative deprivation, and cultural conflict. The first two predict positive outcomes for poor teens moving to more affluent neighborhoods while the last two predict negative outcomes. We then review the extant literature on why there might be gender differences in these outcomes. We also consider family characteristics that may have a differential effect on experimental boys relative to controls and to girls in either program group.

We must preface our discussion of research on neighborhood effects by pointing to the methodological problem of self-selection that plagues most studies of neighborhood effects (Tienda 1991). That is, individuals have a certain amount of choice in deciding what neighborhood they live in and how long they remain in that neighborhood. Individual-level factors, within structural constraints of housing availability and financial wherewithal, influence these decisions, and without an experimental design that randomly places individuals in neighborhoods, we cannot completely isolate the effect of neighborhood-level variables on individual outcomes. MTO is the only current experiment that is able to provide credible estimates of neighborhood effects on individuals. With this caveat in mind, we now turn to non-experimental research on mechanisms that may produce neighborhood effects.

Researchers have hypothesized that adult neighbors may play a critical role in transmitting neighborhood effects to teens (Wilson 1987; Jencks and Mayer 1990). Social ties between neighborhood adults can establish social cohesion, shared expectations, and a

“willingness to intervene for the public good” – also known as “collective efficacy” (Sampson, Morenoff, and Gannon-Rowley 2002:457). Neighborhoods suffering from economic disadvantage may lack the resources to promote and support social cohesion, though researchers are still trying to pinpoint exactly what factors of disadvantage affect social cohesion, and thus collective efficacy (Sampson, Raudenbush, and Earls 1997; Duncan et al. 2003). Measures of collective efficacy have been associated with neighborhood violence (Sampson, Raudenbush, and Earls 1997), initiation of hard drug use (Blaney et al. 2004), asthma (Cagney and Browning 2004), onset of adolescent sexual activity (Browning, Leventhal, and Brooks-Gunn 2004), premature death in general, death from cardiovascular disease, and death as a result of homicide (Cohen, Farley, and Mason 2003). Low-income children who move to neighborhoods with more affluent adults might also benefit from direct ties with working adults who act as role models and as sources of information about jobs and schooling (Wilson 1987).<sup>6</sup>

Low-income teens living in a more affluent neighborhood may also benefit from associations with better off peers, as delinquency is less prevalent in affluent neighborhoods (Shaw and McKay 1942; Johnstone 1978; Kowaleski-Jones 2000; Wikstrom and Loeber 2000). Duncan, Boisjoly, and Harris (2001) find that a teen’s achievement and delinquency are strongly correlated with achievement and delinquency of the teen’s “best friend,” but to a lesser extent than one’s siblings. Rankin and Quayne (2003) find that peers affect African American adolescents’ pro-social competency and problem behavior. Capitalizing on a natural experiment, Levy et al. (2005) show that being randomly paired with a roommate who is a binge drinker increases the likelihood that a male college freshman who engaged in binge drinking in high school would continue to do so in college, though there is no such “multiplier effect” for

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<sup>6</sup> In 2002, experimental households lived in neighborhoods where the fraction of adults who were employed and had college degrees was significantly higher than the neighborhoods their control counterparts lived in (Kling, Liebman, and Katz 2005).



females. Viewing peers as the mechanism for neighborhood effects is also referred to as a “contagion” model. Case and Katz (1991) found evidence for peer contagion effects within neighborhoods in their analysis of data from the 1989 NBER Boston Youth Survey. Young people who lived in neighborhoods where high numbers of teens were engaged in crime, using drugs, or were out of work or school had an increased probability of the same outcome, even after controlling for family and individual-level characteristics. However, when this model has been applied to experimental MTO data, this peer effect has not been found. Using administrative arrest data for MTO participants, Ludwig and Kling (2005) found no relationship between violent crime at the neighborhood level (measured from crimes reported to police) and individual arrests for violent crime.

Both the adult ties and the peer effects models hypothesize benefits for poor children and teenagers living in affluent neighborhoods as opposed to their counterparts in high-poverty neighborhoods. But a relative deprivation model suggests the opposite; that moving to a more affluent neighborhood where one compares less favorably in comparison to one’s peers might create resentment and a negative self evaluation (Jencks and Mayer 1990). Recent evidence for the negative effects of relative deprivation comes from an analysis of data from the National Survey of Family and Households, where Luttmer (2005) found that the earnings of others had a negative effect on self-reports of happiness for adults who lived in the same geographic area (with approximately 150,000 residents in each area). Moreover, this effect was strongest for individuals who socialized more in their neighborhood. For low-income young people living in an affluent neighborhood, the neighborhood effects model predicts that feelings of relative deprivation may encourage the teens to fall into a deviant subculture, where they may engage in more delinquent activities than they would have engaged in otherwise (Kling, Liebman, and Katz 2005). In his study of teenagers in Chicago, Johnstone (1978) found an interaction that may be

related to a negative effect of relative deprivation. Based on self-reports, low-income teens who lived in high-income neighborhoods committed more crimes than those who lived in low-income neighborhoods. However, researchers have also found evidence of a positive influence of affluent neighbors on adolescent behavioral outcomes. Brooks-Gunn, Duncan, et al. (1993) found that the share of affluent neighbors in a neighborhood had a consistent positive relationship to child and adolescent outcomes, though the effect on teens was limited to white teenagers. Similarly, Turley (2002) found an increase in the income gap between one's family's income and one's higher income neighbors is associated with an increase in test scores, self-esteem, and behavior scores among children 12 and under.

A fourth hypothesis, which we will call the cultural conflict model, also predicts that teens moving from high-poverty to low-poverty neighborhoods might fare worse, not better. In her interviews with forty-four low-income African-American students in a high school in Yonkers, New York, Prudence Carter (2003) explores the concept of "non-dominant" cultural capital; the adoption of language styles, dress, and music tastes her subjects deploy in an effort to differentiate themselves from teenagers in the dominant group (whites) and to assert their own group membership. If MTO teens import non-dominant cultural skills into their new low-poverty environments, we may expect the resulting cultural conflict to produce harm rather than benefits, given the negative stereotype that mainstream society holds of low-income African-American young people.

Whichever of the above hypotheses one adopts, the differential effects of MTO for adolescent males versus females is puzzling. This is not to say that the literature does not suggest there are gender differences in these domains. For example, in Carter's (2005) study, boys were not as readily able to strategically deploy dominant cultural capital in ways that benefited them in school or employment as the girls were. Moreover, findings from an analysis of Addhealth

data reveal that there may be an interaction between gender, academic achievement, and popularity for African-American students in grades 7 – 12. Fryer and Torelli (2005) found that popularity continued to increase for white students as their grades increased, but the same was not true for African-American or Hispanic students. Unlike white students, popularity for African-American students increased until their grade point average reached 3.5, at which point the slope became negative.<sup>7</sup> They found that in schools where less than 20% of the students were African-American, this effect is twice as large for high-achieving black males as it is for black females.

There is no a priori reason why we would expect girls to benefit more from exposure to adult collective efficacy and non-kin adult role modeling than boys would. Nor is there any obvious reason why experimental boys would, in some cases, actually fare worse relative to controls. However, Carter's work and Janel Dance's (2002) ethnography of low-income African American males in Boston point to how gender differences in presentations of self may lead to higher levels of cultural conflict in low-poverty neighborhoods for boys than for girls. Dance claims that the male subjects she studied strategically adopted "gangsterlike posturing" to ensure their survival (2002:7). In his ethnography of a high-poverty neighborhood in Philadelphia, Anderson (1990) described how young African-American men had learned a street posture like the one Dance describes – whether they are law-abiding or not. Many of these young men had adopted a skill set of body language and facial expressions (part of non-dominant cultural capital) that they used as they walked down the street. Their posture was designed to give the impression to others that they were not to be messed with. If this "tough" self-presentation is distinctive to males, and if, as Carter suggests, boys have more difficulty deploying dominant

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<sup>7</sup> In the Addhealth database, the mean GPA for students by racial sub-group was as follows: African-Americans: 2.56, Hispanics: 2.55, Whites: 2.91.

cultural capital in environments that demand it, these factors may well lead to more cultural conflict for boys than girls in low-poverty neighborhoods and feed into the stereotype that adults may have of black boys relative to black girls. If this is true, the cultural conflict experimental boys experience might be greater than girls, thus limiting their ability to benefit from exposure to the more affluent adults in their new neighborhoods. In fact, such stereotypes might lead to increased monitoring by neighborhood adults, school officials, and police, thus possibly leading to such outcomes as higher arrest rates and increased marginalization.

In terms of peer effects, Levy et al.'s (2005) findings on binge drinking, summarized above, do suggest that male teens may be more susceptible to peer influences than females at least in terms of alcohol use, but this does not explain why experimental females would benefit from MTO relative to controls while male experimental teens suffered. In fact, Levy et al.'s findings would predict the opposite. Of course, it is foolish to presume that adults or teenagers will limit their social connections to neighborhoods, and friends from outside the neighborhood can be influential as well. If experimental boys spend most of their free time in their origin neighborhoods, their peer networks might be identical to those of controls and, when combined with the reduced parental monitoring for boys who hang out in neighborhoods that are not their own, they may well engage in more delinquent and risky behavior too.<sup>8</sup>

Peer effects may also interact with feelings of relative deprivation. For example, any enhanced alienation that the experimental male teens may have felt as a result of cultural conflict between male behavioral norms in the old and new neighborhoods could presumably affect relationships with peers, possibly leading to associations with more delinquent peers. Indeed, in 2002 experimental boys were more likely to have friends who used drugs than the control boys,

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<sup>8</sup> In 2002 there was no significant difference by gender in making these visits (Kling, Liebman, and Katz 2005). However, this finding does not explain the differences between the experimental boys and their control counterparts.

whereas there was no difference in the drug use of peers of experimental girls and control girls (Kling, Liebman, and Katz 2005).

Finally, ties with kin or extended family may intersect with the MTO demonstration in ways that affect boys and girls differently. Nearly three-quarters of the MTO households in Baltimore and Chicago were female-headed at baseline, which means that girls are more likely than the boys to have a same-sex role model in their household. Moving far from one's program move neighborhood may bring even greater disruption to relationships with biological or non-biological father figures, though whether these relationships are positive or negative certainly depends on the individual men. Researchers have found that extended family support aids single mothers in their efforts of monitoring their children, and is also positively associated with better parenting (Taylor, Casten, and Flickinger 1993; Taylor and Roberts 1995). One small study of urban African-American teen males found that the amount of time that fathers spend with their boys was negatively correlated with the boys' levels of depression and anxiety (Zimmerman, Salem, and Maton 1995).<sup>9</sup> In another study of urban African-American and Latino male adolescents in single parent families, Florsheim, Tolan, and Gorman-Smith (1998) found that the presence of a male family member in boys' lives was associated with less externalizing behavior (i.e. aggression and delinquency). No comparable studies were conducted for girls, but it is plausible that the presence of male role models is less salient for them.

We explore the social processes that might underlie these program effects in the analyses of in-depth qualitative interviews. The four domains of analysis that we have chosen follow directly from the literature: neighborhood context, routine activities, friends' activities, and

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<sup>9</sup> Since time with fathers and mental health measures were assessed at the same time, the direction of causation could realistically go either direction.

family context.<sup>10</sup> First, we use survey data to assess the interaction between gender and treatment on risk behavior in the two cities for which we also have qualitative data -- Baltimore and Chicago. Next, we analyze in-depth interview data to generate hypotheses about the processes that may create this puzzling interaction.

## **DATA AND METHODS**

*Quantitative.* A baseline survey of public housing tenants who enrolled in the MTO program between 1994 and 1997 shows that 63% of the household heads were African-American, though in two cities, Baltimore and Chicago, nearly 100% were African-American. These households had a median number of three children and had high rates of unemployment and low educational attainment. Forty percent had neither a high school diploma nor a GED, and 72 percent were not employed.

A second survey, the MTO Interim Evaluation Survey, was conducted in 2002, four to seven years after families were randomly assigned to the experimental, control, or regular voucher groups. Researchers fielded in-person surveys with adults and children (8 – 19 years old), and administered educational achievement tests to children ages 5 – 19 years old. Up to two children from each household were also surveyed. On average, the sample included 2.6 members per family, including 1.6 children. In the previous section, we summarized the survey findings which pooled data from all five MTO sites. We rely on the survey data from the two cities in our quantitative analysis, Baltimore and Chicago, which includes 1,530 households--the entire MTO

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<sup>10</sup> We consider the school context in our domains of neighborhood context and friend's activities -- although school contexts are more similar across program groups than neighborhood contexts.

population in those sites (see Orr, et al. 2003 for a detailed description of the data collection and analysis of the survey data).<sup>11</sup>

By comparing average outcomes of teenagers assigned to the experimental and control groups, we can draw conclusions about the effect of a low-poverty housing mobility policy on individuals, beyond individual and family characteristics. This intent-to-treat (ITT) estimate identifies the causal effect of offering families the services made available through the experimental treatment. These services include not only the actual voucher, but also housing and budget counseling. Therefore, even the families who did not use the voucher successfully still received some form of treatment if they attended the counseling sessions.

Our quantitative analysis includes only individuals 15 – 19 years old in 2004. These youth were 8 – 15 years old when their families enrolled in MTO.<sup>12</sup> We have also omitted teens in the Section 8 comparison group, keeping our focus on the experimental treatment effect of MTO.<sup>13</sup> This leaves us with 442 respondents, and an effective response rate of 85%.<sup>14</sup> We calculated the ITT effect of the MTO treatment using ordinary least squares regression, controlling for a set of 58 covariates representing pre-random assignment (baseline) characteristics (See Appendix A for a list of covariates). By using robust standard errors, we are

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<sup>11</sup> While educational testing, medical testing, and administrative data were collected, we will only be using data from the survey.

<sup>12</sup> This age range is large because families were randomly assigned within MTO over a period of years. The Interim survey took place four to seven years after families were randomly assigned.

<sup>13</sup> On most risk behavior measures, the coefficients measuring the Section 8 – Control group differences were not significant. The exceptions were that male teens in the Section 8 group were more likely to have ever smoked, and female teens in the Section 8 group were less likely to have ever been arrested.

<sup>14</sup> During fieldwork, a 3-in-10 subsample of hard-to-locate families was taken in order to focus resources on difficult to find cases. Observations from the subsample receive greater weight in the analyses. Accounting for the fact that subsample observations are used to represent observations that were not in the subsample, we calculate an effective response rate (ERR) based on the phase one response rate (R1) and the subsample response rate (R2).  $ERR = R1 + (1-R1)*R2$ .

adjusting for the presence of siblings in the sample. All the estimates are computed using sample weights.<sup>15</sup>

Since we are interested in differential treatment effects by gender, we include interaction terms for gender and treatment group in the models. Let  $Y$  be the outcome of interest,  $G=1$  if female, 0 if not, and  $Z$  be membership in the experimental group. Equation (1) shows a simple regression model used to estimate the control means ( $\beta_{10}$  and  $\beta_{12}$ ) and the ITT differences between the experimental and control groups ( $\beta_{11}$  and  $\beta_{13}$ ) for girls and boys, respectively.

$$Y_i = G_i\beta_{10} + G_iZ_i\beta_{11} + (1-G_i)\beta_{12} + (1-G_i)Z_i\beta_{13} + \varepsilon_{1i} \quad (1)$$

Estimating the treatment effect for both genders simultaneously allows a simple correction of standard errors for correlation in outcomes between siblings.<sup>16</sup>

In order to increase precision of the estimates and control for any small sample differences in baseline covariates ( $X$ ), the primary quantitative analysis in this paper uses regression-adjusted effects, as estimated using equation (2).

$$Y_i = G_i\beta_{20} + G_iZ_i\beta_{21} + (1-G_i)\beta_{22} + (1-G_i)Z_i\beta_{23} + X_i\beta_{24} + \varepsilon_{2i} \quad (2)$$

The difference in treatment effects between males and females is  $\beta_{23} - \beta_{21}$ .<sup>17</sup>

*Qualitative.* Not all of the experimental households actually used the MTO voucher to make a move. In Baltimore, 58% of the experimental group used their voucher to move to a low poverty neighborhood, though almost all have since moved on to other neighborhoods. Chicago had the lowest take-up rate of all five sites, with only 34% of the experimental group using their voucher. Those who used the MTO voucher may have differed in important ways from those who did not.

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<sup>15</sup> These weights have three components, and they are described in detail in Orr et al. (2003), Appendix B. 3-in-10 sub-sample members receive greater weight since they represent individuals who were not contacted during this sub-sampling phase. Youth from larger families receive greater weight, since two children were randomly sampled from each household, they represent a larger fraction of the population. Finally, weights are used to take into account a change in the ratio of individuals randomly assigned to treatment groups.

<sup>16</sup> The cluster option in Stata was used to account for within household heteroscedasticity.

<sup>17</sup> This difference and its standard error were calculated using Stata's `lincom` function.



Our quantitative analysis compares all experimentals, whether they complied or not, to all controls, thus eliminating this concern.

The qualitative analysis uses data from teens in the control group to explore gender differences in behavior in the absence of the MTO intervention.<sup>18</sup> We then turn to experimental complier teens—those who moved with an MTO voucher – to explore how the MTO treatment might have had a different effect on boys than girls. In this analysis, we do not consider experimental non-compliers or families who were offered a regular Section 8 voucher at random assignment.

Our qualitative sample is a stratified random subsample of 233 teens<sup>19</sup> across the three program groups. We sampled evenly among three household types: (1) households with children 8 – 13 years old only, (2) households with children ages 8 – 13 and 14 – 19, and (3) households with children 14 – 19 years old only. Heads of household participated in an in-depth qualitative interview between July 2003 and June 2004. In households containing at least one teenager between 14 and 19, we attempted to interview the teen as well. For households with more than one teen, we randomly selected a “focal youth.” Seventy-one percent of those teens sampled participated, for a total of 131 adolescent respondents.<sup>20</sup> The reasons for non-response include inability to locate the family at all, foster care placement, death of the adult respondent with no valid contact information for the youth’s current caregiver, and death of the youth. The qualitative analysis is based on data from our in-depth interviews with the remaining teens.

[Table 1 about here]

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<sup>18</sup> Since 81% of this control group in the qualitative sample have actually moved, we are not comparing the experimental group to a similar group who stayed in their baseline neighborhoods.

<sup>19</sup> 149 families in Baltimore, and 84 families in Chicago. Though we sampled across the three groups in Chicago, we only sampled experimental movers in Chicago (both movers and non-movers were sampled in Baltimore) due to the extremely low take-up rate in Chicago of 34%.

<sup>20</sup> Out of the 233 families, only 184 had a focal youth. The response rate was 74% in Baltimore and 67% in Chicago.

Since we are focusing this analysis on the experimental compliers and the controls, our sample size for this analysis, as shown in Table 1 is 86: 34 experimental compliers and 52 controls. In the qualitative sub-sample, the median length of time at their current residence ranges from 1.5 years (experimental girls) to 3 years (control boys). Control girls are slightly older than the other three groups (median age is 17 vs. 16), are the most likely to have dropped out of school, and are nearly twice as likely to have been pregnant or had a baby than experimental girls. The control boys are more likely to be living in public housing than the other three groups. The experimental complier girls are the most likely to be currently employed (32%) and the least likely to have an arrest history (11%) among all four groups. The experimental complier boys are the most likely to report an arrest history at 40%, but only slightly higher than the control boys at 38%. However, proportionally more experimental complier boys are employed (27%) than control boys (4%). Though the percent employed is similar between the experimental boys and girls, girls are more likely to be employed full-time, where only one boy has a full-time job. We compare the characteristics of our qualitative sub-sample to the full sample used in the quantitative analysis in Table 2.

[Table 2 about here]

The interview was organized around six themes: neighborhood, social status, school, daily routines, networks, and health. Interviews were taped and usually took one and a half to two hours to complete. Each individual was paid \$35 for participating in the study. To protect confidentiality, each participant was asked to choose a pseudonym.

After the tapes were transcribed, we coded interviews by topic and entered into an electronic database created in Microsoft Access. The initial coding was primarily descriptive rather than analytic. Coders met weekly to ensure the reliability of the coding process. We imported interview material from these topical fields into NVivo for more detailed analytical

coding. At this stage, one coder read through the data and coded for themes and sub-themes, and systematically analyzed the coded material for patterns by gender and program group..

## **QUANTITATIVE RESULTS**

In this mixed-methods analysis, we use the quantitative data to look at the impact of the MTO intervention on risk behavior and mental health outcomes for teenagers, and use the qualitative data to explore the social processes that may lead to these outcomes.

The five-city survey-based analysis of impacts four to seven years after baseline found that experimental households were still in significantly higher income neighborhoods than control households (Kling, Liebman, and Katz 2005). Our survey analysis is limited to Chicago and Baltimore, but we too find that experimental households were located in significantly higher income neighborhoods than the controls. Thus, not only did the MTO intervention “work” in terms of moving families to less impoverished neighborhoods initially, but this effect persisted four to seven years later.

We use measures of marijuana use, alcohol use, cigarette use, arrest history, a delinquent behavior index, a problem behavior index, and a risk behavior index as outcomes of interest, (the components of these indices are described in the notes to Table 3). Mental health is presumably related to whether teens become involved in risky or delinquent activities. Mental health outcomes include a lifetime depression scale, a lifetime generalized anxiety disorder scale, and a six-item scale of psychological distress during the past month.

We constructed models for each outcome with covariates for adult and child characteristics at baseline (see Appendix A.). We used all Baltimore and Chicago individuals aged 15 – 19 at the time of the survey.

Table 3 reveals that experimental girls are less likely than controls to report problem behaviors, risk behaviors, and smoking marijuana. On the other hand, experimental males are more likely than controls to report problem behaviors, risk behaviors, drinking alcohol, and smoking cigarettes. More importantly for this analysis, these results show that the MTO intervention had a sharply different effect by gender. Taking into account the control means for each gender (the gender difference in the absence of the intervention), the experimental males are still significantly more likely than the experimental females to have ever smoked marijuana and cigarettes or drank alcohol, and they are more likely to report problem behaviors and risk behaviors.<sup>21</sup>

[Table 3 about here]

In terms of mental health (Table 4), the data tell a similar story. Experimental females are less likely to report a generalized anxiety disorder in their lifetime than control females. On the other hand, experimental males score significantly higher on the psychological distress scale than control males. Taking into account the gender differences in mental health measures absent the intervention (the control means), experimental females are faring far better than comparable males on two of the mental health measures.

[Table 4 about here]

## **QUALITATIVE RESULTS**

In this section, we compare the experiences of experimental males who moved through MTO to those of their female counterparts, and contrast their experiences to those of the

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<sup>21</sup> We do not find a statistically significant difference with arrest data. As we described earlier, when the five cities were analyzed together, Kling, Ludwig, and Katz (2005) also found no significant difference using self-reported arrest history, but using administrative data, they found that experimental males were significantly more likely to be arrested for property crime. Similar to our analysis, no significant difference was found in the five-city data for the delinquency index.

controls. We cannot, and do not, claim that on the basis of these data we can make causal claims. Rather, using the data from the in-depth qualitative interviews, we seek to generate hypotheses about the set of social processes that might underlie the fact that boys in the experimental group do no better in terms of delinquency and risk behavior, and on some measures, do even worse than control boys, while experimental girls show significant gains in these domains relative to control girls. To this end, we analyze four domains of their experiences: their neighborhood contexts, their patterns of routine behavior, their peers' activities, and their family context.

*Neighborhood Context.* Just over 80% of our qualitative respondents had moved at some point since random assignment. The control girls and boys had also moved, but none moved with a geographically-restricted voucher, such as the special MTO voucher. Consequently, they moved on to, and continue to live in, neighborhoods that, while less impoverished than the housing project they resided in at baseline, are still quite poor, with average tract poverty rates ranging from 30% (control males) to 39% (control females). The teens in the experimental group are now living in neighborhoods with poverty rates that average about 20%. Furthermore, over the past several years, those in the experimental group have lived in neighborhoods with significantly lower poverty on average, compared to their control counterparts (see Appendix Table A1). In general, experimental households in Baltimore and Chicago have lived in neighborhoods that are overwhelmingly African-American since random assignment, so the main demographic change they have experienced is economic rather than racial.

*Making friends.* We asked teens to describe in detail their round of activities and social connections in their current neighborhood. The control girls were well-integrated into the peer networks of their neighborhoods and were, in fact, twice as likely to spend time with friends in their neighborhood as were experimental girls. On the other hand, experimental boys and control boys were equally as likely to have forged social connections with other teens in their

neighborhoods. Delmont, a 16-year-old Chicago experimental who still lived in his first suburban MTO neighborhood, said of his neighborhood peers: “I trust them, I can tell them anything, they won’t tell nobody.” Control boys typically took a somewhat more nuanced view of the peers in their neighborhoods. When we asked Marcus, a control, what people in his West Baltimore neighborhood were like he replied, “It all depends who you hang with. To me, you got people that you do hang with and you don’t hang with. The ones I hang with like be motivated and we keep ourself going. And other people like do drugs and stuff like that. I try not to go on that page.”

Particularly in Baltimore, control boys were more likely than experimental boys to have a clear sense of where the sources of danger were in their neighborhoods, both geographically and socially. More of them report employing a series of conscious strategies, which they usually described as “staying to myself,” when out and about in the neighborhood in an effort to avoid trouble. As indicated above, this does not mean they didn’t have neighborhood friends, but that, like Marcus, they were careful to avoid friendships with neighborhood teens they believed would draw them into the neighborhood’s danger and “drama.” Sixteen-year-old Scott, a control, has lived in the same Baltimore public housing development his entire life and, encouraged by his strict mother, tried hard to stay away from the drug corners in his development. “I know [the guys on those corners] but they ain’t my friends. They [are into] drugs and loitering and stuff like I don’t really [do]. I mind my business.”

The story for girls is quite different; nearly two-thirds of experimental girls reported that they don’t associate with anyone from their neighborhood, compared to 44% of control girls. Aja, a 14 year-old Chicago experimental who still lived in her program move neighborhood, saw opportunities for trouble even in her low-poverty neighborhood, and avoided neighborhood teens whom she considers “bad” or “wild,” claiming her mother doesn’t allow her to associate with

them. “[They’re] bad influence kids, basically. And I’m not allowed to hang because I don’t want to be caught on it ‘cause that stuff’s bad. I mean that puts me off track, and I don’t even like that.” Even girls who did forge friendships with neighborhood peers talked about taking a good deal of care in selecting their friends.

According to experimental compliers of either gender, drug trafficking and violence were still present in their current neighborhoods, though these threats were less salient to their neighborhood stories than the control teens.<sup>22</sup> In these neighborhoods, the drug trade is heavily male-dominated (only one individual knew of a girl who sold drugs). Thus, even for boys and girls living in similar neighborhoods, forging same-sex neighborhood friendships presents far more risks to boys at least in terms of activities relating to illegal drugs. While this might be part of the explanation for the raw gender differences we observe, this does not explain why girls were able to take advantage of the MTO experience, yet boys in the experimental group seemed to suffer as a result of their participation in the experiment.

Differences in where teens make their friends also extend to their school environments. Experimental girls tend to fit in well in their schools, make friends easily, and are thus less dependent on the pool of neighborhood peers than experimental boys, who report fewer friendships at school and less hanging out with schoolmates outside of school. We asked boys and girls to name their three closest friends and to describe how they met them. The girls – control and experimental – were more likely than the boys to have met at least one of their closest friends at school. In particular, the majority of experimental girls who had a close friend from school had made this friend in their current school, or, if they had dropped out or graduated, in their most recent school context. Seventeen year old Precious, an experimental girl from

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<sup>22</sup> In each group except for the control females, the Baltimore teens were much more likely to describe drugs as a prevalent problem in their neighborhoods than the Chicago teens were. For instance, three-quarters of the Baltimore control males talked about people using or selling drugs in their neighborhood compared to only one of the Chicago control males.

Baltimore, dropped out of high school in her junior year following the divorce of her mother and stepfather and a subsequent move that took her out of her high school's catchment area. One of her closest friends was a high school senior at Precious' former school. She was on the honor roll and held a steady job as a receptionist at a hotel. They went to the mall and the movies and talked on the phone a lot. "It's like the whole time we knew each other, it's like I looked up to her 'cause she's always doing the right thing. And she's like a role model."

In contrast, almost all of the experimental boys who had a close friend they'd met at school nominated a friend from an elementary or middle school, not a school they were currently attending or had recently attended. These boys were also much less likely to hang out with school friends outside of school than any of the other groups. Making friends at one's current school, as experimental girls tended to do, might be more beneficial than making friends in the neighborhood, as experimental boys tended to do, for several reasons. Having one's closest friends in school might make the experience of attending school more enjoyable, and students who enjoy the school's social milieu might remain more engaged. In addition, schools offer environments that are supervised by adults, while street corners do not.

*Fitting in.* We asked our respondents to describe both the neighborhoods they resided in at present, as described above, and the low-poverty neighborhoods they originally moved to as part of the MTO demonstration. Especially in Baltimore, the boys were more likely to describe the neighborhoods negatively (as boring). Some even perceived them to be as unsafe or as drug-ridden as their origin neighborhoods, though this was almost certainly not the case. Nineteen-year-old Ross learned about the drug scene from hanging out with older boys in his Baltimore public housing development, but he didn't start selling drugs until he and his family moved with the MTO voucher. He described the new neighborhood as "no shit different" than his project neighborhood.



In contrast, most of the girls made positive comments about their program move neighborhoods, usually about how quiet they were (boys seemed to equate quiet with boring). Eighteen year-old Naomi lived in a working class neighborhood on the edge of Baltimore city. She explained, “See, at first I couldn’t get used to the quietness because I was used to like noise because we was like on the street side [in her origin neighborhood] but now that I’ve gotten used to it now.”

This variation in how the girls and boys viewed their new neighborhoods may speak to a larger way in which they were able to fit into their new neighborhoods. But neighborhoods play a role too, in that they can vary in their acceptance of these young people. One measure of acceptance on the part of the receiving neighborhood is police surveillance. Though boys in both groups complained much more about police harassment than girls,<sup>23</sup> experimental boys were more likely than any other group, including control boys (73% vs. 58%), to do so. Some of the experimental boys who lived or had lived in the suburbs associated the suburbs with increased police surveillance, a theme that was almost completely lacking in the girls’ accounts. Ron, an 18 year-old living in the Baltimore suburbs, claimed that his neighbors call the police when he and his friends, all African American, choose to congregate publicly: “You can’t really [hang out in the neighborhood] because it’s like mixed out here with like white and black . . . So if you see a group of black people and then like white people look out the window and call the police and they just say you gotta leave, and there’s nowhere to go. Like they don’t want us to be together, like if we’re together they say you gotta go, like if you don’t live around here you have to leave. But nobody lives in the same neighborhood so it’s like it’s either, it’s gonna be just you by yourself on your steps.” For experimental boys like Ron, such surveillance makes it difficult to

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<sup>23</sup> Instances of telling youth to move on from loitering, or picking them up for loitering, picking youth up for mistaken identity, and curfew violations were included in this measure. Not included were arrests for actual crimes.

engage in the main social activity he had become accustomed to in the city -- hanging out on street corners, basketball courts or vacant lots. Some boys felt it was virtually impossible to have a social life in the suburbs. Roger, a Chicago experimental, said, "I was in the suburbs. There wasn't nothing to do at all. Police always messing with you. Talking about you doing this, you're doing that."

Ed experienced several instances of police harassment in his relatively low-poverty (still less than 20%) neighborhood on the South Side of Chicago, where he moved when his family left the first neighborhood to which they had moved with their MTO voucher. He spends six days out of the week at his church, participating in various youth activities. According to Ed, even leaving church can be an occasion for getting stopped by the police: "Everywhere we go, we going to get stopped by the police because . . . they can always say we look suspicious and stuff . . . We got stopped, me and my friend, coming out of the church gate before, by the detectives . . . They talking about there was gunshots on the next block and we match the description or whatever . . . They was like, 'Do y'all got guns?' or something. 'We heard shooting on the next block, y'all match the description. Where y'all just come from?' We like, 'We just came out the church, y'all done seen it.' You know just, they stopping us for no reason."

Of course, boys in the control group experience police harassment as well, only at a lower rate than boys in the experimental group. Girls did not experience nearly as much police harassment as the boys did, however, and there were minimal differences between experimental and control girls. It is difficult to know how much of this additional police surveillance can be attributed to race or class discrimination. Ed and Roger have lived in almost completely African-American neighborhoods throughout their moves, but Ron still lives in his program move neighborhood, which is predominantly white. The neighborhoods in which Ron and Roger

talked about experiencing heightened police interference were low-poverty, but Ed's neighborhood was moderately poor (close to 25%).

As we noted earlier, scholars have identified relative deprivation as a potential process behind negative outcomes for teenagers moving to low-poverty neighborhoods. Because we wanted to measure this concept directly, we used a scale, mainly used in health research, that assesses subjective social status (Goodman, et al. 2001; Singh-Manoux, Adler, and Marmot 2003). We asked the teens to place themselves on a social status ladder relative to others in their neighborhood and then to position themselves on another ladder relative to students in their school. There were no gender or program group differences in placement. We also asked them to talk about why they placed themselves where they did. If relative deprivation were at work (at least in a conscious way), we would expect that the experimental boys would say they felt isolated because they measured themselves unfavorably against their more affluent neighbors or better-prepared student peers. However, they do not.

In sum, when we compare the neighborhood contexts of the experimental compliers to those of the controls, three themes emerge. First, especially in Baltimore, the control boys are more likely than the experimental boys to report having a strategy of "staying to myself" when out in their neighborhoods. This phrase refers to a set of daily routines and friendship choices aimed at avoiding neighborhood trouble. Recall that the experimental complier boys moved from their housing projects to neighborhoods that were less than 10% poor when they were between the ages of 8 and 15. Many of these were at a considerable geographic distance from their origin neighborhoods. Though subsequent moves have placed them in neighborhoods that more closely resemble those of the controls, they have usually spent several years in neighborhood environments with considerable social, as well as geographic, distance from where they lived before MTO. Control boys have moved too, but the moves have been far more proximate, both

geographically and socially. Our qualitative evidence suggests that the homogeneous nature of their residential experiences may have induced more of the control boys to formulate a set of navigation skills that allow them to avoid the worst elements of a neighborhood. Experimental complier boys, by contrast, have moved across neighborhoods which are more varied from each other than the controls' neighborhoods, and which have required a more varied set of navigation skills. As most have moved on to somewhat higher poverty neighborhoods, they may have less of a sense of the geography of danger in their neighborhoods or how to navigate it, compared to the controls. Certainly the control boys are running into trouble (as seen in Tables 3 and 4), but the experimental boys may be getting involved in more risky behavior because they are unable to deploy the specific skills required in these contexts. We revisit this theme when we examine these boys' friendship patterns more closely in the section below.

Second, the control girls report more social connections with neighborhood peers than the experimental girls do—the opposite pattern from the boys. The move to a low-poverty neighborhood appears to have taken the experimental girls out of high-poverty environments with plentiful neighborhood friends and put them in a low- to moderate-poverty context with fewer neighborhood friends. If neighborhood friends expose teenagers to risk, and we show below that this might well be the case, this might be of benefit to the girls. However, MTO did not leave the girls bereft of friends. Instead, girls who moved through MTO forged their friendships at school. These friendships, in turn, may have increased their enjoyment and engagement in school, which may have served as a protective factor. Unfortunately, boys who moved through the program were far less likely than girls to create ties with peers they met at school.

Finally, experimental boys – whether in their low-poverty neighborhoods or their current neighborhoods – appeared to be more subject to police harassment and surveillance than the

other groups of teens. This increased police vigilance, along with the fact that experimental complier girls were more likely to appreciate what their new neighborhoods had to offer, may be part of why girls were able to benefit from the low-poverty move and boys were not.

*Free Time.* We asked these teens how they spent their time after school, on the weekends, and during the summer. We were interested not only in what they were doing but also where they were doing it. The majority of both control males and females spent the bulk of their leisure time locally, within their current neighborhoods. Experimental and control girls and boys were also just as likely to talk about spending time hanging out in neighborhoods that were not their own. Usually, these other neighborhoods were where their friends, grandmothers, and other family members currently live and, through years of visiting, these teenagers have created networks of friends in these neighborhoods.

However, nearly 30% of control boys and 19% of control girls claimed they did not hang out in their current neighborhoods at all. John was 16 years old, and he lived in the same Baltimore public housing development his entire life. To avoid trouble, he stopped hanging around his neighborhood and mainly hangs out in his grandmother's neighborhood: "I used to hang out around here a lot but then that's when I like started going, like I started fighting a lot, like when people just start be fighting, sort of got in a fight a lot, and I started going around another neighborhood." When Lincoln, a control boy, hung out in his Chicago neighborhood, he usually did so right around his school, a couple blocks away from his house. He specifically avoided a certain street in his own neighborhood because, "That's just begging to get into a fight. I know enough people, but I don't know everybody." Nineteen year-old Jamila, also a control, also limited the amount of time she spent in her Chicago neighborhood. She admitted that she made people angry when she walked away and refused to socialize: "That's how I'm avoiding

fights, and avoiding the streets, I don't really try to hang around in the area or walk in the area, I just hang out with my friends, ride around, go to the mall, do something.”

By contrast, the experimental boys were much more likely to spend their free time in their current neighborhoods than girls in the experimental group, who usually chose to spend time in the neighborhoods of school friends or family members. Only one-third of experimental girls spent the bulk of their leisure time in their current neighborhoods, a proportion substantially lower than any of the other groups, yet a higher proportion of experimental complier boys did so (79% compared to two-thirds of both control groups).

Nevertheless, the key difference between the males and females overall is not the neighborhood context they chose to hang out in but how they hung out. In the current neighborhoods, former neighborhoods, and other neighborhoods, boys hung out by playing football or basketball at a local school, a park, an alley, inner courtyard, or vacant lot, or loitering on street corners, in front of bars and convenience stores, or on outdoor basketball courts. Girls were more likely to hang out inside the house or on their front stoop or a friend's stoop, usually talking and playing cards. Likewise, when girls visited their friends or family in other neighborhoods, they usually spent their time inside or on their friends' stoops or porches, while boys reported attending parties or playing football and basketball out of doors in these other neighborhoods. This is not to say that girls do not play ball, hang on the corner, or go to parties. They were, however, less likely than boys to discuss these as their main venues for spending leisure time, and many more girls than boys emphasized that they typically spent their free time close to the home if not inside the home.

Girls were also more likely to make a point of visiting public places such as the downtown area, movies, and malls. Most of the boys and girls went to the mall, movies or downtown, occasionally, but the girls were more likely to use these spaces as alternatives to

hanging out in a neighborhood rather than in combination. Fourteen year old Bella, a control girl who now lives in the Baltimore suburbs, emphasized, “I don’t go outside a lot. I like to go *places.*” While some girls in Baltimore and Chicago discussed going downtown or to the mall as a way to avoid trouble in their neighborhoods, this was not usually the case for boys.

Sports were not nearly as central in the lives of girls as they were for boys. Nearly every boy spent at least some time each week playing basketball, football, and to a lesser degree, baseball. However, only a handful of boys across the experimental and control groups were involved in an organized sports league, or school team. Boys in the control and experimental groups in Baltimore usually played basketball out of doors in a park, an alley, or a vacant lot, and only rarely inside a supervised recreation center. These outdoor venues were often places where other teens were engaged in buying and selling drugs. Jay, a 16 year-old in the control group who lived in a Northwest Baltimore neighborhood, liked to play basketball at a local outdoor court and in a nearby alley where someone had mounted a hoop. He said he also witnessed a man stashing his drugs in a house off that alley: “‘Cause there’s another place right here, we play basketball in this alley . . . and a man, when people pass by and he’ll go -- right where we play basketball, there’s a big house -- he go right in there to get it and all that stuff.” Chicago boys were more likely to play in backyards or on school grounds rather than on public courts shared with drug dealers. Interestingly, when girls in the two cities played ball, it was more often in a court attached to or inside of a recreation center, where adults were also present. Girls also reported other activities as well that are nearly absent in boys’ lives, including marching band, practicing daily at a dance studio, or going to a roller skating rink with friends. What is notable here is that girls’ activities typically occurred in a setting where there was adult supervision.

The evidence from the analysis of the control interviews indicates that – absent an intervention – teens in low-income neighborhoods in Baltimore and Chicago engaged in patterns

of hanging out that are highly shaped by gender. These differences were apparent for the experimentals as well. However, the girls' pattern of free time use may have "fit" better with what was expected in the low-poverty neighborhoods. It certainly seemed to draw less negative attention from the police. Since girls were less likely to venture beyond their living rooms and stoops, and more likely to go to the mall, downtown, or the movies, they had to make fewer adjustments to the norms and restrictions in their new environment. On the other hand, Ron's and Ed's accounts are filled with stories about getting in trouble with the police merely by hanging out with friends on the corner, in the parking lot of the school, or just walking down the street in a group.

*Friends.* Up until this point, the activities of the friends of these adolescent respondents have been in the background of our analysis. In this section, we explore the behaviors of friends in more detail, regardless of whether they are neighborhood friends, school friends, or friends made in other contexts, including a former neighborhood or school. In particular, we analyzed patterns of substance use and criminal activity among these friends and how these associations may have affected our teens.

Slightly over half of the control girls and nearly three-quarters of the control boys spoke of regularly associating with friends who smoked marijuana or cigarettes, or drank alcohol. There was a larger gender difference, though, among the experimentals, where only 39% of the girls but two-thirds of the boys associated with friends who smoke or drank. Smoking weed and drinking alcohol – usually hard liquor such as Hennessy rather than beer or wine – was much more common among their friends than cigarette smoking. Some teens reported that their friends only drank on special occasions, like New Year's Eve, but others said that their friends' drinking or drug use was frequent. Nikki, a 17-year-old mother of a three-year-old son, who is in the control group in Baltimore, claimed that her friends drank "every day," though she only drank on



the weekends. She then described how her friends pooled their money each day to purchase the alcohol (bought for them by an older friend).

Some teens said that though being around friends who use drugs or drink hard liquor made it difficult to avoid becoming involved in this activity, they actively resisted their friends' negative influence. Seventeen year-old Mariel, from the Chicago control group, said that she and her friends who chose not to smoke or drink sometimes got pressured by others: "Like if my friends is with some of they friends, the other friends who do that, they'll try to pressure us in doing it, but if you say nah, you got to be too good to do it, or we don't know what we're missing and they're like, 'Here try it.' It's like, 'Nope.' Our answer going to still be no and can't nobody change that, you can't make us drink or smoke if we don't want to." However, others were not so successful in their efforts to resist. James, a 15 year-old Baltimore control group member who was drinking hard liquor and smoking cigarettes by the time he was 10, had a difficult time resisting resuming these habits after he was released from a residential treatment facility. He related his experiences at a party he recently attended where his friends were drinking and smoking pot. "I ain't really want to feel left out so I went on and just had did it for that day, but I ain't knew that day was gonna turn to like the next day I would want another one." For Jamison, a 15 year-old Chicago experimental, drinking alcohol and smoking weed were regular activities he shared with friends at a constant stream of house parties.

Control girls and boys across the two cities were equally likely (56% vs. 59%) to describe friends who were involved in illegal activities (ranging from bringing a weapon to school to being incarcerated) or who had been killed, almost always as a consequence of being involved in an illegal activity.<sup>24</sup> Haylee, a 17 year-old Chicago girl in the control group, described how she

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<sup>24</sup> This does not include smoking marijuana or drinking alcohol. Fights were only included if they resulted in an arrest.

stood by, horrified, as her best friend killed her sister's best friend. "All I seen my sister best friend like this like gaspin' for air. Just gaspin' for air like anything. Blood start comin' out of her mouth and that's like all I seen. And I'm lookin' 'cause it was crazy . . . Then she just died. I couldn't do nothin' but just look at her."

The lack of a gender difference among controls is strikingly different from the pattern for experimentals, where the males were over three times as likely as females (92% vs. 27%) to have friends involved in illegal activities or friends that had gotten killed, usually in pursuit of illegal activities. Ron, whom we have mentioned before, was 18 when we interviewed him, and his family still lived in his suburban program move neighborhood outside of Baltimore. Currently on probation, Ron and his friends have, in the past, stolen cars and set a dumpster on fire. Ross also made a move to a low-poverty neighborhood in Baltimore but his current residence is prison. He told the interviewers that all of his close friends were either locked up or dead.

In sum, the stories drawn from experimental teenagers' narratives about friends point to a consistent theme: girls who made a low-poverty move are far less likely to have friends who use drugs, commit crimes, and get into trouble than any other program group. This difference is notable, as there is no significant difference in the activities of friends between control girls and boys. Boys with a highly heterogeneous residential history—an initial low poverty move typically followed by a series of moves to somewhat higher poverty neighborhoods--may have struggled to form new skills to navigate the various neighborhoods they lived in over time. Their unfamiliarity with the routines of adolescent male behavior in both their low-poverty program move neighborhood and the neighborhoods their families subsequently moved to may have left them more vulnerable to the most risky elements of these neighborhood. Girls with a similarly varied residential history seemed to adopt the new skills sets each new neighborhood required with relative ease.

*Family Context.* Youths' behavior at home, around the neighborhood, and in school are shaped, in part, by their family contexts. We looked to the qualitative interview data to see what kind of differences male and female teens reported in parental expectations. Though we expected parental curfews to be important, there were no significant differences among experimental male and female youth, though control males were somewhat less likely to have a curfew. We also analyzed parental expectations of youth's school performance and found a similar pattern: only a small difference among experimental girls and boys in the percent with parents exhibiting behavior we coded as "demanding" (44 versus 36 percent), but a somewhat larger difference among controls (39 versus 22 percent). While the gender differences are interesting, the fact that there are not larger differences in the experimental group means that such patterns cannot explain why the MTO program affected boys and girls fared differently.

We also analyzed the role of biological or non-biological father figures in these adolescents' lives. At baseline nearly three-quarters of the MTO households in Baltimore and Chicago were female-headed, which means that girls had a same-sex parent in their house while boys did not. Other researchers have hypothesized that part of the gender difference in outcomes for teens in the MTO treatment may be due to the fact that boys were less likely than the girls to have a same-sex parent involved in the family, whether co-residing or visiting regularly (Kling, Liebman, and Katz, 2005). Yet across the four groups, there were no differences in the proportion of respondents who described having regular contact with their biological fathers; only about one-third in all groups did so.

We then looked at father figures. There was no difference between experimental complier girls and control girls in the likelihood of having a non-biological father figure in their lives (usually a stepfather, a mother's boyfriend, or an uncle). However, among the boys, there was a dramatic difference by program group in this domain. Control boys were nearly twice as likely as

experimental boys (63% vs. 33%) to describe a meaningful relationship with a close, caring, or sometimes financially supportive relationship with a male other than a biological father or, at the very least, having such a figure present in their lives. If moving to a low-poverty neighborhood creates more social, as well as geographical, distance from father figures, this absence may contribute to the difficulties that experimental boys are having relative to the control boys. Howard, a Chicago control, spent the year before our interview in the South, learning the trade of pouring concrete with Job Corps. He attributed his turnaround from running in the streets to stable employment to his uncle and aunt who live in Chicago: “They the one that told me about Job Corps, you know. They proud of me that I made it through high school too, because they thought I wasn’t gonna make it through high school . . . ‘Cause if it weren’t for my aunt and my uncle, I’d be still on the streets, the house, come in the house late every day, being out there, doing whatever.”

Interestingly, experimental boys whose narratives did include descriptions of relationships with a father figure were, with one exception, no longer living in middle income neighborhoods. For example, Bart had moved out to the Baltimore suburbs but has since moved back to a high-poverty neighborhood in East Baltimore, not far from where his uncle lives. He mentioned this uncle throughout the interview as someone who taught him valuable things, such as electronics repair, the only vocation that interested Bart and motivated him to go back to high school after having dropped out. “That's why I want to go to school for that [electronics repair], too. I don't know what I am touching but I just know how to do it when I look at it. I know how to fix a lot of stuff. The only thing I got to do is look at it . . . My uncle told me that [I could make a lot of money doing that]. And he taught me you might as well say. Now I do a lot of stuff – I can make one of these [points out a speaker].”

In sum, we do not find distinct differences in parental monitoring from mothers or fathers that would explain the gender differences in the MTO demonstration. Nonetheless, the control boys talked often about the significant role uncles, stepfathers, and mothers' boyfriends played in their lives. For the mothers, forging relationships with new romantic partners may have been more difficult when they made more distant moves, though their children's narratives do not speak to this point. And relationships with kin, such as uncles, do indeed seem to be more attenuated by geographical and social distance. When asked what he missed about living in public housing, Frederick, a Chicago experimental, said, "You know, it was the projects but it still felt like home, I ain't got no problems, because all the people that were around, it was like my uncles and stuff. And they always looked out for me, gave me some money when I needed it." We know from previous literature, that extended kin can help mothers with monitoring and parenting, and there is some indication that a male family member is associated with less aggression and delinquency among boys. To the extent that this is true for the young men in our sample, the experimental boys appear to have lost out on this influence relative to the control boys.

## **CONCLUSION**

Neighborhood effects research indicates that teens who live in low-poverty neighborhoods have a lower risk of adverse outcomes than those who live in high-poverty neighborhoods. Therefore, it is surprising that moving families from high-poverty neighborhoods into lower-poverty neighborhoods would not be beneficial for both male and female adolescents. Among families surveyed in Baltimore and Chicago, we find that the MTO intervention had a differential impact on substance use, risk behavior, and mental health for boys and girls. Controlling for gender differences that would have been observed absent the MTO intervention,

being assigned to the MTO experimental group was associated with a higher risk of smoking marijuana and cigarettes, drinking alcohol, problem behavior, and risk behavior for males than females. In terms of mental health, the MTO intervention was associated with lower scores of psychological distress and generalized anxiety disorder for experimental females compared to males. These indicators all point to a similar pattern: low-income girls were able to take advantage of a move to a low-poverty area in a way that low-income boys were not.

To develop a set of hypotheses about what might lie underneath this interaction effect, we analyzed in-depth interviews with MTO teens from experimental families who moved, and control families. We examined gender differences and differences that may have been associated with or exacerbated by a low-poverty move. These data point to three factors that may contribute to this differential impact on boys versus girls. First, control boys, particularly those who remained in high poverty neighborhoods in Baltimore, describe deploying conscious strategies for avoiding neighborhood trouble, and these strategies are less frequently used by experimental boys despite the fact that by 2004, they had made subsequent moves to higher poverty neighborhoods (though still less poor on average than those of the controls). We speculate that this is partly responsible for the fact that experimental group boys are far more likely to forge ties with delinquent peers than control boys. Second, these teens' routine activities are highly gendered in old neighborhoods and new. Experimental group girls' pattern of activity fits easily within neighborhoods that are very different from their origin neighborhoods. Experimental group boys' daily routines, by contrast, tend to draw negative reactions from community members and agents of social control. Third, though we found no differences in contact with biological fathers across program groups, experimental group boys are far less likely to have strong connections to non-biological father figures than controls – connections that may motivate

them to stay in school, learn a trade, and stay out of trouble. They may thus be more vulnerable to behavioral and mental health problems.

The MTO program was designed with the assumption that moving to a low-poverty neighborhood could benefit individuals above and beyond what their individual or family characteristics might predict. That is, moving to a neighborhood with a low level of poverty or a high level of employment can have a positive effect on adolescents' outcomes. Our conceptual framework outlined several mechanisms that might explain the differential effect of the MTO intervention: adult neighbors, peer effects, relative deprivation, and cultural conflict. We did not find any evidence for an effect of adult neighbors as role models or sources of information about jobs or schools. These teens did not report relating to adults in their neighborhoods in any meaningful way, nor did they differ in how they described adult intervention in neighborhood fights. The low poverty neighborhoods might well have had a greater degree of collective efficacy, however, if that efficacy is reflected in greater police monitoring of boys who hang out in ways that are not in line with neighborhood norms.

There was evidence, however, of peer effects, though not in the expected direction. Relative to their control counterparts, who lived in neighborhoods that were closer both geographically and socially to their origin neighborhoods, experimental boys seemed to lack the set of neighborhood navigational skills that would allow them to avoid neighborhood locations where trouble was likely to occur and to distinguish between good and bad influences when forming friendships. They were more likely than controls to describe regularly interacting with friends who were involved in illegal activities or having had friends who were killed as a result of illegal involvements. Though some could resist the influence of such peers, others could not. The opposite story seemed to hold for girls; experimental girls had far fewer neighborhood social connections than control girls (and, for that matter, for either group of boys), which seems to

have been protective. They chose to forge their close friendships in school, which may have been protective.

Relative deprivation is not a theme that was evident in an explicit way in our respondents' narratives. Experimentals did not express feelings of isolation because they compared themselves unfavorably to more affluent neighbors or better-prepared student peers, either measured through a subjective social status scale or through their narratives. Cultural conflict, though, was surely evident for boys in the experimental group, whose main forms of leisure – congregating on street corners or playing sports in unsupervised settings – drew the attention of neighbors or the police far more than the leisure activities of any other program group. Girls, who stayed close to home, visited friends or relatives in their homes, talked on the phone to school friends on weeknights, and visited the mall or the downtown as leisure destinations did not invite this attention, as these practices were in less conflict with the new neighborhood norms.

These findings indicate complexity in how the MTO intervention interacted with the daily routines, neighborhood navigational skills, and social networks of boys versus girls in ways that benefited the latter while putting the former at somewhat greater risk. At the time these data were collected, many of these teenagers were still in middle adolescence, so a fuller range of important young adult outcomes and the social processes leading to them, such as high school completion or drop out, teen pregnancy, incarceration and the transition to employment, could not be fully observed. Future research should follow these young people over time to see how they fare in these important domains.



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Table 1. Sub-sample of youth respondents in Baltimore and Chicago used in analysis

	Males	Females	Totals
A. Baltimore			
Experimental Compliers	7	11	18
Control	19	17	36
B. Chicago			
Experimental Compliers	8	8	16
Control	5	11	16
<b>Totals</b>	<b>39</b>	<b>47</b>	<b>86</b>

Note: Experimental “compliers” moved using an MTO program voucher.

Table 2. Descriptive statistics for Baltimore and Chicago MTO samples

	Survey sample 15 – 19 years old				Qualitative sample 14 – 19 years old			
	Exp		Control		Exp Compliers		Control	
	Female	Male	Female	Male	Female	Male	Female	Male
Enrolled in school	.62	.53	.50	.60	.79	.80	.68	.83
Employed	.28	.13	.24	.19	.32	.27	.25	.04
Ever arrested	.15	.45	.19	.36	.11	.40	.16	.38
Sample size	145	133	84	80	19	15	28	24

Note. Exp refers to the experimental group.

Table 3. Effects on risk behaviors for Baltimore and Chicago youth

	Females		Males		Male - Female
	Control Mean	E-C	Control Mean	E-C	E-C
Ever used marijuana	.299	-.130† (.075)	.395	.125 (.078)	.255* (.106)
Ever drank alcohol	.369	-.069 (.076)	.391	.127† (.073)	.196† (.103)
Ever smoked cigarettes	.284	-.088 (.068)	.270	.157* (.069)	.245* (.095)
Ever been arrested	.184	.025 (.062)	.332	.105 (.082)	.080 (.098)
Problem behavior index	.371	-.074† (.040)	.315	.097* (.043)	.171* (.058)
Delinquent behavior index	.072	.008 (.024)	.132	.032 (.039)	.023 (.039)
Risk behavior index	.421	-.084† (.049)	.456	.099* (.044)	.183* (.063)

Notes. E-C: Experimental - Control intent-to-treat estimate. Robust standard errors in parentheses. \* $p < .05$ ; † $p < .10$ . Sample sizes for each row are 440, 441, 440, 437, 439, 440, and 441, respectively. Youth ages 15-19 on May 31, 2001. The problem behavior index is the fraction of eleven problem behaviors reported by youth: difficulty concentrating; cheating or lying; teasing others; disobedient at home; difficulty in getting along with other children; trouble sitting still; hot temper; would rather be alone than with others; hanging around with kids who get into trouble; disobedient at school; and trouble getting along with teachers. The delinquent behavior index is the fraction of nine delinquent behaviors that youth reported ever being engaged in: carrying a handgun; belonging to a gang; purposefully damaging or destroying property; stealing something worth less than \$50; stealing something worth \$50 or more; other property crimes; attacking someone with intention to hurt; selling drugs; and getting arrested. The risk behavior index is the fraction of four behaviors: ever smoking marijuana, ever smoking cigarettes, ever drinking alcohol, and ever having sex.



Table 4. Effects on mental health for Baltimore and Chicago youth

	Females		Males		Male - Female
	Control Mean	E-C	Control Mean	E-C	E-C
Depression during lifetime	.139	-.050 (.055)	.037	.002 (.040)	.052 (.060)
Psychological Distress Index for past month	.296	-.035 (.043)	.184	.080† (.042)	.115* (.056)
Generalized Anxiety Disorder during lifetime	.150	-.099† (.051)	.046	.030 (.043)	.130* (.064)

Notes. E-C: Experimental - Control intent-to-treat estimate. The depression and generalized anxiety disorder outcomes are based on an unfolding sequence from the National Comorbidity Survey Replication Adolescent Supplement, described in Kling, Liebman, and Katz (2005). The psychological distress index is the fraction of six mental health questions to which individual reported feeling at least some of the time during the past 30 days; the six items are feeling: so depressed nothing could cheer you up, nervous, restless or fidgety, hopeless, everything was an effort, or worthless. Robust standard errors in parentheses. \* $p < .05$ ; † $p < .10$ . Sample sizes for each row are 428, 438, and 422, respectively. Youth ages 15-19 on May 31, 2001.

## Appendix A – List of Covariates

- During two years prior to baseline, child (6 to 17 years old) had gone to a special class or school, or received help for behavioral or emotional problems
- During two years prior to baseline, child (6 to 17 years old) had been suspended or expelled from school
- During two years prior to baseline, child (6 to 17 years old) went to a special class for gifted students or did advanced work in any subject
- During two years prior to baseline, child (6 to 17 years old) went to a special class or received help for learning problems
- During two years prior to baseline, the school asked someone to come in and talk about problems child (6 to 17 years old) was having with school work or behavior
- Child Age 5 (at baseline)
- Child Age 6 (at baseline)
- Child Age 7 (at baseline)
- Child Age 8 (at baseline)
- Child Age 9 (at baseline)
- Child Age 10 (at baseline)
- Child Age 11 (at baseline)
- Child Age 12 (at baseline)
- Child Age 13 (at baseline)
- Child Age 14 (at baseline)
- Child Age 15 (at baseline)
- Child Age 16 (at baseline)
- Child Age 17 (at baseline)
- Child Age 18 (at baseline)
- Child Age 19 (at baseline)
- Child under age 5 (as of May 31, 2001)
- At baseline, child (0 – 17) had problems that made it hard to get to school or play sports or games
- At baseline, child (0 – 17) had problems that required special medicine or equipment
- Flags for missing value (before imputation) of baseline school/health variables (8)
- At baseline, adult respondent was receiving AFDC/TANF
- At baseline, adult respondent had a car that runs
- At baseline, a household member was disabled
- At baseline, there were no teens (13 – 17) in household
- At baseline, core household size was 2 or smaller
- At baseline, core household size was 3
- At baseline, core household size was 4
- Six months prior to baseline survey, any householder had been robbed, assaulted, or threatened with a weapon
- At baseline, adult respondent had lived in her/his neighborhood for 5 or more years
- At baseline, adult respondent stopped to chat with a neighbor in the street or hallway at least once a week

- At baseline, adult respondent was very likely to tell neighbor if saw neighbor's child getting into trouble
- At baseline, adult respondent reported not having any family living in the neighborhood
- At baseline, adult respondent reported not having any friends living in the neighborhood
- At baseline, adult respondent considered streets near home to be very unsafe at night
- At baseline, adult respondent was very dissatisfied with neighborhood
- At baseline, adult respondent was very sure she/he would be able to find an apartment in a different area of the city
- In five years prior to baseline, adult respondent had moved more than 3 times
- At baseline, adult respondent's primary or secondary reason for moving was to get away from drugs and gangs
- At baseline, adult respondent's primary or secondary reason for moving was for better schools for children
- Prior to baseline, adult respondent had applied for Section 8 voucher or certificate
- Adult respondent's age 19 and 29 (as of May 31, 2001)
- Adult respondent's age 30 and 39 (as of May 31, 2001)
- Adult respondent's age 40 and 49 (as of May 31, 2001)
- At baseline, adult respondent had a GED
- At baseline, adult respondent was a high school graduate
- At baseline, adult respondent was enrolled in school
- Adult respondent is Hispanic
- Adult respondent is male
- At baseline, adult respondent had never been married
- Adult respondent was 10 to 17 years old at the time of the birth of the first child
- Adult respondent is African-American
- Adult respondent is of a racial group other than African-American or white
- At baseline, adult respondent was working for pay
- Flag for missing baseline information on GED and high school diploma status

Appendix Table A1. Poverty measures for the Baltimore and Chicago qualitative samples.

	Experimental Complier	Control
A. Average poverty rate from random assignment through December 2001		
Females	.197*	.439
Males	.222*	.437
B. 4 – 7 years after random assignment		
Females	.186*	.370
Males	.196*	.336
C. 6 – 9 years after random assignment		
Females	.194*	.385
Males	.212	.302

Notes: \* indicates  $p < .05$  on significance tests of difference between the experimental compliers and the control group. Sample sizes for each row are 47, 39, 44, 36, 46, and 36 respectively.