



# Do special education recommendations differ for Asian American and White American students?

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## Abstract

Asian American students are underrepresented in special education, a state of affairs that threatens their access to academic resources. We propose that student race may influence educators' likelihood of recommending them for special education services. In two studies, participants working in the field of education (total  $N=1195$ ) read a realistic, hypothetical observational behavioral report that described a struggling student. The student's race (White or Asian) and area of difficulty (Reading or Math) were manipulated between subjects. Regardless of subject area, participants were less likely to recommend Asian American than White American students for learning disability evaluation. We speculate that the difference is based on stereotypes that Asian American students are too academically successful to struggle. Such lack of recommendation, if it occurs in the classroom, could potentially contribute to the underrepresentation of Asian American students in special education.

**Keywords** Asian American · Learning disabilities · Underrepresentation · Evaluation

## 1 Introduction

Title IX of the Civil Rights Act offers legal protection against discrimination in schools, including equal access to special education accommodations for students with disabilities. In accordance with the Individuals with Disabilities Education Act

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(IDEA), all students with disabilities are provided access to a free and appropriate public education in their least restrictive learning environment (Individuals with Disabilities Education Act, 2004). The provision of appropriate academic accommodations are intended to increase academic achievement of students with disabilities. Accommodations and modifications are dependent on a student's particular needs and range in their least restrictive environment. Students with mild to moderate, high-incidence disabilities may receive academic interventions and extended time on assignments and assessments while spending the majority of their academic day in the general education classroom. Conversely, students with severe, low-incidence disabilities may be educated solely in a special education classroom for the full academic day.

For students with learning disabilities and emotional behavioral disorders (Lan drum et al., 2003), effective interventions have resulted in positive academic gains for both elementary (Chard et al., 2002) and secondary students (Lang et al., 2009) in reading and mathematics (Kroesbergen & Van Luit, 2003). Implementation of multi-tier systems of support, such as response to intervention, in addition to special education increases overall academic performance by emphasizing strong general instruction as a preventative measure (Fuchs et al., 2012).

In order to receive special education services, students must first be determined to have a disability. But while disability assessments are standardized, the identification process is often based on educators' subjective perceptions. Oftentimes, the identification process begins with a recommendation from an individual teacher, or a member of the school support staff, to provide testing to determine whether a given student needs special education services. These judgments may be vulnerable to racial biases that could then produce disparities in what identifications or resources seem appropriate. The current research tests this possibility: it investigates racial bias in the context of recommendation for learning disability assessment.

Asian American students are underrepresented in special education, and policy conversations and research surrounding special education has mostly neglected this underrepresentation (Doan, 2006; Poon-McBrayer, 1998). Nationally, there are disproportionately less Asian American students with disabilities than the number of Asian American students in general. Asian Americans compose less than three percent of the six million students served under IDEA, despite composing over five percent of the national population (Pew Research Center, 2017; U.S. Department of Education, 2018, p. 47). Moreover, research on Asian American students with learning disabilities in special education is limited, and mostly consists of qualitative studies (Cooc & Yang, 2017). This limited literature suggests that underrepresentation could attribute to Asian Americans being stereotyped as a "model minority": a racial minority group that is successful despite setbacks (Wing, 2007).

The model minority myth has embedded itself in American society following a complex history of its development. The stereotype of the model minority exists as a contrast to the stereotype of the "failing" minority, a critique of African Americans. In 1965, a year prior to the first mention of the "model minority," the Moynihan report was published critiquing the African American family unit. The report, published by the U.S. Department of Labor, indicated that a list of cultural and structural characteristics led to African American poverty. American sociologist William

Petersen first coined the phrase “model minority” in a New York Times Magazine article that attributed the successes of Japanese Americans despite the discrimination they faced following Japanese Internment during World War II to—among other things—cultural values and genetics (Chan & Hune, 1995; Kawai, 2005). Later that year, U.S. News and World Report published a second article detailing the “Success Story of One Minority in U.S.” that focused on the perceived success of Chinese Americans (Chan & Hune, 1995; Kawai, 2005; Kobayashi, 1999). These two articles outlined the narrative of the “model minority,” a seemingly positive stereotype that was popularized in subsequent publications that broadened the stereotype to overall Asian American success in the face of difficulty. Consequently, Asian Americans are stereotyped to be as successful, if not more so, than the rest of Americans, despite the challenges and discrimination they may face. There is limited research on the degree to which model minority myth is perpetuated outside of the United States. While the model minority myth also exists for Asian Canadians and Asian Australians (Reitz et al., 2011), research on how the model minority stereotype affects Asian Canadians is limited in comparison to Asian Americans (Chung et al., 1997).

As it relates to academic success, Asian Americans are portrayed in American news and media as model minority students: high academic achievers who excel in math and science and have little to no academic difficulties (Wing, 2007; Yee, 1992; Yoon & Gentry, 2009; Zhang, 2010; Zhao & Qiu, 2009). While seemingly benign, such positive stereotypes can have negative implications (Czopp et al., 2015; Maddux, Galinsky, Cuddy, and Polifroni, 2008). First, the model minority myth portrays Asian Americans as a monolithic population in which all members have the same positive experience, overshadowing the varied experiences of different ethnic groups. People of over 50 distinct ethnicities (“Census Data & API Identities,” n.d.) categorized as “Asian American” have diverse immigration histories and educational and socioeconomic backgrounds, factors which contribute to academic success. For example, while many East Asian families immigrated voluntarily as scholars or professionals, many Southeast Asian families immigrated as refugees with less formal education (Ngo & Lee, 2007). Nearly 40% of Cambodian American students do not receive a high school diploma (“Data Disaggregation,” n.d.; “Educational Attainment by Detailed Group (National),” n.d.), and only 60% of Hmong American students graduate from high school (“Data Disaggregation,” n.d.; “U.S. High School Graduation Rate Hits New Record High,” 2015). Thus, model minority stereotypes do not portray the academic diversity, and sometimes challenging experiences, of Asian American students. The model minority also poses additional stress to Asian Americans because of the high expectations set upon them (Cheryan & Bodenhausen, 2000). Consequences of the model minority stereotype extend past the educational sector. Researchers have noted the impact of the model minority stereotype in both mental and physical health services provided to Asian American populations (Gupta et al., 2011; Ibaraki et al., 2014; Kobayashi, 1999; Yoo et al., 2010). Additionally, the model minority stereotype has been used to invalidate the experiences of other racial minorities (Chow, 2017; Poon et al., 2016).

In special education, the model minority myth perpetuates the notion that Asian American students are academically successful due to natural intelligence or cultural

values, and, as a result, that they do not have serious academic problems (Kitano & DiJiosia, 2001; Wing, 2007; Yee, 1992). Teachers tend to report having positive views of their Asian American students and generally do not expect them to have behavioral or learning difficulties (Cooc & Yang, 2017; Poon et al., 2016; Wing, 2007). This unrealistic expectation of success for Asian American students negatively impacts their educational experience because teachers may expect students to perform well and ignore potential learning difficulties (Hui-Michael & García, 2009; Wing, 2007). As such, despite the fact that Asian American students are as likely as others to have learning disabilities, they are often undiagnosed (Poon-McBrayer, 2011; Poon-McBrayer & García, 2000). Recent research highlights how Asian Americans consistently have the least representation compared to other races (Zhang et al., 2014) and lower placement in special education in nearly all disability categories as recognized by IDEA (Cooc, 2018; Hibel et al., 2010; Kulkarni, 2017).

Educators play a critical role in initiating the identification process for special education services. Since students spend the majority of their academic day at school, it is often teachers or other members of the school support staff who first notice signs of academic difficulties in students. If educators fail to recognize signs of learning disabilities in Asian American students, it could contribute to those students' underrepresentation in special education, resulting in an academic experience that does not meet their needs. Specifically, if educators perceive Asian American students as without learning disabilities, they may not take the steps of noticing and referring students for assessment for learning disabilities. But despite evidence revealing Asian American underrepresentation in special education, data is needed that tests whether there is a causal effect of student race on perceiver's judgments of them related to special education. This question is the possibility that the current research set out to test.

## 1.1 The current research

The current research tested whether student race influences perceptions that the student should be evaluated for special education needs. Study 1 manipulated student race and subject area of difficulty, examining their effects on likelihood of recommending the student for learning disability evaluation. Study 2 replicated Study 1, but also manipulated whether the student could be considered in need of learning disability or giftedness evaluation. In both studies, given stereotypes about Asian American academic success, we expected that an Asian student would be less likely than a White student to be considered in need of learning disability evaluation.

## 2 Study 1

### 2.1 Method

#### 2.1.1 Participants

Participants ( $N=415$ ;  $M_{\text{age}}=44.8$ ,  $SD=14.2$ ; 78.1% women; 76.1% White) were U.S. citizens recruited from the Project Implicit research website (<https://implicit.harvard.edu>). This study was open only to participants who reported an occupation indicating that they work in an educational setting (10.1% Other education, training, and library occupations; 15.7% Other teachers and instructors; 22.9% Counselors, Social Workers, Community specialists; 25.1% Education—Postsecondary Teachers; 26.3% Primary, Secondary, and Special Ed Teachers). Data were collected between October 21, 2016 to October 19, 2017.

This study received ethical approval from the Institutional Review Board at the University of Florida (IRB201601685). Participants indicated their consent to participate by clicking a corresponding option on the consent document; a written signature for consent was not obtained. The authors of this study have no formal conflicts of interest to report.

#### 2.1.2 Materials

**2.1.2.1 Student race and subject manipulation** Participants read a hypothetical observational behavioral report about a student who was either White or Asian and expressed traits representative of Specific Learning Disability (as reported in the Diagnostic and Statistical Manual V, American Psychiatric Association, 2013) in either Reading or Math (see Appendix A for samples of full text of behavioral report). The report described an 8-year-old male third-grade student. The hypothetical student's race was manipulated through his name ("Jimmy Smith" or "Li Ying Chang"; modified from King et al., 2006). The subject area where the student had difficulty was manipulated through the text of the report, which stated that the student exhibited certain traits in either Reading ("difficulties with letter sound recognition") or Math ("understanding and remembering number facts"). The traits were drawn from the characteristics of Specific Learning Disability as reported in the Diagnostic and Statistical Manual (DSM-V, American Psychiatric Association, 2013) because evaluation procedures in United States are based on the DSM.

**2.1.2.2 Recommendation for learning disability evaluation** After reading the report, participants read a definition of Specific Learning Disability, the most common type of learning disability (SLD; "A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may display in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations"). Participants were asked to imagine that they were the student's (Jimmy Smith or Li Ying Chang) teacher, and given the definition of SLD,

**Table 1** Mean likelihood of recommendation for special needs evaluation by condition in Study 1

| Race  | Subject  |  |
|-------|--|--|
|       | Reading  | Math   |
| Asian | $N=101$ , $M=4.35^a$<br>(95% CI=3.95, 4.75), $SD=2.05$ | $N=109$ ,<br>$M=4.19^a$<br>(95%<br>CI=3.85,<br>4.53),<br>$SD=1.92$ |
| White | $N=96$ , $M=5.06^b$<br>(95% CI=4.72, 5.42), $SD=1.74$  | $N=105$ ,<br>$M=4.53^b$<br>(95%<br>CI=4.16,<br>4.93),<br>$SD=1.92$ |

*Note.* Cell means with different superscripts differ significantly

to report on a scale of 1 (*very unlikely*) to 7 (*very likely*) how likely they were to recommend the child for learning disability evaluation (“Based on the behavior report and the definition of Specific Learning Disability, how likely are you to recommend Li Ying Chang [Jimmy Smith] for further testing and evaluations for learning disabilities?”).

### 2.1.3 Procedure

Participants volunteered through the Project Implicit website (<https://implicit.harvard.edu>; Nosek, 2005) and completed demographic items. Participants who met the inclusion criteria (i.e., who reported an occupation indicating that they work in an educational setting) were randomly assigned to this study from a pool of approximately 10 studies. After consent, participants read the hypothetical observational behavioral report that manipulated race and subject area and indicated how likely they would be to recommend the child for learning disability evaluation. They then completed a set of exploratory measures.<sup>1</sup> Once assigned to this study, participants were ineligible to be assigned to Study 2.

## 2.2 Results

Student race (coded as Asian=0.5, White=-0.5), subject area of difficulty (coded as Math=0.5, Reading=-0.5), and the interaction between student race and subject area were entered into a simultaneous regression to predict recommendation. The

<sup>1</sup> Participants completed several exploratory measures that are not reported here. All exploratory measures were completed after the primary outcome variable. All study materials, as well as supplementary analyses and descriptive statistics for exploratory measures, are available on the project page on the Open Science Framework ([https://osf.io/2vrmb/?view\\_only=6e8df0d501804c478c13499ca731c0dc](https://osf.io/2vrmb/?view_only=6e8df0d501804c478c13499ca731c0dc)).

overall model was significant,  $F(3, 407) = 3.91$ ,  $p = 0.009$ ,  $R^2 = 0.02$  (see Table 1 for means and standard deviations by condition).

As expected, there was a main effect of race on recommendation,  $b = -0.53$  (95%  $CI_b = -0.90, -0.16$ ),  $\beta = -0.14$ ,  $SE = 0.19$ ,  $p = 0.005$ , such that Asian race produced a significantly lower likelihood of learning disability recommendation ( $M = 4.27$ ,  $SD = 1.98$ ) than White race ( $M = 4.80$ ,  $SD = 1.85$ ), Cohen's  $d = 0.28$ . There was no main effect of subject on recommendation,  $b = -0.34$  (95%  $CI_b = -0.71, 0.03$ ),  $\beta = -0.09$ ,  $SE = 0.19$ ,  $p = 0.07$ ; that is, participants were not more likely to recommend students with math learning difficulties ( $M = 4.36$ ,  $SD = 1.92$ ) or reading learning difficulties ( $M = 4.71$ ,  $SD = 1.94$ ), Cohen's  $d = 0.18$ . There was not a significant interaction between race and subject,  $b = 0.38$  (95%  $CI_b = -0.37, 1.12$ ),  $\beta = 0.05$ ,  $SE = 0.38$ ,  $p = 0.32$ .

## 2.3 Discussion

As expected, this study showed that participants were less likely to recommend an Asian student than a White student for learning disability evaluation. Further, the magnitude of this difference did not depend on which subject area the student was struggling in. The next study was a replication and extension of Study 1. Like Study 1, Study 2 tested whether participants were less likely to recommend an Asian student than a White student for learning disability evaluation.

In Study 2, we also explored another possible manifestation of the model minority stereotype. If Asian students are seen as “whiz kids,” then might they not only seem less likely to struggle academically, but also seem especially likely to be gifted? Answering this question would lend insight into whether ideas about Asian student success imply only that they do not fall behind, or also that they are exceptionally talented. Thus, we also included a gifted condition where, instead of being a potential candidate for learning disability evaluation, the student was potentially gifted and in need of giftedness evaluation. Secondly, we noted that while the continuous outcome used in Study 1 allows finer distinctions to emerge, in the real world, educators must ultimately make a dichotomous yes-or-no decision as to whether to recommend a student. Thus, Study 2 allowed participants not only to indicate their likelihood of recommendation, but to make a dichotomous decision about whether they would decide to recommend the student for evaluation or not.

## 3 Study 2

### 3.1 Method

#### 3.1.1 Participants

Participants ( $N = 780$ ;  $M_{age} = 42.9$ ,  $SD = 14.5$ ; 76.8% female; 77.0% White) were U.S. citizens recruited from the Project Implicit research website. As in Study 1, this study was open only to users who reported an occupation indicating that they might

realistically work in an educational setting (10.7% Other education, training, and library occupations; 12.5% Other teachers and instructors; 23.5% Education—Post-secondary Teachers; 26.1% Primary, Secondary, and Special Ed Teachers; 27.2% Counselors, Social Workers, Community specialists).

### 3.1.2 Materials

**3.1.2.1 Student race, subject, and ability manipulation** As in Study 1, participants first read a hypothetical observational behavioral report about a student who was either White or Asian and displayed characteristics of Learning Disability or Giftedness, in either Reading or Math (see Appendix A for samples of full text of behavioral report). Participants then read that the student expressed traits representative either of Specific Learning Disability (as reported in the Diagnostic and Statistical Manual V, American Psychiatric Association, 2013) or Giftedness as reported in the Title IX guidelines on Gifted and Talented (Title IX—General Provisions, 2004). In the Learning Disability condition, the subject area where the student had difficulty was manipulated through the text of the report, which stated that the student exhibited certain traits in either Reading (e.g., “difficulties with letter sound recognition”) or Math (e.g., “understanding and remembering number facts”). In the Gifted condition, the subject area where the student excelled was manipulated through the text of the report, which stated that the student exhibited certain traits in either Reading (e.g., “has an advanced vocabulary”) or Math (e.g., “strong mathematical reasoning abilities”).

**3.1.2.2 Likelihood of recommendation for evaluation** Participants in the Learning Disability condition read a definition of Specific Learning Disability (SLD; “a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may display in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations”). Participants in the Gifted condition read a definition of Giftedness (“Students, children, or youth who give evidence of high achievement capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services or activities not ordinarily provided by the school in order to fully develop those capabilities”). All participants were asked to imagine that they were the student’s teacher, and given the definitions of SLD or giftedness, to report on a scale of 1 (*very unlikely*) to 7 (*very likely*) how likely they would be to recommend the child for learning disability or giftedness evaluation (“Based on the behavior report and the definition of Specific Learning Disability [Giftedness], how likely are you to recommend Li Ying Chang [Jimmy Smith] for further testing and evaluations for learning disabilities? [Giftedness]”).

**3.1.2.3 Dichotomous recommendation** Participants reported their dichotomous (“yes” or “no”) judgment as to whether they would recommend the child for learning disability or giftedness evaluation (It is important that students receive appropriate evaluations to support their unique academic needs. As a final recommenda-

**Table 2** Mean likelihood of recommendation for special needs evaluation in the Gifted condition in Study 2

| Race  | Subject   |  |
|-------|---|--|
|       | Reading   | Math   |
| Asian | $N=93, M=6.07^a$<br>(95% CI=5.81, 6.31), $SD=1.21$  | $N=96,$<br>$M=6.04^a$<br>(95%<br>CI=5.82,<br>6.24),<br>$SD=1.05$ |
| White | $N=104, M=5.90^a$<br>(95% CI=5.62, 6.17), $SD=1.42$ | $N=93,$<br>$M=5.96^a$<br>(95%<br>CI=5.67,<br>6.21),<br>$SD=1.32$ |

Note. Cell means with different superscripts differ significantly

tion, would you suggest Li Ying Chang [Jimmy Smith] receive further evaluation for learning disabilities [Giftedness]?). This measure correlated significantly with the continuous measure,  $r=0.65, p<0.001$  (95% CI<sub>r</sub>=0.61, 0.69).

### 3.1.3 Procedure

Participants volunteered through the Project Implicit website and completed demographic items. Participants who met the inclusion criteria (i.e., who reported an occupation indicating that they work in an educational setting and did not participate in the first study) were randomly assigned to this study from a pool of approximately 10 studies. After consent, participants read the hypothetical observational behavioral report that manipulated race, ability and subject area. They then indicated how likely they would be to recommend the child for learning disability evaluation, followed by their dichotomous yes–no recommendation.

## 3.2 Results

### 3.2.1 Main analysis: Likelihood of recommendation for evaluation

Student race (coded as Asian=0.5, White=-0.5), subject area (coded as Math=0.5, Reading=-0.5), ability (coded as Gifted=0.5, Learning Disability=-0.5), and all interactions were entered into a simultaneous regression to predict how likely participants were to recommend the student for evaluation. The overall model was significant,  $F(7, 760)=25.25, p<0.001, R^2=0.18$  (see Tables 2 and 3 for means and standard deviations by condition).

There was no main effect of subject on recommendation,  $b=-0.01$  (95% CI<sub>b</sub> = -0.22, 0.24),  $\beta=0.004, SE=0.12, p=0.91$ ; that is, participants were not more likely to recommend students with math learning difficulties ( $M=5.26, SD=1.75$ ) or reading learning difficulties ( $M=5.26, SD=1.82$ ), Cohen's  $d<0.00$ . There was

**Table 3** Mean likelihood of recommendation for special needs evaluation in the Learning Disability condition in Study 2

| Race  | Subject  |   |
|-------|--|---|
|       | Reading  | Math  |
| Asian | $N=97, M=4.03^a$<br>(95% CI=3.60, 4.42), $SD=2.04$ | $N=100,$<br>$M=4.31^a$<br>(95%<br>CI=3.93,<br>4.67),<br>$SD=1.86$ |
| White | $N=91, M=5.01^b$<br>(95% CI=4.65, 5.36), $SD=1.73$ | $N=93,$<br>$M=4.83^b$<br>(95%<br>CI=4.45,<br>5.22),<br>$SD=1.90$  |

Note. Cell means with different superscripts differ significantly

a main effect of race on recommendation,  $b=-0.30$  (95%  $CI_b=-0.52, -0.07$ ),  $\beta=-0.08$ ,  $SE=0.12$ ,  $p=0.011$ , such that Asian race produced a significantly lower likelihood of recommendation ( $M=5.10$ ,  $SD=1.85$ ) than White race ( $M=5.43$ ,  $SD=1.69$ ), Cohen's  $d=0.19$ . There was also a main effect of ability on recommendation,  $b=1.43$  (95%  $CI_b=1.20, 1.66$ ),  $\beta=0.40$ ,  $SE=0.12$ ,  $p<0.001$ , such that the Gifted condition produced a significantly greater likelihood of recommendation ( $M=5.98$ ,  $SD=1.29$ ) than the Learning Disability condition ( $M=4.53$ ,  $SD=1.92$ ), Cohen's  $d=0.88$ .

The main effects of race and ability were qualified by a significant two-way interaction,  $b=0.91$  (95%  $CI_b=0.45, 1.37$ ),  $\beta=0.13$ ,  $SE=23$ ,  $p<0.001$ . In the Learning Disability condition, there was an effect of race,  $b=-0.75$  (95%  $CI_b=-1.07, -0.42$ ),  $SE=0.17$ ,  $p<0.001$ , such that Asian race produced a significantly lower likelihood of learning disability recommendation ( $M=5.10$ ,  $SD=1.86$ ) than White race ( $M=5.44$ ,  $SD=1.67$ ), Cohen's  $d=0.19$ . In the Gifted condition, race did not influence likelihood of recommendation,  $b=0.16$  (95%  $CI_b=-0.16, 0.48$ ),  $SE=0.16$ ,  $p=0.33$ .

There was no two-way interaction between race and subject area,  $b=0.19$  (95%  $CI_b=-0.27, 0.64$ ),  $\beta=0.03$ ,  $SE=23$ ,  $p=0.42$ , or between ability and subject area,  $b=-0.04$  (95%  $CI_b=-0.49, 0.42$ ),  $\beta=-0.01$ ,  $SE=23$ ,  $p=0.87$ . The three-way interaction of race, ability, and subject was also not significant,  $b=-0.49$  (95%  $CI_b=-1.40, 0.43$ ),  $SE=0.47$ ,  $p=0.30$ .

### 3.2.2 Dichotomous recommendation for special education evaluation

Using simultaneous binary logistic regression, we regressed student race (Asian or White, coded 0.5 and  $-5$ . respectively), subject area of difficulty (Math or Reading, coded 0.5 and  $-5$ . respectively), ability (Giftedness or Learning Disability, coded  $-0.5$  and 5. respectively), and all interactions onto the likelihood of recommendation for evaluation (1) or no recommendation for evaluation (0).

Recommendation for evaluation was coded as (1) regardless of ability condition. In other words, a participant who recommended the student for giftedness evaluation and a participant who recommended the student for learning disability evaluation were each coded as (1). Despite sharing the same code, this recommendation for evaluation implies different perceptions of the student in the Gifted condition (i.e., that the student is probably gifted) versus the Learning Disability condition (i.e., that the student probably has a learning disability). Thus, the effects of student race and subject area is only interpretable separately within each ability condition. Thus, we conducted a regression analysis that included all interactions between ability, race, and subject area, planning a priori to look at the effect of race decomposed by ability regardless of the significance level of the three-way or two-way interactions.

The learning disability condition predicted a lower likelihood of recommendation,  $b = -1.41$  (95%  $CI_b = -1.89, -1.04$ ),  $SE = 0.19$ ,  $p < 0.001$ ,  $OR = 0.25$  (95%  $CI_{OR} = 0.17, 0.36$ ). There was no main effect of race,  $b = -0.29$  (95%  $CI_b = -0.69, 0.12$ ),  $SE = 0.19$ ,  $p = 0.13$ ,  $OR = 0.75$  (95%  $CI_{OR} = 0.51, 1.09$ ), or of subject,  $b = 0.30$  (95%  $CI_b = -0.09, 0.74$ ),  $SE = 0.19$ ,  $p = 0.12$ ,  $OR = 1.35$  (95%  $CI_{OR} = 0.92, 1.98$ ). There were no two-way interactions between race and subject area,  $b = 0.15$  (95%  $CI_b = -0.71, 0.89$ ),  $SE = 0.39$ ,  $p = 0.71$ ,  $OR = 1.16$  (95%  $CI_{OR} = 0.54, 2.48$ ), or between subject area and ability,  $b = -0.13$  (95%  $CI_b = -1.17, 0.42$ ),  $SE = 0.39$ ,  $p = 0.74$ ,  $OR = 0.70$  (95%  $CI_{OR} = 0.33, 1.49$ ).

The two-way interaction between student race and ability was not significant,  $b = -0.36$  (95%  $CI_b = -1.18, 0.47$ ),  $SE = 0.39$ ,  $p = 0.35$ . However, as planned, we looked at the effect of student race in each ability condition separately. In the Gifted condition, there was no effect of student race,  $b = -0.06$  (95%  $CI_b = -0.68, 0.55$ ),  $SE = 0.31$ ,  $p = 0.83$ . In the Learning Disability condition, as predicted, Asian race predicted a lower likelihood of recommendation,  $b = -0.48$  (95%  $CI_b = -0.90, 0.05$ ),  $SE = 0.22$ ,  $p = 0.03$ . The three-way interaction of race, ability, and subject was not significant,  $b = 1.21$  (95%  $CI_b = -0.38, 2.92$ ),  $SE = 0.10$ ,  $p = 0.12$ .

### 3.3 Discussion

Study 2 showed that participants were less likely, as assessed by both continuous and dichotomous outcome measures, to recommend an Asian student than a White student for learning disability evaluation. Moreover, for both the continuous and dichotomous recommendation outcomes, racially-disparate recommendations were confined to learning disability recommendations; no effects of race emerged in the Gifted condition.

## 4 General discussion

The present research was designed to demonstrate the effect of race on likelihood of recommendation for learning disability evaluations. As expected, in two studies, we found that when represented by otherwise identical behavioral reports, an Asian student was less likely to be recommended for learning

disability evaluation than a White student. This lack of recommendation, if it occurs in the classroom, could potentially contribute to the underrepresentation of Asian American students in special education. Without appropriate evaluations, students cannot obtain the academic accommodations they need to support their educational careers, potentially threatening equal access to accommodations and resources.

Moreover, this effect held across subject areas, suggesting that Asian American students are not only expected to excel in STEM, but in other disciplines, including those related to English proficiency. Despite stereotypes about Asian Americans' foreignness (e.g., Zou & Cheryan, 2017), participants were just as unwilling to recommend the Asian student for reading (i.e., English) difficulties as they were for math difficulties. However, this may also reflect that participants could believe Asian students' reading difficulties are due to English-learning, rather than general language, difficulties.

Results did not differ in models separated by participant race, and participant race did not interact with student race in predicting recommendations. However, we had low power to test for racial differences in recommendations because most participants were White. Other research in schools has found teacher and principal racial composition to predict the racial composition of students in those schools' gifted programs (Grissom et al., 2017), so the possibility that participant race moderates recommendation remains open.

In Study 2, we explored whether Asian students not only seem less likely to struggle academically, but also seem exceptionally talented. To do so, we manipulated whether participants read about a student who potentially had a learning disability or was potentially gifted. Participants did not see Asian students as more gifted than White students—only less likely to be in need of extra help with a learning disability. This could be because Asian students are not seen as especially gifted. However, we speculate that it is more likely because the current research did not compare Asian students to other minorities, but to White students. Model minority stereotypes, according to which Asian Americans are “whiz kids”, may imply giftedness only relative to other minority students, not relative to White students. The model minority stereotype exists as a contrast to stereotypical portrayals of African Americans as “failing” minorities (Lee, 2015). As such, the model minority stereotype has been used to support the reasoning that, if one racial minority can perform well, then lower achievement in other minority groups must be a result of pathology or lower innate ability. Unfortunately, these stereotypes undermine the nuance of the differences in history, background and opportunity amongst different minority groups, and even within different ethnicities of a single racial group. According to archival analyses, Asian American students are overrepresented in gifted programs relative to Black and Hispanic students (Ford et al., 2008; McBee, 2006; Yoon & Gentry, 2009). However, lower rates of Black and Hispanic student enrollment in gifted programs are also a consequence of factors, such as teacher referrals, that are not reducible to student ability alone (Ford et al., 2008; Grissom et al., 2017). Future research could apply the current experimental approach to examine the causal effect of race across multiple races, examining whether giftedness

recommendations differ for Asian students than, for example, Black or Hispanic students, but that White and Asian students do not differ (as found in nonexperimental research; McBee, 2006).

#### 4.1 Strengths and limitations

The current research is strengthened by two important features of its methodology. Firstly, the current research uses data collected from educators, allowing more confident generalizations to people who are actually recommending students for the disability identification process through special education evaluation. Secondly, the experimental design offers causal information about the influence of race in these recommendations, which was previously a matter of speculation.

That said, the current research is general and abstract when compared to real special education provision processes. Realistically, states and school districts vary greatly in their assessment and evaluation processes, usually involving actual teacher observation of real-time student behavior, multiple recommendations, and parental consent for evaluation. In the current studies, student race and difficulties were communicated via text. In reality, race and difficulties could be more or less salient. Future studies could attempt to improve external generalizability in this sense.

Additionally, the current research neglects the diverse cultural heritages of Asian Americans, as well as its intersection with other identities (e.g., gender, socioeconomic status, level of acculturation). Although the current research used an East Asian (Chinese) student name (because ethnically Chinese people form the largest subgroup of Asian Americans; Pew Research Center, 2017), people may or may not apply the same bias to students of South Asian or Southeast Asian background, or to a student whose immigration status or cultural identity is ambiguous due to a White first name and an Asian last name (e.g., Zhao & Biernat, 2017). The current research also focused on a male student, while recommendations may also differ based on student gender and its salience relative to race (e.g., Rattan, Steele, and Ambady, 2019), or may interact with other aspects of identity or culture such as socioeconomic status. Future research could fruitfully extend the current findings by exploring these questions.

#### 4.2 Recommendations

The current research implies that policy approaches could include some form of bias education (e.g., Devine et al., 2012) or construction of more objective recommendation standards (e.g., Uhlmann & Cohen, 2005). Future research, inside or outside the lab, could examine whether simple awareness of the observed bias is sufficient to eliminate discrimination, and if not, whether objective recommendation standards can limit the opportunity for subjective discretion to interfere with fair perceptions of students.

### 4.3 Conclusion

The current research offers evidence that student race influences evaluation recommendations for learning disabilities, revealing a disadvantage for Asian American students. This pattern may contribute to the underrepresentation of Asian American students in special education. By considering implementing bias training or more objective standards, it may be possible to develop fairer recommendation processes that offer Asian American students the resources they need to succeed.

## Appendix A

| <b>Observational Behavioral Report</b>   |             |          |                          |
|--|-------------|----------|--------------------------|
| STUDENT NAME (last, first)<br><b>Smith, Jimmy</b>  | SEX<br>Male | AGE<br>8 | GRADE<br>3 <sup>rd</sup> |
| Check subject area(s) of observation.<br><input checked="" type="checkbox"/> Reading <input type="checkbox"/> Math   |             |          |                          |
| <b>OBSERVATION</b>   |             |          |                          |
| Jimmy Smith is a good communicator and can clearly express his questions and needs to the teacher. However, Jimmy has difficulties with letter-sound recognition and his reading aloud is slow, inaccurate, and effortful. While Jimmy does have these difficulties, he is a solid student and completes his homework regularly. |             |          |                          |

Hypothetical observation behavioral report in the White-Reading condition. The report shows the race of the student, as indicated by his name, and the potential subject area of difficulty, as indicated by the observation.

### Observational Behavioral Report

STUDENT NAME (last, first)  
**Chang, Li Ying**

| SEX  | AGE | GRADE           |
|------|-----|-----------------|
| Male | 8   | 3 <sup>rd</sup> |

Check subject area(s) of observation.  
 Reading  Math

#### OBSERVATION

Li Ying Chang is a good communicator and can clearly express his questions and needs to the teacher. However, Li Ying has difficulties understanding and remembering number facts or arithmetic procedures for adding, subtracting. While Li Ying does have these difficulties, he is a solid student and completes his homework regularly.

Hypothetical observation behavioral report in the Asian-Math condition.

### Observational Behavioral Report

STUDENT NAME (last, first)  
**Chang, Li Ying**

| SEX  | AGE | GRADE           |
|------|-----|-----------------|
| Male | 8   | 3 <sup>rd</sup> |

Check subject area(s) of observation.  
 Reading  Math

#### OBSERVATION

Li Ying Chang is an excellent communicator and clearly expresses his questions and opinions to the teacher. Additionally, Li Ying has an advanced vocabulary, writes with creativity and originality, and enjoys advanced books and word games. Li Ying has an I.Q. in the 95th percentile. Overall, he is an outstanding student, although he is often unmotivated to complete his homework.

Hypothetical observation behavioral report in the Asian-Reading-Gifted condition.

### Observational Behavioral Report

STUDENT NAME (last, first)  
**Smith, Jimmy**

| SEX  | AGE | GRADE           |
|------|-----|-----------------|
| Male | 8   | 3 <sup>rd</sup> |

Check subject area(s) of observation.  
 Reading  Math

#### OBSERVATION

Jimmy Smith is an excellent communicator and clearly expresses his questions and opinions to the teacher. Additionally, Jimmy has strong mathematical reasoning abilities, quickly solves critical thinking problems, and enjoys advanced math topics and number games. Jimmy has an I.Q. in the 95th percentile. Overall, he is an outstanding student, although he is often unmotivated to complete his homework.

Hypothetical observation behavioral report in the White-Math-Gifted condition.

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