

Institute for Policy Research Working Paper

**The Black-White-Other Test Score Gap:
Academic Achievement Among Mixed Race Adolescents**

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¹ The author wishes to thank the following people for their comments and assistance in writing this paper: Paula England, Michael Herron, Antonia Randolph, Barbara Schneider, Bruce Spencer, Scott Richman, Susan Herman, and participants in the Sociology of Education seminar at NORC.

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Abstract: This paper describes the achievement patterns of a sample of 1,492 multi-racial high school students and then examines how their achievement fits into existing theoretical models that explain mono-racial differences in achievement. These theoretical models include status attainment, oppositional culture, and educational attitudes. The results show that racial identity and experiences of racism are not strong factors in explaining the achievement of multi-racial or mono-racial students. Instead, the school achievement of multi-racials is related to a mix of the variables present in theoretical explanations for each monoracial group, including SES, peer academic values, and the degree to which a given youth fears the consequences of school failure. Additionally, we find that multi-racial students who self-identify as black or Latino achieve less in school than those who self-identify as white or Asian.

Introduction

Over the last decade, multi-racial and multi-ethnic² people and their racial/ethnic identities have increasingly fascinated researchers in fields ranging from psychology to demography. This heightened interest is the result of changing demographics in the United States. In the 1970's, several years after the last few states repealed their anti-miscegenation laws, one in 100 children born in the United States had parents who were not of the same race. In the thirty years since, that ratio has increased to one in nineteen (National Center for Health Statistics, 1999). Consistent with the relatively new interest in this field of multi-racial identity development and the difficulty of identifying appropriate samples, much of the work that exists is based on small, non-random samples of multi-racial people.

If research in this field of multi-racial identity is in its infancy (metaphorically), research on developmental outcomes for multi-racial youth is still being conceived. This small body of empirical research has focused almost exclusively on mental health outcomes (Rocquemore and Brunσμα, 2002). Researchers who have considered race in terms of other developmental outcomes such as academic achievement, have focused on cultural and environmental factors associated with *monoracial* groups, not multi-racial groups. For example, sociologists of education have documented consistent race differences in academic achievement: Asians and Asian-Americans achieve the highest grades and test scores, on average, followed by non-Hispanic Whites,

² Multi-racial will henceforth refer to multi-racial *and* multi-ethnic.

then Hispanics and African-Americans (Hallinan 1988, Lee 1996, Jencks and Phillips 1998). These differences remain significant even when one controls for the quality and funding of the school, family socioeconomic status, and neighborhood, family and peer group influences (Jencks and Phillips 1998).

As educators and public policy makers struggle with issues of test score gaps between monoracial groups, they have made use of a select group of theories to guide their research and practices. These include status attainment theory (Howell & Friese 1979; Kerckhoff 1976, 1977a, 1977b; Porter 1974; Portes & Wilson 1976), theories of parenting style (Baumrind 1978, Steinberg, Dornbusch & Brown 1992; Dornbusch et al 1987), oppositional culture theory (Fordham & Ogbu 1986, Ogbu and Simons 1998, Ogbu & Davis 2003), and theories about students' attitudes toward education (Mickelson 1990). Because these theories were all developed to explain the achievement gaps between monoracial groups, they do not adequately address the complexities of achievement differences among America's growing number of multi-racial youth. Indeed, almost nothing is known about how and why these differences in achievement or their causes might play out among multi-racial youth. This paper will describe the achievement patterns of multi-racial youth and then examine how their achievement fits into the four abovementioned theoretical explanations of monoracial differences in achievement. These theories of racial variations in achievement represent the current range of thinking on achievement differences because they take into account factors such as background, environment,

culture, and cognitive processes. They lack a physiological perspective, but most of the literature concurs that biological differences between race groups, if they exist at all (King, 1981), do not have a significant influence on the achievement gap between race groups.

Background:

The monoracial test score gap:

Much of the work on ethnic differences in academic achievement focuses on African-Americans and non-Hispanic Whites (henceforth referred to as blacks and whites; see Jencks and Phillips 1998 for a complete review). Hernstein and Murray (1994) aside, this work provides compelling evidence that the test score gap between blacks and whites is environmental, not hereditary. For example, black and multi-racial children who are raised in white homes have higher test scores than those raised in black homes (Nisbett, 1998). Since the 1930s when IQ tests were first administered, scores have risen for all ethnic groups (Flynn 1987; Neisser, 1998) and the gap between black and white IQ scores has decreased over the last century (Hedges and Nowell 1998, and Grissmer, Flanagan, and Williamson 1998). Also, the test scores of blacks raised in adoptive white families decrease relative to their white peers during adolescence (Nisbett, 1998). Thus, there is clear evidence that the environment plays an important and well- documented role in creating achievement differences between race groups.

Explanations for this body of environmental evidence range from ethnic differences in family socialization toward school achievement (Steinberg, Dornbusch, and Brown, 1992) and ethnic differences in the cultural values placed on education (Ogbu, 1978) to perceived or real ethnic discrimination in school by teachers (Mickelson 1990; Carew and Lightfoot 1979; Baron, Tom, and Cooper 1985) and stereotype threat (Steele, 1997). Other explanations point to how assimilation with American culture and school norms affects the achievement of immigrant youth of Asian and Hispanic descent (Suarez-Orozco and Suarez-Orozco, 2001; Lee 1996, Stanton-Salazar, 2001).

There are other sociological explanations for differences in achievement and attainment. For example, the scholars of status attainment (Blau and Duncan 1967, Haller and Portes 1973) show that family socioeconomic status, ability, prior achievement, aspirations, and role models are the most significant predictors of educational and occupational attainment. Though their original research was done on middle and working class white Midwestern boys, more recent research suggests that the impact of these variables on attainment is different for other race and gender groups (Jencks, Crouse, and Meuser 1983; Alexander, Eckland, and Griffin, 1975; Howell and Frese 1979; Kerkhoff and Campbell 1977a 1977b). There is reason, therefore, to question how these variables might behave in a model employing multi-racial subjects.

In contrast to the status attainment literature, Ogbu's (1978) theory of oppositional culture is based on differences specific to certain racial and ethnic

groups. This theory specifies that members of involuntary minority groups such as African-Americans, Latinos, Native Americans, and Asian refugees perceive limited returns to education and racist educational/occupational opportunity structures. Therefore, these students develop resistance to school and the white/middle class cultural achievement standards they perceive to be controlling the school. The result is a peer group that imposes negative sanctions for academic achievement and depressed grades for involuntary minority group students. One problem with Ogbu's explanation is that it assumes that the experiences of the race groups are culturally specific, identifiable, and different.³ Ogbu argues that the factors deterring black students' academic achievement are rooted in the African-American culture and its rejection of the mainstream white middle class culture. Similarly, Ogbu would argue that the factors deterring Latino student achievement are rooted in the Latino culture and the history of its relationship to white culture; that Native American culture and the history of its relationship to white culture affects the ability of Natives to excel in school, and so forth. Although his theory is explained in terms of differences in the ways involuntary and voluntary minority group members approach school, the explanation for the differences is rooted in specific cultures such as African-American culture, Latino culture, etc. While Ogbu's theory was not designed to explain the experiences of mixed race individuals, it does not readily suggest such an explanation. Thus, scholars looking for a more parsimonious and scope-

³ Other scholars have expressed different reservations about Ogbu's thesis, for example Ainsworth-Darnell and Downey 1998.

free theory are left to develop a hypothesis that would address this theoretical gap.

Mickelson (1990) attempted to fill just this gap when she proposed her theory of concrete and abstract beliefs. She showed that Ogbu's findings about academic performance among involuntary minorities can be explained by differences between blacks and whites in concrete beliefs regarding the chances for educational and occupational success. While nearly all students hold the abstract belief that achievement in school is important to success in life, Mickelson showed that black students are much more likely to have pessimistic concrete beliefs about their own personal abilities to secure the economic benefits of increased education. Her findings have been replicated on other monoracial samples (Steinberg, Dornbusch and Brown, 1992; Dillingham 1980) and so it is reasonable to think similar results might be found among the multi-racial sample. However, nobody has tested Mickelson's, Ogbu's, or any of the other theories listed above among a multi-racial sample.

Multi-racial achievement

The little research that exists on developmental outcomes for multi-racial students focuses on testing a 75-year-old theory developed by sociologists Robert Park (1928) and Everett Stonequist (1935). The "Marginal Man" theory suggests that biracial people are more prone to low self-esteem and its attendant problems because they are marginalized and isolated from "both" monoracial

groups. Park (1928) gives ethnographic evidence of this isolation among mixed race people though no evidence of its impact on achievement. Some developmental psychologists have examined the self-esteem of multi-racial people and report that there is no psychological disadvantage associated with a multi-racial background (Phinney and Alipuria 1996, Field 1992, Grove 1991 Cauce et al, 1992) though others support the Marginal Man theory that multi-racial people are troubled and marginalized (Berzon 1978, Nakashima 1992, Gibbs 1987, Sommers 1964, Tiecher 1968).

The Marginal Man theory provides a compelling, though discomforting, explanation for poor treatment of multi-racial people in our society. Namely, social distance between racial groups causes biracial people to be marginalized by “both” groups because they have trouble finding a status group with which they can identify fully. Modern sociologists have found little support for Park’s theory, however. Social distance between groups does not consistently affect the test score gap among multi-racial high school students, rather racial self-identity has a strong impact on individual academic performance (Harris 2000, Kao 1999).

A different argument about the outcomes of multi-racial people derives from an uncomfortable social norm in American society: the one-drop-rule, also known as the norm of hypodescent. This norm, developed in the era of slavery in the southern United States, essentially stipulates that a multi-racial person is assigned to the group with the lowest social value among the race groups

represented by his/her ancestry (see Root, 1997 for a full description). Similar social norms governing racial and ethnic relations indicate that Black Americans fall at the bottom of the social hierarchy, followed by Latinos and Asians, with non-Hispanic northern Europeans at the top. Combining these norms, one can derive the hypothesis that mixed race people, especially to the extent that they have any Black ancestors, will fall toward the bottom of the social hierarchy and experience similar treatment as “monoracial” Blacks.

Indeed, the way one is treated has an important impact on self-identification in the sense that if one is perceived as black, one is treated as black and is likely to self-identify as black (Herman, 2001). Of all mixed-race youth, those with some black or Latino heritage are far more likely to report (on a survey) being black or Latino than those with some white heritage are to report being white or those with some Asian heritage are to report being Asian. Therefore, I argue, being treated as black leads to a racial identification and set of developmental outcomes for part-black biracials that is very similar to those for monoracial black youth. If membership in a lower status race group is related to lower school performance for monoracial black and monoracial Latino youth, it is logical to wonder whether the same achievement relationship is found among multi-racial youth who *identify* as Latino or African-American.

The achievement of multi-racial students may be similar to that of the race group(s) with which they identify and/or it may be similar to the achievement of the race group in which others perceive them to be. All people, regardless of

racial background, are treated according to certain stereotypes (Cohen 1972, Aronson et al 1999). Adolescents, particularly those subject to negative racial stereotypes, find themselves either having to live up to the stereotypes or actively deny them (Lee 1996; Brown, Hamm, Herman, and Heck, 2003). This process of reacting to stereotypes is probably more complicated and potentially more difficult for multi-racial youth because they are subject to the stereotypes of multiple groups. However, actively denying the multiple stereotypes that apply to multi-racial youth can cause them to downplay the significance of race altogether and increase the significance of other influences on their behavior (Gaskins 1999). For example, rather than being expected to join an ethnically specific peer group, multi-racial youth may make more active decisions to identify with a particular reputation or activity-based peer group. Choosing one's peer group is an option for both monoracial and multi-racial youth, but multi-racials have more choices because of their multiple statuses. Whatever stereotypes are associated with the chosen group then come to apply to the multi-racial person.

This group of ideas leads to several testable hypotheses:

1. Multi-racial students with some black or Latino ancestry have lower achievement than multi-racial students with no Black or Latino ancestry.

2. Among multi-racial students with some black or Latino ancestry, those who *self-identify* as black or Latino have lower achievement than those who self-identify as white or Asian.
3. As with monoracial students, racial identity is a strong factor in explaining the achievement of multi-racial students.
4. Unlike monoracial students, racial identity is not particularly salient to multi-racial students in terms of academic achievement; other variables are much more important.

Data

Sample

The survey population used in this study consists of all students in nine high schools in California and Wisconsin between 1987 and 1990. The survey was originally designed to study parenting styles, peer interaction, and academic achievement but the questionnaires also included many items relevant to the study of race and ethnic identity (Steinberg 1996). The survey sample included all students who were present in school on the day the survey was administered except for a small percentage which refused to participate and those whose parents denied consent to participate.⁴ Usable questionnaires were obtained from approximately 80% of potential respondents. Herman (2001) provides details about the biracial subsample and its demographic characteristics. Of the 10,275 respondents, 8,732 (85%) reported a race for themselves and for both

⁴ Steinberg et al. (1992a) provide details on the survey, its administration, and resulting minor biases in the sample. .

biological parents. Of the respondents who completed the items for their own and their parents' race, 1,496 (16.9%), were designated as biracial based on the reports of their parents' race(s). Table 1 shows the breakdown of biracial groups and the responses of multi-racial adolescents on the forced choice race question ("which race best describes you?"). Because respondents were only given a mono-racial option, it is not possible to determine which multi-racial respondents claim a multi-racial identity and which do not. However, it is possible to compare multi-racial respondents who make different mono-racial claims.

***** Table 1 approximately here *****

Measures

Each theory of achievement described above suggests a regression model predicting achievement over time. The status attainment model variables include student-reported mean years of parents' education (SES), academic orientation of peers, educational aspirations, fatalism, school deviance, and prior achievement (grades). (See appendices A and B for a verbal and statistical description of these and other variables used in this study).

Because Ogbu's (1978, 1986, 2003) work is ethnographic, measuring the concepts associated with the oppositional culture hypothesis using survey items is challenging. However, the variables in my oppositional culture model capture many of Ogbu's central concepts including educational expectations, school

engagement, perceptions of ethnic discrimination by peers, teachers, and other adults, minority peer group membership, and positivity of feelings about ethnic identity.

Mickelson's (1990) argument about the negative effects of pessimistic concrete beliefs on *black* students' achievement suggests a test among *multi-racial* students: do those multi-racial students who have some black ancestry have more pessimistic concrete beliefs about their own 'personal chances to succeed, given a good education'? Mickelson's concepts of abstract and concrete beliefs map reasonably well onto my survey data using a question examining the difference between worrying about the occupational consequences of oneself not getting a good education (concrete belief, focused on the individual) and being convinced that getting a good education will help one secure a good occupation (abstract belief, true for everyone). In addition to concrete and abstract beliefs, Mickelson's model and my tests of it include variables measuring socioeconomic status, effort in school, and peer academic values.

Finally, I put together a model that I think works best for the unique situation of biracial youth. It includes aspects of each theoretical model that pertain best to biracial youth and omits ones that seem more suited toward monoracial youth. Because biracial youth have no single racial identity, they may be less focused on their racial category as an indicator of their own and others' expectations for their academic achievement. Instead, they react somewhat to

others' perceptions and categorizations of them, to the ethnic peer culture they choose (as opposed to the single ethnic peer culture monoracial youth are assumed to experience), and to their unique perceptions of the potential they have to achieve in the wider social structure. These variables are collected in what I call the "contexts" model. It is loosely based on work showing that the contexts of home, school, neighborhood, and peer group are associated with achievement among adolescents (Cook et al, 2002), but it focuses on the ethnic aspects of each of these contexts rather than their overall quality.

As an outcome variable measuring achievement, I use student-reported grades. The fact that the grades are self-reported makes them slightly unreliable compared to transcript reports of these variables. However, separate analyses of these data (Dornbusch 1994) comparing student reports to transcript information for a sub-sample of the students showed that student-reported grades by middle and upper ability students are mostly accurate (correlation of .76) while those with GPAs below 2.0 tend to inflate their grades somewhat. The grades variable is the average of four student-reported grades (social studies, English, math, and science). The current paper uses the first year grades as a control variable and the second year grades as an outcome.

Methods and Results

The first hypothesis is that students who have some black or Latino ancestry have lower grades than those who do not. To test it, I compare the

descriptive statistics for all the groups' grade point averages. Figure 1 provides some support for this hypothesis insofar as the average grades of all groups with some black and or Latino heritage are considerably below the sample mean of 2.778 and all but two are significantly below it ($p < .01$). Furthermore, the black-Latino group has the lowest grades of all groups and it is considerably below the average of both the monoracial black and monoracial Latino groups. Black-Latino students may be suffering under the double burden of whatever negative effects membership in each of these two race groups has on educational achievement.

*****Figure 1 about here*****

The second hypothesis is that biracial students who identify as black or Latino have lower grades than those who self-identify as Asian or white. To test it, I compare the grades of students in the same biracial category who self-identified differently. The comparison, in table 2, shows that the hypothesis is supported for some of the biracial groups. For example, the top section of table 2 shows that Latino-white students who identify as Latino have significantly ($p < .001$) lower grades (average GPA = 2.37) than those who identify as White (2.70). White-identifiers also have significantly higher peer academic values than the Latino-identifiers. The fourth section of table 2 shows that black-Asian students who report being black have significantly lower grades (2.14) than those

who report being Asian (3.5). There are no significant differences between the grades of Asian-Latinos who report being Asian and those who report being Latino, but the academic aspirations of the Asian-reporters are significantly higher. Similarly, section two shows no significant differences between black-white students who identify as black versus white on variables related to academics though there are some differences related to ethnic identity. The grades of Asian-whites who identify as Asian (3.15) are significantly higher than those who identify as white (2.76). There are no significant differences in the grades of black-Latinos who report being black and those who identify as Latino. Thus, having black or Latino ancestry and self-identifying as black or Latino are both associated with decreased grades relative to not having or self-reporting these racial statuses.

***** Table 2 approximately here *****

Biracial vs. monoracial groups

The third and fourth hypotheses examine whether ethnic identity is a strong factor in explaining achievement among multi-racial students. In particular, I was interested to compare the strength of ethnic identity as a factor in predicting achievement among multiracial versus monoracial students. In order to test these hypotheses, I began by checking to see whether the multi-racial subset should be disaggregated from the monoracial subset using a

statistical test for pooled significance. This test employed an autoregressive change model regressing grades at time 2 on: grades at time 1, SES, importance of ethnic background, educational aspirations, fears of the consequences of failing in school, and a biracial dummy variable. These variables represent the major concepts from each of the theoretically driven models described above⁵. The biracial dummy variable indicates whether the respondent is biracial but does not distinguish among the different biracial categories. The coefficient for this variable acts as an indicator of whether the multi-racial subset is significantly different from the monoracial subgroup to which it is being compared in this model. The results (presented in Table 3) show that multi-racial subset is significantly different from the monoracial black group and the monoracial Asian group. The multi-racial subset can therefore be disaggregated from these two monoracial groups in testing the third and fourth hypotheses that ethnic identity matters differently for multi-racials versus monoracials.

*****Table 3 about here*****

Thus, in assessing my third hypothesis about the effects of ethnic identity on achievement, it is evident that having positive feelings about one's ethnic group is positively associated with achievement only among monoracial Latinos and monoracial whites. Achievement among blacks and Asians positive ethnic

⁵ Results of this and all the other models are the same with and without including gender as a variable.

identity is not significantly related to ethnic identity. Furthermore, adding the interaction effect to the main effect of ethnic identity within the white and Latino columns in Table 3 shows that ethnic identity is not significant in predicting achievement among biracial groups. If not ethnic identity, then what *does* predict the achievement of biracials? The fourth hypothesis examines this question and to test it, I look to existing theories of achievement. The models in this theory section are also auto-regressive change models, estimated in two different ways. First, I estimated a single model for each theory that included dummy variables for each race group, main effects for each theory, and interactions of each race group with each main effect. These models allow meaningful comparisons across race groups. For a more parsimonious presentation, however, I estimated the models separately by race group. The results are substantively identical, very similar statistically, and I have noted in the text where the two approaches differ.

Theory-driven models

*****Table 4 about here*****

Status attainment

According to the status attainment theory and its associated empirical literature, one would expect a weak but positive association between socioeconomic status and academic performance. In contrast, one would expect

a stronger positive association between aspirations, peer values and educational performance or attainment (Haller and Portes, 1973). Haller and Portes' findings are based on a midwestern white male sample gathered in the 1950s. Kerkhoff and Campbell (1973) found that this model does not fit a black sample very well and that previous school achievement, fatalism, mother's education and current disciplinary record are much more important than father's education in predicting attainment among blacks. In my version of the status attainment model, I have included comparable measures of all the variables in both the Wisconsin model and the Kerkhoff & Campbell model.

I was able to replicate Haller and Portes' original findings among whites (see Table 4). Kerkhoff and Campbell's model fits well for whites, also. These findings indicate that the factors predicting attainment in my sample are comparable to the original findings, at least in direction and significance (effect sizes vary somewhat). Both demographic and social psychological variables are significantly related to the achievement of white students. Fatalism has no significant impact on grades, but school deviance has a significant negative impact. In contrast to monoracial whites, none of the predictive variables in the model has a significant relationship with achievement for blacks except prior gpa which gives less of a boost to black achievement than it does for white students. These findings hold regardless of whether the Wisconsin model or the Kerkhoff & Campbell model is employed. Prior gpa is also significantly related to Asian achievement, along with aspirations and peer values, though these latter two are

not significant in the interactions model. The grades of monoracial Latino youth are negatively related to school deviance; also, educational aspirations are significantly related in the interactions model though not in the model presented here. The status attainment model fits quite well for biracial youth: nearly every variable is significantly related, in the expected direction, to achievement.

Oppositional Culture

Ogbu's (1986, 2003) ethnographic work on oppositional culture suggests that involuntary minority youth (blacks and Latinos in this sample) have lower achievement than whites and Asians as a result of having low educational aspirations, peer values that denigrate educational achievement, disengagement from school, and a strong sense of identification with the ethnic group. My quantitative model attempts to test Ogbu's theory using the following variables to instantiate his concepts: educational aspirations, peer educational values, class cutting, effort put forth in school, and feelings about ethnic background. Because other theorists of race and achievement suggest that racism is to blame (Carew and Lightfoot 1979; Baron, Tom, and Cooper 1985), I also included a variable measuring perceived ethnic discrimination by teachers, peers, and others (racism) in my model. If Ogbu's theory is correct, I would expect that ethnic discrimination and class cutting would have a significant negative relation to grade point average while the remaining variables would have a significant

positive relationship among black and Latino youth but not among whites or Asians.

In contrast to Ogbu's findings, my results show that with the exception of class cutting, none of the oppositional culture variables has a significant relation with later grades among monoracial black youth. Even without prior grades in the model, only educational aspirations and class cutting are significant.

Contrary to Ogbu's contention that the grades of blacks students suffer when these students identify strongly with their racial group, black students' grades are not related to their feelings about ethnic identity. In contrast, however, having a positive ethnic identity *boosts* the grades of Latino students (also involuntary minorities). Perceived ethnic discrimination does not affect the grades of any of the ethnic groups. Having friends with academic values helps the grades of whites, Asians and biracials, but not blacks or Latinos. The Latinos in my sample are mostly Mexicans and Puerto Ricans; as such they would fit with Ogbu's classification of involuntary minorities. Yet the overall evidence from the groups in this study does not support Ogbu's theory.

Educational attitudes

An alternative to Ogbu's theory by Mickelson (1990, 2003?) suggests that it is not oppositional culture that sets involuntary minority youth apart from culturally dominant whites. Rather, minority youth believe that they face a racist job market and that this belief shapes both their academic aspirations and their

achievement. The black youth in Mickelson's study espouse the belief that education generally helps people to realize greater occupational returns, but for themselves, personally, they do not expect education to pay off well and therefore apply themselves commensurately at school. Mickelson calls this paradox the difference between abstract and concrete beliefs: everyone holds the abstract belief that education is the key to success, but blacks hold more pessimistic concrete beliefs about the effects of education on their own personal attainment than do members of the majority group or voluntary minority groups. Thus, she predicts that those who hold pessimistic concrete beliefs about the effects of education on their own attainment will do worse in school than those who have optimistic concrete beliefs. Her own data support this interpretation.

Steinberg, Dornbusch and Brown (1992) also tested Mickelson's hypothesis using a variable that measures the extent to which a respondent believes that failing to get a good education will hurt his/her chances of getting a good job (concrete belief). They found that this belief is strongly associated with academic achievement whereas believing that getting a good education will increase one's chances of getting a good job (more of an abstract, universal belief) was not significantly associated with achievement because there was so little variation among respondents on latter measure.⁶

My model testing Mickelson's theory employs the same Steinberg et al. (1992) measures of concrete and abstract beliefs along with peer educational

⁶ In contrast, Steinberg et al. found wide variation on the concrete belief measure, the extent to which students feared the consequences of failing to get a good education.

values. The results show that of these variables, only prior grades and effort in school are significant in predicting the grades of monoracial black students. That is, neither concrete nor abstract beliefs as measured here have a significant impact on the achievement of black students. However, concrete beliefs are significantly related to grades for biracials, monoracial Latinos, and monoracial whites. Thus, my results show some support for Mickelson's theory insofar as concrete beliefs (as instantiated here) are associated with grades for some ethnic groups.

A contextual model

Research suggests that changing contexts and the passage of time affect the ethnic identity of mixed-race people (Root 1997). Extrapolating from contexts as a source of variation in identity, it is logical to think that contexts may also have an important effect on the achievement of biracial youth. Four contexts with a significant impact on adolescent development are: the peer group, the school, the family, and the neighborhood (Cook et al, 2002). Cook et al's research focuses on the quality of each context but in my instantiation of the contexts model, I chose variables that represented racial/ethnic aspects of each context and variables for which there was significant variation across races. For the family context, I used behavioral control, involvement in school, and psychological autonomy granted by parents, measures on which there is statistically significant variation across race groups. Similarly, for neighborhood context, I used racial and socioeconomic composition derived from 1988 census

data. For school context, I used the percentage of whites among the student body and school deviance. For peer group context, I used membership in an ethnic crowd and academic peer values. The results show that the racial/ethnic aspects of contexts are important factors in achievement among adolescents, particularly for biracial youth. The strongest context seems to be neighborhood, where the results indicate that biracial youth in higher SES neighborhoods have significantly higher achievement. The racial composition does not have an effect on achievement in any race group. However, the school context variables (percent white in school, and school deviance) were also significant predictors of biracial achievement, as were the peer crowd context variables of peer values and minority peer crowd membership. The family context variables measuring parenting styles were not particularly effective in predicting biracial achievement although they did well for Asians: exercising behavioral control and granting psychological autonomy boosts the grades of monoracial Asians.

Disaggregating biracial groups

Although it is necessary to achieve statistical significance, it is somewhat unsettling to group all the biracial groups in one large biracial category. Separating the biracial groups from each other results in such small groups that it is impossible to make any significant statements about any individual group. However, it is possible to compare the biracial subgroups to their component monoracial groups in order to understand differences in the determinants of

achievement among, for example, biracial black-Asians and monoracial blacks. Thus, the last set of models compares each multi-racial group and its component monoracial groups using the theories presented above. This group of models is set up just like the theoretical models used above but each one includes a dummy variable for the biracial category in question and is estimated on a single biracial group with one of its monoracial components at a time. For example, the status attainment model, estimated on a sample of black-white biracials and white monoracials, regresses grades at time 2 on black-white biracial status, gpa1, ses, ethnic identity, peer values, and academic aspirations.

The results (not presented) show that the only biracial group that is statistically significantly different from its component monoracial groups is black-Asians. These youth have higher grades than those of monoracial blacks and lower grades than monoracial Asians. Perhaps the large social distance between monoracial blacks and Asians in the school context accounts for these significant differences but it seems more likely that the lack of other significant differences in this set of models is due to sample size.

Discussion

This study examines achievement among biracial and monoracial youth paying special attention to existing theories about the achievement gap between race groups. These findings demonstrate that the hierarchy of achievement by race among multi-racial groups is comparable to the hierarchy within monoracial

groups: part-black and part-Latino youth fare poorly compared to part-white and part-Asian youth. Furthermore, multi-racial students who self-identify as black or Latino achieve less in school than those who identify as white or Asian. Yet, unlike much of the literature on race differences in achievement, this paper shows that racial identity is not as strong a factor in explaining the achievement of multi-racial *or* mono-racial students. Only among Latino and white students is ethnic identity a strong factor and it has a positive relation to achievement. If not ethnic identity, then what factors predict achievement among biracial students?

The analyses in this paper show that biracial youth, like monoracial Asian and white youth, achieve more in school when they have peers who are invested in the education system. Like whites and Latinos, biracial youth are stronger achievers when they fear the consequences of failing in school or engage in school deviance. Furthermore, biracial youth seem to respond more to the contexts they live in, particularly their neighborhoods and peer groups.

However, biracial youth are, at best, a poorly aggregated amalgam of mixes and types. It is important to consider the subgroups separately, as well as the whole subsample of biracial youth. Indeed, the only good reason to consider them as a whole group is because statistical tests show that not all of the biracial subgroups can be disaggregated from their component monoracial groups.

Subgroup analyses show that only black-whites and black-Asians are significantly different from their respective monoracial component groups. To those familiar with the one-drop rule and the racial hierarchy of the United States,

this finding should come as no surprise. Part-blacks have less choice in the formation of their ethnic identities because society imposes the one-drop rule and prevents their choosing other identities more than it does part-Asians and part-Latinos. This conjecture is consistent with the fact that the outmarriage rate is lower for blacks than Asians or Latinos; essentially, blacks are more constrained in their social choices related to race than Asians and Latinos (Goldstein 1999).

The conjecture is also consistent with my finding that there are no significant achievement differences between black-white students who identify as black versus white: with respect to academic matters, black-whites are probably considered and treated as blacks by their teachers and peers. The implications of this conjecture for minority student achievement are serious. Recent research on the test score gap shows that minority students do better in school when they have more encouragement and less demandingness from teachers (Ferguson, 2002). Other research shows that students take schoolwork more seriously to the extent that they consider evaluations of the work to be soundly based; yet the evaluations teachers give to black and Latino students are less soundly based than those given to white students (Natriello and Dornbusch 1984). To the extent that teachers treat multi-racial students as they do monoracial minority students, the policy implications would clearly be in favor of more teacher professional development training in the area of race and achievement. Groups like the Minority Student Achievement Network, a consortium of 15 suburban school

districts with heterogeneity in race as well as achievement are working on such training and development among teachers.⁷

The results of this paper show that the research on achievement and attainment, regardless of the race of the subject pool, misses some important concepts that would explain achievement among non-whites and those of mixed heritage. For example, the four theories analyzed in this paper all predict that expectations of educational attainment play a role in achievement and yet the findings in this paper show that expectations explain considerably more among a white sample than a mixed or non-white sample. We need better theories of both minority achievement and biracial achievement.

To test such theories we need adequate datasets. Research on mixed race youth suffers from a lack of large representative samples with good measures of racial identity and behavioral outcomes. We need a sample that includes enough of each biracial group to do meaningful comparisons between groups. We need surveys that explore students' self-identity allowing a mixed option along with choosing a default single best-race category. Ideally, such a survey would also include questions that assess all the theories of achievement differences discussed in this paper along with other current theories such as differences in achievement motivation across race groups (Ferguson, 2002). Hopefully, such research would allow for a more nuanced test of the theories and a retest of the two main findings of this paper: that the average achievement of

⁷ For more information, see www.msanetwork.org

individual biracial groups falls somewhere between the means levels of their component monoracial groups' achievement, and that ethnic identity is not a particularly salient factor in explaining the achievement of multi-racial youth.

Because existing theories of achievement do not adequately explain the differences between monoracial groups, perhaps considering multi-racial youth will help researchers develop better theories. Clearly, culturally specific theories only explain a small portion, if any, of the achievement gap between race groups. Theories that consider factors such as motivation, encouragement, and evaluation styles may be the way to advance our understanding of this crucial question of what, after controlling for typical background and environmental characteristics, explains the remaining differences in achievement across race groups and multi-racial groups.

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Table 3: Disaggregating biracials from each monoracial group

	White		Black		Asian		Latino	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Biracial	-.015		.077 **		-.044 *		.028	
GPA1	.643 ***		.564 ***		.666 ***		.579 ***	
SES	.045 ***		.052 *		.006		.027	
Positive feelings about ethnic group	.040 **		-.034		.006		.139 ***	
Academic aspirations	.078 ***		.071 *		.065 **		.046	
Concrete beliefs	.071 ***		.091 ***		.062 ***		.122 ***	
Biracial*positive feelings about ethnic group	-.033 *		.025		-.021		-.110 **	
N	3341		982		1387		1164	
R2	.527		.405		.554		.417	

* p < .05 ** p < .01 *** p < .001

Table 4: Theoretical Models predicting GPA2, by Race group

	White		Black		Asian		Latino		Biracial	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Status Attainment										
GPA1	.648	***	.459	***	.696	***	.533	***	.585	***
SES	.051	***	.082		-.013		.043		.032	
Peer academic values	.047	***	.001		.078	**	.036		.093	**
Academic aspirations	.083	***	.036		.073	*	.034		.088	*
Fatalism	-.030	*	-.012		-.041		.063		.040	
School misconduct	-.053	***	-.039		-.015		-.175	***	-.088	**
N	2579		271		655		433		625	
R2	.534		.230		.546		.343		.460	
Oppositional Culture										
GPA1	.644	***	.452	***	.710	***	.485	***	.619	***
SES	.051	***	.083		-.009		.021		.032	
Peer academic values	.041	***	-.007		.078	**	.057		.108	***
Academic aspirations	.076	***	.044		.077	**	-.008		.082	*
Positive ethnic ID	.031	*	-.023		.002		.148	***	-.004	
Perceptions of racism	.005		.075		.037		-.039		-.003	
Cutting class	-.024		.015		.034		-.107	*	.076	*
Effort in school	.049	***	.112	*	.025		.094	*	.027	
N	2628		288		655		397		650	
R2	.534		.225		.546		.353		.456	
Concrete/Abstract Beliefs										
GPA1	.672	***	.456	***	.718	***	.522	***	.608	***
SES	.066	***	.088		-.003		.012		.049	
Peer academic values	.045	***	-.005		.087	**	.054		.104	***
Effort in school	.046	***	.110	*	.009		.095	*	.020	
Concrete beliefs	.062	***	.019		.048		.134	***	.120	***
Abstract beliefs	-.042	**	.004		-.012		-.013		-.005	
N	2667		288		655		433		650	
R2	.532		.223		.542		.339		.462	
Contexts										
GPA1	.672	***	.473	***	.694	***	.517	***	.604	***
SES	.054	***	.112		-.027		.018		.037	
Peer academic values	.046	***	.009		.086	**	.014		.103	***
Minority peer crowd	-.013		-.045		-.046		-.007		-.063	*
Percent white in school	.024		-.077		.053		-.053		.068	*
School misconduct	-.046	***	-.057		.002		-.169	***	-.079	*
Percent white in neighborhood	.011		-.164		.041		.044		-.016	
Neighborhood SES	.019		.071		.030		.045		.121	***
Parental behavioral control	.023		-.107		.103	***	.085		.071	*
Psychological autonomy	.010		-.025		.102	***	-.024		-.042	
Parental involvement	.037	*	-.014		-.010		.034		-.053	
N	2244		174		599		362		625	
R2	.530		.199		.561		.351		.481	

* p < .05 ** p < .01 *** p < .001

Appendix A: the variables used in this study

The GPA variable is the average of eight student-reported grades (social studies, English, math, and science) over two semesters. Year one and year two grades were computed separately.

SES is the average of a respondents parents' years of education scaled as follows: 1 = high school degree or less, 2 = some college, 3 = bachelor's degree, 4 = graduate or professional degree.

The importance of ethnic identity variable measures "how important is it that others know your ethnic background" and the response categories range on a 5 point scale from "not at all important" to "extremely important." The positivity of ethnic identity variable measures "how do you feel about your ethnic background" on a six point scale of "strongly negative" to "strongly positive."

The academic aspirations variable measures "what is the highest level you expect to go in school?" with response categories of: quit high school, finish high school, some college, two year degree, four year degree, and graduate degree.

The academic orientation of peers variable is a response to the question "among your friends, how important is it to a) finish high school, b) get good grades, and c) go to college?" The response categories ranged on a four point scale from "extremely important" to "not at all important."

The parenting style variables include authoritative, authoritarian and permissive parenting styles. These variables are described in detail in Dornbusch, et al., 1987.

The school engagement variables are as follows. Trying hard in school is the mean of answers to four items "How hard do you try hard in a) math, b) English, c) social studies and d) science?" Response categories were "1) every day, 2) a few times per week, 3) once a week, 4) very rarely, and 5) never." The cutting class variable was the mean response to "How often do you cut class?" for each of the four subjects listed above. Responses were "1) never, 2) a few times per year, 3) a few times per month, 4) a few times per week, 5) almost every day."

Perceptions of ethnic discrimination is the mean of responses to the question "how often has a a) teacher b) peer c) other adult been unfair to you because of your ethnicity?" Response categories were on a five point scale of "almost never" to "almost always."

Minority peer group membership is a binary variable indicating whether the respondent would categorize him/herself as a member of an ethnic minority crowd (Asians, Chinese, Filipinos, Mexicans, Blacks, Hispanics, Latinos, Vietnamese, Pacific Islanders, etc.) or a reputation/activity crowd (jocks, brains,

populars, partyers, etc.) See Brown, Hamm, Herman, and Heck (2003) for details.

Concrete and abstract educational beliefs were responses to the questions: “How likely is it that you’ll get the job you hope for if you don’t get a good education?” and “how likely is it that you’ll get the job you hope for if you do get a good education?” Response categories were on a four point scale of “very likely” to “very unlikely.”

Photo appearance was coded from yearbook photos of all biracial respondents. See Herman (2001) for details.

Neighborhood racial and socioeconomic variables were derived from 1988 census tract data corresponding to students’ home addresses (provided by the schools). The variables used were average household income and percent of each race group in tracts.

School deviance is the mean of three items scaled “never, once or twice, several times, or often”: in the past school year how often have you 1) copied homework or a class assignment from somebody else, 2) cheated on a class test, or 3) come to class late.

See appendix B for descriptive statistics by race category.

Appendix B: means and standard deviations, by race group

	<i>black</i>	<i>white</i>	<i>Asian</i>	<i>Latino</i>	<i>black-white</i>	<i>black-Asian</i>	<i>black-Latino</i>	<i>white-Asian</i>	<i>white-Latino</i>	<i>Asian-Latino</i>	<i>Total</i>	<i>N</i>
Psychological autonomy	.742 (.125)	.787 (.126)	.735 (.131)	.748 (.126)	.749 (.143)	.745 (.135)	.722 (.108)	.768 (.128)	.751 (.130)	.756 (.106)	.768 (.129)	7356
Behavioral Control	.754 (.134)	.740 (.127)	.745 (.147)	.755 (.139)	.749 (.137)	.687 (.212)	.708 (.152)	.731 (.137)	.746 (.132)	.726 (.138)	.743 (.134)	7842
Parental involvement	.818 (.112)	.821 (.108)	.789 (.115)	.779 (.119)	.799 (.123)	.770 (.142)	.801 (.114)	.792 (.125)	.797 (.110)	.824 (.104)	.809 (.113)	7486
Percen white in school	.492 (.137)	.574 (.099)	.586 (.081)	.584 (.093)	1.691 (10.532)	3.673 (17.249)	.562 (.112)	3.242 (15.704)	4.514 (18.959)	.616 (.041)	1.148 (7.418)	10255
Percent white in n'hood	.457 (.333)	.856 (.115)	.751 (.143)	.682 (.194)	.711 (.230)	.709 (.276)	.681 (.230)	.784 (.148)	.787 (.141)	.686 (.183)	.784 (.185)	7719
GPA year 1	2.433 (.757)	2.874 (.794)	3.168 (.753)	2.450 (.814)	2.601 (.784)	2.483 (1.098)	2.234 (.865)	2.948 (.768)	2.515 (.831)	2.585 (.795)	2.789 (.829)	9566
GPA year 2	2.496 (.678)	2.929 (.777)	3.142 (.745)	2.528 (.794)	2.593 (.767)	3.182 (.643)	2.292 (.674)	2.952 (.819)	2.605 (.667)	2.594 (.701)	2.850 (.793)	6030
Peer academic values	3.262 (.740)	2.961 (.788)	3.264 (.768)	3.083 (.794)	2.957 (.803)	2.952 (.994)	3.167 (.868)	3.037 (.846)	2.992 (.815)	3.232 (.668)	3.042 (.801)	8311
Perceived ethnic discrim.	1.726 (.807)	1.194 (.459)	1.612 (.717)	1.606 (.798)	1.733 (.954)	2.143 (1.362)	2.056 (1.133)	1.376 (.652)	1.380 (.690)	1.327 (.638)	1.374 (.662)	8992
Class cutting (total)	1.417 (.800)	1.420 (.712)	1.354 (.691)	1.607 (.882)	1.572 (1.004)	2.067 (1.528)	1.997 (1.220)	1.522 (.811)	1.541 (.825)	1.760 (.934)	1.459 (.774)	9617
Trying hard in school	4.006 (.849)	3.805 (.889)	4.019 (.848)	3.998 (.830)	3.637 (.876)	3.494 (1.517)	3.819 (.809)	3.880 (.827)	3.943 (.854)	3.913 (.856)	3.873 (.884)	8389
School misconduct	2.316 (.640)	2.418 (.683)	2.126 (.693)	2.286 (.714)	2.551 (.745)	2.690 (1.042)	2.372 (.779)	2.377 (.727)	2.337 (.692)	2.492 (.679)	2.354 (.701)	7954
Fatalism	.113 (.155)	.117 (.158)	.098 (.157)	.115 (.155)	.111 (.146)	.136 (.199)	.165 (.215)	.108 (.136)	.129 (.162)	.122 (.139)	.115 (.159)	10040
SES (Parent education)	3.109 (.694)	3.401 (.635)	3.262 (.884)	2.375 (1.032)	3.263 (.735)	3.040 (.935)	2.913 (.915)	3.326 (.755)	2.969 (.812)	2.720 (.834)	3.217 (.802)	9088
Importance of ethnicity	2.462 (1.296)	1.814 (.994)	2.472 (1.150)	2.584 (1.268)	2.253 (1.266)	2.700 (1.622)	2.816 (1.409)	2.202 (1.179)	2.290 (1.177)	2.346 (1.064)	2.103 (1.153)	9156
Pos. feelings about ethnicity	4.576 (1.372)	4.510 (1.026)	4.259 (1.246)	4.483 (1.327)	4.333 (1.292)	4.167 (1.642)	4.245 (1.726)	4.211 (1.227)	4.430 (1.180)	4.346 (1.186)	4.462 (1.156)	9101
Educational expectations	4.524 (1.338)	4.782 (1.196)	5.007 (1.113)	4.032 (1.433)	4.763 (1.301)	4.467 (1.717)	4.115 (1.700)	4.855 (1.186)	4.287 (1.358)	4.278 (1.379)	4.665 (1.282)	9992
Concrete beliefs	2.627 (.833)	2.599 (.838)	2.690 (.803)	2.539 (.830)	2.735 (.855)	2.786 (.975)	2.400 (.894)	2.621 (.837)	2.542 (.844)	2.463 (.745)	2.598 (.836)	8562
Abstract beliefs	1.528 (.709)	1.540 (.648)	1.533 (.689)	1.529 (.710)	1.731 (.884)	1.786 (.975)	1.233 (.430)	1.515 (.677)	1.523 (.665)	1.429 (.501)	1.539 (.681)	8594
Minority peer crowd	.104 (.306)	.003 (.054)	.081 (.273)	.148 (.356)	.075 (.264)	.100 (.305)	.154 (.364)	.024 (.153)	.041 (.199)	.109 (.315)	.043 (.202)	11404
N	834	5840	1381	1273	160	30	52	250	461	55	10336	