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# Differences in the Risk of Grade Retention for Biracial and Monoracial Students in the United States, 2010 to 2019

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**Abstract:** Understanding how outcomes for biracial individuals compare with those for their monoracial peers is critical for understanding how patterns of racial inequality in the contemporary United States might be shifting. Yet, we know very little about the life chances of biracial individuals because of limitations in most available data sources. In this article, I utilize American Community Survey data from 2010 to 2019 to examine the risk of being clearly behind expected grade among biracial and monoracial K-12 students, helping to fill a gap in our understanding. With large sample sizes for most biracial groups, I am able to estimate grade retention risk for biracial students with enough precision to differentiate even modest differences in risk relative to monoracial groups. The results indicate that for most biracial groups, biracial students have risk similar to their lower-risk monoracial constituent group. Although biracial students tend to have favorable family resource characteristics, controlling for these characteristics does little to change the overall placement of their outcomes.

**Keywords:** biracial; multiracial; outcomes; grade retention; racial stratification

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THE experiences of mixed race individuals will play an important role in the future of race in the United States. A rise in interracial unions since the 1960s has resulted in a "biracial baby boom" of individuals whose parents cross racial lines (Root 1992), and this demographic surge may have transformative effects on racial boundaries (Hochschild, Weaver, and Burch 2012; Alba 2020). Although racial mixing is nothing new to U.S. history (Morning 2000; Gullickson and Morning 2011), this biracial boom is notable for its size and has occurred in an environment in which historical norms of racial classification may be eroding.

The transformative potential of this biracial baby boom is contingent on both how these biracial individuals identify their own race and how they are sorted into a prevailing system of racial inequality. Although extensive scholarship documents the identification and classification decisions made by or on behalf of multiracial individuals (Xie and Goyette 1997; Herman 2004; Qian 2004; Brunsma 2005; Roth 2005; Bratter and Heard 2009; Holloway et al. 2009; Davenport 2016; Liebler 2016), only a smattering of research has documented how the life chances of biracial individuals compare with those of their monoracial peers (Kao 1999; Campbell 2009; Herman 2009). In this article, I expand on this work by examining the risk of grade retention for kindergarten through 12th-grade (K-12) students whose parents identify with different races.

By examining this outcome, I am able to overcome two important limitations that have hampered prior work on the life chances of biracial individuals. First,

using self-identification of biracial respondents to analyze outcomes is problematic. Prior research indicates that individuals whose parents belong to different races do not consistently identify with both races (Doyle and Kao 2007; Liebler et al. 2017; Gullickson 2019). Furthermore, social status and social mobility can predict racial identification generally (Saperstein and Penner 2012; Saperstein and Gullickson 2013), and social status is related to the identification choices of biracial individuals specifically (Roth 2005; Davenport 2016). Thus, differences in outcomes among biracial individuals may in part produce differences in identification, rather than the other way around.

This problem of reverse causation can be eliminated when researchers have access to the racial identification of a respondent's biological parents. Even when such information is available, however, researchers run into a second limitation of sample size. The samples of biracial respondents in many data sources are too small to make reliable statistical inferences. This limitation is particularly severe for biracial individuals with two non-White parents.

Biracial children who reside with both biological parents can be identified in large-scale data sources such as the Census. Researchers have previously utilized this feature to examine the classification choices made on behalf of these children (Xie and Goyette 1997; Roth 2005). Analyzing outcomes for such children is more difficult, for the simple reason that they do not have many measurable outcomes yet. However, grade retention is measurable and important even for young children. Being held back in school is a relatively common occurrence that has consequences for later educational transitions (Jimerson 2001) and is disproportionately applied by race (Warren, Hoffman, and Andrew 2014). Grade retention is one of the earliest stratifiers of life chances that an individual will experience.

In this article, I use data from the American Community Survey to examine the likelihood of being held back in school for biracial children in comparison with their monoracial peers. Pooling data from 2010 to 2019, I am able to draw a large enough sample to make reliable statistical inferences for most biracial groups, including those with two non-White parents. The results provide a window into the placement of biracial children within an existing system of racial inequality. In contrast to prevailing hypotheses that predict either a pattern of hypodescent or an in-between position for biracial individuals, I find a consistent pattern in which the risk of grade retention is similar to that of the lower-risk constituent monoracial group. This result holds even after adjusting for differences in resources across respondents, despite the fact that most biracial groups are positively selected by parental resources relative to their monoracial groups.

## Where Do Biracials Fit?

How might we expect the outcomes for biracial individuals to differ from their monoracial peers? In every case, the relevant comparison is how a biracial person fares relative to the two constituent groups with which their parents identify. For example, in the case of an individual with one Black and one White parent, we would compare the average outcomes for such individuals with the average outcomes for individuals with two White or two Black parents, respectively. The outcome for

the Black/White group may be similar to one of the monoracial groups, it may be somewhere in between the outcomes for the two monoracial groups, or it may be higher or lower than either of the monoracial groups.

I distinguish three mechanisms that help us understand where biracial individuals might be positioned among these possibilities. First, I consider arguments regarding racial discrimination at both an individual and systemic level. Second, I consider arguments regarding different distributions of resources across racial groups. Third, I consider arguments regarding how the nature of hybridity itself may affect outcomes.

### *Discrimination and Classification*

Discrimination and bias by race play an important role in overall levels of racial inequality (Quillian 2006; Pager and Shepherd 2008). Discrimination need not be consciously recognized by actors but may instead reflect cognitive biases and schema that individuals unknowingly rely upon and reinforce in social interactions (Quillian 2006). Discrimination can also be systemic in nature when biases are built into and reinforced by organizations and institutional systems (Reskin 2012). In our current "color-blind" regime (Bonilla-Silva 2006), such systems may be formally race neutral but produce disparate impacts by race (Pager and Shepherd 2008).

The experiences of biracial individuals within such a system of discrimination depend almost entirely on how they are classified by others. To the extent that biracial individuals are classified as more like one of their monoracial constituent groups than the other, they will receive the same treatment and reap similar rewards or suffer similar penalties.

The strongest historical precedent for understanding such classification in the United States is the "one-drop rule" norm governing classification as Black. According to the one-drop rule, individuals of known Black ancestry are considered exclusively Black, regardless of other ancestries (Davis 1991). Davis (1991) generalizes this practice into the concept of *hypodescent* in which individuals with mixed racial ancestry will be classified as members of the lower status group. A parallel pattern of *hyperdescent* implies that individuals of mixed racial ancestry will be classified as members of the higher status group. This pattern of hyperdescent has historically governed the experiences of individuals with American Indian ancestry (Snipp 1989; Wolfe 2001).

Although the hypodescent/hyperdescent paradigm is often used to frame the experiences of multiracial individuals, its generalizability and contemporary relevance are questionable. Hypodescent and hyperdescent are observed in two specific historical cases involving Black ancestry and American Indian ancestry, respectively. As Iverson et al. (2022) note, these two cases could just as parsimoniously be explained by a "dominance" model that ranks ancestries by their tendencies to be supercessive or recessive in determining identification and classification.

The development of particular norms may also reflect the historical regime in which they were developed (Gullickson and Morning 2011; Iverson et al. 2022). In this case, neither the hypodescent/hyperdescent nor the dominance paradigm may help us to fully understand the experiences of those of Latino and Asian ancestry

due to more recent processes of racialization. Furthermore, the historical norms for all groups may be transforming in the post–Civil Rights era.

If outcomes for biracial individuals all closer to one of their constituent groups, then we may have stronger evidence about such norms of classification. However, what if those outcomes fall in between the two groups? Processes of classification and discrimination could still produce an in-between status for several reasons.

First, racial ambiguity in appearance may lead to more inconsistent classification into single race categories across observers. Even if norms consistently indicate a certain type of classification, correct identification by observers is a probabilistic phenomenon and likely to be more heterogeneous for biracial individuals. As a result, biracial individuals will experience a lower sum total of discrimination and bias affecting the lower status group in the case of hypodescent and will not reap the same rewards as a member of the higher status group in the case of hyperdescent.

Second, biracial people's experience of discrimination may be "softened" because a more ambiguous physical appearance provokes less racial antipathy. The United States already has a long history of this kind of softening. Because of the one-drop rule, Black individuals vary substantially in skin tone, and those individuals with a lighter skin tone have better outcomes (Hughes and Hertel 1990; Keith and Herring 1991; Monk 2014) and are viewed more favorably by both Blacks and Whites (Maddox and Gray 2002). Thus, light skin moderates the stigma of Blackness even among monoracial individuals.

Third, biracial individuals may be classified into an ambiguous "middleman" minority position. This kind of middle tier status for individuals of mixed race is common in Latin America (Telles and Sue 2009), and Bonilla-Silva (2004) has argued that such a system may be emerging in the contemporary United States as well. In this case, many biracial groups may occupy a nebulous and ill-defined middleman or buffer class position in between White and darker-skinned non-White people, helping to cement a new kind of racial hierarchy.

### *Differential Resources*

Racial inequality is at least partly explained by different distributions of material, cultural, and social resources across racial groups (Conley 1999). On average, socioeconomic background (e.g., parental income, wealth, and education) differs by race, and such socioeconomic background is consequential for outcomes. Other less materially defined resources also vary across groups such as cultural styles, social networks, and neighborhood quality. These differences in background resources reflect the accumulation of historical processes of discrimination and, when combined with contemporary processes of discrimination, magnify the overall level of racial inequality we observe.

How do differences in the distribution of resources affect biracial individuals? Naively, we might expect biracial individuals to inherit parental resources roughly halfway between their two constituent groups, on average (Chew, Eggebeen, and Uhlenberg 1989). Prior research looking at biracial children in the Census data has found some evidence to support this argument (Chew et al. 1989). In such a case,

the resources of biracial individuals would predict outcomes in between the two constituent groups, barring other mechanisms.

However, the actual resource position of biracial individuals is likely far more complicated because people are not randomly selected into interracial unions. The relationship between this selection process and a biracial child's outcomes depends on the strength and direction of that selection on each partner, its consistency across different types of unions, and how strongly the selected characteristic predicts outcomes in the next generation.

Status exchange theory predicts that given an unequal racial hierarchy, individuals from a lower status racial group will be positively selected on socioeconomic characteristics into intermarriage with a higher status group, whereas individuals from a higher status racial group will be similarly negatively selected into the same marriage (Davis 1941; Merton 1941; Fu 2001). Prior research has shown substantial evidence of this pattern in the case of Black male/White female marriages in the United States, but weaker evidence for other types of unions (Fu 2001; Gullickson 2006; Kalmijn 2010; Hou and Myles 2013). Even in cases where status exchange is present, its net effect on resources is complex because status exchange positively selects one partner and negatively selects the other partner. Therefore the two effects may somewhat cancel each other out in terms of the overall distribution of resources across parents.

Regardless of the underlying complexity of this selection process, delineating its role as opposed to other mechanisms is key to understanding the overall process that sorts biracial individuals within the racial hierarchy. Although this approach is sometimes characterized as pitting race versus class, that is not the case here. Instead, this delineation allows us to understand how race affects the outcomes of biracial individuals in a multigenerational process.

### *Hybridity*

The experience of hybridity itself may also positively or negatively affect outcomes for biracial individuals. According to "marginal man" theory, biracial individuals will find it difficult to fit in due to the dissonance of an identity that crosses strong and salient racial boundaries (Park 1928; Stonequist 1935). This liminal identity conflict will result in negative mental health experiences that could feed into other negative outcomes as well. Evidence for such negative mental health experiences, however, has been mixed (Udry, Li, and Hendrickson-Smith 2003; Campbell and Eggerling-Boeck 2006; Cheng and Lively 2009; Bratter and Gorman 2011).

Marginal man theorists viewed culture in monolithic and static terms, and thus to be trapped in between two cultures was seen as a difficult experience. Contemporary views of culture instead emphasize the flexible, fragmented, and fluid use of cultural bits that comprise a "toolkit" (Swidler 1986; DiMaggio 1997). From this perspective, biracial individuals may actually benefit from an enlarged cultural toolkit that allows them to navigate a variety of diverse social contexts (Shih et al. 2019).

The complexity of the underlying mechanisms described above prevents simple and straightforward hypotheses regarding the position of biracial individuals.

Different mechanisms may produce the same observed outcome, and the weight of different mechanisms can also vary by groups as these groups may be governed by different regimes of classification. However, comparing outcomes across biracial groups may help us better understand the likely mechanisms involved and to disregard others as implausible. Accounting for the effect of parental resources on outcomes to the best of our ability is also key to reaching any conclusions about the placement of biracial individuals within the racial hierarchy.

## Prior Work

Prior work on the outcomes for biracial individuals has been hampered by several methodological issues. With good reason, researchers have been reluctant to use data in which multiracial or biracial status is determined solely by the self-identification of respondents. We know that far fewer people identify as biracial than could feasibly do so based on their parents' races (Morning and Saperstein 2018) and that various selection effects operate on the decision to identify as biracial among those who could (Roth 2005; Davenport 2016). Furthermore, research on changes in racial reporting over time suggests that other status markers like education and income may influence how people identify themselves (Saperstein and Penner 2012; Saperstein and Gullickson 2013). For example, a person with one Black and one White parent who is routinely treated by others as Black and discriminated against as Black may be more likely to identify themselves as exclusively Black than a similar person of Black and White ancestry who experiences less consistent discrimination. Thus, any analysis of outcomes for biracial individuals based on self-identification must deal with the potential for reverse causation in the observed differences between biracial individuals and their constituent groups (Bratter 2018).

Instead of self-identification, researchers have generally relied upon survey data in which the racial identifications of a respondent's biological parents are provided. Campbell (2009) used data from the National Longitudinal Study of Adolescent to Adult Health (Add Health) to examine high school grades, advanced placement in math, and four-year college enrollment among biracial and monoracial individuals identified by co-resident biological parents' races. Herman (2009) examined differences in grades using data on high school students in California and Wisconsin in which the students reported their parents' races. Both of these studies found some support for an "in-between" status for many biracial groups but were hampered by a lack of statistical power due to small sample sizes. Kao (1999) used data from the National Educational Longitudinal Study of 1988 to examine mathematics achievement scores and grades for biracial students with Black and Asian parentage and found that biracial Black students have outcomes similar to monoracial Black students, whereas biracial Asian students have outcomes more similar to monoracial White students. This study, however, is limited by the fact that biracial students are identified by a discrepancy between their reported race and one parent's reported race, rather than by both biological parents' races.

Results in prior work tend to be inconclusive due to the sample size for most biracial groups. An alternative approach is to use large-scale Census or American Community Survey data to identify biracial children by the race of the biological

parents in their household. This approach can generate much larger samples of biracial individuals. However, researchers then have a limited range of outcomes to explore because biracial individuals identified by this method are by definition children. This approach has been used previously to examine the likelihood of living in poverty (Bratter and Damaske 2013; Bratter and Kimbro 2013) and residential segregation (Ellis et al. 2012). These studies provide valuable information on biracial childrens' lived experience but do not directly measure their own outcomes. However, one important educational outcome is partially identifiable for children in Census and ACS data: grade retention.

Grade retention is the practice of having students repeat a grade due to poor academic performance. Prior work on grade retention has failed to show a positive effect of grade retention on later educational outcomes and has instead found evidence of "scarring" effects that lead to later negative educational outcomes, such as a higher dropout risk (Jimerson 2001; Stearns et al. 2007; Andrew 2014; Hughes et al. 2017). The risk of grade retention also varies substantially by race and class background, with Black and Latino students at particularly high risk of grade retention relative to other groups (Warren et al. 2014).

Because grade retention often happens very early in the K-12 system, it is one of the earliest stratification mechanisms that individuals encounter. For these same reasons, it provides an important window into understanding the placement of biracial children within a racially stratified educational environment. In the remainder of this article, I examine this placement using data from the American Community Survey.

## Data and Methods

Data for this analysis come from the American Community Survey (ACS), an annual 1-in-100 survey of the U.S. population, conducted by the Census Bureau. To increase sample size for smaller populations of biracial respondents, I pool ACS data for a full decade from 2010 to 2019. All data were extracted from the IPUMS USA Version 10 data set (Ruggles et al. 2020).

Ideally, I would restrict the sample to children living in a household with two biological parents. However, although the ACS distinguishes between biological, adopted, and stepchildren, it only records the direct family relationship between the head of household and other members of the household. Respondents can therefore be identified as biological children of another member of the household only if that member is the head of household or the biological child of the head of household. Determining whether the partner/spouse of that biological parent is the other biological parent is more difficult.

Prior work has used a variety of additional restrictions to limit the analysis to children who are more likely to be the biological children of both parents (Saenz et al. 1995; Xie and Goyette 1997). Consistent with this prior work, I restrict cases in two ways. First, I restrict the sample to cases where both parents were of a reasonable age at the birth of the child (aged 15 to 44 for mothers and aged 15 to 60 for fathers). Second, I restrict the sample to those cases where the reported race and Hispanicity of the child is inclusive of at least one of the parents' races.

The final analytical sample consists of children aged 5 to 20 who are currently enrolled in the K-12 school system and live in a household with two parents who are both likely to be biological parents. This necessary sample restriction will bias the family structure of the analytical sample relative to the total population of K-12 schoolchildren. Children living in two-parent nuclear households have greater educational success than other children as a result of material and social resources (Biblarz and Raftery 1999). Therefore, this sample restriction will bias overall estimates of grade retention downward. However, this bias is less problematic for the goal of this study, which is to estimate differences between groups. The sample restriction effectively eliminates differences in family structure across racial groups that may account for some observed differences in grade retention. However, the remaining differences observed here are likely to hold for the full population in the absence of strong racial differences in the effect of family structure on grade retention.

The race of children is calculated by a cross-tabulation of parents' races. To produce reasonably parsimonious categories, I collapse each parent's race into the categories of White, Black, Asian, Latino, and Indigenous. These categories form the "ethnoracial pentagon" that is commonly used in popular practice and government tabulation to identify race in the United States (Hollinger 1995). Parents are identified as Latino based on their response to the Hispanicity question, regardless of their response to the race question. Parents are identified as Indigenous if they responded as either American Indian/Alaska Native or Pacific Islander. Because the goal of my analysis is to examine specifically the outcomes of "first-generation" biracial children, I exclude cases where at least one parent identified with multiple races. The cross-tabulation of parents' races leads to 10 distinct biracial categories. The total sample size for each of these biracial categories is shown in Table 1, along with the sample size of the monoracial comparison groups.

Grade retention is difficult to measure accurately. In most data sources, researchers lack specific reports of grade retention and instead infer grade retention from a discrepancy between a student's reported age and grade. Prior studies have used the concept of a student being behind modal grade (Bianchi 1984; Frederick and Hauser 2008). The most notable limitation of this approach is the ambiguity created by the fact that at any given age, a student may reasonably be in two modal grades. Without detailed information on birth dates and survey timing, the correct modal grade for most students cannot be identified. This issue has been somewhat alleviated in prior work by the use of the October supplement to the Current Population Survey, which is close to the beginning of the school year.

The ACS data do not provide the ability to identify or limit survey timing, so I instead use a related measure of whether a given student is clearly behind expected grade (CBEG). A student is considered CBEG if their age is higher than either of the expected ages for a student of that grade. This measure will underestimate overall grade retention because it will miss students who have been retained but not yet had a birthday in their current grade that would place them CBEG. However, the goal of this study is not to estimate grade retention accurately but rather to understand racial differences in grade retention. Because this bias is largely a function of when students have birthdays, it should be more or less random with regard to

**Table 1:** Descriptive survey-weighted statistics by race

| Race | Sample size | Clearly behind expected grade |
|---|---|---|
| White | 1,703,079 | 3.51% |
| Latino | 386,718 | 5.11% |
| Asian | 146,479 | 2.56% |
| Black | 130,849 | 5.45% |
| White/Latino | 120,369 | 3.13% |
| White/Asian | 38,014 | 1.82% |
| Black/White | 26,829 | 3.86% |
| Indigenous | 16,224 | 7.86% |
| White/Indigenous | 13,689 | 5.25% |
| Black/Latino | 9,578 | 3.93% |
| Latino/Asian | 5,570 | 2.43% |
| Indigenous/Latino | 2,627 | 5.25% |
| Black/Asian | 2,084 | 2.98% |
| Black/Indigenous | 701 | 5.96% |
| Indigenous/Asian | 521 | 2.60% |

*Notes:* Shading indicates biracial group. Groups ordered by sample size.

sociodemographic characteristics. This approach is equivalent to the method used by Rosenfeld (2010) on 2000 Census data, but more detailed information on current grade in recent ACS data allows for more precise estimation. Table 1 shows the percentage of each monoracial and biracial group that is CBEG.

Using grade–age comparisons to infer grade retention may inadvertently capture cases of "academic redshirting" in which parents intentionally delay their child's kindergarten enrollment by a year. Frederick and Hauser (2008) suggest that academic redshirting may, in many cases, be a form of preemptive retention for children with developmental delays, and thus the error induced by these false positive cases may be minimal. However, Bassok and Reardon (2013) have shown that academic redshirting is more common among White and socioeconomically privileged parents, suggesting that the demographic covariates of academic redshirting may operate in the opposite direction of grade retention. Regardless, academic redshirting should be of minimal concern for the measure of CBEG used here. Academic redshirting most frequently occurs for students whose birthdays fall close to the cutoff period for enrollment (Graue and DiPerna 2000; Bassok and Reardon 2013). Therefore, academic redshirts spend most of a given school year at the older, but correct, modal age for their grade, and most of these students will not be identified as CBEG.[1]

My goal is to understand the risk of being CBEG for each biracial group relative to its constituent monoracial groups (e.g., a Black/White student compared with White and Black students). Throughout this article, I use a visual approach to illustrate this placement. As an example, I display the percentages of White, Black, and Black/White students who are CBEG in Figure 1. I display confidence bands/bars around all three point estimates, but these confidence ranges require some explanation as they are not standard 95 percent confidence intervals. My goal is to determine whether the biracial group's point estimate is statistically distinguish-

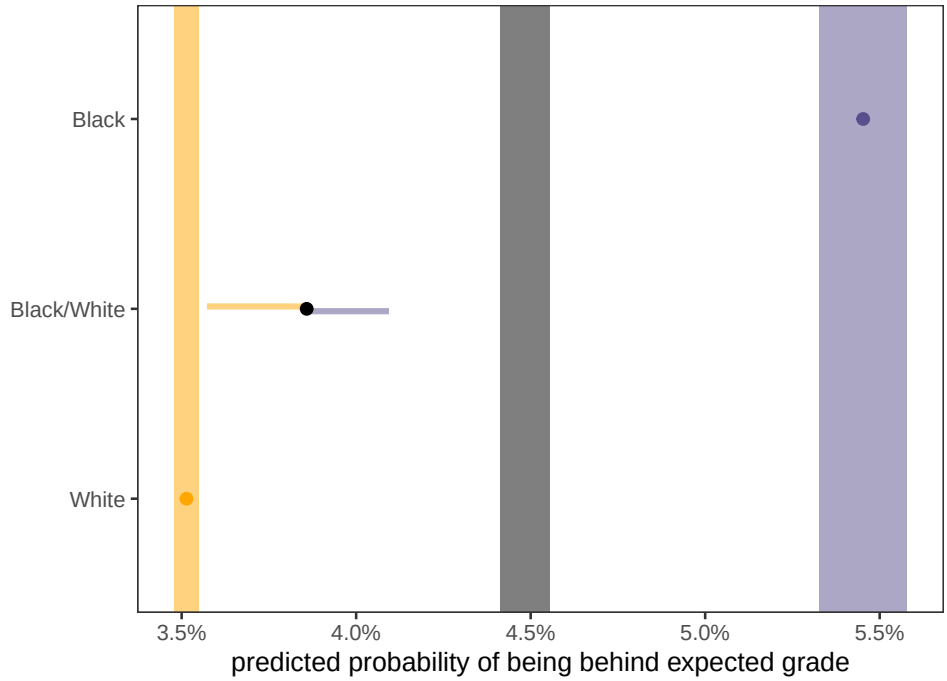


**Figure 1:** Probability of being clearly behind expected grade for biracial Black/White respondents in comparison with their monoracial comparison groups. Non-overlap in color corresponding confidence bands indicates statistically significant difference at the five percent level.

able from a given monoracial constituent group's point estimate by non-overlap of confidence intervals. Overlap in 95 percent confidence intervals is not equivalent to failing a hypothesis test of difference at $p < 0.05$, and when used in this way, such assessments lead to far more stringent tests (Knol, Pestman, and Grobbee 2011). When standard errors between groups are equal, overlap in 83.4 percent confidence intervals will achieve this goal. However, in cases where standard errors vary substantially across estimates, the calculation of the appropriate confidence interval is more complex and varies by each pairwise comparison.[2]

I calculate two confidence intervals for each biracial group. Each confidence interval is in comparison with one of the constituent monoracial groups. These confidence intervals are color-coded in Figure 1 to indicate the reference group. I only draw half-intervals in the direction of the monoracial group's point estimate. Overlap in these color corresponding bars and bands indicates that the difference between the biracial group and the monoracial group is not statistically significant at $p < 0.05$. For example, the yellow bar shown in Figure 1 for biracial Black/White students does not quite overlap with the yellow band for White students, indicating that the point estimates for these two groups are statistically distinguishable at $p < 0.05$.

Additionally, I include a measure of the "halfway" point between the two monoracial groups in dark gray.[3] This halfway point allows me to determine where

the biracial group falls relative to the expectation of being halfway between the two constituent monoracial groups. In this case, Black/White students are much closer to White students in their risk of grade retention and have probabilities much lower than both Black students and the halfway expectation.

Figure 1 shows the raw differences between the three racial groups of interest. However, in practice, I want to estimate differences across groups while holding constant a variety of variables. To do this, I estimate a set of logit models that predict the likelihood of a student being CBEG by race and a variety of other variables. I then construct figures similar to Figure 1 by calculating from the model the average predicted probabilities (APPs) for each racial group. An APP estimates the average probability of the outcome by a given covariate across all cases while holding constant all other variables. APPs are akin to average marginal effects (AMEs) and estimated in the same way. Whereas AMEs estimate differences or slopes, APPs estimate the level for a given category.

I begin with a baseline model that adjusts for a variety of nuisance characteristics that may vary across groups and thus need to be controlled in all models. First, I include fixed effects for state of residence because states dictate educational policy and thus can differ substantially in the likelihood of grade retention. I also include dummy variables indicating whether the student lived in a central city, suburban, or rural area.[4]

The probability of being CBEG also increases with the student's current grade, so I include fixed effects for the current grade of the student. Additionally, as Figure 2 shows, the percentage of students who are CBEG has declined over time, but this decline has been much more substantial at higher grade levels. For the elementary grades, there is no evidence of a decline at all. To account for this grade-specific decline in the models I include an interaction between a linear year term and current grade. Sensitivity analysis showed that this functional form was preferred by the Bayesian information criterion to models with no interaction and a model with interaction terms that treated year as a categorical variable. I also considered a similar interaction between state and year, but this model was not preferred.[5]

The baseline model also includes the race of the respondent. I then add additional terms measuring material and cultural resources that may account for racial differences in a set of subsequent models. First, I include measures of nativity and English proficiency for both the respondent and each of their parents. Second, I include a categorical measure of highest degree earned for each parent. Finally, I include measures of family income (square rooted), home ownership, and whether the parents are married.

All statistical analysis adjusts for sampling weights among respondents. All models incorporate design effects for variance in sample weights and the clustering of multiple respondents within the same household.

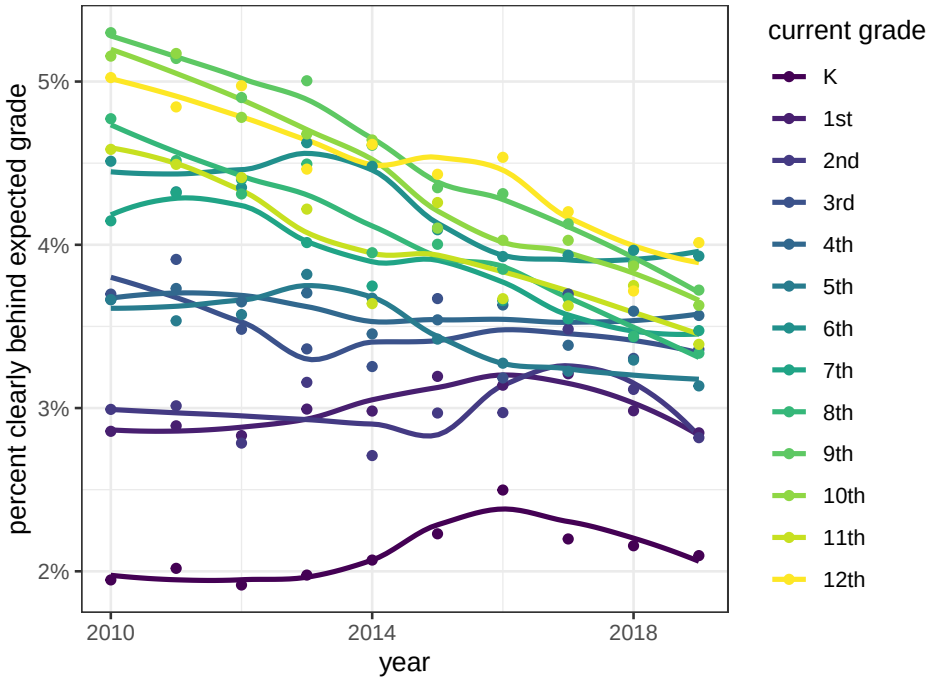


**Figure 2:** Trends over time and grade in the percentage of students clearly behind expected grade. Lines are fit to each set of points by grade via lowess smoothing.

# Results

## *Monoracial Differences*

I begin by showing the relative risk of being CBEG among monoracial respondents across models. Understanding these differences helps to clarify the potential for how biracial respondents might be positioned between monoracial groups. Table 2 reports average marginal effects on the probability of being CBEG for each monoracial minority group in comparison with White students.

Model 1 only controls for structural factors such as state of residence, student location, grade, and year. These results provide a baseline estimate of the differences across monoracial groups without controlling for differences in cultural and material resources. The results show that Black, Indigenous, and Latino students all have substantially higher probability of being CBEG than White students. Indigenous students have substantially higher risk than all other students, with a probability of being CBEG that is 4.1 percentage points higher than White students. Asian students have the lowest probability of being CBEG, and their risk is slightly lower than White students.

The subsequent models control for a variety of additional variables. Model 2 includes controls for whether the student and each of their parents are native-born and speak English well. Model 3 controls for the highest degree received by each parent, and model 4 controls for family income (square rooted), home ownership, and whether the student's parents are married.

**Table 2:** Average marginal differences in the probability of being clearly behind expected grade by monoracial group, relative to a monoracial White student

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| Black | 0.015* | 0.016* | 0.010* | 0.007* |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Indigenous | 0.039* | 0.039* | 0.026* | 0.022* |
| | (0.003) | (0.003) | (0.003) | (0.003) |
| Asian | −0.003* | −0.006* | −0.005* | −0.005* |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Latino | 0.022* | 0.013* | −0.001 | −0.002* |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| State fixed effects | Yes | Yes | Yes | Yes |
| Location fixed effects | Yes | Yes | Yes | Yes |
| Grade fixed effects | Yes | Yes | Yes | Yes |
| Year linear effects | Yes | Yes | Yes | Yes |
| Year × grade effects | Yes | Yes | Yes | Yes |
| Nativity and language | No | Yes | Yes | Yes |
| Parent's education | No | No | Yes | Yes |
| Other family resources | No | No | No | Yes |
| *N* | 2,603,331 | 2,603,331 | 2,603,331 | 2,603,331 |

*Notes:* $* \ p < 0.01$.

Model 2 and model 3 have substantial effects on the observed inequality across racial groups, whereas the additional variables from model 4 have less impact. Controlling for the characteristics related to immigration and acculturation in model 2 cuts the gap between White and Latino students in half and increases the gap between Asian and White students. It has no impact on the gap between White and Black or White and Indigenous students because most of these students are native-born with native-born parents.

Controlling for education in model 3 reduces the gap substantially for Black and Indigenous students and removes the gap entirely for Latino students. In fact, the results of both models 3 and 4 suggest that, when holding constant cultural and family resources, Latino students are slightly less likely than White students to be CBEG.

In total, resource differentials account for a substantial part of the overall racial differences in the risk of being CBEG, but not its entireity. Black and Indigenous students remain at higher risk than other students. Asian students remain the group with lowest risk across all models. The most notable shift across models is for Latino students. Their higher risk of being CBEG relative to White students is completely accounted for by resource differentials. When comparing White and Latino students with the same level or resources in model 4, Latino students actually have slightly lower risk of being CBEG.

Although, the racial differences in risk of CBEG are substantially reduced by controlling for resource differentials, the remaining gaps across all pairwise combinations are still large enough in most cases to sustain the question of where biracial

individuals fit within these gaps. Before turning to this question, however, I want to better understand how the resources of biracial individuals compare with those of their monoracial constituent groups.

### *The Distribution of Resources for Biracial Individuals*

Table 3 shows the mean values of the resource variables across monoracial and biracial groups.[6] I also calculate a counterfactual probability of CBEG for each racial group based solely on their observed distribution of resources. Differences in this counterfactual probability provide a summary measure of the resource differentials between groups. This counterfactual probability is calculated by estimating the average predicted probability for each group from model 4 of Table 2 when all non-resource variables, including race, are held at their mean.[7]

The results show different risks of being CBEG across biracial groups because of differences in resources. For example, White/Asian students have the lowest counterfactual risk of being CBEG of all groups at 2.4 percent owing to their exceptionally high family income and the high college attainment of their parents. At the other end of the spectrum, Indigenous/Latino students have a counterfactual risk of CBEG nearly two percentage points higher, given their much lower family resources.

I am particularly interested in how each biracial group compares with its constituent monoracial groups. For example, although Indigenous/Latino students have the highest counterfactual risk of being CBEG among biracial students, their risk is still lower than their two constituent groups of Indigenous (4.5 percent) and Latino (5.3 percent) students, owing in large part to somewhat higher family income, greater parental educational attainment, and greater acculturation. These results suggest positive selection into Indigenous/Latino interracial unions.

Table 4 summarizes the patterns from Table 3 across all 10 biracial groups. In six of these cases, the biracial group would have outcomes similar to or better than the monoracial group with better resources. These results imply that for the majority of these groups, parents in these matches are being positively selected from their constituent groups.

Only three groups exhibit an in-between status based on resources. All three of these groups are part Indigenous. This finding does not hold for Indigenous/Latino students but nonetheless suggests less selectivity in crossing this boundary.

The Black/White case stands out as an outlier. Black/White students have similar resources to Black students, and both groups have fewer resources than White students, as can be seen in Table 3 for family income, home ownership, and parental educational attainment. Unlike most of these other groups, I observe no positive class selectivity into Black/White interracial unions.

The effect of controlling for these resources will be complex and different across biracial groups. For those biracial groups with resources similar to their more advantaged constituent group, controlling for these resources should reduce their advantage relative to the less advantaged monoracial group. For the Black/White case, on the other hand, controlling for resource differentials should eliminate some

**Table 3:** Mean resources by racial group

| Race | CBEG, counterfactual | Family income | Own home | Mother, four-year college degree | Father, four-year college degree |
|---|---|---|---|---|---|
| White/Asian | 2.4% | $187,049 | 85.2% | 63.9% | 65.5% |
| Black/Asian | 2.9% | $131,156 | 64.6% | 44.3% | 39.4% |
| Latino/Asian | 2.9% | $130,330 | 70.3% | 43.4% | 40.5% |
| White | 3.1% | $136,953 | 83.3% | 46.7% | 43.6% |
| Asian | 3.1% | $141,982 | 72.4% | 56.7% | 59.6% |
| White/Latino | 3.3% | $125,805 | 73.0% | 38.8% | 36.1% |
| White/Indigenous | 3.6% | $97,664 | 70.7% | 28.2% | 24.2% |
| Indigenous/Asian | 3.6% | $100,783 | 56.1% | 28.8% | 22.6% |
| Black/White | 3.7% | $94,841 | 57.6% | 31.9% | 27.1% |
| Black | 3.8% | $87,159 | 53.9% | 30.9% | 25.1% |
| Black/Latino | 3.8% | $86,825 | 47.2% | 25.8% | 23.4% |
| Black/Indigenous | 4.1% | $76,097 | 44.7% | 19.3% | 21.5% |
| Indigenous/Latino | 4.4% | $72,164 | 47.8% | 14.4% | 10.0% |
| Indigenous | 4.5% | $63,115 | 50.7% | 13.2% | 8.8% |
| Latino | 5.3% | $62,226 | 50.2% | 10.4% | 8.5% |

| Race | Foreign-born | Either parent foreign-born | Speak English well | Both parents speak English well |
|---|---|---|---|---|
| White/Asian | 6.2% | 73.3% | 99.4% | 98.8% |
| Black/Asian | 7.3% | 81.7% | 99.4% | 98.6% |
| Latino/Asian | 4.5% | 71.1% | 99.5% | 96.8% |
| White | 1.9% | 9.4% | 99.6% | 98.9% |
| Asian | 21.9% | 96.2% | 96.5% | 76.8% |
| White/Latino | 2.0% | 32.9% | 99.3% | 98.5% |
| White/Indigenous | 1.1% | 9.6% | 99.8% | 99.9% |
| Indigenous/Asian | 9.9% | 71.3% | 100.0% | 97.0% |
| Black/White | 2.0% | 17.0% | 99.8% | 99.7% |
| Black | 6.4% | 27.7% | 99.4% | 96.2% |
| Black/Latino | 2.0% | 32.4% | 98.9% | 98.5% |
| Black/Indigenous | 3.9% | 23.6% | 100.0% | 99.9% |
| Indigenous/Latino | 1.1% | 29.9% | 99.3% | 97.5% |
| Indigenous | 7.1% | 23.6% | 99.2% | 96.1% |
| Latino | 11.6% | 83.0% | 96.4% | 50.8% |

*Notes:* All results are survey weighted. Results sorted by counterfactual probability of being clearly behind expected grade. Shading indicates biracial group.

**Table 4:** Relative placement for biracial groups in comparison with monoracial constituent groups based on counterfactual probability of being clearly behind expected grade due to resources alone

| Biracial | Lower probability than both | Similar probability as lower | Between | Similar probability as higher | Higher probability than both |
|---|---|---|---|---|---|
| White/Asian | X | | | | |
| Black/Asian | | X (Asian) | | | |
| Latino/Asian | | X (Asian) | | | |
| White/Latino | | X (White) | | | |
| Black/Latino | | X (Black) | | | |
| Indigenous/Latino | | X (Indig.) | | | |
| White/Indigenous | | | X | | |
| Black/Indigenous | | | X | | |
| Indigenous/Latino | | | X | | |
| Black/White | | | | X (Black) | |

of their disadvantage relative to Whites. For the remaining "in-between" groups, it is more difficult to make a priori predictions.

### *Biracial Placement*

I now turn to the risk of CBEG for biracial respondents. Due to the number of comparisons being made, I split these results into two separate figures. In Figure 3, I show the placement of each biracial group involving one Black parent in comparison with their two monoracial constituent groups. To allow comparison across models, I compare the results from the baseline model (model 1 in Table 2) and the full model that accounts for all cultural and family resources (model 4 in Table 2).

I focus first on biracial groups with one Black parent because of a stronger historical expectation that these students will be identified as Black by the "one-drop rule" and as a result will have similar outcomes to Black students. Figure 3 provides little evidence for such a pattern and soundly rejects it in the case of Black/White and Black/Latino students. Black/White and Black/Latino students have a risk of being CBEG substantially lower than Black students and closer to their non-Black constituent group. Solid conclusions are difficult for the remaining two groups because of smaller sample size and correspondingly wider confidence intervals on estimates. Nonetheless, the point estimates in each of these cases suggest probabilities of being CBEG roughly halfway between the two constituent groups.

Controlling for resource variables has some effect on the placement of part-Black biracial respondents. Black/White biracial students initially have a risk of being CBEG slightly higher than and statistically distinguishable from White students. After controlling for cultural and family resources, however, Black/White students have a risk of being CBEG that is slightly lower than but not statistically distinguishable from White students. This change reflects the relatively low level of parental education and income among Black/White students, which is much closer to Black students than White students, as shown on Table 3.

Black/Latino students start from a very different position, having a risk of being CBEG substantially lower than both Black and Latino students, who have somewhat similar risks. However, after controlling for cultural and family resources, Black/Latino students have a risk of being CBEG that is statistically indistinguishable from the risk of Latino students and substantially lower than and statistically distinguishable from Black students. This change largely reflects the fact that Black/Latino students have greater resources than Latino (but not Black) students, and once this advantage is held constant, they have a similar risk. After controlling for family resources, both Black/White and Black/Latino students have a risk of being CBEG similar to their monoracial constituent group with lower risk.

The role of parental resources is harder to determine for Black/Asian and Black/Indigenous students due to the greater uncertainty in these estimates. Controlling for resources moves the point estimate for Black/Asian students from a risk similar to Asian students to more of a halfway position between the two constituent groups. Black/Indigenous students have risk of being CBEG roughly halfway between their two constituent groups in both models. However, this finding of

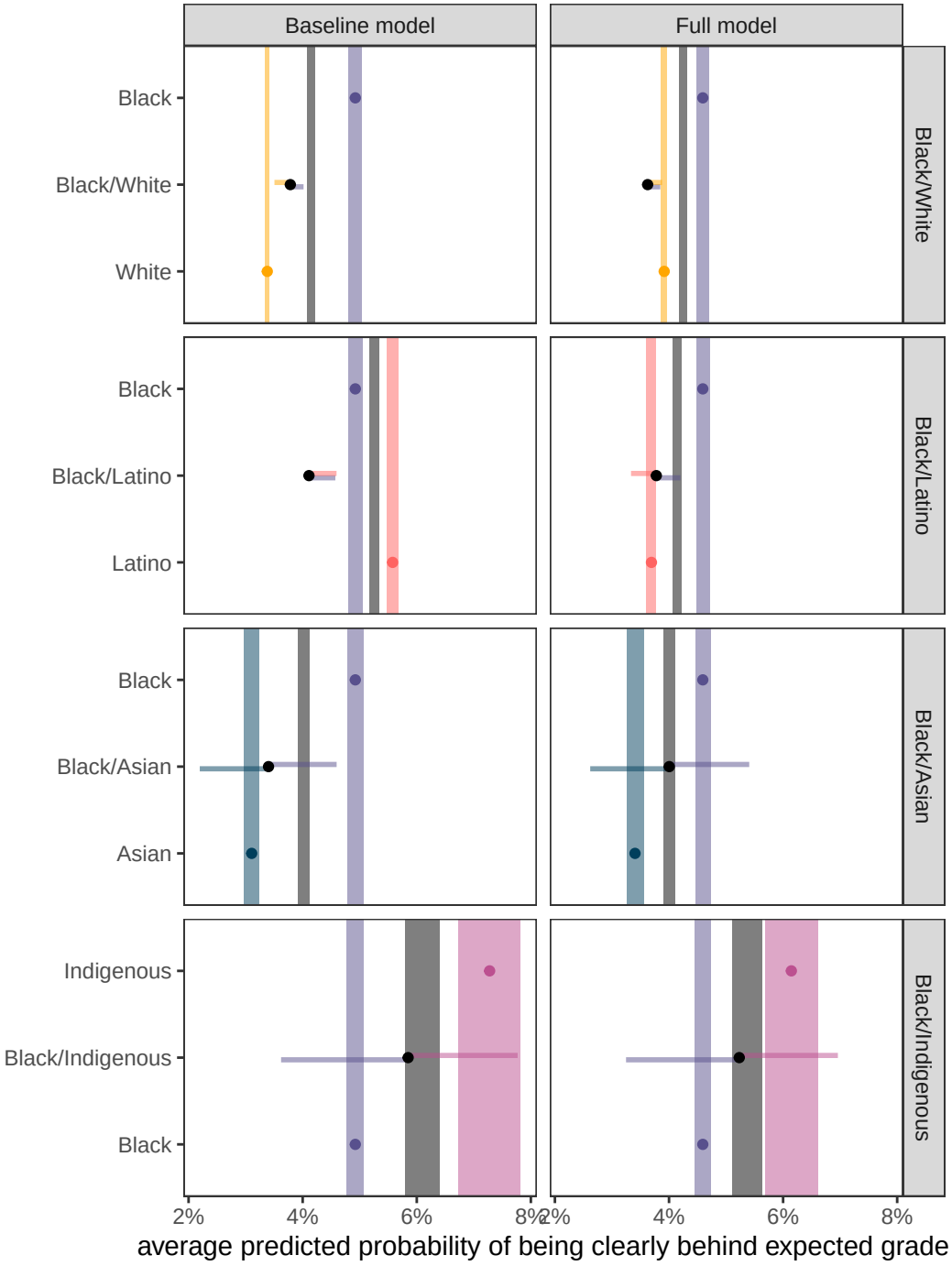


**Figure 3:** Probability of being clearly behind expected grade for biracial respondents with one Black parent, in comparison with their monoracial comparison groups. Non-overlap in color corresponding confidence bands indicates statistically significant difference at the five percent level. Baseline model includes year, grade, location, and state fixed effects. Full models include control variables for nativity, English proficiency, income, education, home ownership, and marital status of parents.

a halfway position for both groups is highly tentative owing to wide confidence intervals.

Figure 4 shows the results for the remaining biracial groups. For most of these groups, the full models indicate that each biracial group has a risk of being CBEG similar to the risk of the lower-risk monoracial constituent group or has risk higher than this group but less than the halfway point. There are two exceptions to this general pattern. First, the point estimate of the probability of being CBEG for the Indigenous/Latino group is roughly halfway between the two constituent groups, although it is not statistically distinguishable from the lower-risk group. Second, Latino/Asian students are the only case where the point estimate of the risk for the biracial group is higher than either monoracial group. However, the confidence bands indicate that the risk for this group cannot be statistically differentiated from either of the two monoracial constituent groups. This result only emerges in the model that controls for resources, because Latino/Asian students come from more advantaged households than both Latino and Asian students, on average.

Aside from the case of Latino/Asian students, controlling for resources has moderate effects on the placement of the remaining biracial groups. White/Asian students are the only case with a substantial shift, owing to their highly advantaged households. Initially White/Asian students have risk of being CBEG substantially below both White and Asian students. After controlling for resources, the risk of being CBEG for White/Asian students is indistinguishable from that of Asian students but still substantially and statistically distinguishable from the higher risk of White students.

Results for part-Latino students are complicated by the substantial change in the monoracial Latino risk across models. For example, although Latino students have substantially higher risk of being CBEG than White students in the baseline model, there is only a very small difference favoring Latino students in the full model. Nonetheless, even in this case, we see that White/Latino students have risk closer to that of the lower-risk Latino group but distinguishable from both groups.

## Conclusions

In this article, I have used the risk of grade retention among K-12 students to better understand how biracial students' life chances compare with those of their monoracial peers. Unlike prior work on this topic, the estimates used here for most biracial groups are relatively precise due to large sample sizes. For groups with a high level of precision, the results tell a consistent story: biracial students' risk of grade retention is similar to their lower-risk monoracial constituent group.

These results contradict expectations of both a "halfway" position and the dominance of the one-drop rule. For no group do I observe clear evidence of a pattern of hypodescent in which the risk was similar to the higher-risk constituent monoracial group. These results also strongly contradict the expectations of the marginal man hypothesis.

Two possibilities emerge that may help us understand these results better. First, we may be witnessing a shift toward a new regime of hyperdescent that applies broadly across a wide variety of racial groups. Second, the relatively low risk for

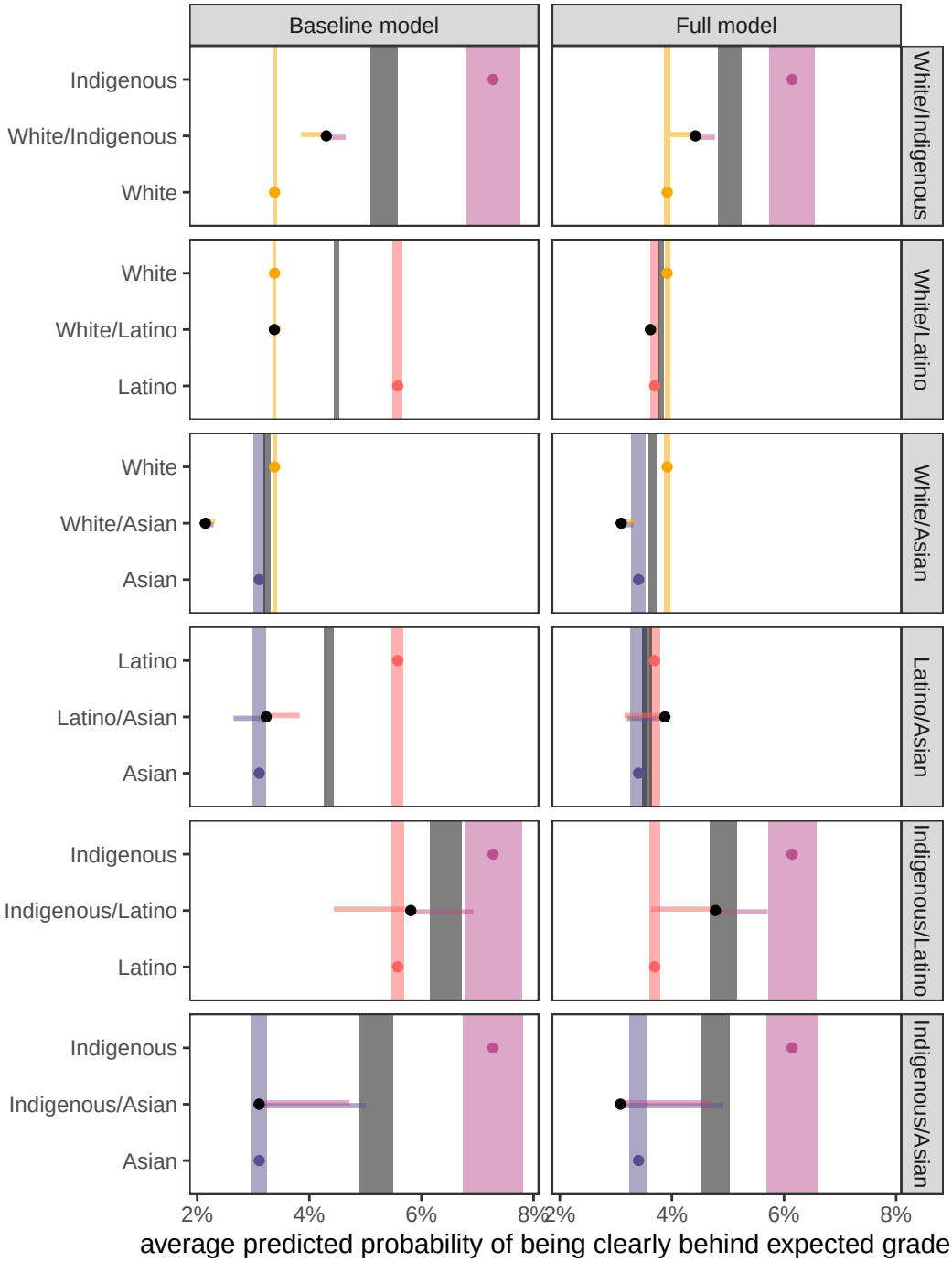


**Figure 4:** Probability of being clearly behind expected grade for non-Black biracial respondents, in comparison with their monoracial comparison groups. Non-overlap in color corresponding confidence bands indicates statistically significant difference at the five percent level. Baseline model includes year, grade, location, and state fixed effects. Full models include control variables for nativity, English proficiency, income, education, home ownership, and marital status of parents.

biracial students may be a product of the strength of hybridity in allowing biracial students to better negotiate racialized systems than their monoracial minority peers.

Differences in family resources were expected to play some role in the relative position of biracial students' risk. The results on parent selection vary somewhat by group, but the majority of biracial groups had resources more similar to their monoracial constituent group with higher resources, indicating a strong positive selection into interracial unions in the prior generation. The most important exception to this trend is the case of Black/White biracial students, who have far fewer resources than White students and resources closer to Black students.

Regardless of variation in biracial students' parental resources, accounting for these resource differentials does not substantially change the overall result that biracial students' risk is more similar to the constituent monoracial group with lower risk. The one exception to this finding is for the Latino/Asian case where the much lower risk of these students compared with Latino and Asian students was entirely driven by resource differentials.

Low relative risk for biracial individuals is sometimes treated as an indication of a positive future direction for the United States in terms of ameliorating racial inequality. However, the improved prospects for biracial individuals do nothing to ameliorate the often strong and persistent inequalities between monoracial groups. The growth and relative success of biracial populations may isolate remaining members of monoracial minority groups as much as it assimilates mixed race individuals. The real question at stake is how existing divides and identities may be restructured in the context of a growing biracial population. This research suggests the potential for a growing divide between these mixed race populations and the most disadvantaged monoracial minority populations from which they derive at least part of their ancestry.

These findings stand in contrast to earlier work that found more evidence of an "in-between" status in other educational outcomes (Campbell 2009; Herman 2009). I raise two possible explanations for this discrepancy that point to strengths and weaknesses of the current research and may help drive future work on the topic. First, this discrepancy may be due to the small sample sizes of multiracial respondents in prior work that led to statistically imprecise estimates. Because the current findings rely upon large samples, they present an important step forward in our understanding of how biracial individuals will fit into America's system of racial inequality. Nonetheless, sample sizes for some non-White biracial respondents remain small, limiting our understanding of the outcomes for those groups. In particular, results for non-White part-Indigenous populations are quite imprecise. The results counterintuitively suggest that part-Indigenous populations are the least likely to be in the position expected by hyperdescent, but due to low sample sizes, that finding is highly tentative.

Second, the current findings may also diverge from the findings of prior work because different outcomes were examined. Although grade retention is an important early life outcome, it is far from the only one that these individuals will face in their lives. Although we often observe similar racial inequalities across a variety of outcomes, knowing the result for one outcome does not enable us to perfectly predict other outcomes. As biracial individuals age and face later outcomes in the

educational system, the labor market, and elsewhere, their experiences may differ from what I observe here. Thus, collecting more detailed information on these outcomes in future studies remains critically important.

## Notes

1 Analysis of the probability of being CBEG by race and grade, shown in the supplementary materials, indicates that Black and Latino children in kindergarten are less likely to be CBEG than White children, which may be a consequence of redshirting. However, these differences quickly reverse direction by first grade. As a sensitivity analysis, I repeated the main analysis shown here separately for students in elementary (first to fifth), middle school (sixth to eighth), and high school (ninth to 12th) grades. These results are presented in the supplementary materials. Although more statistically noisy due to smaller sample sizes, those results are consistent with the conclusions drawn here.

2 The formula for calculating the z-score for the correct interval is given by

$$1.96 \times \frac{\sqrt{1+\rho^2}}{1+\rho},$$

where $\rho$ is the ratio of the standard errors for the two statistics. See Knol et al. (2011) for a detailed derivation.

3 The halfway point is given by taking the mean between the two monoracial group. Its standard error is given by $\sqrt{(s_1^2+s_2^2)/2}$, where $s_1$ and $s_2$ are the standard errors of the estimates for the two monoracial groups. To avoid clutter, I do not draw a third half–confidence interval for this point. Its length will be roughly halfway between the lengths of the other two intervals.

4 The location cannot be determined for all students, and I therefore also include a fourth category of unknown in all models.

5 The supplementary materials provide, for each model specification, the Bayesian information criterion (BIC) scores and marginal probabilities of being clearly behind expected grade for each racial group. The marginal probabilities for each racial group are almost identical across specifications, indicating that results are not driven by the modeling choice made here.

6 For compactness, I combine the parent foreign-born and English proficiency questions into whether either parent is foreign-born or speaks English. In the models, I use separate variables for mothers and fathers. Tables in the supplementary materials provide the full breakdown of these variables by racial group.

7 It might seem odd to hold categorical variables at their mean, but because all categorical variables are entered into the models as 0/1 numeric indicator variables, their mean value can be calculated as the proportion of cases with the indicated value.

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