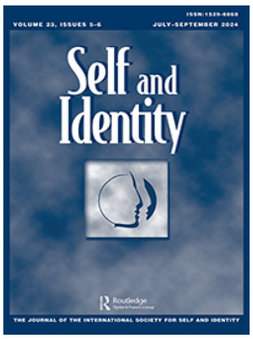

Routledge
Taylor & Francis Group

Self and Identity

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/psai20

Hawai'i face database: a racially and ethnically diverse set of facial stimuli

Chanel Meyers, Maria M. Garay & Kristin Pauker

To cite this article: Chanel Meyers, Maria M. Garay & Kristin Pauker (17 Oct 2024): Hawai'i face database: a racially and ethnically diverse set of facial stimuli, Self and Identity, DOI: 10.1080/15298868.2024.2417664

To link to this article: https://doi.org/10.1080/15298868.2024.2417664

Published online: 17 Oct 2024.

SELF AND IDENTITY
https://doi.org/10.1080/15298868.2024.2417664

Hawai'i face database: a racially and ethnically diverse set of facial stimuli

Chanel Meyers[a], Maria M. Garay[b] and Kristin Pauker[c]

[a]Department of Psychology, University of Oregon, Eugene, OR, USA; [b]Department of Psychology, Tufts University, Medford, MA, USA; [c]Department of Psychology, University of Hawai'i at Mānoa, Honolulu, HI, USA

ABSTRACT

Within psychology, face perception processes have been widely studied, examining traits and social categories that a face can communicate. However, much of this research has predominately focused on White faces. We review existing face databases that include racially diverse stimuli and note the lack of representation of Asian subgroups (e.g. East, South, and Southeast Asian), Pacific Islanders, as well as both Multiracial and multiethnic faces (especially with multiple minoritized backgrounds). We provide a new racially diverse set of free, standardized images including 140 unique faces representing eight different groups that vary in ethnicity and race (Asian, East Asian, Southeast Asian, Pacific Islander/Native Hawaiian, Hispanic/Latinx, White, Multiracial, and Multiracial Asian), along with norming data. These images and data are available for access use in research: https://osf.io/fkn7y

ARTICLE HISTORY
Received 11 April 2024
Revised 24 September 2024
Accepted 11 October 2024

KEYWORDS
Social perception; face perception; racially diverse; social categorization; face database

The human face is a vital channel of communication that can convey significant amounts of information, including social categories (e.g., sex, age, race), psychological traits (e.g., trustworthiness, competence), and psychological states (e.g., emotional expressions). Consequently, researchers have demonstrated numerous findings highlighting the importance of faces in fundamental human processes such as trait inferences, social categorization, and interpersonal judgments (Hugenberg & Wilson, 2013; Oosterhof & Todorov, 2008; Sporer, 2001; Willis & Todorov, 2006). Given the importance of human faces in psychological research, facial stimuli databases, such as the Chicago Face Database (Ma et al., 2015), have been instrumental in broadening our comprehension of social perception processes and social cognition. Nevertheless, as societal contexts, particularly within the United States, continue to expand in cultural, ethnic, and racial diversity (U.S. Census Bureau, 2021), facial databases should be comprised of more culturally, ethnically, and racially diverse stimuli to keep pace with this growing diversity.

Access to diverse facial stimuli databases is important for psychological research. Some existing databases have started to include representations of multiple racial groups, such as White, Black, Asian, and Latinx (Ma et al., 2015; Strohminger et al., 2016). However, most of these databases are not inclusive of groups that have historically been excluded and underrepresented in psychological research. Such groups include Pacific Islander,

CONTACT Chanel Meyers chanelm@uoregon.edu Department of Psychology, University of Oregon, 1227 University St, Eugene, OR 97403, USA

Southeast Asian, and multiethnic and Multiracial individuals. To address this gap, recent databases, such as the American Multiracial face database (Chen et al., 2021) and the Multiracial expansion to the Chicago Face Database (Ma et al., 2021), have been created to provide diverse stimuli of mixed-race individuals. Previous studies have shown that there is a lack of racial diversity among journal editors, paper authors, participants, and stimuli, highlighting the marginalization of certain cultural, ethnic, and racial groups within the field of psychological research (Roberts et al., 2020). Calls to address these trends of exclusion have been made, acknowledging the historical oppression of certain groups within the U.S (Buchanan et al., 2021; Dupree & Kraus, 2022). To address these concerns, researchers require access to culturally, racially, and ethnically diverse stimuli for their studies.

Thus, this paper aims to introduce a new database of facial stimuli that adds access to stimuli from historically understudied racial/ethnic groups in the psychological sciences. There are vital factors that make this facial stimulus database unique:

(1) We include racial representation of underrepresented ethnic and racial groups such as Southeast Asian, Pacific Islander, and Multiracial faces of those with multiple minority ancestry (i.e., Asian and Pacific Islander) and multiethnic faces (i.e., Korean and Japanese).
(2) We include norming data on evaluative judgments, such as attractiveness, trustworthiness, masculinity, femininity, distinctiveness, age, and racial prototypicality.
(3) We include self-reported age, gender identification, and ethnic/racial identification of all targets.

Existing databases

There is a continuously growing resource of facial stimuli databases that can be used in psychological research[1] (see Table 1 for a summary of a few prominent databases).

We focus on a few of the most prominent face databases which include more than one racial/ethnic target identities that many social cognitive researchers have used. First, the Chicago Face Database (CFD; Ma et al., 2015) provides a large database of high-quality photos that have been utilized in a variety of studies examining face perception/face recognition (e.g., Greche & Es-Sbai, 2016; Gwinn et al., 2015; Wilson et al., 2018), prejudice/bias (e.g., Lick & Johnson, 2016; Todd et al., 2016), and judgment or stereotype formation (e.g., Cooley et al., 2018; Kleider-Offutt et al., 2017). Another prominent face database, MR2 (multiracial, mega-resolution), was created to make larger, higher-quality photos consistent with the CFD (Strohminger et al., 2016). This database includes stimuli of White, Black, and *East* Asian faces, acknowledging that their Asian stimulus did come from participants who identified as East Asian. Like the CFD, the MR2 database has been used to study various person perception related inquires, such as perceptions of trust (Bartosik et al., 2021) and racial identity (Cooley et al., 2018). The London Face Research Lab Database (DeBruine & Jones, 2017) and the NimStim Face Database (Tottenham et al., 2009) also provide high-quality photos of faces, with the NimStim Face Database providing a range of emotional expressions. Similarly face databases were created by Tsikandilakis et al. (2019) to investigate recognition and appraisal of facial dialects across various cultures (e.g., Britain, New Zealand, Chile, and Singapore). However, these stimuli are not readily open-access, and conflate nationality with racial/ethnic backgrounds, therefore it is unclear which racial/

Table 1. Summary of facial stimuli sets.

Database	Number of Individuals Photographed	Percent of White Stimuli	Percent of Black Stimuli	Percent of Asian Stimuli	Percent of Hispanic/ Latinx Stimuli	Percent of Multiracial Stimuli	Validation
American Multiracial Faces Database (Chen et al., 2021)	110	None	None	None	None	100%	Validated by adults
Chicago Face Database (Ma et al., 2015)	597	31%	33%	18%	18%	None	Validated by adults
Chicago Face Database: Multiracial Expansion (Ma et al., 2021)	88	None	None	None	None	100%	Validated by adults
MR2 Face Database (Strohminger et al., 2016)	74	30%	43%	27% (East Asian only)	None	None	Validated by adults
NimStim Face Database (Tottenham et al., 2009)	43	58%	23%	14%	5%	None	Validated by adults
London Face Research Lab Database[2] (DeBruine & Jones, 2017)	102	68%	13%	19% (East and West Asian)	None	None	Not systematically validated

ethnic background these stimuli represent. While these databases have certainly played a foundational role in progressing person perception research, limitations persist in the racial, and ethnic diversity of their targets.

Underrepresentation of racial and ethnic minorities

Asian ethnic groups and Pacific islanders

The Chicago Face Database (Ma et al., 2015) and the NimStim Database (Tottenham et al., 2009) are both examples of novel and diverse standardized stimuli databases that include faces of White, Black, Latinx, and Asian individuals. However, the representation of other racial groups and specific ethnic groups remains limited. For instance, the Asian racial group is a pan-ethnic category that includes individuals from a wide range of ethnic groups with very different cultural traditions (Pew Research Center, 2021), and collapsing all Asian ethnic groups into a single Asian category can lead to the invisibility of specific groups such as South or Southeast Asian communities. To address this issue, the MR2 database (Strohminger et al., 2016) exclusively sampled and photographed East Asian individuals, thereby specifying which Asian ethnic group was represented. Similarly, the London Face Research Lab Database (DeBruine & Jones, 2017) also specifies the included Asian ethnic groups as East and West Asian. A recent expansion to the Chicago Face Database also includes South Asian individuals from India. However, the representation of Southeast Asian individuals remains lacking. Since Southeast Asian individuals are frequently excluded and marginalized (see Museus & Truong, 2009; Museus et al., 2016; Ngo & Lee, 2007; Yang, 2004), diversifying facial stimuli by including Southeast Asian individuals and

distinguishing which Asian ethnic group is represented in the database (e.g., Southeast Asian vs. East Asian) is an essential step toward improving research on and for diverse Asian American communities.

Research indicates that non-East Asians are often excluded from the concept of the Asian category (Ramakrishnan et al., 2017), and East Asians are typically viewed as the prototype or standard for all of "Asian" communities, by most Americans (Goh & McCue, 2021). Consequently, research on Asian individuals often mistakenly attributes East Asian characteristics to all Asian individuals, despite significant differences between Asian ethnic groups (Lowe, 1991, Nadal, 2019). Skin color is one of many important factors in distinguishing between the prototypical appearance of East Asian, Southeast Asian, and South Asian individuals (Bonilla-Silva, 2004; Hunter, 2007). This perceptual distinction, known as phenotypicality bias, is essential to consider when studying these racial groups since it has been associated with meaningful perceptual and behavioral outcomes (Maddox & Gray, 2002; Wilkins et al., 2010). For instance, Williams et al. (2019) found that Asian Americans who were perceived as having a more "typical" appearance (in this case, East Asian phenotypic prototypicality) were more likely to be seen as having strong STEM abilities and persist in STEM related fields. However, this study did not disaggregate "Asian," and Asian "stereotypic prototypicality" which was based on East Asian attributes. As a result, much of the research exploring phenotypicality bias among Asian American targets tends to overlook the diversity in appearance among various Asian subgroups, including the related stereotypes and downstream consequences that may differ across groups.

Discriminatory treatment of Southeast Asian Americans based on their phenotypic appearance is a significant concern. Studies have shown that Southeast Asian Americans experience more marginalization compared to their East Asian counterparts (Nadal, 2019). Negative stereotypes, such as being considered inferior or foreign, are also more frequently attributed to Southeast Asian Americans than East Asian Americans (Lee et al., 2017; Reyes, 2017; Zhou & Gatewood, 2007). In addition, Southeast Asian Americans face greater income inequality than East Asian Americans (Pew Research Center, 2018). Therefore, assuming that the experiences of "Asian Americans" are homogenous ignores the unique challenges faced by Southeast Asian Americans, which differ from those experienced by East Asian Americans.

These existing databases do not include Pacific Islanders at all in their datasets, which leads to an underrepresentation of this population in research, and especially within social perception research (Brown et al., 2007; George et al., 2014). Pacific Islander Americans face a unique type of erasure as they are often grouped with Asian Americans (e.g., AAPI), which can contribute to feelings of invisibility and further marginalize Pacific Islander communities (Hsieh & Kim, 2020; Martinsen, 2017Nadal, 2019; Srinivasan & Guillermo, 2000). Like Southeast Asian Americans, Pacific Islanders experience various forms of racial inequality and discrimination in the U.S., which can lead to poorer physical and mental health outcomes (Brondolo et al., 2009; Subica et al., 2017). Moreover, as phenotypic appearance, stereotyping, and behavioral discrimination are interlinked (Monk, 2015), the inclusion of Pacific Islander individuals is crucial to understanding the marginalization and oppression that these communities experience. Therefore, the inclusion and distinction of Asian ethnic groups and Pacific Islanders would be beneficial for research aimed at helping disadvantaged groups.

Multiethnic and multiracial groups

Additionally, most face databases typically represent monoracial groups, often neglecting those with multiple racial backgrounds. Due to the lack of stimuli representing Multiracial groups, researchers have utilized computer-generated morphs of monoracial faces of different races to create a "Biracial/Multiracial" face. Computer-generated morphs attempt to represent Multiracial faces as 50–50 blends of the two racial identities of interest. However, research has found that computer-generated morphs of "Biracial" individuals are perceived differently than photos of actual Biracial individuals (Gaither et al., 2019). Specifically, real faces were more likely to be categorized according to hypodescent (categorizing a Multiracial face with their minority or lower-status identity; Chen et al., 2018) than computer-generated morphs. Ironically, other work has found that computer-generated morphs are more likely to be racially categorized as "Multiracial" than actual Multiracial face stimuli (Ma et al., 2022). Therefore, research attempting to examine racial categorization of Multiracial faces using computer-generated morphs is likely inflating their rates of "accurate" categorizations if real faces are not categorized in similar ways. To address this gap in stimuli availability, Chen et al. (2021) created the American Multiracial Faces Database, which includes 110 images of individuals who self-identify with more than one race. Furthermore, Ma et al. (2021) also expanded the Chicago Face Database to include 88 images of Multiracial individuals.

Despite recent efforts to increase the representations of Multiracial individuals in research stimuli, the majority of these faces are those with White ancestry, thus neglecting those with multiple minority ancestry (Chen et al., 2021; Garay & Remedios, 2021). Similar to Asian ethnic groups and Pacific Islanders, the dominance of Multiracial groups with White ancestry can result in the marginalization and erasure of Multiracial groups with multiple minority ancestry (see Garay & Remedios, 2021). Moreover, while recent expansions to the CFD and the AMFD include Multiracial targets, they do not provide specific information on the self-identified racial backgrounds of these individuals (unless requested), making it difficult to do research on specific Multiracial backgrounds (e.g., Asian-Black) without making guesses that may not have concordance with individuals' own self-identification. This information is crucial for understanding the complexities of Multiracial identity, as self-identification may not align with phenotypic appearance (see Meyers et al., 2022; Remedios & Chasteen, 2013; Vinluan & Remedios, 2019). Therefore, to comprehensively examine Multiracial identity, it is important to include individuals with multiple minority ancestries in research stimuli and to provide clear information on the racial backgrounds of these targets.

The current discussion on Multiracial people often overlooks multiethnic individuals who possess multiple ethnicities within a single racial group, such as being both Korean and Chinese, which are both East Asian ethnic groups. It is possible that past work has involved multiethnic individuals without even realizing it. Indeed, even within our database, some targets did not specify their ethnic backgrounds, defaulting to broad categorizations like "Asian." We recognize the challenge as a researcher to be specific about how we represent groups within the literature while simultaneously respecting people's self-identification. We hope that with further efforts toward increasing representation within both the stimuli we use and the questions we test, we will better understand how people perceive and interpret both Multiracial and multiethnic faces beyond those with White

ancestry. The U.S. Census Bureau (2021) shows that those who identify with multiple racial backgrounds are currently the fastest-growing racial demographic in the U.S. Thus, using facial stimuli to reflect these rapidly changing demographics is vital for research. As previously stated, physical appearances have significant real-world implications, and Multiracial and multiethnic groups with multiple minority ancestry are not immune to differential treatment based on their appearance. Indeed, those with multiple minority ancestry report experiencing more racism and discrimination based on their darker skin tone or hair texture as compared to Multiracial individuals with White ancestry (Davenport, 2018). Providing researchers with a racially and ethnically diverse set of facial stimuli would enable researchers to test questions that reflect society's ever-changing demographics.

The present paper aims to introduce a new facial stimuli database that addresses the limitations of current facial stimulus sets: the Hawai'i Face Database (HFD). Given some of the limitations concerning the racial diversity of extant facial stimuli databases, this paper introduces a database that includes 140 unique faces representing eight different ethnic/racial groups (Asian, East Asian, Southeast Asian, Pacific Islander/Native Hawaiian, Hispanic/Latinx, White, Multiracial, and Multiracial Asian). Furthermore, stimuli include faces that depict neutral and smiling faces and profiles. Lastly, stimuli include the target's self-reported age, gender, and racial identification.

Method

Stimuli collection

Stimuli collected for the Hawai'i Face Database were volunteers recruited through a large public University in Hawai'i. Individuals who participated in unrelated psychological studies were asked if they would be interested in having their photos taken for use in future research. If the participant agreed, they were asked to fill out a release waiver allowing researchers to use their photos for future research. After participants consented to have their pictures taken, they were asked to fill out a whiteboard with the following items (open-response): age, gender, and race. Once they indicated their age, gender identification, and racial identification, participants were seated in front of a camera (Fujifilm JX680, 16 MP). The camera was preset approximately 40 inches from the participant's chair. Lighting conditions were consistent across participants, with only overhead fluorescent lights. Participants were asked to hold up their whiteboard and take a picture, and then they were asked to make the following expressions: smiling with teeth, smiling without teeth, neutral, and right/left profiles.

Stimuli standardization

We standardized all five photos for each target using Adobe Photoshop CS6 Extended Version 13.0 × 64. Once opened in Adobe Photoshop, the rectangle tool was used to create a small rectangular box that was adjusted over the face of the target. Each box was adjusted horizontally so that the edges of the box touched the outermost section of the targets' cheeks. The box was adjusted vertically such that the top edge of the box touched the lowest part of the eyebrows, and the bottom edge of the box touched the top of the

upper lip. This method was completed to find the exact center of the face. On Adobe Photoshop, pressing the "command" key on the keyboard with the "t" key opens additional controls for the rectangular box. These additional controls include a crosshair appearing in the center of the box. This crosshair was used to pinpoint the center of the face. A secondary 2000 (wide) x 1500 (high) pixel rectangular box was created using the same rectangular tool to crop the photo to encompass only the face and shoulders. The same "command+t" tool was used to display the center crosshair of the secondary box, which was then overlaid and centered with the previous rectangular box. This ensured that the secondary box (used as a guide for cropping) had the participants' faces centered.

Due to the preset camera placement, many images needed additional edits to ensure that the top of the target's head and shoulders were within the new cropped photo. Therefore, the secondary box was adjusted to maintain a 1-inch margin above the top of the head and a 3-inch margin on both sides of the shoulder, whenever possible (there were a few instances where camera placement and target's proportions did not allow us to hit this minimum margin standards). Once these measurements were met, the crop tool was used and followed the guidelines of the secondary box. This ensured that every photo after cropping was 2000×1500 pixels. Furthermore, every photo was exported at a resolution of 72 pixels/inch. Additional adjustments were made to increase the quality of the photos. Photos were batch edited to increase brightness by 50, decrease contrast by 20, increase vibrancy by 20, decrease saturation by 5, and sharpen once. Example final stimuli are shown in Figure 1.

Stimuli composition

The final database comprised 140 unique faces (66% women and 34% men; $M_{age} = 20.08$; $SD_{age} = 2.64$). The final racial breakdown of the photos are 18 Asian, 22 East Asian, 26

Figure 1. Sample stimuli from the Hawai'i Face Database (from left to right: smiling without teeth, smiling with teeth, neutral, left profile, right profile).

Southeast Asian, 10 Pacific Islander/Native Hawaiian, 13 hispanic/Latinx, 15 White, 19 Multiracial, and 17 Multiracial Asian. These categories were created by grouping the volunteers' reported race; therefore, Asian targets consisted of those who only wrote "Asian" as their race or listed multiple Asian ethnic groups (e.g., Chinese and Filipino) as their racial/ethnic identification. East Asians consisted of those whose racial background consisted of one or more East Asian ethnicities (e.g., Korean and/or Chinese). Multiracial consisted of those of any racial background that consisted of different racial groups (e.g., Native Hawaiian and Hispanic/Latinx). Multiracial Asians were anyone who listed White and Asian (any one Asian ethnicity or multiple) as their race. Pacific Islander/Native Hawaiian included those who listed Native Hawaiian or other Pacific Islander ethnicities (e.g., Samoan, Tahitian, etc.). Southeast Asian targets consisted of those whose racial background consisted of one or more Southeast Asian ethnicities (e.g., Filipino and/or Vietnamese). Lastly, White included anyone who identified as White. Access to the full set of stimuli and norming data is available here: https://osf.io/fkn7y.

Stimuli ratings

140 targets were uploaded and programmed into a survey via Qualtrics. Raters were presented with a neutral expression from one target. Following other prominent face databases norming data (see Ma et al., 2015; Strohminger et al., 2016), we asked raters to estimate the age of the target, as well as rate the target's attractiveness, femininity, masculinity, distinctiveness, and trustworthiness on a scale ranging from 1 (*not at all*) to 7 (*extremely*). Next, while still looking at the neutral expression of the same target, raters were asked to select what races they perceived the target to be. This item allowed for multiple monoracial races (White/European American, African American/Black/Caribbean, Native American/Native Alaskan, Pacific Islander, East Asian, Southeast Asian, South Asian, Hispanic/Latinx, and/or other) to be selected. After selecting the race(s) they perceived the target to be, participants then rated how prototypical of each race they selected they perceived the target being on a scale ranging from 1 (*not at all*) to 10 (*extremely prototypical*). Participants were also asked whether they perceived the target to be Multiracial and again asked to rate how prototypical they perceived the target to be Multiracial on a scale ranging from 1 (*not at all*) to 10 (*extremely prototypical)*. Once these items were completed, raters then saw the following photos of the target: neutral, smiling with teeth, and smiling without teeth, one at a time, and were asked to select what emotion (happy, angry, fearful, sad, disgust, surprised, threatened, neutral, or none of the above) they perceived to be present in each photo. Participants were only presented with a random subset of 15 targets for each session to account for rater fatigue.

Participants

The aim was to recruit at least 450 participants to ensure 30 ratings were completed for each target stimulus. Our sample consisted of 496 participants recruited from students at a large public University in Hawai'i and additional participants from Amazon's Mechanical Turk (7% African American, 14% East Asian, 11% Southeast Asian, 1% South Asian, 48% White, 1% Pacific Islander, 3% Hispanic/Latinx, 2% Indigenous (e.g., Native American or Native Hawaiian), 13% Multiracial; $M_{age} = 30.20$, $SD_{age} = 13.47$; 57% women and 43% men). Those

collected from the University were compensated extra credit for a psychology course (n = 245), while those collected via Mechanical Turk were compensated $1.50 USD ($n$ = 251). We purposefully recruited a sample from Hawai'i to capture norming ratings from those living within the context in which our models were recruited. The addition of the Amazon Mechanical Turk sample ensured we had a more nationally representative sample of raters. We conducted analyses to test for differences in ratings across the two samples and found that all traits showed no difference (ps > .70) except for the trait distinctiveness.[3] Subsequently, we discuss the results of the ratings as they collapse across our two samples.

Results

Expression ratings

Targets were asked to make the following expressions: smiling with teeth, smiling without teeth, and neutral. Participant raters viewed each photo expression and were asked to select which emotion they perceived, coded as the following: happy = 1, angry = 2, fearful = 3, sad = 4, disgust = 5, surprise = 6, threatened = 7, neutral = 8, or none of the above = 9). Proportion scores were created by summing how many participants correctly identified what emotion is expressed in the photo, divided by the total amount of ratings received. Overall, proportion scores for happiness were high for smiling with teeth expressions (M = .98, SD = .06) and, slightly lesser degree, smiling without teeth (M = .73, SD = .21) expressions. Proportions were high for neutral on neutral expressions (M = .83, SD = .11).

Evaluative ratings

Participants were asked to rate the target's neutral photo on perceived age, attractiveness, femininity, masculinity, distinctiveness, and trustworthiness. Faces higher in femininity, distinctiveness, and trustworthiness were rated more attractive, while those rated as more masculine were rated less attractive (see Table 2 for correlations). Femininity was negatively correlated with ratings of masculinity but positively correlated with ratings of distinctiveness and trustworthiness. Conversely, ratings on masculinity were negatively correlated with distinctiveness and trustworthiness. Lastly, ratings of distinctiveness and trustworthiness were positively correlated.

Race

To examine if evaluative ratings differed across target race, we conducted one-way ANOVAs for each evaluative trait across target race categories (Asian, White, East Asian,

Table 2. Correlations between evaluation ratings.

		1	2	3	4	5	6
1	Age	—					
2	Attractiveness	−.10	—				
3	Feminine	.06	.67**	—			
4	Masculine	−.03	−.59**	−.99**	—		
5	Distinctive	.04	.49**	.28**	−.21*	—	
6	Trustworthy	−.04	.49**	.52**	−.50**	.22*	—

*p < .01, **p < .001.

Table 3. Evaluative ratings across self-reported race.

Dimension	Asian	Southeast Asian	East Asian	White	Hispanic/Latinx	Pacific	Multiracial	Multiracial Asian
Age	25.05	23.94	25.13	26.75	25.23	25.33	24.76	23.56
	(2.28)	(2.00)	(2.38)	(3.39)	(1.76)	(3.26)	(2.36)	(1.84)
Trustworthy	3.86	3.68	3.93	3.63	3.57	3.60	2.66	3.82
	(.26)	(.35)	(.37)	(.45)	(.39)	(.27)	(.42)	(.47)

Standard deviations are in parentheses.

Southeast Asian, Hispanic/Latinx, Native Hawaiian/PI, Multiracial, Multiracial Asian). Perceived attractiveness, femininity, masculinity, and distinctiveness did not significantly vary across target race, $ps > .13$. We did find a significant difference in perceived age across target race, $F(7, 49.90) = 2.41$, $p = .03$. Post-hoc using Tukey's correction found that White targets were perceived as significantly older than Multiracial Asian, $t(132) = 3.76$, $p = .006$, and Southeast Asian targets, $t(132) = 3.62$, $p = .01$. There was also a significant difference in perceived trustworthiness across target race, $F(7, 50.70) = 2.35$, $p = .04$; however, none of the post-hoc comparisons were statistically significant, $ps > .13$. See Table 3 for ratings.

Categorization and prototypicality

Evaluative ratings across categorization

We were interested in how the evaluative ratings of the targets would be associated with how targets were categorized. We conducted correlations across the evaluative rating (e.g., attractiveness) and racial categorization proportion scores (e.g., how likely a target was categorized as White). For brevity, we only report statistically significant associations. Targets were more likely to be perceived as older the more they were categorized as Black, $r(76) = .27$, $p = .02$, 95% CI [.05, .47]. Targets were more likely to be perceived as attractive if they were categorized as White, $r(136) = .30$, $p < .001$, 95% CI [.14, .44], and/or Multiracial, $r(138) = .22$, $p = .009$, 95% CI [.06, .37]. Targets were more likely to be rated as distinctive when categorized as Hispanic/Latinx, $r(105) = .20$, $p = .04$, 95% CI [.008, .37], and/or Pacific Islander, $r(125) = .34$, $p < .001$, 95% CI [.18, .49], and/or Multiracial, $r(138) = .40$, $p < .001$, 95% CI [.25, .53]. Lastly, targets were rated as more trustworthy when categorized as East Asian, $r(124) = .31$, $p < .001$, 95% CI [.14, .46], but were rated as less trustworthy when they were categorized as Hispanic/Latinx, $r(105) = -.27$, $p = .006$, 95% CI [−.43, −.08]. Dimensions of femininity and masculinity were not associated with racial categorizations.

Self-reported race by perceiver categorization and ratings

After rating the target's neutral photo on evaluative dimensions, participants were asked to indicate which race(s) they believed the target belonged to. Proportion scores were created for each racial category by summing how many participants indicated that the target belonged to that category, divided by the total number of ratings received for that photo. We designated targets as high in prototypicality if rated as 6 or greater (based upon the rating scale of 1–10). See Table 4 for proportion averages within each racial category and Table 5 for prototypicality averages within each racial category.

Table 4. Average racial categorization proportion scores within each reported race category.

Reported Race	White	Black	Native American	Pacific Islander/ Native Hawaiian	East Asian	Southeast Asian	South Asian	Hispanic/ Latinx	Multiracial	Other
Asian	0.08	0.04	0.04	0.14	0.55	0.38	0.06	0.06	0.40	-
	(.06)	(.05)	(.03)	(.10)	(.23)	(.18)	(.05)	(.05)	(.13)	
Southeast Asian	0.09	0.05	0.05	0.22	0.28	0.49	0.09	0.13	0.44	0.02
	(.08)	(.04)	(.04)	(.09)	(.20)	(.16)	(.07)	(.15)	(.08)	(.01)
East Asian	0.11	0.03	0.03	0.08	0.74	0.26	0.03	0.05	0.34	-
	(.14)	(.01)	(.02)	(.06)	(.14)	(.09)	(.01)	(.05)	(.15)	
White	0.96	0.02	0.04	0.03	0.02	0.02	0.02	0.04	0.13	-
	(.02)	(.01)	(.02)	(.01)	(.001)	(.00)	(.0002)	(.01)	(.04)	
Hispanic/Latinx	0.46	0.03	0.06	0.13	0.12	0.12	0.14	0.39	0.50	0.02
	(.25)	(.02)	(.02)	(.08)	(.08)	(.07)	(.12)	(.14)	(.09)	(.0004)
Pacific Islander/ Native Hawaiian	0.35	0.19	0.04	0.32	0.13	0.24	0.05	0.18	0.56	-
	(.29)	(.20)	(.03)	(.24)	(.09)	(.16)	(.03)	(.11)	(.13)	
Multiracial	0.33	0.22	0.06	0.22	0.22	0.23	0.07	0.23	0.56	0.02
	(.24)	(.32)	(.03)	(.14)	(.24)	(.19)	(.07)	(.15)	(.15)	(.0002)
Multiracial Asian	0.52	0.12	0.05	0.15	0.34	0.16	0.06	0.19	0.58	0.02
	(.30)	(.21)	(.03)	(.11)	(.27)	(.13)	(.07)	(.15)	(.17)	(.001)

Standard deviations are in parentheses.

Table 5. Average racial prototypicality ratings within each reported race category.

Reported Race	White	Black	Native American	Pacific Islander/ Native Hawaiian	East Asian	Southeast Asian	South Asian	Hispanic/ Latinx	Multiracial	Other
Asian	4.36	4.60	5.71	4.85	6.32	6.20	4.70	5.65	5.41	-
	(1.06)	(2.34)	(1.69)	(1.40)	(.89)	(.59)	(1.90)	(2.36)	(.41)	
Southeast Asian	4.17	5.59	5.25	5.17	5.42	6.34	5.32	5.78	5.29	3.71
	(1.41)	(1.55)	(2.09)	(1.06)	(.97)	(.71)	(1.35)	(1.49)	(.41)	(3.15)
East Asian	4.42	4.93	5.35	4.63	6.85	5.69	4.00	5.64	5.15	-
	(1.93)	(2.15)	(1.64)	(1.69)	(.77)	(.64)	(2.43)	(1.61)	(.50)	
White	8.07	5.40	4.97	4.92	2.60	5.50	4.50	4.67	5.19	-
	(.35)	(.89)	(1.80)	(2.69)	(2.07)	(3.54)	(2.12)	(2.22)	(.87)	
Hispanic/Latinx	5.35	4.04	3.96	4.24	3.79	4.88	5.60	5.46	5.45	7.00
	(1.04)	(1.97)	(1.51)	(.94)	(.52)	(1.36)	(.83)	(1.71)	(.57)	(.00)
Pacific Islander/ Native Hawaiian	4.99	5.31	5.96	5.28	3.92	4.57	4.07	5.39	5.76	-
	(1.07)	(2.22)	(1.66)	(1.50)	(1.29)	(1.04)	(2.27)	(.94)	(.29)	
Multiracial	4.61	5.33	5.60	4.73	4.49	5.04	5.25	5.71	5.31	7.50
	(.96)	(1.82)	(1.03)	(1.19)	(1.54)	(1.40)	(1.75)	(.71)	(.57)	(3.54)
Multiracial Asian	5.19	4.59	5.56	4.39	4.71	4.85	4.73	5.22	5.52	2.20
	(1.28)	(1.31)	(1.64)	(1.21)	(1.14)	(1.11)	(1.79)	(.83)	(.43)	(3.35)

Standard deviations are in parentheses.

East Asian. East Asian-identified individuals were 74% likely to be categorized as East Asian ($M = .74$, $SD = .14$) and categorized as East Asian more so than all other racial categories, $ps < .001$. East Asian-identified individuals were also rated high in prototypicality for East Asians ($M = 6.85$, $SD = .77$).

Southeast Asian. Southeast Asian-identified individuals were 50% likely to be categorized as Southeast Asian ($M = .50$, $SD = .16$) categorized as Southeast Asian more so than all other racial categories except for Multiracial ($M = .44$, $SD = .08$), $ps < .01$. Southeast Asian individuals were also rated high in prototypicality for Southeast Asians ($M = 6.34$, $SD = 77$),

and this was greater than their rating of prototypicality for Multiracial ($M = 5.29$, $SD = .41$), $p < .006$. Thus, while Southeast Asian-identified individuals were categorized to a similar extent as Southeast Asian and Multiracial, raters perceived these individuals to be more prototypical of Southeast Asian descent.

Asian. Asian-identified individuals were 55% likely to be categorized as East Asian ($M = .55$, $SD = .23$), 40% likely to be categorized as Multiracial ($M = .40$, $SD = .13$), and 38% likely to be categorized as Southeast Asian ($M = .38$, $SD = .18$). There was no significant in likelihood to be categorized across these three categories, $p > .99$. Asian identified individuals were rated high in prototypicality for East Asians ($M = 6.32$, $SD = .90$) and Southeast Asian ($M = 6.20$, $SD = .59$). While Asian identified individuals were categorized as East Asian, Southeast Asian, and Multiracial to a similar extent, they appeared more prototypically East Asian and Southeast Asian.

White. White-identified individuals were 96% likely to be categorized as White ($M = .96$, $SD = .02$) and were rated high in prototypicality for how White they appeared ($M = 8.07$, $SD = .35$).

Pacific Islander/Native Hawaiian. Pacific Islander/Native Hawaiian identified individuals only were 32% likely to be categorized as Pacific Islander/Native Hawaiian ($M = .32$, $SD = .24$) when in comparison to other monoracial categories; however, they were 56% likely to be categorized as Multiracial ($M = .56$, $SD = .13$). Pacific Islander/Native Hawaiian faces were rated as slightly more prototypical of Multiracial ($M = 5.76$, $SD = .29$) than Pacific Islander/Native Hawaiian ($M = 5.28$, $SD = 1.50$). Given that majority of the Pacific Islander/Native Hawaiian population in Hawai'i are Multiracial (Pew Research Center, 2015), such ratings are reflective of the population the faces were sampled from.

Hispanic/Latinx. Hispanic/Latinx-identified individuals were 39% likely to be categorized as Hispanic/Latinx ($M = .39$, $SD = .14$) when in comparison to other monoracial categories; however, they were 50% likely to be categorized as Multiracial ($M = .50$, $SD = .09$). Furthermore, Hispanic/Latinx identified individuals were rated as equivalent in prototypicality for Hispanic/Latinx ($M = 5.46$, $SD = 1.71$) and Multiracial ($M = 5.45$, $SD = .58$). Such ratings are unsurprising, given that Hispanic/Latinx communities are likely also Multiracial (Nicolas et al., 2019.

Multiracial. Multiracial-identified individuals were 57% likely to be categorized as Multiracial ($M = .57$, $SD = .15$). While Multiracial identified individuals were categorized as Multiracial, raters perceived them to be slightly more prototypical of Hispanic/Latinx ($M = 5.71$, $SD = .71$) than for Multiracial ($M = 5.31$, $SD = .57$). Multiracial targets are often categorized and/or perceived as being Hispanic/Latinx or Middle Eastern (see Nicolas et al., 2019); therefore, such ratings are not unusual.

Multiracial Asian. Multiracial Asian-identified individuals were 58% likely to be categorized as Multiracial ($M = .58$, $SD = .17$) and 52% likely to be categorized as White ($M = .52$, $SD = .30$). Similarly, raters perceived these individuals to be most prototypical for

Multiracial ($M = 5.52$, $SD = .43$) and White ($M = 5.19$, $SD = 1.28$). The majority of the mixed-race Asian population do have White ancestry; therefore, such ratings are reflective of the population the faces were sampled from (Pew Research Center, 2015).

Self-reported age by perceiver ratings

We found that photo volunteers' self-reported age was significantly correlated with raters' perception of their age, $r(138) = .49$, $p < .001$, 95% CI [.35, .60].

Discussion

This face database provides an ethnically and racially diverse array of targets, such as Multiracial, Southeast Asian, and Pacific Islanders. Broadening the ethnic and racial diversity of available facial stimuli is one way in which we can begin to encourage researchers to incorporate more diversity in the research questions that are being asked. For example, disaggregating broad categories such as AAPI (Asian American Pacific Islander) often illuminate disparities amongst specific ethnic groups (see Nguyen et al., 2013). Often when researchers examine perceptions about "Asian" people, the default leans toward East Asian groups (e.g., Japanese, Korean, Chinese, etc.). While research has begun to make great strides toward understanding this specific subgroup, there is still much to discover regarding how perceptions about other Asian ethnic groups, such as South and Southeast Asian, differ (see Goh et al., 2023).

Furthermore, even less research has included perceptions of Pacific Islander groups (e.g., Samoan, Tongan, Native Hawaiian, etc.). The Hawai'i Face Database provides images of 140 individuals across eight ethnic and racial categories: White, East Asian, Southeast Asian, Mixed Asian, Multiracial, Multiracial Asian, Hispanic/Latinx, and Pacific Islander. In addition to neutral stimuli, we also provide emotional expressions of happiness (smiling with and without teeth showing) and profile shots. Neutral and emotional expressions are accompanied by norming data from a broad participant pool (college students and MTurk sample).

Lastly, another novel aspect of our database is that we include the targets' self-reported age, race, and gender. Whether researchers' goals are to use norming data or targets' self-identification to select stimuli, this database will allow access to either set of criteria. This allows our database to be used for a wider range of research questions, whether the research question stems from perceiver judgments or target identity. For example, researchers may want to examine whether individuals stereotype prototypical East vs. Southeast Asian targets as foreign to the same extent. In this scenario, researchers may want to choose targets whose norming data indicate high racial prototypicality as East and Southeast Asian. However, on the other hand, researchers may be interested in whether individuals who are East vs. Southeast Asian elicit foreign stereotypes to the same extent, in which case researchers may choose targets based on their self-reported identity as opposed to how they were rated. The framing of the question is important because we find that self-reported identity and racial categorization/prototypicality do not always align (see Meyers et al., 2022).

In our face database, the only targets whose self-identification and categorization ratings were high in concordance for East Asian and White individuals. All other groups had concordance (i.e., in a way that matched their self-identification) about half of the time (e.g., near 50%) or were extremely racially ambiguous, such as Pacific Islanders and

Hispanic/Latinx individuals. These findings are particularly interesting given that Multiracial individuals are typically considered the prototype of "racial ambiguity;" however, our results demonstrate that raters can guess the self-identification of Multiracial targets at around chance level (50%). Pacific Islander and Hispanic/Latinx individuals were more likely to have low concordance between categorization and self-identification, and were categorized as "Multiracial" more than any other racial category. These findings mirror work by Nicolas et al. (2019), where racial categorizations of Black-White Multiracial individuals were often labeled as Hispanic or Middle-Eastern. This suggests that more research is needed on the racial categorization process for Hispanic/Latinx and Pacific Islander individuals. Most research on racial categorization has used targets for whom perceivers can likely achieve high concordance on categorization and self-identification (e.g., White, Black, and East Asian); however, our findings suggest that many other groups beyond Multiracial individuals are racially ambiguous. Given the growing racial diversity of our society, we should incorporate racially diverse targets when testing theories on social perception. Researchers have opportunities to expand on this work to create stimuli databases to include other underrepresented targets, such as Middle Eastern and Native Americans, who have also historically been underexplored within social perception research. Similarly, research with these targets would help to expand our understanding of racial categorization processes for groups that may be more visually ambiguous. Additionally, our database only includes targets displaying smiling and neutral expressions. It would be valuable for future databases to include a broader range of emotional expressions to understand how emotions shape race-related social categorization processes. Lastly, our database includes primarily young adult targets due to the constraints of our sampling strategy (e.g., a public University). To better understand how visual markers like race, gender, and age interact, age diversity within stimuli databases is necessary.

We provide the Hawai'i Face Database for free use to all academic researchers in hopes that they will broaden the racial/ethnic composition of the targets they study. By doing so, we hope to broaden our understanding of theories within social perception that have typically only examined perceptually salient groups such as White, Black, and East Asian, and include groups that have long been invisible (e.g., Southeast Asian, Pacific Islander, Multiethnic).

Notes

1. We do note that this summary of databases is not exhaustive.
2. There is one Multiracial face included in this database.
3. We conducted interaction tests between the sample source and race of target for all of our trait ratings to test whether or not our two samples rated particular racial groups systematically differently. We found a significant interaction for distinctiveness, $F(7, 264) = 2.93$, $p = .006$. Overall, our sample of Mturk raters rated targets as higher in distinctiveness than our sample of University raters. Importantly, our sample of Mturk raters were majority-White (73%), while our University sample was minority-White (22%), which may explain these differences.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Open practices statement

The stimuli, data, and codebook for the HFD are available at: https://osf.io/fkn7y/

This research was not pre-registered because hypotheses testing was not a primary aim for this work.

References

Bartosik, B., Wojcik, G. M., Brzezicka, A., & Kawiak, A. (2021). Are you able to trust me? Analysis of the relationships between personality traits and the assessment of attractiveness and trust. *Frontiers in Human Neuroscience*, *15*, 685530. https://doi.org/10.3389/fnhum.2021.685530

Bonilla-Silva, E. (2004). From bi-racial to tri-racial: Towards a new system of racial stratification in the USA. *Ethnic and Racial Studies*, *27*(6), 931–950. https://doi.org/10.1080/0141987042000268530

Brondolo, E., Gallo, L. C., & Myers, H. F. (2009). Race, racism and health: Disparities, mechanisms, and interventions. *Journal of Behavioral Medicine*, *32*(1), 1–8. https://doi.org/10.1007/s10865-008-9190-3

Brown, S. L., Shriberg, D., & Wang, A. (2007). Diversity research literature on the rise? A review of school psychology journals from 2000 to 2003. *Psychology in the Schools*, *44*(6), 639–650. https://doi.org/10.1002/pits.20253

Buchanan, N. T., Perez, M., Prinstein, M. J., & Thurston, I. B. (2021). Upending racism in psychological science: Strategies to change how science is conducted, reported, reviewed, and disseminated. *The American Psychologist*, *76*(7), 1097–1112. https://doi.org/10.1037/amp0000905

Chen, J. M., Norman, J. B., & Nam, Y. (2021). Broadening the stimulus set: Introducing the American multiracial faces database. *Behavioral Research Methods*, *53*(1), 371–389. https://doi.org/10.3758/s13428-020-01447-8

Chen, J. M., Pauker, K., Gaither, S. E., Hamilton, D. L., & Sherman, J. W. (2018). Black + white = not white: A minority bias in categorizations of black-white multiracials. *Journal of Experimental Social Psychology*, *78*, 43–54. https://doi.org/10.1016/j.jesp.2018.05.002

Cooley, E., Winslow, H., Vojt, A., Shein, J., & Ho, J. (2018). Bias at the intersection of identity: Conflicting social stereotypes of gender and race augment the perceived femininity and interpersonal warmth of smiling black women. *Journal of Experimental Social Psychology*, *74*, 43–49. https://doi.org/10.1016/j.jesp.2017.08.007

Davenport, L. D. (2018). *Politics beyond Black and White: Biracial identity and attitudes in America*. Cambridge University Press.

DeBruine, L., & Jones, B. (2017). Face Research Lab London Set (Version 5). figshare. https://doi.org/10.6084/m9.figshare.5047666.v5

Dupree, C. H., & Kraus, M. W. (2022). Psychological science is not race neutral. *Perspectives on Psychological Science*, *17*(1), 270–275. https://doi.org/10.1177/1745691620979820

Gaither, S. E., Chen, J. M., Pauker, K., & Sommers, S. R. (2019). At face value: Psychological outcomes differ for real vs. computer-generated multiracial faces. *The Journal of Social Psychology*, *159*(5), 592–610. https://doi.org/10.1080/00224545.2018.1538929

Garay, M. M., & Remedios, J. D. (2021). A review of White-centering practices in multiracial research in social psychology. *Social and Personality Psychology Compass*, *15*(10), e12642. https://doi.org/10.1111/spc3.12642

George, S., Duran, N., & Norris, K. (2014). A systematic review of barriers and facilitators to minority research participation among African Americans, latinos, Asian Americans, and pacific islanders. *American Journal of Public Health*, *104*(2), e16–e31. https://doi.org/10.2105/AJPH.2013.301706

Goh, J. X., Lei, R. F., & Zou, L. X. (2023). Positioning Asian Americans in social cognition. *Social and Personality Psychology Compass*, *17*(6), e12760. https://doi.org/10.1111/spc3.12760

Goh, J. X., & McCue, J. (2021). Perceived prototypicality of Asian subgroups in the United States and the United Kingdom. *Journal of Experimental Social Psychology*, *97*, 104201. https://doi.org/10.1016/j.jesp.2021.104201

Greche, L., & Es-Sbai, N. (2016, March). Automatic system for facial expression recognition based histogram of oriented gradient and normalized cross correlation. *2016 International Conference on Information Technology for Organizations Development (IT4OD)* Fez, Morocco (pp. 1–5). IEEE.

Gwinn, J. D., Barden, J., & Judd, C. M. (2015). Face recognition in the presence of angry expressions: A target-race effect rather than a cross-race effect. *Journal of Experimental Social Psychology*, *58*, 1–10. https://doi.org/10.1016/j.jesp.2014.12.001

Hsieh, B., & Kim, J. (2020). Challenging the invisibility of Asian Americans in education. *Review of Education, Pedagogy, & Cultural Studies*, *42*(2), 95–103. https://doi.org/10.1080/10714413.2020.1760643

Hugenberg, K., & Wilson, J. P. (2013). Faces are central to social cognition. In D. E. Carlson (Ed.), *The oxford handbook of social cognition* (pp. 167–193). Oxford University Press.

Hunter, M. (2007). The persistent problem of colorism: Skin tone, status, and inequality. *Sociology Compass*, *1*(1), 237–254. https://doi.org/10.1111/j.1751-9020.2007.00006.x

Kleider-Offutt, H. M., Bond, A. D., & Hegerty, S. E. (2017). Black stereotypical features: When a face type can get you in trouble. *Current Directions in Psychological Science*, *26*(1), 28–33. https://doi.org/10.1177/0963721416667916

Lee, S., Xiong, C., Pheng, L. M., & Vang, M. N. (2017). The model minority maze: Hmong Americans working within and around racial discourses. *Journal of Southeast Asian American Education and Advancement*, *12*(2), 1. https://doi.org/10.7771/2153-8999.1153

Lick, D. J., & Johnson, K. L. (2016). Straight until proven gay: A systematic bias toward straight categorizations in sexual orientation judgments. *Journal of Personality & Social Psychology*, *110*(6), 801. https://doi.org/10.1037/pspa0000052

Lowe, L. (1991). Heterogeneity, hybridity, multiplicity: Marking Asian American differences. *A Journal of Transnational Studies*, *1*(1), 24–44. https://doi.org/10.3138/diaspora.1.1.24

Ma, D. S., Correll, J., & Wittenbrink, B. (2015). The Chicago face database: A free stimulus set of faces and norming data. *Behavior Research Methods*, *47*(1), 1–14. https://doi.org/10.3758/s13428-014-0532-5

Ma, D. S., Kantner, J., Benitez, J., & Dunn, S. (2022). Are morphs a valid substitute for real multiracial faces in race categorization research? *Personality & Social Psychology Bulletin*, *48*(1), 95–104. https://doi.org/10.1177/0146167221989836

Ma, D. S., Kantner, J., & Wittenbrink, B. (2021). Chicago face database: Multiracial expansion. *Behavior Research Methods*, *53*(3), 1289–1300. https://doi.org/10.3758/s13428-020-01482-5

Maddox, K. B., & Gray, S. A. (2002). Cognitive representations of Black Americans: Reexploring the role of skin tone. *Personality & Social Psychology Bulletin*, *28*(2), 250–259. https://doi.org/10.1177/0146167202282010

Martinsen, N. E. (2017). *Supporting pacific islander Student success in higher education through culturally sustaining leadership* [Unpublished doctoral dissertation]. San Francisco State University.

Meyers, C., Gaither, S. E., Remedios, J., & Pauker, K. (2022). Detecting biracial identity strength: Perceived phenotypicality is inaccurate. *Self and Identity*, *22*(4), 1–30. https://doi.org/10.1080/15298868.2022.2146742

Monk, E. P., Jr. (2015). The cost of color: Skin color, discrimination, and health among African-americans. *The American Journal of Sociology*, *121*(2), 396–444. https://doi.org/10.1086/682162

Museus, S. D., Shiroma, K., & Dizon, J. P. (2016). Cultural community connections and college success: An examination of Southeast Asian American college students. *Journal of College Student Development*, *57*(5), 485–502. https://doi.org/10.1353/csd.2016.0064

Museus, S. D., & Truong, K. A. (2009). Disaggregating qualitative data from Asian American college students in campus racial climate research and assessment. *New Directions for Institutional Research*, *2009*(142), 17–26. https://doi.org/10.1002/ir.293

Nadal, K. L. (2019). The Brown Asian American movement: Advocating for South Asian, Southeast Asian, and Filipino American communities. *Asian American Policy Review*, *29*, 2–12.

Ngo, B., & Lee, S. J. (2007). Complicating the image of model minority success: A review of Southeast Asian American education. *Review of Educational Research*, *77*(4), 415–453. https://doi.org/10.3102/0034654307309918

Nguyen, B. M. D., Nguyen, M. H., & Nguyen, T. L. K. (2013). Advancing the Asian American and Pacific Islander data quality campaign: Data disaggregation practice and policy. *Asian American Policy Review*, *24*, 55.

Nicolas, G., Skinner, A. L., & Dickter, C. L. (2019). Other than the sum: Hispanic and Middle Eastern categorizations of black–white mixed-race faces. *Social Psychological & Personality Science*, *10*(4), 532–541. https://doi.org/10.1177/1948550618769591

Oosterhof, N. N., & Todorov, A. (2008). The functional basis of face evaluation. *Proceedings of the National Academy of Sciences*, *105*(32), 11087–11092. https://doi.org/10.1073/pnas.0805664105

Pew Research Center. (2015). *Hawai'i is home to the nation's largest share of multiracial americans*. https://www.pewresearch.org/fact-tank/2015/06/17/hawaii-is-home-to-the-nations-largest-share-of-multiracial-americans/

Pew Research Center. (2018). *Income inequality in the U.S. is rising most rapidly among asians*. https://www.pewresearch.org/social-trends/2018/07/12/income-inequality-in-the-u-s-is-rising-most-rapidly-among-asians/

Pew Research Center. (2021). *Key facts about Asian Americans, a diverse and growing population*. https://www.pewresearch.org/fact-tank/2021/04/29/key-facts-about-asian-americans/

Ramakrishnan, K., Lee, J., Lee, T., & Wong, J. (2017). *National Asian American survey (NAAS) 2016 pre-election survey*. National Asian American Survey.

Remedios, J. D., & Chasteen, A. L. (2013). Finally, someone who "gets" me! Multiracial people value others' accuracy about their race. *Cultural Diversity & Ethnic Minority Psychology*, *19*(4), 453–460. https://doi.org/10.1037/a0032249

Reyes, A. (2017). *Language, identity, and stereotype among Southeast Asian American youth the Other Asian: The Other Asian*. Routledge.

Roberts, S. O., Bareket-Shavit, C., Dollins, F. A., Goldie, P. D., & Mortenson, E. (2020). Racial inequality in psychological research: Trends of the past and recommendations for the future. *Perspectives on Psychological Science*, *15*(6), 1295–1309. https://doi.org/10.1177/1745691620927709

Sporer, S. L. (2001). Recognizing faces of other ethnic groups: An integration of theories. *Psychology, Public Policy, & Law*, *7*(1), 36–97. https://doi.org/10.1037/1076-8971.7.1.36

Srinivasan, S., & Guillermo, T. (2000). Toward improved health: Disaggregating Asian American and native Hawaiian/Pacific islander data. *American Journal of Public Health*, *90*(11), 1731. https://doi.org/10.2105/ajph.90.11.1731

Strohminger, N., Gray, K., Chituc, V., Heffner, J., Schein, C., & Heagins, T. B. (2016). The MR2: A multiracial, mega-resolution database of facial stimuli. *Behavior Research Methods*, *48*(3), 1197–1204. https://doi.org/10.3758/s13428-015-0641-9

Subica, A. M., Agarwal, N., Sullivan, J. G., & Link, B. G. (2017). Obesity and associated health disparities among understudied multiracial, Pacific Islander, and American Indian adults. *Obesity*, *25*(12), 2128–2136. https://doi.org/10.1002/oby.21954

Todd, A. R., Thiem, K. C., & Neel, R. (2016). Does seeing faces of young black boys facilitate the identification of threatening stimuli? *Psychological Science*, *27*(3), 384–393. https://doi.org/10.1177/0956797615624492

Tottenham, N., Tanaka, J. W., Leon, A. C., McCarry, T., Nurse, M., Hare, T. A., Nelson, C. (2009). The NimStim set of facial expressions: Judgments from untrained research participants. *Psychiatry Research*, *168*(3), 242–249. https://doi.org/10.1016/j.psychres.2008.05.006

Tsikandilakis, M., Kausel, L., Boncompte, G., Yu, Z., Oxner, M., Lanfranco, R., Chapman, P. (2019). "There is no face like home": Ratings for cultural familiarity to own and other facial dialects of emotion with and without conscious awareness in a British sample. *Perception*, *48*(10), 918–947. https://doi.org/10.1177/0301006619867865

U.S. Census Bureau. (2021). *2020 census illuminates racial and ethnic composition of the country*. https://www.census.gov/library/stories/2021/08/improved-race-ethnicity-measures-reveal-united-states-population-much-more-multiracial.html

Vinluan, A. C., & Remedios, J. D. (2019). Who do multiracials consider part of their racial in-group? *Social Psychological & Personality Science*, *11*(4), 522–532. https://doi.org/10.1177/1948550619876639

Wilkins, C. L., Kaiser, C. R., & Rieck, H. (2010). Detecting racial identification: The role of phenotypic prototypicality. *Journal of Experimental Social Psychology*, *46*(6), 1029–1034. https://doi.org/10.1016/j.jesp.2010.05.017

Williams, M. J., George-Jones, J., & Hebl, M. (2019). The face of STEM: Racial phenotypic stereotypicality predicts STEM persistence by—and ability attributions about—students of color. *Journal of Personality & Social Psychology*, *116*(3), 416–443. https://doi.org/10.1037/pspi0000153

Willis, J., & Todorov, A. (2006). First impressions making up your mind after a 100-ms exposure to a face. *Psychological Science*, *17*(7), 592–598. https://doi.org/10.1111/j.1467-9280.2006.01750.x

Wilson, J. P., Young, S. G., Rule, N. O., & Hugenberg, K. (2018). Configural processing and social judgments: Face inversion particularly disrupts inferences of human-relevant traits. *Journal of Experimental Social Psychology*, *74*, 1–7. https://doi.org/10.1016/j.jesp.2017.07.007

Yang, K. (2004). Southeast Asian American children: Not the "Model minority. *The Future of Children*, *14*(2), 127–133. https://doi.org/10.2307/1602799

Zhou, M., & Gatewood, J. V. (2007). Transforming Asian America: Globalization and contemporary immigration to the United States. In M. Zhou & J. V. Gatewood (Eds.), *Contemporary Asian America: A multidisciplinary reader* (pp. 115–138). New York University Press.