

Collecting and tabulating race/ethnicity data with diverse and mixed heritage populations: A case-study with US high school students

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Abstract

The increasing diversity of the US coupled with the continuing need for information gathered about race/ethnicity require us to re-examine our practices of collecting and tabulating such data, particularly from individuals of mixed heritage. In the context of Census 2000, which allowed people for the first time to identify with multiple race groups, this article focuses on the context of education and looks at high school students' self-identification practices on forms. Survey data gathered from 638 freshmen during 1999–2000 at a diverse, public high school in California indicate: there can be high levels of inconsistency in students' individual identifications depending on question format and response options provided; and, overall demographic counts can greatly vary depending on how multiple-response data are tabulated. Students' responses raise questions about whether it is possible to attain a high level of measurement reliability when working with a diverse population that includes individuals of mixed heritage.

Keywords: Racial/ethnic self-identification; mixed heritage; race classification in schools; demographic data collection and tabulation.

The mixed-race population, especially of children, continues to grow in the US. Examining Census 2000 data on a national level, 4.0 per cent of people under the age of eighteen are of mixed heritage, and in California (the state in which this research took place), this statistic is higher at 7.3 per cent.¹ If we are to continue collecting data about race/ethnicity² to be

used to monitor discrimination, enforce civil rights, and study trends – in the context of schools and other social institutions – we must consider where mixed heritage individuals fit into contemporary race/ethnicity classification schemes.³ For many years, the census has set an example for how race/ethnicity information is gathered in the US for policymaking, evaluation, and research purposes. One of the largest impacts of our decennial census on the collection of race/ethnicity data stems from the issuance of Directive 15 in 1978 by the Office of Management and Budget [OMB]. To ensure consistency across various federal departments and agencies, this policy set guidelines that five basic race categories be considered when compiling demographics: White, Black, Hispanic (considered an ethnic category by the federal government), Asian or Pacific Islander, and American Indian or Alaskan Native. On the 1980 and 1990 censuses, respondents were presented with a list of choices (all converging into the five ‘standard’ groups) and asked to choose only one response. People of mixed heritage were expected to identify or be designated to the race category that best reflected their recognition in the community.⁴ Only on the most recent census, in 2000, were individuals of mixed heritage allowed to identify with more than one race. With this change allowing people to identify with more than one group, there comes the need to be more creative and analytical in our approaches to tabulating and interpreting these data.

The research presented in this article focuses on the context of education, looking at high school students’ racial/ethnic self-identifications. The young people who participated in the study are growing up in an increasingly multiracial and multi-ethnic society in which the very definitions of what it means to be of mixed heritage today and to identify as such are different from what they have been at other times in our nation’s history. Departing from past notions about mixedness being a completely marginalizing experience or one in which people who live ‘inbetween’ are psychologically tormented (Stonequist 1937; also reviewed in Nakashima 1992), young people of mixed heritage today often express pride in being different or unique, having more or interesting culture, being able to interact in many groups and to appreciate multiple viewpoints (Korgen 1998; Lopez 2001; Wallace 2001). And though being of mixed heritage can have its disadvantages at times, its growing prevalence, acceptability, and even trendiness seem to impact the ways in which adolescents today make decisions about how to racially identify on forms (and in other contexts).

While the decision-making process involved in self-identification is an important aspect of understanding race/ethnicity classification in the twenty-first century, this article centres on the collection and tabulation of race/ethnicity data. This piece is not focused on identity development or the many factors that influence how one identifies racially or ethnically,⁵ but on the more technical aspects involved in gathering race/

ethnicity data. As social scientists, educators, and policy-makers, many of us rely on such information to make sense of our social worlds in formal and informal ways, in our professional endeavours as well as our everyday lives. The data presented in this article illustrate some of the complexity involved in collecting and tabulating race/ethnicity data – particularly when working with an increasingly diverse and mixed heritage population.

To move beyond the standard multiple-choice question on which individuals are asked to choose one from a limited list of response options, in this study I implemented a survey that contained alternative question formats – ones that would allow for more complexity and nuance in students' responses, in particular, to accommodate individuals of mixed heritage. For example, an open-ended question was asked with blank lines for students to fill in, some of the questions permitted participants to identify with more than one group, one of the items offered an extensive list of choices (beyond the categories typically considered on forms), and so on. The use of multiple question formats on the survey not only gave students more options about how to identify racially/ethnically, it also allowed me to examine inconsistencies or discrepancies in their responses (primarily an issue for those who are mixed-race or multi-ethnic). While it is easy to speculate that if one presents people with more choices about how to racially/ethnically identify themselves and an opportunity to give multiple responses there will be greater variation on both an aggregate and individual level, the data collected in this study document these phenomena.

The use of alternative question formats for collecting race/ethnicity data also demands a critical examination of how then to tabulate these more complicated data – namely in instances where people choose to give multiple responses or to identify with more than one race/ethnicity group. There are various ways tabulation could take place: for example, people who identify with more than one group could get classified into a combination category, they could get counted in each of the groups chosen, they could be fractionally assigned to each group, or they could be designated to one group using a number of allocation methods (the largest, the smallest, the non-White one, etc.). In my analyses, I consider these tabulation strategies or ways of counting and summarizing multiple response race/ethnicity data and also compare results across items on the survey.

Beyond the technical issues involved in tabulating multiple response data, there are political concerns, too, about the impact that various tabulation strategies might have on counts for 'minority' populations – whether in the context of schools or other social institutions. Numerical presence is essential to continuing efforts that remedy the historical mistreatment of African Americans, Native Americans, and other groups of colour in the US; minority groups want to avoid diluting counts as a

result of people identifying with multiple or additional race/ethnicity groups. Even the use of classification methods that reallocate people who identify as White and something else with the non-White category is fraught with its own flavour of political controversy as a sort of modern-day 'one drop rule', this time 'aimed at redressing discrimination rather than enforcing segregation' (Goldstein and Morning 2001, p. 4). And, while this type of reassignment alleviates concerns about reducing minority population counts, it also results in the allocation of some individuals, who in the past primarily or solely identified as White, to minority counts based on now-allowed mixed heritage responses; and this has implications in that civil rights protections are extended to an additional segment of the US population (Goldstein and Morning 2001). This is not raised to say that these protections should not be extended to this group, rather, to illustrate the potential for political and legal ramifications of methodological decisions regarding the collection and tabulation of race and ethnicity data. The results presented in this article inform these conversations and provide a platform for discussing the relevance of reliability in racial/ethnic measurement or identification, both at the individual and group level – particularly in an increasingly diverse, multi-racial, and multi-ethnic society.

Survey overview

The survey data presented in this article were collected during the 1999–2000 academic year with freshmen at Aquaria High School (pseudonym), a large, public school located in a densely populated urban/suburban community of California. The larger study from which these data derive explored issues related to racial/ethnic measurement, classification, and identification for adolescents – particularly mixed-race and multi-ethnic youth. Though not discussed in this article, interview data were also collected with a subset ($n = 24$) of the survey participants. The interviewees are from varied racial/ethnic backgrounds, and all of them are 'mixed,' although not all of them necessarily identify as mixed, only do so in certain contexts, or do so with irregularity. In the semi-structured interviews, students were asked a series of questions about the following: how they identify themselves in terms of race/ethnicity (in various contexts of everyday life and on paper when filling out forms); how they define notions of race, ethnicity, and culture; terminology preferences and format suggestions for asking questions about race and ethnicity; and how they think information about their race/ethnicity is used by schools, on standardized tests, the Census, and so on. These issues were discussed in the context of home and school experiences with parents, family, friends, peer groups, and school staff.

Aquaria High School [AHS] was chosen as a research site, in part, because its student population is racially/ethnically diverse (about a third

Black, a third White, and a third Other) and includes a large population of mixed heritage students, even relative to other schools in California. As the only public high school in the city, AHS is quite large and at times can feel like a mini-college (both in terms of its physical size and course offerings). The community in which this school is located has a history of political activism, interracial relations and is a poster-city, if there ever was one, for multiculturalism. It includes in its borders a state university, contributing to the area's reputation of being a political, artistic, philosophical, and scientific hub of activity.

As became clear to me in the course of this research, students at AHS are sophisticated in their ability to think and talk about issues of race and ethnicity. In fact, most of the adolescents who participated in the interview component of the study expressed, at the very least, vague understandings of why race/ethnicity data are collected and how they are used. In some instances, they were actually *more* critical and astute in their observations than many of the adults who were asked the same questions about the collection and use of such information (on school enrolment forms, standardized achievement tests, applications for college and academic programmes, even the Census). While the survey responses of these high school students do not necessarily reflect those of all fourteen- and fifteen-year olds in the country, or even California, they offer a powerful lens through which to consider how young people growing up in diverse contexts are dealing with racial/ethnic identification questions on forms.

The freshman class of AHS was surveyed through one of their core courses. Of the 741 students enrolled in the required first-year Cultural Studies course (mandatory for graduation), 638 completed surveys,⁶ yielding a response rate of 86 per cent. The written questionnaire asked students to identify their race/ethnicity, using various instruction formats and response options. Students were initially asked an open-ended question about how they racially/ethnically identify themselves, then a multiple-choice one in which they were asked to 'circle all that apply,' and later a multiple-choice one with instructions to 'choose only one' response. In addition, students were asked to indicate their perceptions about how other people would likely identify their race/ethnicity, in particular, parents and school staff. In most of the questions, students were provided with choices congruent with the race/ethnicity categories used by school systems in California: American Indian, Black, Hispanic, Filipino, Pacific Islander, Asian, White, and Other. On one item of the survey in which students could offer multiple responses, sixty-four race/ethnicity categories were listed (based on the demographics of the community according to 1990 Census data), and students were invited to list additional ones as well – referred to as the 'long list' question later in this article. Students were also questioned explicitly about whether they consider themselves multiracial or multi-ethnic and the basis for that

decision. (A complete copy of the *Racial/Ethnic Identification Student Survey* used in this study is available to readers upon request.) An effort was made to format and order questions on the survey in a way that would not bias students' responses to later questions.

The survey data presented in this article are organized into four main sections. The first compares and contrasts students' responses to the multiple-choice questions; the second experiments with several tabulation methods for dealing with multiple response race/ethnicity data; the third discusses students' responses to an explicit question about being multiracial or multi-ethnic; and, the fourth summarizes how participants answered an open-ended question about their race/ethnicity.

Students' responses to multiple-choice questions about race/ethnicity

Multiple-choice questions are commonly used to collect information about race/ethnicity because they offer a finite array of choices to respondents. When surveying a large population, a multiple-choice format can streamline processes of data collection and analysis. As described above, several questions on the survey for this study were in multiple-choice format, most with response options matching those utilized by the California State Department of Education.

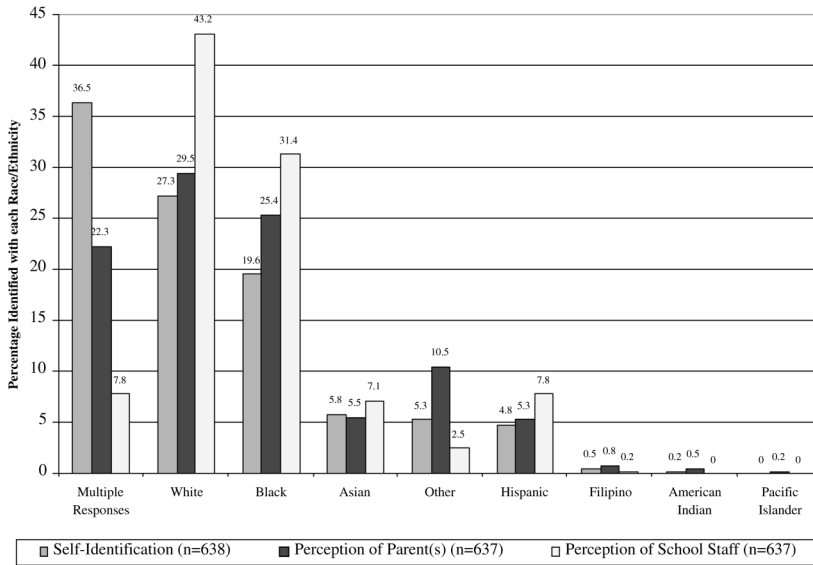
This section compares and contrasts the ways in which students responded to these multiple-choice questions: how they identify themselves versus how they think parents and school staff would; how they identify when asked to 'choose only one' category versus 'circle all that apply'; and their responses then provided an extensive list of sixty-four choices rather than a short one with only eight. Such comparisons speak to intra-individual consistency of students' responses, an important consideration as we think critically about the measurement reliability of race/ethnicity data.

Self-identification versus perceptions of parent and school staff views

On the whole, students were more likely to choose multiple responses and utilize an Other category when answering questions regarding race/ethnicity about themselves (See Figure 1). In contrast, they perceived that others would be more likely to choose a single category response for them, particularly those with less information about them (i.e., a school staff member versus a parent). When allowed to identify with more than one group, over a third of students (36.5%) gave multiple responses while 22.3% said their parents would, and 7.8% said that a school staff member would.

On average, students chose 1.48 identifications from the eight listed categories on the 'circle all that apply' question, and 1.70 identifications also taking into account multiple specifications written into the Other

Figure 1. Students' self-identifications and their perceptions of parent and school staff views



category. Females, on average, chose more identifications than males: females averaged 1.56 responses from the eight listed choices while males averaged 1.39 ($p < .01$); and, when Other specifications are included, females gave on average 1.78 responses while males gave an average 1.62 responses ($p < .05$).

In terms of single responses on the multiple-choice questions – when they were given the option to choose more than one identification – students used the Black, Hispanic, and White categories less often about themselves than they perceived that others would about them. Also, they perceived that school staff would be more likely to choose a single response for them than their parents. For the Asian, Filipino, and Pacific Islander, and American Indian categories, there was more variation across student, parent and school staff responses.

Table 1 summarizes the percentage of students from each race/ethnicity group (categorized based on responses to the ‘circle only one’ survey item) who chose different identifications across the self, parent, and school staff questions (on all of which they could identify with multiple groups). On average, 44.8% of students chose different categories across the three questions. Between race/ethnicity groups, there were several statistically significant differences as indicated in the table. Also, of the small number of students identified as American Indian or Pacific Islander when asked to choose only one response, 100% chose different racial/ethnic identifications on the self, parent, and school staff questions. Though not a statistically significant difference, females

Table 1. *Percentage of students who chose different identifications across the self, parent, and school staff questions^b*

Race/Ethnicity ^a	% Who Chose Different Identifications
American Indian	100
Pacific Islander	100
Filipino ^c	88.9
Other ^d	84.6
Hispanic	43.9
Black	42.2
White	33.6
Asian	22.7
TOTAL	44.8

N = 638

^a Category assignment based on responses to the 'choose only one' question.

^b On each of these three questions, students could identify with more than one group.

^c A greater percentage of Filipino students chose different identifications on these three questions compared to White and Asian students ($p < .001$).

^d A greater percentage of Other students chose different identifications on these three questions compared to Hispanic, Black, White, and Asian students ($p < .001$).

(48.5%) were more likely than males (40.9%) to do so. Females seem to recognize greater variation between self and outsider perceptions of their race/ethnicity, though it is unclear what is behind their understandings of this variation, whether it has to do with phenotype, behaviour, cultural affiliation, etc..

(In)consistency on 'Choose only one' and 'Circle all that apply' questions

Next, we can look at the consistency of students' self-identifications on survey items in which they were asked to 'choose only one' versus 'circle all that apply'. On the whole, 39.5% of students identified differently or inconsistently on these two questions. Inconsistency here does not necessarily mean that individuals gave completely different responses on the two survey items; in many cases, it was an issue of offering more detailed identifications on the question on which multiple responses were permitted.

Also, looking at these two multiple-choice questions, there are statistically significant gender differences: females (43.6%) were more likely than males (35.1%) to offer different or inconsistent responses ($p < .05$). In addition, a larger percentage of females (40.9%) than males (31.8%) identified with more than one race/ethnicity category on the 'circle all that apply' question ($p < .05$). And, as was presented earlier, females also tended to identify with more race/ethnicity categories on this question than males. Given that equivalent percentages of female and male students *could* have identified with more than one group (according to both school and district data as reported by the California Education Department),⁷ it appears that female adolescents were more likely to identify as such. This trend of

females being more likely to indicate multiple racial/ethnic identifications will come up again in other sections of this article. It would seem that female students in this study view racial/ethnic identification as a more complex and less static process than their male counterparts.

Though not an explicit focus of this research, these findings might reflect adolescent gender differences in cognitive development (regarding categorization and abstraction), or in identity formation. For example, it may be that 14- to 15-year old females are at a place in their cognitive development where they are more able to think overall in less binary and more nuanced terms, as compared to male students. It also could be that 14–15 year old females are at a point in their identity formation that allows or requires them to acknowledge multiplicity in their race/ethnicity, more so than male students. These trends could also be context-specific, meaning that AHS or the surrounding community could in some way be influencing female and male adolescents to conceptualize their racial/ethnic identifications in different ways.

Table 2 outlines how students categorized themselves when able to mark multiple responses, compared to choosing only one. The percentage of students from each group who chose to identify with multiple categories when permitted to do so are as follows: American Indian 100, Pacific Islander 100, Filipino 44.4, Other 42.9, Black 36.3, Hispanic 29.3, White 18.8, and Asian 13.6. These data give a sense of the number of students in this class whose additional identifications get lost when they are only allowed to select one response. Of course, the analyses possible here are limited by the racial/ethnic categories included as response options on the survey questions (in this case, those used by school systems in California).

While Asian, Filipino, and Pacific Islander students identified with at most two groups, White, Hispanic, and American Indian students identified with up to three groups, and Black students identified with up to four of the five 'standard' race categories.⁸ Besides students who identified as Other on the 'choose only one' question, only four students who identified as Black on the 'circle all that apply' question chose not to identify as Black when asked to give only one response – two of them identified as Native American, one as Hispanic, and one as Filipino. This trend, along with the large number of combination categories applicable to Black students, illustrates the lasting salience of the 'one drop rule' in the US and likely, too, our reliance on phenotype to determine race/ethnicity, particularly in terms of denoting Blackness. Also evident in these data is that students who identified as Asian, Filipino, or Pacific Islander on the 'choose only one' question additionally identified only as White or Black (in one instance) when allowed to choose multiple groups on the 'circle all that apply' questionnaire item. These results not only depict which racial/ethnic combinations are more common than others in this particular community, they also begin to give us a picture of how students

Table 2. 'Circle all that apply' versus 'Choose only one': Self-identifications of a freshmen class

'Choose only one'	n	'Circle all that apply'	of 'Choose only one' responses	
			Number	%
American Indian	n = 3	American Indian & White	1	33.3
		American Indian & Black & Hispanic	1	33.3
		Black	1	33.3
Black	n = 204	Black	130	63.7
		Black & American Indian	19	9.3
		Black & White	16	7.8
		Black & Hispanic	6	2.9
		Black & Asian	4	2.0
		Black & American Indian & White	9	4.4
		Black & American Indian & Hispanic	5	2.5
		Black & American Indian & Asian	3	1.5
		Black & Hispanic & White	3	1.5
		Black & American Indian & Hispanic & White	7	3.4
		Black & American Indian & Asian & White	1	0.5
Hispanic	n = 41	Hispanic	29	70.7
		Hispanic & White	8	19.5
		Hispanic & American Indian	2	4.9
		Hispanic & Asian	1	2.4
		Hispanic & American Indian & Black	1	2.4
Filipino	n = 9	Asian	5	55.6
		Asian & White	3	33.3
		Asian & Black	1	11.1
Pacific Islander	n = 2	Asian & White	2	100
Asian	n = 44	Asian	38	86.4
		Asian & White	6	13.6
White	n = 244	White	198	81.2
		White & Hispanic	18	7.4
		White & American Indian	13	5.3
		White & Asian	12	4.9
		White & American Indian & Hispanic	2	0.8
		White & Hispanic & Asian	1	0.4
Other	n = 91	White	22	24.1
		Black	13	14.3
		Hispanic	11	12.1
		Asian	6	6.6
		Black & White	9	9.9
		Asian & White	8	8.8
		Hispanic & White	4	4.4

Table 2. *Continued*

'Choose only one'	'Circle all that apply'	of 'Choose only one' responses	
		Number	%
	Hispanic & White	4	4.4
	American Indian & White	2	2.2
	Black & Asian	2	2.2
	American Indian & Black	1	1.1
	American Indian & Hispanic	1	1.1
	Black & Hispanic	1	1.1
	Black & Hispanic & White	4	4.4
	American Indian & Black & White	2	2.2
	American Indian & Black & Hispanic	1	1.1
	Black & Hispanic & Asian	1	1.1
	Hispanic & Asian & White	1	1.1
	American Indian & Black & Hispanic & White	1	1.1
	American Indian & Hispanic & Asian & White	1	1.1

Note: Single-race and combination categories recognized by the OMB are considered in this table. Hence, Filipinos and Pacific Islanders are designated as 'Asian' in the third column.

who identify with more than one race/ethnicity when permitted to, decide what trumps what in the game of racial/ethnic identification – when it comes down to choosing only one category.

Extensive race/ethnicity category choices

The above discussion has focused on the survey questions which provided respondents with a short list of race/ethnicity categories congruent with those used by school systems in California. Briefly now, I turn to the survey item on which students had sixty-four race/ethnicity groups from which to choose (based on the demographics of the community according to 1990 Census data). Respondents were instructed to circle all that apply and also permitted to add categories not listed. The average number of identifications chosen or added by students on the whole is 4.0. Overall, 21.9% of students wrote in additional identifications; 17.1% listed one, 4.5% listed two, and 0.3% listed three. Also, in line with other survey results, there is a statistically significant difference ($p < .001$) between the number of responses chosen by females (4.27) and males (3.62). Again, it appears that female students are responding to questions about their race/ethnicity in more complex and dynamic ways, compared to male students.

In Table 3, we can compare the average number of identifications chosen by various race/ethnicity groups in the sample. Statistically significant differences ($p < .001$) include the following comparisons:

Table 3. *Identifications chosen from a list of 64 response options, by race/ethnicity^a*

Race/Ethnicity ^a	Average Number of Identifications ^b
American Indian	7.0
Pacific Islander	6.5
Filipino	6.3
White	4.7
Other	4.1
Hispanic	4.0
Asian	3.0
Black	3.0
TOTAL	4.0

N = 638

^a Category assignment based on responses to 'choose only one' question.^b This tabulation includes identifications added by students.

Students who identified as White, Hispanic, or Other when asked to 'choose only one' group selected on average a greater number of responses on the 'long list' multiple-choice question than Asian and Black fellow students. These data seem to indicate variation in the level of complexity or nuance entailed in racial/ethnic identification for different groups of students. Also worth noting is that American Indian and Pacific Islander students selected a greater number of identifications than any other group, though these are not statistically significant differences due to their small groups sizes.

Summarized in Table 4 are students' responses on the 'long list' and 'circle all that apply' questions for each racial/ethnic category included as an option in *both* items. In addition to American Indian, Black, Hispanic, Filipino, Pacific Islander, Asian and White, three alternative macro-group labels from the 'long list' question are included in this table: Native American, Latino, and Chicano. Focusing on the shaded diagonal cells, we see in the row per cent that a larger percentage of students who identified as Black (96.2), African American (93.3), or White (92.6) on the 'long list' question identified similarly on the 'circle all that apply' question, particularly as compared to the percentage of students who identified as Native American (48.5), American Indian (68.1), or Pacific Islander (50.0) on both items. The percentages were in between for students who identified as Filipino, Hispanic, Chicano, Asian, or Latino in terms of similar identifications being made on both questions. Looking at the column per cent, the smallest percentages of similar responses across the two questions were in the use of Chicano, Latino, and Hispanic identifications – in other words, smaller percentages of students who identified as Hispanic on the 'circle all that apply' question identified with these groups on the 'long list' question, compared to the statistics on similar identifications across the two questions for other race/ethnicity groups. On the other end of the spectrum,

Table 4. Comparison of responses on the 'Long list' and 'Circle all that apply' questions

Frequency Row % Column %	'Circle all that apply' Response						
'Long list' Response ^a	American Indian n = 69	Black n = 229	Hispanic n = 96	Filipino n = 15	Pacific Islander n = 13	Asian n = 71	White n = 329
American Indian n = 69	47 68.1 68.1	41 59.4 17.9	15 21.7 15.6	1 1.4 6.7	1 1.4 7.7	3 4.3 4.2	35 50.7 10.6
Native American n = 66	32 48.5 46.4	40 60.6 17.5	16 24.2 16.7	– –	– –	4 6.1 5.6	28 42.4 8.5
Black n = 158	29 18.4 42.0	152 96.2 66.4	22 13.9 22.9	4 2.5 26.7	1 0.6 7.7	1 0.6 1.4	28 17.7 8.5
African American n = 210	40 19.0 58.0	196 93.3 85.6	19 9.0 19.8	6 2.9 40.0	1 0.5 7.7	3 1.4 4.2	34 16.2 10.3
Hispanic n = 49	9 18.4 13.0	13 26.5 5.7	43 87.8 44.8	1 2.1 6.7	1 2.0 7.7	2 4.1 2.8	21 42.9 6.4
Latino n = 45	6 13.3 8.7	10 22.2 4.4	36 80.0 37.5	1 2.2 6.7	1 2.2 7.7	2 4.4 2.8	13 28.9 4.0
Chicano n = 32	3 9.4 4.3	3 9.4 1.3	28 87.5 29.2	– –	– –	2 6.3 2.8	9 28.1 2.7
Filipino n = 17	3 17.6 4.3	9 52.9 3.9	2 11.8 2.1	15 88.2 100	3 17.6 23.1	1 5.9 1.4	4 23.5 1.2
Pacific Islander n = 12	– –	2 16.7 0.9	– –	5 41.7 33.3	6 50.0 46.2	5 41.7 7.0	5 41.7 1.5
Asian n = 61	2 3.3 2.9	3 4.9 1.3	2 3.3 2.1	7 11.5 46.7	4 6.6 30.8	49 80.3 69.0	19 31.1 5.8
White n = 283	26 9.2 37.7	35 12.5 15.3	32 11.3 33.3	6 2.1 40.0	9 3.2 69.2	17 6.0 23.9	262 92.6 79.6

^a Only categories from the 'long list' question that match those used on the 'circle all that apply' question or are alternative macro-group labels (i.e., Latino, Chicano, and Native American) are included in this table.

100% of students who identified as Filipino on the 'circle all that apply' question also identified as Filipino on the 'long list' one.

This table also shows that a greater percentage of students who identi-

fied as American Indian on the ‘circle all that apply’ question identified as American Indian than as Native American on the ‘long list’ question. Also, a greater percentage of students who identified as Black on the ‘circle all that apply’ question identified as African American than Black on the ‘long list’ item. In both of these cases, the first category presented in the extensive list of options included on the ‘long list’ question (ordered alphabetically) was chosen more frequently, though it should be noted that many students went on to choose other categories from the list, indicating that they at least perused later options presented on this questionnaire item. In the case of alternative referents for the Hispanic category, a greater percentage of students who identified as Hispanic on the ‘circle all that apply’ question identified with Hispanic than with Latino or Chicano on the ‘long list’ one.

These comparisons of data presented in Table 4 offer a way to consider the consistency of students’ racial/ethnic identifications on the ‘long list’ and ‘circle all that apply’ multiple-choice questions. In addition, they illustrate how students utilized alternative race/ethnicity group labels – compared to those implemented by California school systems – when presented such options in the extensive multiple-choice item.⁹

Exploring tabulation methods to use with multiple response race/ethnicity data

In addition to addressing individual-level inconsistencies in responses to multiple-choice race/ethnicity questions, the survey data collected for this study also indicate how the overall racial/ethnic demographics of the freshmen class at AHS differ depending on question format and/or tabulation method considered. To help make this point, Table 5 summarizes data from the ‘choose only one’ and ‘circle all that apply’ questions on the survey in which students were asked to self-identify their race/ethnicity. In addition, this table presents various tabulations of the multiple response data (as collected on the ‘circle all that apply’ question), including disaggregation, non-White category assignment, and fractional assignment; also, a tabulation of these data using combination category assignment is provided in Table 6. Each tabulation method will be described in this section.

Disaggregated multiple responses

The third column of Table 5 presents disaggregated multiple response data – in other words, the percentages of students who identify *at all* with each race/ethnicity category are tabulated – whether alone or in conjunction with other responses. Thus, the percentages in this column total more than 100%, and it is not surprising that the counts are highest for each race/ethnicity category using this method, especially compared to

Table 5. Racial/ethnic demographic tabulations of a freshmen class

	'Choose only one'	'Circle all that apply'	Disaggregated Multiple Responses	Non-White Category Assignment	Fractional Assignment	California Department of Education
White	38.2	27.3	51.6	34.5	43.9	38.7
Black	32.0	19.6	35.9	26.5	29.1	34.5
Hispanic	6.4	4.8	15.0	11.0	10.9	9.2
Asian	6.9	5.8	11.1	11.0	9.9	9.0
American Indian	0.5	0.2	10.8	2.8	4.9	0.6
Filipino	1.4	0.5	2.4	0.3	0.7	0.8
Pacific Islander	0.3	–	2.0	0.6	0.6	
Other	14.3	5.3	19.3	13.3*		
Multiple Responses		36.5				7.2**

N = 638

* Students identified with multiple non-White categories are classified as 'Other' in this column.

** The California Department of Education combines mixed-race and 'unspecified' responses into one category.

the 'circle all that apply' counts (which are the lowest for each group except Filipino) in which multiple responses are clumped into one catch-all 'Multiple Responses' category. Using disaggregated tabulation, the demographics of the class are as follows: 51.6% White, 35.9% Black, 15.0% Hispanic, 11.1% Asian, 10.8% American Indian, 2.4% Filipino, 2.0% Pacific Islander, and 19.3% Other.

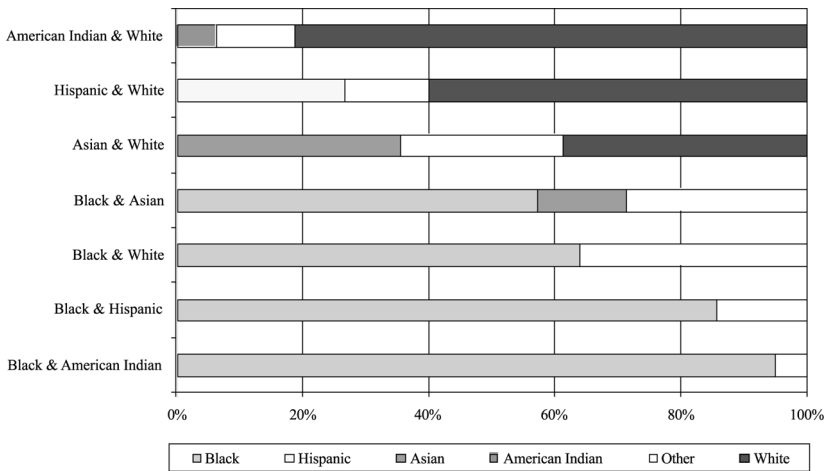
Non-White category assignment

Another way to tabulate data about race/ethnicity is to count people who are White and something else as the 'something else.' This strategy alleviates concerns of non-White race/ethnicity groups losing people in the shuffle if people who are mixed and part White get counted as White (especially since historically these individuals have typically been counted in the non-White group, based on the 'one drop rule' legacy and other societal perceptions). One dilemma, of course, is where to count people who identify with more than one non-White race/ethnicity group. In its guidelines regarding racial statistics for civil rights monitoring and enforcement, the OMB deals with this by specifying that individuals be counted with the group with which a claim is being made or a concern is being raised.

As with any reallocation method, this practice of reducing multiple-category or mixed heritages responses to single-race categories runs counter to the purpose of self-identification (Goldstein and Morning 2001), as these classifications do not necessarily match how individuals would identify themselves if asked to choose only one response. (Of course, one might raise the issue that the very provision of a limited set of race categories from which to self-identify is problematic, which it is,

but that is a topic for another article.) In addition, there can be variations across different mixed heritage combinations in how they choose to identify when asked to select only one category. For example, in this study, if we examine the percentage of students who identified as White and *either* American Indian, Hispanic, Asian, or Black on the ‘circle all that apply’ question, there are differences in the percentages that chose to identify as White on the ‘choose only one’ item rather than as the non-White race or as ‘Other’: 81.3% of the American Indian & White students, 60.0% of the Hispanic & White students, 38.7% of the Asian & White students, and none of the Black & White students. (See Figure 2 for an illustration of how students who identified with selected two-race combinations identified when asked to choose one. Two-race combinations included in this figure are those that comprise at least one per cent of the overall student population.)

Figure 2. *How mixed heritage students identified when asked to ‘Choose only one’*



If we use non-White category assignment with these data, the racial/ethnic tabulation for the class would be: 34.5% White, 26.5% Black, 11.0% Hispanic, 11.0% Asian, 2.8% American Indian, 0.3% Filipino, 0.6% Pacific Islander, and 13.3% multiple non-White category membership. Compared to other tabulations in Table 5, the Hispanic and Asian counts are highest with this non-White category assignment method (besides the disaggregated tabulation, which totals more than 100%).

Fractional assignment

In terms of tabulating multiple response data regarding race/ethnicity, there is also a fractional assignment method in which people are counted fractionally to each group with which they identify. If an individual

identifies with two race/ethnicity groups, 0.5 would be counted for each group; if an individual identifies with three race/ethnicity groups, 0.33 would be counted for each group, and so on.¹⁰ An advantage of fractional assignment is that it ensures the tabulation totals 100%; however, this method can be problematic conceptually as we think about ‘fractional people’ and associated negative connotations with past racial classifications in the US focused on blood quantum (del Pinal 1998; Snipp 2000). If we assign students to categories using this tabulation method, the demographics of the class would be: 43.9% White, 29.1% Black, 10.9% Hispanic, 9.9% Asian, 4.9% American Indian, 0.7% Filipino, and 0.6% Pacific Islander. Compared to other tabulation strategies, the counts for American Indians and Whites are the highest with fractional assignment (again, besides the disaggregated tabulation). The fractional counts increase the size of each category, compared to tabulations in which multiple response data are sorted into combination categories (as described in the next section). In fact, 100% of the Pacific Islander count comes from the fractional additions, 96.8% of the American Indian count, 42.4% of the Hispanic count, 27.3% of the Asian count, 26.5% of the Filipino count, 22.5% of the Black count, and 21.5% of the White count. These data illustrate the extent to which counts for various race/ethnicity groups seem to be diminished by questionnaire items that force people to choose one category rather than mark all that apply.

Combination category assignment

Thus far, this discussion has primarily focused on the race/ethnicity categories used by the California State Department of Education to keep track of demographics. Another way to tabulate data collected from students about their race/ethnicity is in terms of the categories used by the US government, which include American Indian, Black, Hispanic, Asian, and White (though it should be noted that Hispanic is considered an ‘ethnicity’ while the others are defined as ‘races’). In preparation to deal with multiple response data collected on Census 2000 about race and ethnicity, the OMB issued Bulletin 00–02 with guidelines specifying that the following combination categories also be considered in demographic analyses pertaining to civil rights monitoring and enforcement: White & Black, White & American Indian/Alaska Native, White & Asian, Black & American Indian/Alaska Native. In addition, OMB Bulletin 00–02 requires that combination groups accounting for at least 1% of the overall population (e.g., a state, city, school, etc.) be included in tabulations as well. Though these guidelines have been set specifically for dealing with racial statistics in the civil rights arena, the policy sets a precedent for the organization of demographic data in other contexts as well.

Table 6 includes survey results from this study regarding how students

Table 6. *Combination category assignment of mixed heritage students*

Race/Ethnicity	%
White	34.5
Black	22.6
Asian	7.7
Hispanic	6.2
White & Asian	4.8
White & Hispanic	4.7
White & Black	3.9
American Indian & Black	3.1
American Indian & White	2.5
American Indian & Black & White	1.7
American Indian & Black & Hispanic	1.2
American Indian & Black & Hispanic & White	1.2
Black & Asian	1.1
Black & Hispanic	1.1
Black & Hispanic & White	1.1
American Indian & Hispanic	0.5
American Indian & Black & Asian	0.5
American Indian & Hispanic & White	0.3
Hispanic & Asian & White	0.3
American Indian	0.2
Hispanic & Asian	0.2
Black & Hispanic & Asian	0.2
American Indian & Black & Asian & White	0.2
American Indian & Hispanic & Asian & White	0.2

N = 638

Note: **Bold** categories meet OMB's suggested 1% cutoff or are one of the groups required in tabulations by Directive 15 and Bulletin 00-02. Also, as a reminder, the US federal government does not consider 'Hispanic' a race category.

identified their race/ethnicity when allowed to choose multiple responses, presented using OMB's suggested race/ethnicity categories and the guideline for which combination groups get 'counted.' As indicated in the table, groups listed in **bold** type indicate that they meet the 1% cutoff guideline or are one of the standard race/ethnicity categories required in tabulations (in the case of American Indian). It should also be noted that the OMB does not include Hispanic identifications in its guidelines for aggregated race/ethnicity categories, but these responses were taken into consideration for the present analyses. In addition to the one-race/ethnicity categories (with the exception of American Indian), seven two-race/ethnicity categories meet the 1% criterion as do three three-race/ethnicity categories and one four-race/ethnicity category. The combination categories that meet the 1% cutoff all include White or Black, though not every combination category with White or Black met this threshold. It may also be noted that the only combination categories with Asian are White & Asian and Black & Asian; most of the combination categories are comprised of the American Indian, Black,

Hispanic, and White groups – in this particular school context. On the whole, over a quarter of the students in this class (28.8%) could be classified into combination race/ethnicity categories (including 2.4% who fall into combination categories that do not meet the OMB's 1% cutoff suggestion).

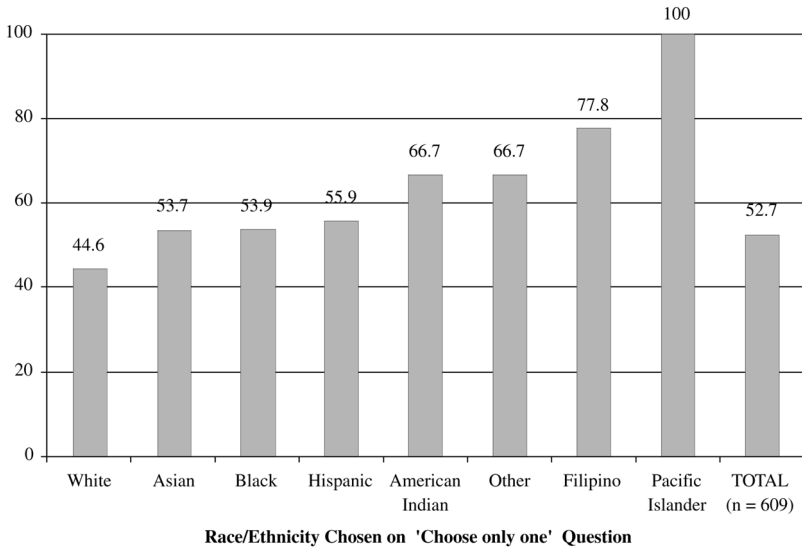
Students' responses to an explicit question about being of mixed heritage

In rethinking our methods for collecting race data, the idea of including a separate multiracial category in classification systems is sometimes proposed, as it was during discussions of census revisions that took place in preparation for Census 2000 (Evinger 1996). Though many multiracial activists favour the addition of a multiracial category to forms, there are justified concerns that an all-purpose multiracial category would not capture the diversity within the group and would diminish representation or counts in other race/ethnicity groups. To look at this issue with AHS students, a question was written on the survey that explicitly asked whether they consider themselves multiracial or multi-ethnic.

Based on pilot trials and input from teachers who work with these students, one yes/no question was included, along with a space for them to explain their bases for this decision. In response to this question, just over half of the freshmen class (52.7%) identified as multiracial or multi-ethnic. Figure 3 displays the results for this question by race/ethnicity (based on students' responses to the 'choose only one' item). Percentages for these groups range from 44.6% for Whites to 100% for Pacific Islanders. The only statistically significant difference ($p < .05$) is between students who identified as White and Other on the 'choose only one' question. It is not surprising that students who identified as Other were among the most likely to say they were multiracial or multi-ethnic. For many individuals of mixed heritage, choosing Other is the only way to indicate belonging to more than one race/ethnicity group. Regarding gender, though females (56.1%) were more likely than males (49.0%) to consider themselves multiracial or multi-ethnic (in line with other survey results) this was not a statistically significant difference.

With over half the students identifying as multiracial or multi-ethnic, it is important to understand how they are making decisions about what it means to be mixed.¹¹ For example, some students used multiracial or multi-ethnic as synonymous with multicultural, citing that though they themselves may only identify with one race/ethnicity, they have diverse friends or extended family and/or a working knowledge of other culture(s) and therefore consider themselves multiracial or multi-ethnic. Since this and other notions of what it means to be multiracial and multi-ethnic that students explained do not necessarily match definitions used by researchers and social scientists, new variables – separate for mixed-

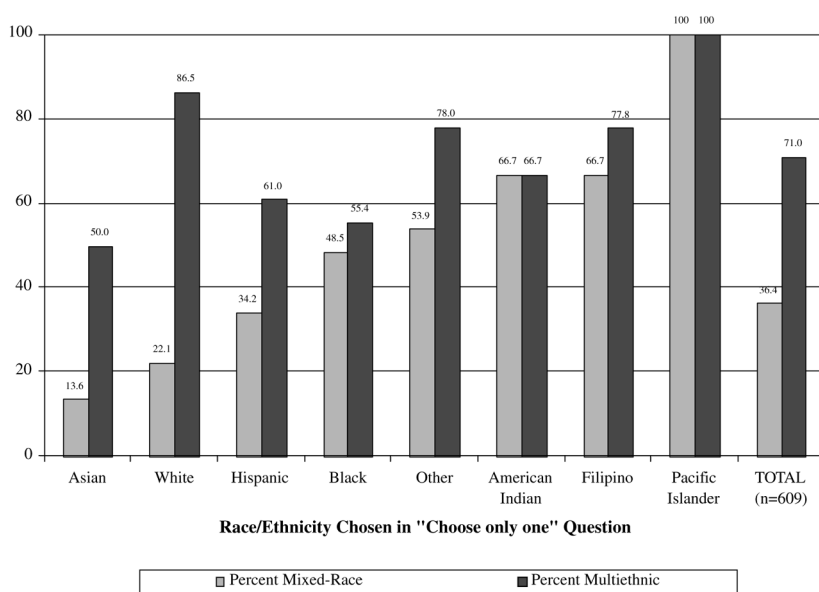
Figure 3. Percentage of students who consider themselves multiracial or multi-ethnic, by race/ethnicity



race and multi-ethnic – were created based on students' responses to survey items about racial/ethnic identification.

Of course, not all researchers, social scientists, or school staff would agree on how to define mixed-race or multi-ethnic either. In the tabulations presented in Figure 4, based on their responses to the 'circle all that apply' multiple-choice question, students are considered *mixed-race* if they identified with more than one of the 'standard' categories endorsed by the federal government, including American Indian, Black, Asian, White, or Hispanic. Students were considered *multiethnic* if they identified with more than one ethnicity (regardless of the number of the five 'standard' race categories with which they identified).

Using these definitions of mixed-race and multi-ethnic, we find that 36.4% of this class would be considered mixed-race and 71.0% multi-ethnic (in comparison to the 52.7% who identified explicitly as multiracial or multi-ethnic). In addition, as survey results throughout this article have implicated, there are statistically significant differences between the percentages of females and males who indicated mixed-race and multi-ethnic backgrounds. While 41.8% of females would be considered mixed-race based on their survey responses, only 30.5% of males would ($p < .01$); and, while 75.2% of females would be considered multi-ethnic based on their survey responses, 66.6% of males would ($p < .05$). There were also several statistically significant differences ($p < .001$) between race/ethnicity groups (as defined by students' responses to the 'choose

Figure 4. Percentage of mixed-race and multiethnic students, by race/ethnicity

only one' question).

In the case of the *mixed-race* classification, smaller percentages of Asians and Whites gave mixed-race responses overall on the survey than Blacks and students who chose Other on the 'choose only one' question. Also, a smaller percentage of Asians gave mixed-race responses compared to Filipino students. In the case of *multiethnic* classification, smaller percentages of Asian and Black students gave multi-ethnic responses on the survey overall compared to Whites and students who identified as Other on the 'choose only one' item. In addition, a smaller percentage of Hispanic students indicated that they were multi-ethnic in their survey responses overall than White students. While only a few students identified as American Indian or Pacific Islander when asked to choose one identification, it should be noted that relatively large percentages of students from these groups gave responses indicating that they were mixed-race and multi-ethnic, respectively.

Students' responses to an open-ended question about race/ethnicity

It could be argued that the most meaningful way to collect race/ethnicity data on forms is to ask an open-ended question. Though this is not an easy method to be used with large groups of people due to the time-intensive data entry, coding, and tabulation it entails, this question type was included on the survey for this study so that students' responses could be compared with those on the multiple-choice questions. In this

Table 7. *Self-identifications on the ‘Open-ended’ and ‘Long list’ questions*

Racial/Ethnic Identification ^a	% Listing Identification in ‘Open-ended’ Question	% Choosing Identification in ‘Long list’ Question
White	26.0	44.4
African American	19.0	32.9
Black	18.0	24.8
Caucasian	8.9	NA
American	8.2	b
Jewish	7.7	c
Mixed	7.1	NA
European	5.6	NA
Mexican	4.5	8.8
European American	3.6	NA
Irish	3.4	24.1
Japanese	2.5	4.2
Latino/a	2.5	7.1
Chinese	2.4	4.5
German	2.4	21.3
Native American	2.2	10.3
Hispanic	1.9	7.7
American Indian	1.7	10.8
Asian	1.7	9.6
Filipino	1.7	2.7
Puerto Rican	1.7	3.1
Russian	1.6	16.7
Scottish	1.6	13.0
Mexican American	1.4	d
Asian American	1.3	e
Italian	1.3	6.4
Korean	1.1	1.4

N = 638

^a Identifications listed in open-ended question by at least 1% of the student population are reported.^b 1.9% of students listed ‘American’ as an additional response.^c 2.7% of students listed ‘Jewish’ as an additional response.^d As indicated, 8.8% of chose ‘Mexican.’^e 2.2% of students listed ‘Asian American’ as an additional response.

section, open-ended responses will be compared with those on both the short and ‘long list’ questions.

The first question on the survey was an open-ended one: ‘How would you identify your ethnicity or race, in your own words?’ Ample space was provided in which students could list identifications, write a complete sentence, or give a short answer and then elaborate. Of the 96% of survey respondents who answered this open-ended question, 49.4% listed one identification, 35.4% listed two, 10.3% listed four, and 4.9% listed four or more. As with other survey items, female students tended to list a larger number of identifications in their responses to the open-

ended question about their race/ethnicity than male students. This was a statistically significant difference ($p < .01$): females averaged 1.84 written identifications while males averaged 1.61.

To look at whether similar percentages of students identified with each race/ethnicity group, irrespective of whether the survey question was open-ended or multiple-choice, one can examine the percentage of students who identified in the open-ended question with race/ethnicity categories congruent with those listed on the 'circle all that apply' item. In the case of American Indian identifications, more students listed American Indian or Native American in the open-ended question (2.2%) than solely chose to identify as American Indian on the multiple-choice 'circle all that apply' question (0.2%). However, fewer students identified as American Indian or Native American on the open-ended question than on the 'circle all that apply' question when one takes into account the responses of students who also identified with other race/ethnicity groups (10.8%).

While inconsistencies across open and closed ended questions can result from respondent error, interruption, tuning out, and so on, data from the interview component of the larger study indicate that the student participants sometimes do not feel that they are 'enough' of a particular race/ethnicity group to claim or choose it as an identification, particularly in the case of students who are Native American or American Indian (cite withheld for blind review process). Looking at students who responded as Filipino, we see a similar phenomenon. While more students listed Filipino (1.7%) on the open-ended question than chose it as their sole response on the 'circle all that apply' question (0.5%), the percentage is still less than the number who identified as Filipino (2.4%) when multiple responses were considered.

For Black students and White students, there is not much of a difference in the percentages for the open-ended and 'circle all that apply' questions when one takes into account only those who solely identified as Black or White in the multiple-choice question. However, when one compares the percentage of students who identify as Black or White on the open-ended question with the percentage of students who identified as Black or White at all on the multiple-choice item, there is a larger difference. While 19.0% of students listed Black or African American in their open-ended response, and 19.6% chose *only* the Black category in the 'circle all that apply' question, 35.9% chose Black or African American *either* by itself or with other racial/ethnic identifications on that same question. Similarly, while 26.0% of students listed White, Caucasian, European, or European American in their open-ended response, and 27.3% chose *only* the White category on the 'circle all that apply' question, 51.6% identified as White, Caucasian, or European when one considers multiple response data.

In the case of Hispanic and Asian identifications, it seems that fewer

students identified with these broad categories when allowed to give an open-ended response. Instead, they opted to list more specific ethnic groups (such as Mexican, Puerto Rican, Japanese, Chinese, and so on) that typically get clumped into larger categories on multiple-choice questions: 62.2% of Hispanic students and 78.6% of Asian students identified with a specific ethnicity group (data not shown). For example, fewer students listed Hispanic or Latino/a (2.5%) in the open-ended question than chose only Hispanic on the ‘circle all that apply’ question (4.8%), although a larger number overall identified as Hispanic on the multiple-choice question whether alone or in conjunction with other race/ethnicity categories (15.0%). Similarly, fewer students listed Asian or Asian American (1.7%) on the open-ended question than chose Asian on the multiple-choice item where they could choose multiple identifications (5.8%); however, an even larger percentage identified as Asian when one takes into account students who also identified with another race/ethnicity group (11.1%).

We can also examine how students responded to the ‘long list’ multiple-choice item in which sixty-four choices were provided (based on the demographics of the community). Table 7 presents the percentage of students who identified with particular racial/ethnic identifications on these two questions – data are included for groups with which at least 1% of the student population identified on the open-ended item. In general, higher percentages of students chose particular racial or ethnic groups from the long list of options in the multiple-choice question than wrote in those responses in the open-ended question of the survey. This was particularly the case for White ethnicities. That is, while a student might not identify in her own words as Irish, German, Russian, Scottish, or Italian, she still might identify with such a group or groups when presented with an extensive list of race/ethnicity categories and allowed to give multiple responses. [Waters (1990) made a similar observation in her work with adults of White ethnicities.] In addition, higher percentages of students chose American Indian and Native American in the ‘long list’ question than identified as American Indian or Native American in their open-ended responses. Differences in responses for Hispanic, Latino/a, and Asian race/ethnicity categories were less pronounced between the open-ended and ‘long list’ formats.

Summary of survey findings

Survey results from this study give a detailed example of how various methods of collecting and tabulating race/ethnicity data can yield different overall demographics of a group – in this case, the freshmen class at AHS – as well as inconsistencies in individual-level responses, particularly for people of mixed heritage. In terms of the overall racial/ethnic demographics of the freshmen class at AHS, disaggregating

multiple response data results in the largest percentages for each race/ethnicity group (since the total is allowed to exceed 100%), and clumping multiple response data into a catch-all category 'Multiple Responses' results in the smallest percentages for each race/ethnicity group (except Filipino). Other than the disaggregated counts, non-White category assignment yields the largest percentages for Hispanics and Asians, fractional assignment results in the largest percentages for American Indians and Whites, and the tabulation of responses to the 'choose only one' question (which does not permit multiple responses) shows the largest percentage for Blacks. Group percentages range as follows, depending on the question or tabulation format used: 27.3 to 51.6 White, 19.6 to 35.9 Black, 4.8 to 15.0 Hispanic, 0 to 10.8 American Indian, 5.5 to 11.1 Asian, 0.2 to 2.4 Filipino, 0 to 2.0 Pacific Islander, and 2.5 to 19.3 Other. One can also compare data collected from this project with 'official' demographic data from the California Department of Education on the freshmen class studied at AHS (also included in Table 5): 38.7% White, 34.5% Black, 9.2% Hispanic, 9.0% Asian, 0.8% Filipino, 0.6% American Indian, and 7.2% Mixed-race or Unspecified.

In the context of schooling, demographic variations impact processes such as the determination of how 'minority' a schools is, analyses of achievement test data by race/ethnicity group, boundary-setting to keep schools within a district racially/ethnically balanced or representative of the overall student population, allocation of students to schools within a district when choice programmes factor race/ethnicity into the equation, and programme and curriculum development to meet the needs and interests of particular race/ethnicity groups.

Analysing the survey data on a more individual level, it is clear that various question formats yielded different responses from students; though different does not necessarily mean discrepant, rather, some responses seemed to be more complete or elaborated than others. In general, students were more likely to identify with multiple race/ethnicity categories on questions about themselves as compared to how they believe that their parents and especially school staff would identify them.

Also, females were more likely than males to indicate mixed heritage, either by choosing multiple categories on the 'circle all that apply' question, offering more information on the open-ended question, or explicitly identifying as multiracial or multi-ethnic at some point on the survey. Overall, females tended to offer more complex, dynamic, and less static racial/ethnic identifications than males. Given that equivalent percentages of female and male students *could* have identified with more than one group (according to both school and district data as reported by the California Education Department), it appears that female adolescents were more likely to do so. Though it is not clear exactly what is causing this, it might have to do with gender differences

in adolescent cognitive development (specifically regarding categorization and abstraction) and identity formation; there also could be contextual factors specific to AHS and the surrounding community influencing female and male students to conceptualize and/or identify their race/ethnicity in different ways.

In addition to this gender difference, there are also several differences in patterns of identification for particular race/ethnicity groups. For instance, students were most likely to identify as American Indian or Filipino on the 'circle all that apply' multiple-choice question, as compared to either identifying solely as American Indian or Filipino on the same question or including one of these identifications in their response to the open-ended item. Another trend seen in the data is that students who identify as Asian or Hispanic were more likely to specify ethnicity in their responses to the open-ended question than to identify with the broad categories of 'Asian' or 'Hispanic' on the multiple-choice items.

The survey results also indicate that students who are Black (even if they are also something else) are more likely to identify as Black rather than another category when asked to 'choose only one' response, reflecting the lasting legacy of the 'one drop rule,' unique to the history of the US. On the whole, students who are Black and something else also tend to write fewer identifiers in their responses to the open-ended question, compared to students who are White and something else. In addition, students overall are more likely to choose specific ethnicities from an extensive or 'long list' of options on a multiple-choice question than to write these specific ethnicities in their own written responses when asked about how they self-identify using an open-ended item. This was particularly the case for White ethnicities. These types of variations and inconsistencies in individuals' responses threaten our ability to secure reliability in race/ethnicity measures.

Reliability in 'measuring' race/ethnicity

When we collect data about race/ethnicity, is it possible to do so in consistent ways over time and across context? Threats to reliability are evidenced through these survey data by the level of inconsistency in students' responses to various questions about their race/ethnicity. Reliability is especially complicated to consider when it comes to mixed-race and multi-ethnic people. For it is these individuals who have the most choices about ways they could self-identify and therefore the highest likelihood of inconsistency in racial/ethnic identification practices. The process of strategic identification seems to manifest more when filling out forms, compared to answering questions in social situations, perhaps for the same reason that students in the study sometimes respond to race/ethnicity questions arbitrarily or randomly on paper but not in social

situations – i.e., having to do with the anonymous nature of surveys as compared to in-person exchanges since the person asking a verbal question typically has some visual information about them. Although these adolescents sometimes try to be strategic about how they identify in social situations, they perceive to hold less control over these identifications (especially when phenotype, behaviour, or cultural involvement do not help to substantiate these claims).

This is not to say that mixed-race and multi-ethnic adolescents are being duplicitous in how they identify; rather, when faced with decisions about how to categorize themselves, they are asked to make choices that have understood repercussions and implications in today's society. The adolescent participants in this study demonstrate that racial/ethnic measurement and identification is not a clear-cut, straightforward, or static process for everyone, particularly those who fit into several categories of standard racial/ethnic classification schemes. Their survey responses raise questions about whether it is possible to attain high levels of reliability in measuring race/ethnicity when working with a diverse population that includes mixed-race and multi-ethnic individuals.

Concluding thoughts

Typicality of the 'case'

As with any case study, the typicality of the 'case' can impact the generalizability of the research findings. Any one high school could hardly do justice representing all high schools, even within the same country. In this work, Aquaria High School is unique compared with many other schools in terms of the size of its mixed heritage student population and in its emphasis on acknowledging privilege and oppression to the point of a mandatory cultural studies class required for graduation. Intertwined with the larger community's history of multiculturalism, interracial relations, and political activism, this focus on socio-historical and cultural literacy seems to give students sophistication in their ability to talk and think about issues of race and ethnicity, and may also heighten the salience of self-identification decisions.

In other ways, AHS could be likened to many high schools that are serving (and struggling, at times, to do so) an increasingly racially/ethnically diverse student population and striving to effectively incorporate multiculturalism into the curriculum. In addition, as with many other diverse high schools, AHS is still plagued to some extent by continuing formal and informal segregation: formal in terms of tracking or course placements made by administrators, and informal as evidenced by students' social groupings both in and out of the classroom.

Limitations of the data and suggestions for future research

One limitation of the data collected in this site is that some of the race/ethnicity populations were quite small: in particular, Pacific Islanders and American Indians. It would certainly be valuable to study issues of racial/ethnic identification in other parts of the country (and in other countries), in places with different demographic contexts and social histories. In addition, no systematic data were collected regarding socio-economic status; it would be interesting to consider the potential impact of social class on how mixed heritage adolescents choose to identify themselves. Future research might also explicitly examine gender differences in racial/ethnic identification, the causes for them, and whether such differences also exist with adults. In addition, longitudinal work on how mixed heritage individuals self-identify, over the lifespan and at different points of their lives, is much needed.

Implications for the collection and tabulation of race/ethnicity data

Though the present work focuses on high school students, in a critical period of identity development (beyond race and ethnicity), these adolescents are future adults; they represent the practices and experiences of young people coming of age at a time in the US different from what previous generations have experienced with regard to the prevailing tone of race relations and the demographic terrain. Their survey responses illustrate the complexity inherent in racial/ethnic identification, particularly for mixed heritage individuals, and have implications for race/ethnicity data collection and tabulation in any context (whether in a school system, by the Census Bureau, for research purposes, etc.).

If we persist in relying on such information to help us make sense of social worlds, it is critical that we use ‘measurement’ strategies that result in the most accurate and meaningful data possible – for a growing number of people, being able to identify with multiple groups is necessary to accomplish this end. As mixed heritage populations burgeon in the US and other places, the need to recognize, allow for, and acknowledge fluidity and multiplicity in racial/ethnic identification intensifies. Beyond *collecting* more detailed race/ethnicity data – e.g., by permitting multiple responses or permitting identification with combination groups – we must also be clear about the ways in which we are *organizing or counting* mixed heritage information. Methods of collecting and tabulating race/ethnicity data matter, not only at the individual-level of attaining useful and meaningful responses, but also on a macro-level in that they impact summaries about the overall demographics of a group and, therefore, the conclusions we are able to derive about whatever social phenomena we are studying.

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Notes

1. These statistics are based on parent/guardian responses regarding children; the numbers would likely be larger if we had data on how the youth identify *themselves* racially/ethnically. It should also be noted that these statistics are based on the Census 'race' question, on which Hispanic/Latino was not an option. To count Hispanic/Latino as a group on the race question, respondents had to choose the category 'Some other race.' Therefore, the percentages of people identifying with more than one category would likely be higher if Hispanic/Latino were actually included on the race question rather than asked as a separate item.
2. The use of both these terms together is not meant to imply that these constructs are one and the same. I use them both throughout this article in an effort to be inclusive in my discussion of demographic data collection and tabulation. Certainly, there are many different ways in which people have defined race and ethnicity – some biological and genetic, others cultural, geographic, or socially constructed (e.g., Goldsby 1971; Thernstrom 1980; Davis 1991; Molnar 1992; Omi & Winant 1994; Hirschfeld 1996).
3. I say 'if' with regard to continued collection of race/ethnicity data since there are current efforts by some in California to ban state and local government agencies from collecting information about race. Voters will face what proponents are calling the 'Racial Privacy Initiative' on the October 2003 ballot. In reality, demographic data would likely still be collected; however, they would not be accessible (even in aggregate) to the public, thereby making it difficult to assess anti-discrimination policies and diversity goals.
4. Of course, the use of 'community' here is fraught with vagueness. This wording conveys the assumption that there is some shared sense regarding an individual's race within 'the community'. Which community, and according to whom within that community?
5. Other writings from this research address factors that influence racial/ethnic self-identification – e.g., diversity of social environment(s), context in which identifications are made, perceived uses of information, notions about what it means to be 'mixed', knowledge regarding background/family, cultural ties, and phenotype (cite withheld for blind review process) (Lopez 2001).
6. Ninety-eight students were absent for the survey, and five students declined to participate.
7. These data identify 8.4% of females and 8.3% of males in the *district*, and 4.9% of females and 5.0% of males in the *high school* with multiple race/ethnicity categories (or no response at all) during the 1999–2000 academic year in which data collection for this study took place. Data are based on enrolment information reported by school districts to the California Department of Education – in the case of AHS, racial/ethnic identifications are typically made about students by parents/guardians.
8. The five standard race/ethnicity groups recognized by the OMB are considered here – this means that Filipinos and Pacific Islanders are subsumed into 'Asian'. This was done in response to very small numbers of students in the surveyed class identifying with either of these groups.
9. Certainly, other comparisons could be made to examine students' preferences to alternative or more ethnically specific category labels – e.g., three fourths of students who identified as West Indian (n = 9) or as Jamaican (n = 8) on the 'long list' survey item

identified as Black on the 'circle all that apply' question, half of students who identified as Iranian ($n = 6$) and three fourths of those who identified as Middle Eastern ($n = 22$) on the 'long list' question identified as White on the 'circle all that apply' one.

10. Another way to do this type of fractional classification would be to base the fractions on one's heritage. For example, if someone is $3/4$ African American and $1/4$ Native American, then he would get counted as 0.75 in the African American group and 0.25 in the Native American group. However, this level of detailed information is seldom available; it is not how we typically collect 'data' about race/ethnicity, it is not how some people conceptualize their racial/ethnic identifications, and many would not be able to provide that level of specificity regarding their racial/ethnic background(s).

11. In general, students tended to use one or a combination of the following types of explanations about why they do or do not consider themselves multiracial or multi-ethnic:

- biological:** blood, genes.
- phenotypical:** appearance, outsiders' perceptions; includes references to skin tone, hair type, etc.
- cultural:** cultural or religious beliefs and practices, customs, traditions; includes references to language, holidays, dress, food, history, etc.
- geographical:** place of nativity or ancestry, country of origin; where born, raised, or live.
- ancestral:** ancestors, lineage, descent, roots; includes statements about relatives' racial/ethnic identifications (e.g., my mom is _____, my dad is _____).
- associative:** associations with others (friends, extended family, neighbours); includes references to group membership/affiliation.

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