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Diverging Experiences during Out-of-School Time: The Race Gap in Exposure to After-School Programs

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Diverging Experiences during Out-of-School Time:

The Race Gap in Exposure to After-School Programs

There is considerable interest in identifying ways to close the black-white achievement gap. This study examines race differences in children's participation in after-school programs, an out-of-school time experience that may influence children's achievement. Using nationally representative data spanning 1995 - 2005, we find that African-American children are twice as likely to attend after-school programs as white children, and the gap in program use is growing. Race differences in family and neighborhood characteristics explain only a small amount of the gap in program use, leaving much of the difference unexplained. We discuss the implications of our findings for research and policy.

Diverging Experiences during Out-of-School Time:

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Race, poverty, and social inequality are inexorably tied together in the United States. There are well-documented differences between African-American and white children in outcomes such as academic achievement and delinquency (Roscigno & Ainsworth-Darnell, 1999; Sampson & Wilson, 2005). Many of these differences begin early in the life course and become more pronounced as children move through their school-age years (Lee & Burkham, 2002). Policy-makers are actively seeking an understanding of the processes through which these differences emerge and ways to intervene to reduce these divergent paths. An enormous literature examines the role that racial disparities in families, schools, and neighborhoods play in the development and maintenance of social inequality (Farkas, 2003; Massey & Denton, 1993; Wilson, 1996). Unfortunately, despite decades of social policy, inequality in children's family resources is increasing in some important ways, setting the stage for potentially greater inequality in children's life chances (McLanahan, 2004).

Within this context, educators are seeking ways to reduce inequality in educational outcomes. Educators and policy-makers are particularly interested in identifying "malleable factors" that is, factors within the control of policy-makers or schools that can be used to reduce the black-white achievement gap. Both in-school and out-of-school factors are potential policy levers, as research has shown that differences in children's experiences out of school, such as during the summer, influence the achievement gap (Entwisle & Alexander, 1992; Downey, von Hippel, & Broh, 2004).

This study focuses on race differences in children's after-school care arrangements. Advocates for after-school programs have argued that these programs can reduce delinquency,

increase academic achievement and promote positive social and emotional development (Hollister, 2003; Larner, Zippiroli, & Behrman, 1999; Takanishi, 2004). Funding for after-school programs has soared over the past decade in hopes of increasing the achievement of disadvantaged students. Through the 21st Century Community Learning Centers program (21st CCLC), the Department of Education spends nearly $1 billion per year on after-school programs designed to boost the achievement of at-risk youth. The No Child Left Behind Act also stipulates that school districts must provide youth with after school tutoring if the school does not meet adequate yearly progress for three consecutive years (Fusarelli, 2007). In addition, many children attend after-school programs while their mothers are at work. Indeed, funding for child care subsidies, which are often spent on center-based care and after-school programs, has increased dramatically in the wake of welfare reform. Despite the funding available for after-school programs and the focus on their potential role in supporting achievement, surprisingly little research focuses on race differences in exposure to these environments.

Understanding race differences in children's participation in after-school programs is particularly important because the strong rhetoric about the potential for programs to boost achievement is not yet matched by strong empirical evidence. Indeed, research on the effects of after-school programs on children's academic and social outcomes is decidedly mixed (Granger, 2008; Kane, 2004). Some studies have shown positive effects of after-school programs on child outcomes (Mahoney, Lord, & Carryl, 2005; Posner & Vandell, 1999), but others, including an evaluation of the 21st CCLC program, show few effects on development (James-Burdumy et al, 2005; NICHD-SECC, 2004). Thus, while after-school programs have the potential to boost achievement, they are not consistently meeting this goal.

Despite the limited evidence that these programs are effective at boosting achievement, enrollment in after-school programs is rising. From 1995 – 2005 the proportion of 6 – 9 year olds enrolled in after-school programs doubled, from 12 – 24% (Hynes & Doyle, 2009). Prior research indicates that African-American youth are more likely to use after-school programs than their white peers (Hynes & Doyle, 2009; Kleiner, Nolan & Chapman, 2004), but it is unclear what the reasons for this difference are. It is also not clear whether race differences in program use are increasing or decreasing, and how these trends influence children's outcomes.

In this paper we examine differences in after-school program use by race, showing that African American children – particularly those at-risk of low achievement – are disproportionately enrolled in after-school programs. We show that differences between white and African-American children in factors such as living in single parent families, living in urban areas, and using child care subsidies do not explain race differences in program use. We also examine trends in program use over time, showing that the gap between white and black children in the use of after school programs is growing. We discuss the implications of our findings for research on the effects of after-school programs and for the continuing endeavor to decrease inequality in children's educational attainment and life chances.

Background

African-American children perform worse than white children on academic skills tests at kindergarten entry, and the gap in achievement widens as children progress through their school-age years (Cheadle, 2008, Fryer, 2004). Many explanations for the black-white achievement gap have been put forth. Some, such as Herrnstein and Murray's (1994) argument that race differences in inherited intelligence, as measured by IQ, explain the racial inequalities between black and whites, have been quite controversial and refuted by further research (e.g. Darling-

Hammond, 1995; Hallinan, 2002). Other explanations focus on the quality of schools. Black youth are more likely to attend schools with fewer resources (Kozol, 1991) and be taught by less experienced in comparison to white students (Ferguson, 1998). Research also suggests that teachers have lower expectations of black students (Ladson-Billings, 1994) and black students are more likely to take less rigorous classes or reside in a lower academic track than their white counterparts (Oakes, 1990; Kelly, 2009). A third explanation focuses on the students' behavior or their disposition toward schooling. Fordham and Ogbu (1986) argue that black high school students reject high academic standards for themselves because it is not part of their cultural identity. Though research suggests that schools can reduce the achievement gap between socio-economic groups, achievement gaps continue to grow as children progress through school (Downey, von Hippel, & Broh, 2004).

Additional explanations of the black-white achievement gap focus on non-school factors, such as the student's socio-economic status and the quality of their neighborhood (Downey, von Hippel, & Broh, 2004). For example, Orr (2003) argues that the gap in wealth between blacks and whites ($16, 686.49 and $87,545.28 respectively) creates a gap in life experiences and knowledge that impact children from lower-SES realms negatively. Research also suggests that children benefit from having affluent neighbors, as opposed to middle-income neighbors (Brooks-Gunn, Klebanov, & Sealand, 1993) and black males tend to benefit more from middle-class neighbors than black females (Brooks-Bunn et al., 1993; Ensiminger, Lamkin, & Jacobson, 1996; Duncan, 1994; Halpern-Felsher et al, 1997).

The way children spend their out-of-school time also differs by race and has been implicated in the black-white achievement gap. Cheadle (2008) found that black and white parents organize their children's' lives very differently, even after controlling for socioeconomic

status. White families practice much more “concerted cultivation” (Lareau, 2003), through their own interactions with children and by enrolling their children in enrichment activities such as dance and music outside of the school setting. Cheadle’s (2008) findings demonstrate that these differences in parenting explain some of the differences in achievement gaps. Differences in out-of-school activities become most pronounced over summer, when children are not spending a considerable portion of their day in school. Research suggests that differences in achievement are partially explained by differences in how students spend their time during the summer, with the most pronounced lags in summer-learning apparent among in low-SES students (Burkam, Ready, Lee, & LoGerfo, 2004).

Another out-of-school time environment that has received less attention in the literature is after-school care. Descriptive studies indicate that African-American children are more likely to attend after-school programs than white children (Hynes & Doyle, 2009; Kleiner, Nolan & Chapman, 2004). Therefore after-school programs are a developmental context that disproportionately influences African-American children. If after-school programs have positive developmental effects, they may currently be keeping the achievement gap from growing. On the other hand, if after-school programs have negative effects, they may be contributing to the achievement gap.

Before we can understand the role of after-school programs in the achievement gap, we need a better understanding of selection into after-school programs. Research based on observational data has known limitations because those attending programs may differ in observed and unobserved ways from those not attending after-school programs. These unobserved characteristics may bias results of the effects of after-school program participation on academic achievement (Duncan & Gibson-Davis, 2006; Moffitt, 2005). Therefore it is

important to understand whether race differences in program use exist net of factors known to influence program use. Despite differences in patterns of child care use by race, very few researchers have focused on understanding the reasons for these race differences (Johnson et al., 2003; Garcia Coll et al., 2000).

While after-school programs are touted as a way to improve achievement, most after-school arrangements are selected by parents to facilitate maternal employment. Theories about child care choices indicate that factors such as parental availability, financial resources, parental preferences, and the availability of care in the local child care market influence the type of non-maternal care selected (Casper & Smith, 2005). To the extent that black and white families differ on these main components, we should see race differences in rates of after-school program use.

Availability of parental and relative caregivers. Garcia Coll et al. (2000) and Johnson et al. (2003) argue that two aspects of the African American family that distinguish themselves from families of other races and ethnicities. The first aspect is that African American families are more likely to be headed by a single mother and the second is that black families are more likely to include extended family members in their household. These two aspects affect child care choices in different ways: Single mothers are more likely to use non-parental child care than those in two-parent families, but families with grandparents and other relative caregivers are less likely to use center-based care.

Financial resources. It is unclear whether financial resources will explain differences in after-school program use. Center-based care, including after-school programs, often cost more than informal child care arrangements. While African-Americans are more likely to be poor than whites (making center-based care less attractive due to its cost) they are also more likely to have

access to subsidized child care (Blau & Tekin, 2005). Child care subsidies offset the costs of child care for working mothers; therefore, mothers with child care subsidies can select center-based care, while mothers without subsidies often rely on less expensive relative or neighbor care (Hofferth & Wissoker, 1992).

Preferences. Qualitative research indicates that low-income African-American mothers who live in risky neighborhoods may prefer center-based care over other non-relative care options. They perceive that center-based care is at least "public" care, while home-based providers are largely out-of-sight and may provide low quality care for their children (Lowe & Weisner, 2001).

Availability of programs. Parents' child care choices are constrained by the availability of programs in their neighborhoods. The availability of programs varies across neighborhoods and geographic regions in ways that may lead to more program availability for African-American families than for white families. A higher proportion of blacks live in urban areas than whites, and children living in urban areas are more likely to be enrolled in center-based child care and Head Start than children living in rural areas (Liang et al., 2000). Center-based care options are also more prevalent in the south, which in another geographical area with a high population of black people (Liang et al, 2000). In addition, high poverty neighborhoods and heavily minority neighborhoods are often targeted by educational and social service agencies to receive services. For instance, elementary schools serving predominantly minority students are more likely to have after-school programs than schools serving primarily white students (U.S. Department of Education, 2009).

Child care choices are not the only factor leading to after-school program participation. Just as Head Start is an early care and education program focused on improving developmental

outcomes for at-risk children, 21st CCLC programs and other academic remediation programs focus on fostering improved achievement for at-risk school-age youth. These remediation programs often run for fewer hours per week than after-school programs that are primarily used for child care, and are more prevalent in high poverty and minority schools (U.S. Department of Education, 2009). Thus race differences in after-school program use may be due to parents' child care needs or to children's developmental needs.

This study contributes to our knowledge about race differences in children's after-school experiences. We focus in particular on children's enrollment in after-school programs because funding for these programs has increased rapidly despite mixed evidence about their effectiveness. We discuss the implications of our findings for further research and policy.

Data

We use data from both the National Survey of America's Families (NSAF) and the National Household Education Survey (NHES). Each data source has unique strengths that improve our ability to examine race differences in after-school program use.

The NSAF provides a nationally representative sample of non-institutionalized households with members under age 65. The NSAF is a repeated cross-section study designed explicitly to examine changes in state policies and social service use over time (Abi-Habib, Safir, and Triplett, 2004) and contains detailed information about the child care arrangements of one randomly selected 6 – 12 year old from each household, as well as demographic and economic variables known to influence child care choices. This study will use all three waves of the NSAF: 1997, 1999 and 2002.

We also use the 1995, 1999, 2001, and 2005 waves of the National Household Education Surveys (NHES). The NHES is a nationally representative, repeated cross-sectional study of

various aspects of families' educational experiences, including participation in before- and after-school programs (Hagedorn et al., 2006). The 1995 NHES was only collected for children in kindergarten through third grade, therefore we restrict analyses from this year to children ages 6 – 9. The remaining years cover children ages 6 – 12.

We rely on two data sources for several reasons. First, there are minor differences between the surveys (and within survey over time) in the series of questions about after-school program use. Replicating our analyses where possible gives us confidence that these data collection changes are not influencing our results. Second, each data source has unique advantages. For instance, while both data sets are large, the sample sizes become small when we want to estimate rates of after-school program use by race for subgroups such as single working mothers. While there are changes over time in program use, our results show that they are relatively minor during the three years of the NSAF data collection. Therefore, for descriptive analyses of small subgroups, we collapse across the three waves of the NSAF to increase our sample size and ensure that our results are robust. The NHES in contrast, allows us to examine trends over time for a much longer time frame. In addition, the 2005 NHES includes several theoretically important variables that are not available in the NSAF, allowing us to explore in detail the factors associated with program use that might differ by race.

We restrict both samples to children age 6 – 12. While there is policy interest in youth programming (ages 13 – 17), youth programming should be studied separately from programming for 6 – 12 year olds. Youth patterns of after-school activities are driven more by developmental need than by parents' child care needs, and public funding through the CCDF and the 21st CCLC is not available for older youth. Children in home schooling, pre-first grade, un-graded school, special education and nursery school were dropped from analyses as it was

unclear whether they would face similar needs for after-school care. Children in regular kindergarten, including half-day kindergarten, remain in the sample. Because of the tremendous interest in black-white achievement gaps, we limit our sample to children who are white or African-American (those who identify as Hispanic or other are excluded).

The final analysis sample consists of 26,330 children age 6 – 12 from the 1997 – 2002 NSAF, 17,809 children age 6 – 12 from the 1999 – 2005 NHES, and 13,001 children age 6 – 9 from the 1995 – 2005 NHES.

Measures

After-school program use. Parents in both data sets are asked about their children's non-parental care arrangements. Parents in the NSAF indicated whether their child attended a before- or after-school program on a weekly basis, and the total hours in after-school programs. Parents in the NHES had the opportunity to identify multiple after-school programs and to list the hours associated with each program, though the number of programs they could identify varied across survey years. We create a dummy variable in each year in each data set indicating whether the child participated in regularly scheduled before- or after-school programs at least once a week. As prior research indicates that some children spend only a handful of hours per week in after-school programs (James-Burdumy et al., 2005; Hynes & Doyle, 2009) and that these programs with fewer hours may be primarily academic remediation programs (U.S. Department of Education, 2009), we create a second dummy variable for children participating in programs for five or more hours per week (0 = children not enrolled in after-school programs and children enrolled for fewer than five hours per week, 1 = children enrolled 5+ hours per week). In both surveys, the questions about after-school program use are in a section about children's non-

parental child care arrangements. Separate questions are asked about clubs, sports and other after-school activities in both surveys.

Availability of parental and relative caregivers. Because the effects of maternal employment on child care choices differ between single and two-parent families, we use a categorical variable that combines employment and family structure (1 = single-parent, working, 2 = single-parent, not working, 3 = two parents, both working, and 4 = two parents, only one working). We also include a linear variable indicating the number of non-parental household members over 18.

Financial resources. We generate a family income-to-needs ratio based on the family size and the total family income. Respondents are classified into one of three poverty groups: poor (<100% of the federal poverty line), near-poor (100-200% poverty) and not poor (>200% poverty).[1] We also include a measure of whether the family receives a subsidy to assist with their child care expenses (0 = no subsidy, 1 = has subsidy), as parents with subsidies are more likely to select center-based care than comparable parents without child care subsidies.

Preferences and child care market. We include several measures from the NHES related to the child's neighborhood of residence to capture variation in the availability of programs and variation in parental concerns about unsupervised care. A measure of the proportion of the neighborhood that is poor (1=<5%, 2=5-9%, 3=10-19%, 4-20+$) captures both parental perceptions of risk and the likelihood that free programs are available. Research indicates that youth living in predominantly minority neighborhoods are more likely to have low academic achievement. Schools and organizations may be particularly likely to set up after-school

[1] The NSAF collects detailed information on family income from various sources then creates a combined measure of family income. The NHES includes only one self-report question on family income and asks parents to report their income range (e.g. $15,000 - $20,000). Therefore family income in the NSAF is a more precise measure.

programs in these neighborhoods, therefore we also include a measure of the proportion of the child's neighborhood that is black or Hispanic (1=<=5%, 2=6-15%, 3=16-40%, 4=41% or more). While these neighborhood variables are highly correlated, the results are robust across models that test each variable independently compared to the model we present below which includes all three neighborhood variables simultaneously. We also include a dummy variable indicating whether the child lives in an urban or rural environment, as after-school programs are more accessible in urban areas. We control for region of the country (1=NE, 2=S, 3=MW, 4=W).

Additional Child and Household Characteristics. The remaining independent variables have been associated with child care choices in previous research, including child age (ranges from 6 -12), child sex (0 = female, 1 = male), maternal education level (1 = less than high school, 2 = high school degree, 3 = more than high school), the number of children in the household age 0 to 5, and the number of children in the household age 6 to 17 (including the target child). For all "maternal" variables, information about the child's mother is used if available. For children where information on the mother is missing, information on the person reported to be the child's primary caregiver is substituted.

Analysis Plan

We begin with descriptive analyses of race differences in after-school program use, examining both any participation in an after-school program and participation in programs for five or more hours per week. We then present logistic regression and multinomial logit models that allow us to examine reasons for the black-white gap in program use and whether the gap in program use has grown over the past decade. Given the complex survey designs, all analyses are weighted.

Results

Table 1 compares rates of after-school program use for African-American and white children from 1997 - 2005. While the levels of program use differ slightly between data sets, the overall patterns are very consistent. In all years, African-American children are more likely to use after-school programs than white children. In 2005, 35% of school-age African-American children attended after-school programs, compared to 17% of white school-age children. African-American children are also far more likely to attend after-school programs for five or more hours per week than white children. In 2005, 23% of African-American children were in after-school programs for five or more hours per week, compared to only 10% of white children.

[TABLE 1 ABOUT HERE]

Not only are African-American children more likely than white children to attend after-school programs, the difference in program use has increased over time. In 1997, the black-white ratio of program use was 1.7; by 2005, the ratio was 2.1. When we look at children attending programs for five or more hours per week the difference is even larger, with African-American children 2.3 times more likely to attend for 5+ hours per week in 2005. Thus much of the general increase in after-school program use across this time period was due to increased program use by African-American children.

Table 2 focuses on children ages 6 – 9, allowing us to look at a longer time trend and to focus on young children, who are more likely than older children to be enrolled in after-school programs. From 1995 – 2005, rates of program use for white children ages 6 – 9 increased from 11% to 19%, with most of this growth occurring from 1995 - 1999. Over the same time period, rates of program use increased from 20% to 39% for African-American children. When we examine children attending programs for five or more hours per week, rates for white children

hover between 10 and 12%, while rates for black children increase from 16 – 28%. Therefore, after-school programs represent a major developmental context for significant proportions of African-American children, while white children have considerably less exposure to these environments.

[TABLE 2 ABOUT HERE]

Family structure and poverty rates differ considerably for black and white families, making it possible that higher rates of program use are simply due to higher rates of single parenthood among African-American families and more effort by schools and communities to provide out-of-school time opportunities to poor children. Table 3 dispels the notion that the difference in program use can be explained by these two factors. Using the NSAF we collapse across all three years of data to ensure adequate subgroup sample sizes for reliable estimates of after-school program use. Even within poor, single-parent families, African-American children are nearly twice as likely as white children to be enrolled in after-school programs and are 2.3 times as likely to attend for five or more hours per week. The group most likely to attend after-school programs is African-American children with higher income single mothers, at 45%. And while many studies of child care choices focus only on children with employed mothers, some of the largest race differences in program use occur in families that do not have working mothers. Program use by this group may be due to schooling or other non-work related activities, or may reflect enrollment in enrichment or remedial programming during after-school hours.

[TABLE 3 ABOUT HERE]

We now turn to multivariate analyses. Our first set of analyses rely on the 2005 wave of the NHES where we examine whether the differences between African-American children and white children can be explained by parental availability, financial resources, neighborhood

characteristics, and child and family characteristics. Table 4 shows that the inclusion of control variables in these logistic regression models reduces the estimated association between race and after-school program use but does not eliminate it. For instance, when no controls are in the model, African-American children are estimated to be 2.6 times more likely to use after-school programs than white children. The inclusion of parental availability and financial resource variables reduces the association to 2.3, and the inclusion of neighborhood, child, and household characteristics further reduce the association to 2.0. However with all controls included, African-American children are still twice as likely to attend after-school programs as white children.

[TABLE 4 ABOUT HERE]

While these variables do not eliminate race differences in program use, they do influence program use in expected ways. Children with a parent or other adult household member available to provide care are less likely to use programs than children with fewer available caregivers. Older children and children with more school-age siblings (who also require care) are less likely to use after-school programs. Children with child care subsidies are more likely to use after-school programs than those who do not have subsidies. Children living in predominantly minority neighborhoods are more likely to attend after-school programs than those living in neighborhoods with fewer minorities, perhaps reflecting parental concern about risk or perhaps reflecting greater availability of programs in these neighborhoods.

Table 5 further examines program use with a multinomial logit model that allows us to compare the characteristics of children regularly attending after-school programs for fewer than five hours per week compared to children attending for more than five hours per week. The first two columns come from a model that uses “no program participation” as the reference category;

the third column is based on the same model but the reference category is "Fewer than 5 hours per week in an ASP". This third column formally tests whether there are significant differences in the characteristics of children and families who use after-school programs for fewer than five hours per week and more than five hours per week.

[TABLE 5 ABOUT HERE]

Variables associated with child care choices in previous literature are, in these models, associated with attending after-school programs for five or more hours per week. This makes sense if children attending after-school programs for fewer than five hours per week are more likely to be attending for academic reasons instead of child care needs. For instance, children with at least one parent at home and older children who may object to center-based care are less likely to attend after-school programs for 5+ hours per week. Other variables follow the same pattern but the differences between <5 and 5+ hours per week do not reach statistical significance. For instance, living in an urban area and having other adults in the household who might provide after-school care are more likely to attend after-school programs for 5+ hours per week. In contrast to what we would expect, having a child care subsidy is significantly associated with attending an after-school program for <5 hours per week but not associated with attending for 5+ hours per week, though the difference does not reach statistical significance in column 3. Because the number of children in the sample receiving child care subsidies is very small, we are hesitant to place too much emphasis on the subsidy results.

African-American children are more likely than white children to *both* attend after-school programs for <5 hours per week and to attend for 5+ hours per week. Therefore, the processes selecting more African-American children into after-school programs may stem from both developmental considerations and child care needs. Similarly, children living in predominantly

minority neighborhoods are also more likely than those living in neighborhoods with fewer minorities to attend programs for <5 and 5+ hours per week.

Finally, we examine whether the widening gap in program use that we observed in the descriptive tables is large enough to be significant in multivariate models that control for family and neighborhood characteristics. To test this, we estimate logistic regression models of program use with two years of data (1995 and 2005 for children ages 6 – 9; 1999 and 2005 for children ages 6 – 12) in the NHES. Each model includes an interaction between year and race to test whether the gap in participation has changed significantly over time; excerpts from these models are shown in Table 6. In two of the four models, there is a significant interaction between year and race, indicating that the racial gap in program use is increasing. In the other two models the interaction is not significant.

[TABLE 6 ABOUT HERE]

Figure 1 plots the predicted gap in program use, net of family and neighborhood characteristics. To create these graphs, we generated predicted probabilities of program use in each year, by race, based on logit coefficients from the models presented in Table 6. For this exercise, probabilities were generated by setting all control variables at their means and varying race and year. The black-white program use ratio was calculated from these predicted probabilities. Results largely mirror our descriptive findings. Between 1995 and 2005 there was a large increase in the black-white ratio for children ages 6 – 9 when we examine participation in after-school programs for five or more hours per week. There is a small increase in the descriptive statistics in the black-white gap for any program use across these years, but this increase appears to be largely accounted for by changes in the underlying composition of the population. Using the larger sample of children ages 6 – 12 from 1999 – 2005, the race

difference in program use is marginally significant, net of control variables, for any after-school program use and is not significant for using five or more hours per week of after-school programs. Thus the analyses provide some evidence that the gap in program has been growing, though much of the growth that is not explained by changes in family characteristics probably occurred in the late 1990s.

[FIGURE 1 ABOUT HERE]

Discussion

The purpose of this paper was to describe the black-white gap in after-school program use and to examine the possible reasons for these differences. One pervasive characteristic of the African American community that could explain the race difference in after-school programs is the prominence of single-parent families, making child care needs more acute. Furthermore, black children are more likely to live in poor neighborhoods. These neighborhoods are often targeted by social services, making center-based care more prevalent. Parents may also feel more confident that these structured environments will protect their children from crime and delinquency. Low-income African-American parents are also more likely to receive child care subsidies which can be used towards center based care facilities. After controlling for these factors, we find that African American children are still twice as likely as white children to attend after-school programs. They are more likely to attend programs for fewer than five hours per week – perhaps reflecting their enrollment in academic remediation or enrichment programs – and for more than five hours per week – perhaps reflecting their greater use of center-based after-school child care. Over the past decade, the black:white gap in after-school program use has gradually increased.

While after-school programs receive a lot of publicity and policy interest, only a small proportion of white children are exposed to these environments. For African-American children however, attending an after-school program is an increasingly common experience. Differences in children's out-of-school time experiences are well-known contributors to the black:white achievement gap and subsequently, to long-term racial inequality. After-school programs are yet another place where the developmental contexts experienced by white and black youth differ.

Further research is clearly necessary to examine whether this race difference in after-school program use is contributing to or reducing inequality in children's outcomes. There is surprisingly little research in this area. Because a much larger proportion of African-American children are in after-school programs than white children, having a better understanding of the effects of these programs on children's development is essential. Most of the literature on after-school program effects has relied on observational data. Our research shows that even after controlling for an extensive set of family and neighborhood characteristics, there are large unexplained race differences in program use. The risk that these unobserved characteristics will bias estimates of program impacts based on observational data are well-documented in the policy literature (Duncan & Gibson-Davis, 2006; Moffitt, 2005). More randomized trials of the effects of after-school programs on children's development are necessary.

In addition, it is possible that the effects of after-school programs differ for black and white children. Because of racial segregation, it is quite possible that programs serving African-American youth differ in their quality, content, and focus in ways that could lead to differences in the developmental effects of the programs. It is also possible that even with similar levels of quality and similar program content, after-school programs could have different impacts on African-American youth than on white youth. This could occur if the environments that children

would be in if they were not in after-school programs were considerably different for African-American children than for white children. Therefore more research needs to examine whether the quality and content of programs differs between programs serving primarily white children and those serving primarily black children, and whether the effects of programs on development differ by race.

Policy-makers need to be aware that any decisions they make about after-school programs will disproportionately influence the lives of African-American families and the well-being of African-American children. Often more attention is spent at both the state and federal level on funding child care slots than on funding quality improvement efforts. Yet low quality after-school programs will disproportionately disadvantage African-American children. In contrast, quality improvement efforts will disproportionately help African-American children. Indeed, after-school programs represent a malleable environment that could be leveraged to reduce inequality in children's social and academic outcomes. However these goals can only be achieved if careful attention is paid to developing high quality programs that are rigorously evaluated to ensure they are meeting their goals.

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Table 1. Rates of after-school program use for children ages 6 - 12, by data set, race and year

	Any After-school use, Ages 6 - 12				ASP 5+ hours/week, Ages 6 - 12			
	NSAF		NHES		NSAF		NHES	
	White	African-American	White	African-American	White	African-American	White	African-American
1997	15%	27%	-	-	12%	20%	-	-
1999	14%	27%	16%	29%	11%	21%	10%	20%
2001-2	15%	31%	15%	29%	12%	26%	8%	21%
2005	-	-	17%	35%	-	-	10%	23%

	Any After-school use		ASP 5+ hours/week	
	NSAF	NHES	NSAF	NHES
	Black-white ratio	Black-white ratio	Black-white ratio	Black-white ratio
1997	1.83	-	1.71	-
1999	1.97	1.80	1.88	2.08
2001-2	2.07	1.97	2.16	2.52
2005	-	2.07	-	2.31

Sources: National Household Education Surveys, 1999 – 2005; National Survey of America's Families, 1997 - 2002.

Notes: Sample sizes for children ages 6 – 12: NSAF (N in 1997 = 7,944, N in 1999 = 8,584, N in 2002 = 9,802); NHES (N in 1999 = 7,084, N in 2001 = 4,949, N in 2005 = 5,776). Black-white ratios are calculated from these weighted percentages. In all cases, differences within year by race are statistically significant.

Table 2. Rates of after-school program use for children ages 6 - 9, by race and year, NHES

	Any ASP, Children 6 - 9 NHES		ASP 5+, Children 6 – 9 NHES	
	White	African-American	White	African-American
1995	11%	20%	10%	16%
1999	17%	27%	13%	22%
2001	17%	31%	10%	24%
2005	19%	39%	12%	28%
	Black-white ratio		Black-white ratio	
1995	1.76		1.51	
1999	1.57		1.69	
2001	1.78		2.29	
2005	2.04		2.36	

Source: National Household Education Surveys, 1995 – 2005.
Notes: Sample sizes for children ages 6 – 9: NHES (N in 1995 = 3,972, N in 1999 = 4,078, N in 2001 = 2,176, N in 2005 = 2,775). Black-white ratios are calculated from these weighted percentages. In all cases, differences within year by race are statistically significant.

Table 3. After-school program use for children 6 – 12 in the 1997 – 2002 NSAF, by parental availability and income

	Any ASP			ASP 5+ hours/week		
	White	African-American	Black: White ratio	White	African-American	Black: White ratio
Single mother, employed						
Poor	15%	30%	1.96	10%	24%	2.29
Near-poor	24%	32%	1.33	20%	28%	1.40
Not poor	33%	45%	1.36	28%	39%	1.39
Single mother, not employed						
Poor	7%	20%	2.67	5%	14%	2.69
Near-poor	8%	22%	2.68	6%	18%	2.96
Not poor	-	-	-	-	-	-
Two parents, both employed						
Poor	8%	17%	2.17	3%	8%	2.71
Near-poor	8%	24%	2.93	6%	13%	2.26
Not poor	18%	33%	1.84	15%	25%	1.63
Two parents, 1+ not employed						
Poor	-	-	-	-	-	-
Near-poor	3%	15%	4.91	1%	9%	7.89
Not poor	4%	8%	1.86	2%	7%	4.02

Source: National Survey of America's Families, 1997 - 2002.

Notes: Results are based on a pooled data set that collapses data from all three years of the NSAF to allow for robust estimates of after-school program use in each cell. Black-white ratios are calculated from these weighted percentages. N = 26,330. (-) indicates in adequate sample size for robust estimates.

Table 4. Logistic regression models indicating race differences in ASP use, NHES 2005

	Model 1	Model 2	Model 3
Child is African-American	2.640*	2.372*	2.013*
	(0.302)	(0.296)	(0.310)
Single parent, not employed (reference = single parent, employed)	-	0.828	0.836
		(0.205)	(0.219)
Two parents, both employed	-	0.759*	0.814
		(0.095)	(0.107)
Two parents, 1+ not employed	-	0.340*	0.351*
		(0.062)	(0.066)
# of non-parental adults in household	-	0.808*	0.809*
		(0.073)	(0.072)
Near poor (reference = poor)	-	1.252	1.209
		(0.240)	(0.238)
Not poor	-	1.412*	1.243
		(0.245)	(0.233)
Child has child care subsidy	-	1.918*	1.923*
		(0.524)	(0.552)
Child's age	-	-	0.919*
			(0.021)
Child is male	-	-	1.063
			(0.100)
# children in household 0-5 years old	-	-	0.962
			(0.103)
# children in household 6-17 years old	-	-	0.845*
			(0.052)
Mother has high school degree (reference= mother has <HS degree)	-	-	0.866
			(0.251)
Mother has some college or more	-	-	0.945
			(0.274)
Neighborhood: 6 - 15% minority (ref = <6% minority)	-	-	1.051
			(0.148)
Neighborhood: 16 – 40% minority	-	-	1.168
			(0.173)
Neighborhood: 40+% minority	-	-	1.565*
			(0.310)
Neighborhood: 5 – 9% poor (ref = 0-4% poor)	-	-	0.736*
			(0.085)
Neighborhood: 10 – 19% poor	-	-	1.030
			(0.154)
Neighborhood: 20+% poor	-	-	0.856
			(0.229)
Neighborhood: Urban	-	-	1.146
			(0.161)
N	5,776	5,776	5,776

Source: National Household Education Surveys, 2005.

Notes: Analysis sample is children ages 6 – 12 in the 2005 NHES. + p. <0.10, * p. <0.05. Standard errors in parentheses. Region of country is included as a control and is not significant, results omitted from tables. Coefficients are odds ratios (<1 is a negative association, >1 is a positive association).

Table 5. Multinomial logit models predicting amount of after-school program use, 2005 NHES

	Fewer than 5 hours/week ASP vs. no ASP use	ASP5+ vs. no ASP use	ASP5+ vs. fewer than 5 hours/week ASP
Child is African-American	0.486**	0.760**	0.274
	(0.168)	(0.193)	(0.223)
Single parent, not employed	0.209	-0.469	-0.678
	(0.364)	(0.318)	(0.464)
Two parents, both employed	-0.293+	-0.177	0.116
	(0.175)	(0.160)	(0.215)
Two parents, 1+ not employed	-0.567**	-1.482**	-0.915**
	(0.211)	(0.306)	(0.355)
# of non-parental adults in household	-0.149	-0.268*	-0.119
	(0.124)	(0.115)	(0.159)
Near poor (100 – 200% poverty ratio)	0.194	0.161	-0.034
	(0.232)	(0.264)	(0.321)
Not poor (200%+ poverty ratio)	0.281	0.169	-0.112
	(0.225)	(0.245)	(0.301)
Child has child care subsidy	0.931**	0.487	-0.444
	(0.322)	(0.360)	(0.414)
Child's age	-0.013	-0.129**	-0.116**
	(0.031)	(0.028)	(0.039)
Child is male	0.047	0.089	0.042
	(0.130)	(0.120)	(0.167)
# children in household 0-5 years old	-0.027	-0.041	-0.014
	(0.187)	(0.124)	(0.223)
# children in household 6-17 years old	-0.109	-0.192*	-0.083
	(0.087)	(0.081)	(0.116)
Mother has high school degree	-0.166	-0.134	0.032
	(0.356)	(0.396)	(0.494)
Mother has some college or more	0.112	-0.121	-0.233
	(0.390)	(0.382)	(0.509)
Neighborhood: % children in poverty	-0.085	-0.019	0.065
	(0.084)	(0.084)	(0.107)
Neighborhood: 6 - 15% minority (ref = <6% minority)	-0.119	0.078	0.197
	(0.174)	(0.189)	(0.245)
Neighborhood: 16 – 40% minority	-0.116	0.208	0.324
	(0.178)	(0.181)	(0.239)
Neighborhood: 40+% minority	0.464*	0.459+	-0.005
	(0.225)	(0.254)	(0.310)
Neighborhood: Urban	0.032	0.373+	0.342
	(0.164)	(0.194)	(0.239)
Constant	-2.035**	-0.612	1.423+
	(0.643)	(0.634)	(0.851)
N	5,776	5,776	5,776

Source: National Household Education Surveys, 2005.

Notes: Analysis sample is children ages 6 – 12 in the 2005 NHES. + p. <0.10, * p. <0.05. Standard errors in parentheses. Coefficients are not odds ratios (<0 is a negative association, >0 is a positive association).

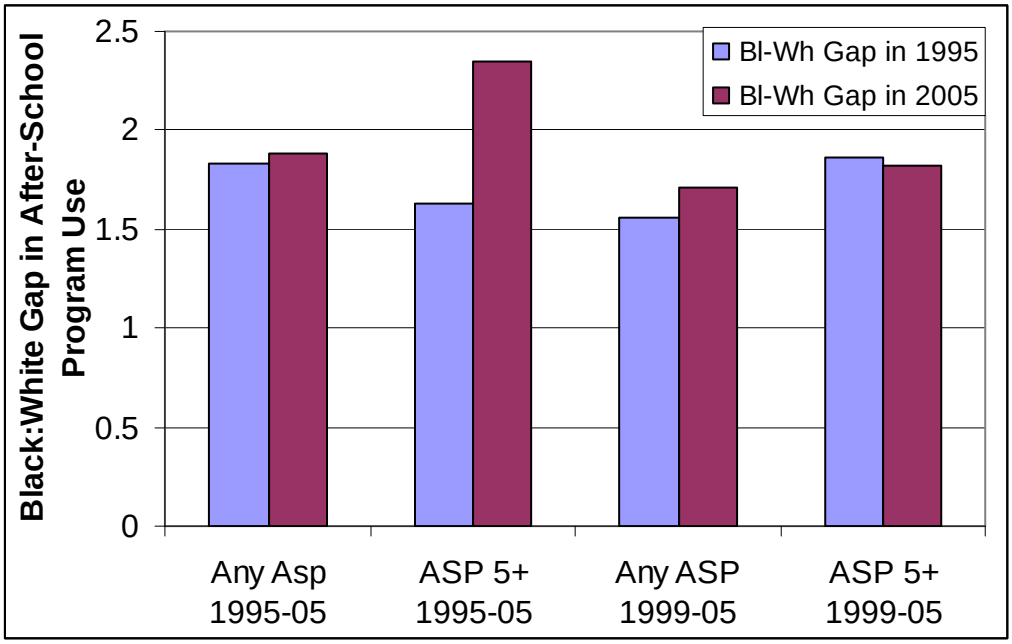
Table 6. Excerpts from logistic regression models examining growth in race gap, NHES

	Children 6 – 9 NHES 1995 – 2005		Children 6 – 12 NHES 1999 – 2005	
	Any ASP	5+ ASP	Any ASP	5+ ASP
Year is 2005	2.196*	1.307+	1.048	0.974
	(0.307)	(0.203)	(0.073)	(0.086)
African-American	2.072*	1.779*	1.577*	1.596*
	(0.345)	(0.326)	(0.181)	(0.211)
Year*African-American	1.253	1.716*	1.315+	1.287
	(0.297)	(0.459)	(0.202)	(0.225)
N	6,747	6,747	12,860	12,860

Source: National Household Education Surveys, 1995 – 2005.

Notes: Models compare the earliest year (1995 or 1999) to 2005. Data from 1999 and 2001 are excluded. All models include full set of controls, except whether the child had a child care subsidy (comparable measures are not available in the 1995 and 1999 data). + p. <0.10, * p. <0.05. Standard errors in parentheses. Coefficients are odds ratios (<1 is a negative association, >1 is a positive association).

Figure 1. Predicted black-white gap in program use, net of family and neighborhood characteristics



Notes: Gap in program use is estimated based on predicted probabilities of program use from logit models similar to those in Table 6. The gap in program use is calculated from the generated predicted probabilities.

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