“Looking smart”: Examining Prototypicality as a predictor of gender brilliance attributions across White, East-Asian and South-Asian racial groups in British Children

Amalina Saifulmazli, supervised by Dr Jillian Lauer

Cambridge University Learning and Development (CUDL) Lab

Laidlaw Undergraduate Research and Leadership Programme

1st October 2025

Abstract

Globally, women are underrepresented in Science, Technology, Engineering and Mathematics (STEM) fields. One explanation for this is the impact of stereotypes, such as the male gender brilliance which associates men with intellectual talent. Therefore, it is important to understand stereotypes to support equality. Across cultures, children endorse male gender brilliance and recent work suggests that American children's endorsement of this stereotype varies across racial-ethnic groups, emerging early in development for sterotying White individuals but not for East Asian or Black individuals. Study 1 aims to investigate whether these patterns replicate in the British context and extend prior work by examining children's stereotypes toward an understudied racial-ethnic group: South Asian individuals. In Study 1, 142 British children aged 5–11 completed the stereotype task assessing their gender-brilliance stereotypes toward targets from three racial-ethnic groups: East Asian, South Asian, and White individuals. Children associated brilliance significantly more with South Asian men than South Asian women, and more with White men than White women. However, they displayed the reverse stereotype for East Asian targets. Notably, gender-brilliance stereotypes were strongest when children evaluated South Asian individuals. These findings challenge the notion that children endorse gender-brilliance stereotypes primarily when stereotyping White individuals. Study 2 aims to further test the theory that those belonging to low-status racial groups, such as East-Asians, may escape from the gender brilliance stereotype by virtue of their non- prototypicality. Participants complete a prototypicality task and a stereotype task to see if the former can predict the later. Data collection for Study 2 is ongoing and expected to be completed by December 2025.

Acknowledgments

This report and the development of Study 2 was made possible by the Laidlaw Foundation through the Laidlaw Undergraduate Research Programme. Additional funding for Study 1 and 2 was funded by the Department of Psychology and the Department of Education at the University of Cambridge. We thank our school partners and our participants and their families for taking part. Data collection for study 1 was done with the help of Sophie Bishop & Amani Christi. Thank you especially to my supervisor, Dr Jillian Lauer, for their continued support throughout this study.

Contents

Introduction

Globally, there are significant differences in the ethnic and gender distributions of individuals across fields of study and work; these differences are also evident within the United Kingdom. This begins as early as in school subject choices and impacts future career choices. For example, non-White identifying students are less likely to choose humanities subjects as an A-level (Vidal Rodeiro, 2012) and in the UK between April 2024 and March 2025, only 24.5% of those employed in Science, Research, Engineering And Technology Professions identified as female (Office for National Statistics, UK, 2025). This limits the representation of minority groups in prestigious fields.

A possible contributor to this disparity is the impact of stereotypes around intelligence. Notably, the impact on male gender brilliance has been well documented. By the age of 6, girls are less likely than boys to believe that members of their gender are “really, really smart” and begin to avoid activities said to be for children who are “really, really smart.” (Bian et al., 2017). This directly shows how the gender brilliance stereotype limits the choices of girls from a young age. For these reasons, it is important to study the origins of stereotypes around intelligence and how and when they are applied in order to examine how the negative impacts of stereotypes can be reduced and to support equality.

However, gender is not the only trait which impacts how an individual’s intelligence is stereotyped. Race is also a common trait used to evaluate intelligence. In particular, there is a strong stereotype associating East Asians with brilliance. Additionally, gender stereotypes are often racialised and not applied equally to all races (Shu et al., 2022). Therefore, it is important to examine both gender and racial stereotypes together to understand how these stereotypes impact life outcomes.

Intersections between Gender and Racial Brilliance

There is significant evidence for gender brilliance being attributed differently across racial groups. Most notably, East Asian women are commonly associated with intelligence more than East Asian men. This is true both for American and Chinese participants (Shu et al., 2022. & Kim et al. 2024). This is contrary to the traditional stereotype associating men with brilliance which is seen when using White targets.

There are mixed results regarding if male gender brilliance is seen with Black targets. Some studies report Black women are associated more with intelligence (e.g Jaxon et al., 2019) while others report Black men still being associated more with intelligence (e.g Storage et al., 2020). Therefore, it is not as clear if traditional gender brilliance is seen with Black targets. Furthermore, current literature has focused mainly on American children and their views of intelligence. Hence, further research is needed to

investigate the stereotypes held by British children. This is especially true as the ethnic makeup of British and Americans differ, impacting the people children are likely to see in their everyday lives. An example of this is for true for Asian ethnic groups where the UK has a larger proportion of South Asians compared to East Asians while the converse it true for the US. Furthermore, this distinction is commonly lost in the current literature where "Asian" is mostly used to refer to exclusively East Asians and South Asians are underrepresented in research. When South Asians are included as targets, they are commonly grouped with East Asians to form a single category, this is despite the stereotypes and social status of South and East Asians being different. For this reason, this study aims to investigate the stereotypes held by British children around intelligence and kindness for White, East Asians and South Asians.

Prototypicality

One of the current leading theories for racial difference in the gender brilliance stereotype is prototypicality. A prototype is defined as a mental representation of an object or concept; the closer an individual or object is to this mental representation, the more prototypical they are. Prototype theory hypotheses the more prototypical an individual is, the more strongly a stereotype is applied. It is theorised that who is prototypical is strongly linked to social status with high status group being the most prototypical.

This is often used to explain why the gender brilliance stereotype is less prominent for East Asians. Men and women belonging to high-status racial groups (such as White individuals) are perceived as the prototypical members of their gender and therefore are direct targets of gender stereotypes. In comparison, those belonging to low-status racial groups, such as East-Asians, may escape from the gender brilliance stereotype by virtue of their non- prototypicality (Purdie-Vaughns & Eibach, 2008). Therefore, examining prototypicality is important to understanding how stereotypes are applied to different racial groups.

However, this theory does not explain why male gender brilliance stereotypes are seen for other non-White races that are not East Asians. For example, it is less clear if male gender brilliance is also seen for Black individuals, with some studies finding Black men (e.g Storage et al., 2020) are seen as more brilliant while others find Black women (e.g Jaxon et al., 2019) are seen as more brilliant. A different theory that explains this is a general negative stereotype of Black men. Alternately, East Asians are often seen as more feminine and therefore East Asian men do not benefit from gender brilliance stereotypes as much as they are seen as less masculine and less prototypically male. Therefore, the present study aims to investigate if prototypicality could explain the racial differences in the gender brilliance stereotype.

Based on the current literature, this study aims to test the following hypotheses.

1) Stereotyping
    i. Gender will have a significant effect on who is selected by children as "very very clever",
    ii. Race will have a significant effect on who is selected by children as "very very clever"
    iii. The interaction between race and gender will have a significant effect on who is selected by children as "very very clever"

2) Prototypicality
    i. Gender will have a significant effect on who is selected by children as prototypical, with men being selected as brilliant significantly more.
    ii. Race will have a significant effect on who is selected by children as prototypical, with White individual being selected a significantly higher proportion of the time
    iii. The interaction between race and gender will have a significant effect on who is who is selected by children as prototypical

3) Prototypically will significantly predict the strength of the gender brilliance stereotype. Specifically, the more prototypically male an adult is perceived, the higher the likelihood that children will select that individual as "very, very clever." Conversely, the more prototypically female an adult is perceived, the lower the likelihood that children will select that individual as "very, very clever".

Study 1

Study 1 focused on assessing the stereotypes held by British children (H1) and was conducted primarily by Jillian Lauer and Sonali Biswas at the CUDL Lab. This study was done first as it was deemed important to see if British children would believe similar to American children in existing literature and to examine how South Asians are stereotyped by British children. Ethical approval was obtained from the University of Cambridge's Department of Education Ethics Committee.

Method

Participants and recruitment

Parents of participants were recruited through schools in the UK and through posting advertisements on social media. 142 children aged between 5-11 completed the critical stereotype task.

Warm up Task

A warm up task was used to ensure that participants could effectively take part in this study and to allow participants to get used to answering questions over zoom. Participants were shown the colours orange and blue and were asked to name both. Two numbers were then presented with one having an orange outline and the other a blue. Participants were asked if a number was either the blue or orange option. This was done both to get children used to selecting between two options verbally (necessary for this study) and check participants could recognise single digit numbers (necessary for tasks in study 2).

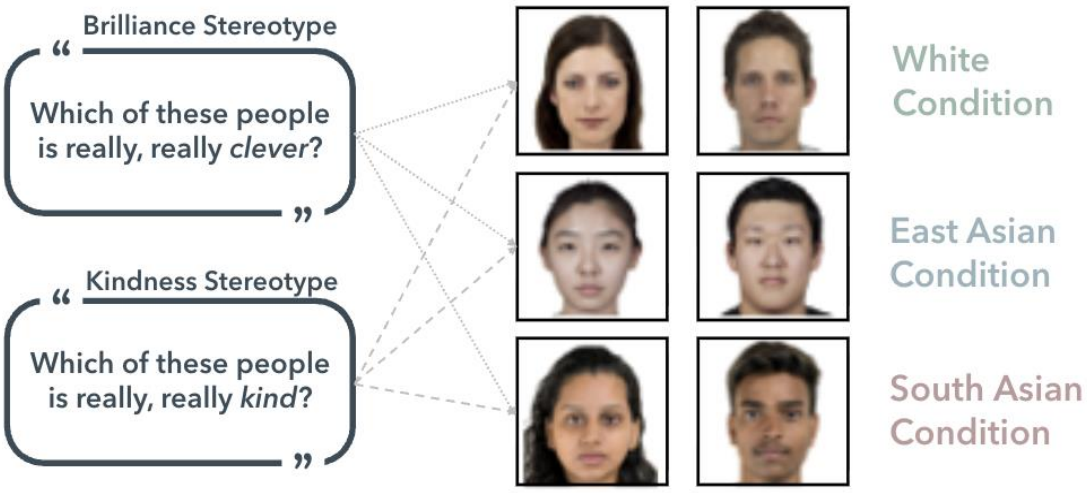
Procedure and Stimuli

The procedure was adapted from Shu et al. (2022) which adapted from Bian et al. (2017). This task aimed to measure participant's beliefs about who is "very very clever". The original study on American children used the phrasing "very very smart". This was adapted to "clever" to match language used commonly by British children. As a control assessment, data was also collected on participants' beliefs of who is "really, really nice" because "nice" is familiar to children of this age, and yet it is not strongly associated with men (Kim et al., 2024 & Shu et al. ,2022).

The "clever" and "nice" questions were presented to children in two separate blocks. The order of the two blocks, as well as the order of the questions within each block, was counterbalanced across participants. Each block started with 4 screener questions to test children's understanding of "clever" and "nice". For each question, the experimenter described a behaviour of an unknown child (e.g., "This child can always answer even the hardest questions from the teacher"). Participants were asked to answer whether the child in the picture possesses the relevant trait (e.g., "Is this child clever, not clever, or are you not sure?"). Children were corrected if they answered incorrectly. Bian et al. (2017) used 6 screener questions with the exclusion criterion of 4/6 correct for each trait. This was reduced to 4 screener questions as this was deemed sufficient to check understanding and an exclusion rate of 3/4 correct.

After the screener questions, participants were presented with photo pairs of adults. Upon seeing each pair, children were told that one of the two people was either "really, really smart" or "really, really nice" and asked to guess which individual possessed the trait. Stimuli were drawn from the Chicago Face Database (Ma et al., 2015 & Lakshmi et al., 2021) and were matched on perceived age and attractiveness as rated by American adults. The children were then presented with 3 practise trials where the adults in the pairs were the same gender and race. This was to get participants used to answer the questions and to obscure the objective of the study to not bias participants. In the critical trials, participants were presented of male-female pairs of adults in the three racial categories (White, East Asian and South Asian).

Figure 1: Example stimuli from critical task



Analysis

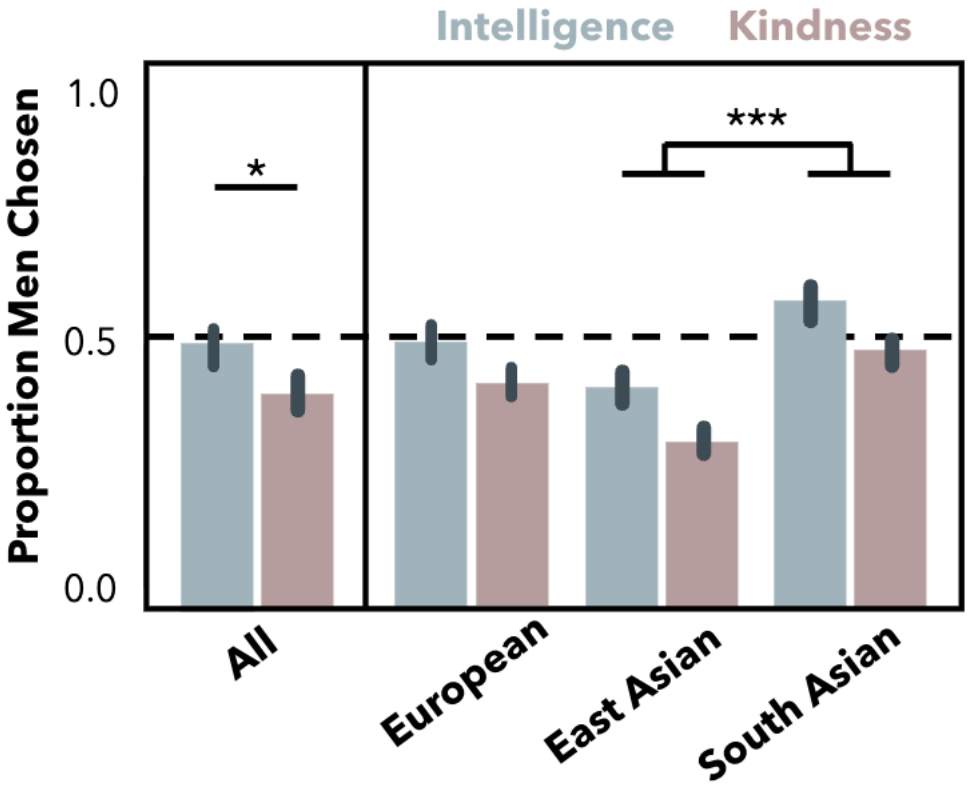
Data from the critical task was analysed using mixed effects modelling in R. A **mixed ANOVA** with a 2 (**clever** vs. **kind**) × 3 (race condition) design was used. Mixed effect modelling was chosen as the best analysis method as the study includes both **Between-subjects variable** (2 groups: **clever** vs. **kind**) and **Within-subject variable.** Therefore, mixed effect modelling would allow to see if there was a significant main effect of each variable and to examine their interactions.

Additionally, the effect of age was analysed using a linear analysis to see if age moderated the effects of race as previous literature suggests that male gender brilliance appears for 8-year-olds but not 5-year-old and race-based stereotyping emerges at a later age than gender (Shu et al.,2022).

Results

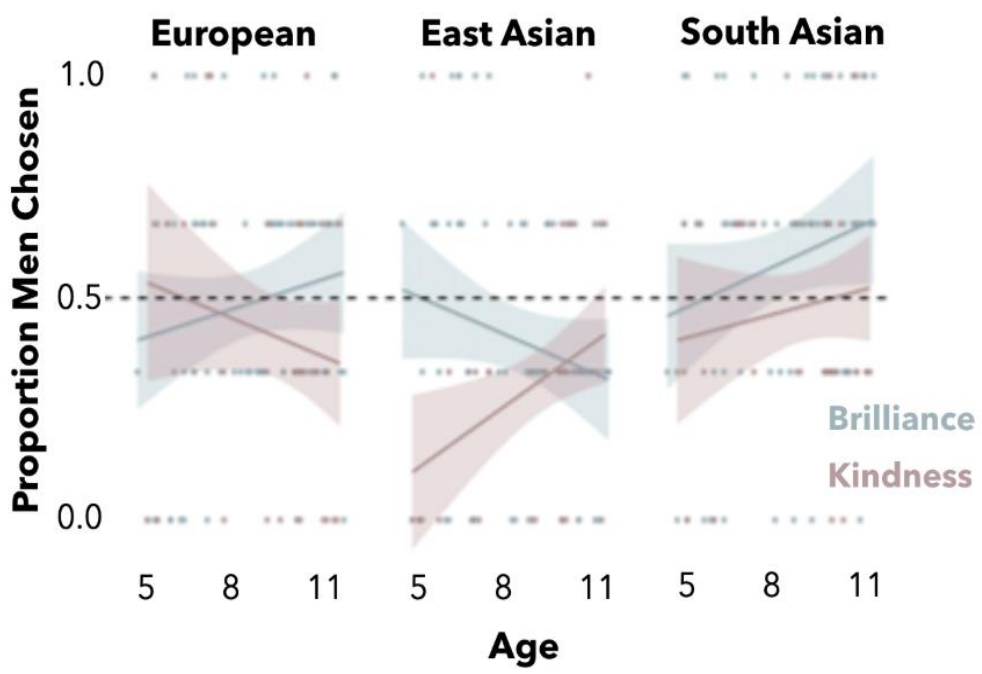
Across all ethnicities, there was a statistically significant difference in how kindness and intelligences were stereotyped. Children displayed stronger kindness than brilliance stereotypes ($p < 0.05$). With men being selected a higher proportion of the time for clever than kind. For intelligence, there was a significant effect of race where men were select as brilliant a significantly higher proportion of the time in the White and South Asian conditions but not in the East Asian condition. Stereotypes were strongest when evaluating South Asian individuals. In all racial conditions, men were selected as "kind" a smaller proportion of the time.

Figure 2: Proportion of Men Chosen as Intelligent or Kind across race



Additionally, age of participants significantly moderated the effects of race and gender on who children selected as kind and intelligent. As age increased, the proportion of men chose as smart increased in the European and South Asian conditions but decreased in the East Asian condition. In the kindness conditions, as age increase the proportion of men decreased in the European condition but increased significantly in the East Asian condition.

Figure 3: Proportion of Men selected as Intelligent or Kind against age of participant



Discussion

This study aimed to assess the gender stereotypes of intelligence held by British children across European, East Asian and South Asian racial groups. It was hypothesised that 1i) Gender will have a significant effect on who is selected by children as "very very clever" and 1iii) The interaction between race and will have a significant effect on who is selected by children as "very very clever." The results of this study support these hypotheses. As this study forced on gender stereotypes and children were only presented with male-female pairs, hypothesis 1ii was not examined.

There was a statistically significant difference in kindness and intelligences were stereotyped. Overall, intelligence was more associated with men than kindness. This fits with existing literature on stereotypes held by American (Bian et al., 2017) and Chinese children (Shu et al., 2022). This suggests that British children stereotype similarly to these groups. Additionally, children displayed stronger kindness than brilliance stereotypes. This could be due to the increasing social movement of increasing visibility of intelligent women in mainstream media and prompting STEM subjects to women and young girls while the same has not been done for boys and kindness.

Race had a significant effect on the proportion of men selected as being “very very smart.” In the White condition, men were selected a significantly higher proportion of the time while in the East Asian condition, women were selected more as being brilliant. This fits with existing literature (Shu et al., 2022), showing that gender stereotypes are racialised and applied different to different racial groups. This clearly illustrates that children do not only consider a single identity (such as gender) when making assumptions about other. Hence, this emphasises the need to research identities such as race and gender together as their intersection creates pattern that may otherwise be missed when studies in isolation.

Most interestingly, stereotypes were strongest when evaluating South Asian individuals. This is despite South Asians being also being part of lower status groups and being less prototypical than White targets, similar to East Asians. This is contrary to existing theories that higher social status groups and individuals who are more prototypical (e.g, Purdie-Vaughns & Eibach, 2008). This is similar to existing studies that have shown Black targets are also subjects to male gender brilliance (Storage et al., 2020). Hence, intersectionality was not explained by status or prototypicality differences and further research is needed to examine the impact of prototypicality on the enforcement of stereotypes. Additionally, the moderating effects of age and race explain why overall men are not selected as intelligent significantly more but are for Europeans and South Asians by the age of 8.

Age significantly moderated the effects of gender on stereotyping. Initially, 5-year-old children did not significantly associate men with brilliance more than women. However, with age, traditional stereotypes emerged for White targets and but not East Asian targets. This is in line with other studies where girls are equally as likely to associate brilliance with own gender until age of 8 where intelligence begins to be associated more with men (Bian et al., 2017). This suggest that though children initially have an ingroup bias for intelligence, they then develop the association of intelligence with men. This could suggest that this association is socially learned and not innate although more research is needed to determine this as it could also be an innate association that develops at later age.

Limitations

One limitation of the present study is that it is not clear how different social identities are ranked. This used male-female pairs in different racial conditions. Therefore, while participants considered multiple identities, it remained unclear how all interactions of identity are ranked. For example, how children asses the intelligence of Asian women compared to White men.

Additional, the use of a forced choice measure (man or woman) makes it difficult to determine the direction of the gender stereotype about brilliance. For example, are men

seen as brilliant or are women seen as not brilliant or a combination of both. Furthermore, the direction of the stereotype could be a potential cause of why gender stereotypes are racialised. For example, it has been proposed that Black women are sometimes perceived as more brilliant than Black men because of general negative stereotypes of Black men and not from gender brilliance lift of Black women. Future research should explore using other measure (such as assigning numeric scores) to assess perceived intelligence so that the direction of intelligence stereotypes can be examined.

Conclusion

This study aimed to investigate the gender stereotypes of intelligence and kindness held by British children across European, East Asian and South Asian racial groups. Overall, children displayed stronger kindness than brilliance stereotypes across target ethnicities. Age moderated the effects of who children selected as being "very very clever " or "very very kind." With age, traditional stereotypes (of men being associated with intelligence but women with kindness) emerged for White targets and South Asians, but not East Asian targets. Furthermore, stereotypes were strongest when evaluating South Asians. This challenges existing theories that attribute differences in the attributions of gender stereotypes across racial groups to factors such as social status or prototypicality. Since South Asians, despite having lower social status and being less prototypical than White targets (similar to East Asians), are still stereotyped in the same direction as white targets and stronger than White targets. Further research is needed to examine if prototypicality can explain intersectionality in gender stereotypes.

Study 2

Study 2 focused on extending the methodology from study 1 to examine how to examine the link between prototypicality and stereotype attribution (H2 and H3). As of October 2025, data collection for this study is still on going and is expected to conclude in December 2025. This paper details the methodology and planned analysis of the current study. Ethical approval was obtained from the University of Cambridge's Department of Education Ethics Committee.

Method

This study was conducted online via video conferencing. The decision to conduct the study online was made due to the length of study and for ease of recruitment. As the study took approximately 45 minutes to complete, allowing participants to participate at home would allow them to sit through the study for longer. Additionally, participants of South Asian decent are often harder to recruit, therefore the study was conducted online in the hopes this would allow for greater flexibility in recruitment.

For the majority of the questions, the experimenter shared their screen with the child and read the question, the child answered the questions verbally and the experimenter recorded the child's answer in Qualtrics. Video and audio recording of sessions were made when consented for and used as a data back up and for training purposes but not analysed as part of this study. This study consisted of 2 tasks. Task 1: Stereotypes held by participants and Task 2: Prototypicality. Full stimuli and script from this study can be found in Appendix A. Participants also complete a further two tasks for use in separate studies. Task 3: Identity Salience and Task 4: Self-perceived intelligence. Procedure for tasks 3 and 4 can be found in Appendix B.

Ethical Approval

This research protocol was reviewed by the Ethics Committee of the Faculty of Education, University of Cambridge.

Participants and recruitment

Participants are British children aged 6-10, currently aiming for approximately 150 total participants. Children were excluded if they could not name and distinguish between the colours orange and blue or if they could not name and recognise numbers 1-9 as this would prevent them from being able to answer questions in the tasks.

Parents of participants were recruited through various methods. This includes physical posters placed at museum and parks, contacting schools to share through newsletters and online recruitment through social media accounts such as Reddit, Instagram and Facebook.

Participants and guardians were given an information sheet which described the study as investigating “Who is smart?” and “Who is kind?” The information sheet detailed the right to withdraw and how data was being stored. Consent forms were filled out online via Qualtrics prior to the session by guardians.

Warm up Questions and Task 1: Stereotypes held by Participants

The warmup questions and screener questions remained the same as from study 1 and extensions were made to the critical task.

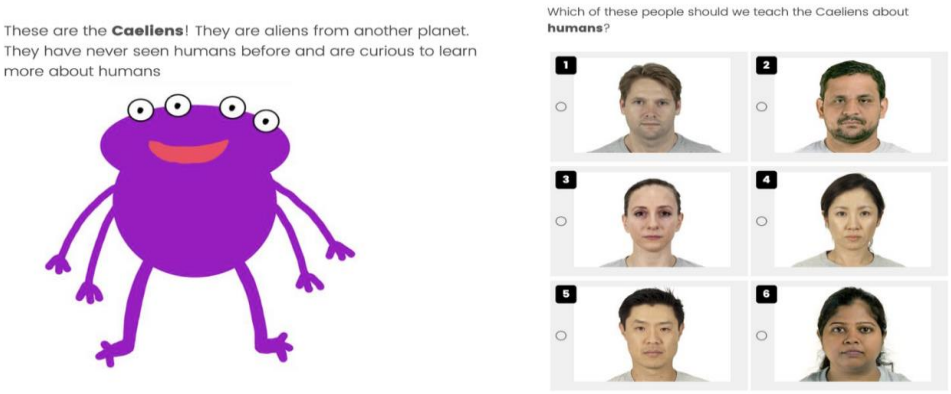
After the screener questions, children were presented with fifteen pairs of adults (instead of three in study 1) in randomised order. This represents all possible pairs of 2 adults with of each race (White, East-Asian or South-Asian) x gender (male or female) combination. This was done opposed to the 3 (each race) male-female pairs to address a limitation of Study 1 to examine how different social identities are ranked that has not been previously studies (such as comparing an Asian woman and a White man). This would allow for H1ii to also be tested. As some pairs were individuals of the same gender while others were same race or differed in factors, it was decided that practise trails were not needed to camouflage the aim of the study.

Task 2: Prototypicality

Protocol and script were adapted from Lei et al. (2021). Children were introduced to a cartoon alien (“The Caliens”) who, they were told, did not know many of the things they knew but wanted to learn about our world; children were asked to help make a book to teach the Caliens. This method has been used in prior developmental research to probe beliefs about typicality.

As with previous tasks, stimuli consisted of adult faces drawn from the Chicago Face Database (Ma, Correll, & Wittenbrink, 2005), matched on perceived age and attractiveness within trial. Participant’s prototypes of three different social categories were assessed: people, men, and women. The people trial always came first, due to concern that picking an exemplar for the gendered categories (men, women) first would make gender salient and therefore bias later responses to the people category. The two gendered trials were presented in randomized order. For the people trials, children saw a total of six faces, one of each race (White, East-Asian or South-Asian) x gender (male or female) combinations. Participants were asked to pick the single best option to teach the Caliens about the category. The selected options were then removed and the participants were prompted to choose the next best option.

Figure 4: Example stimuli from prototypicality task



Analysis

Analysis method and R scripts for the prototypicality task will be adapted from Lei et al. (2021). Data will be analysed using a linear mixed models by specifying a binomial distribution. Predicted means should be viewed as the likelihood of picking a given stimulus (i.e, 1/6 (16.7%)). Separate models for each category and tested for main and interactive effects of stimulus race and stimulus gender.

A further linear regression analysis will be performed from the results of the prototypicality task to see if prototypically can statistically predict gender brilliance. Moderation by participant age, participant gender, and participant race will also be conducted.

Next Steps and Expected Results

Data collection is continuing at the CUDL Lab and is expected to conclude in December of 2025 when analysis can be conducted.

This study aims to test the common theory in current literature that differences in how male brilliance applied to different racial groups is due to social status and prototypicality. This theory states that those belonging to low-status racial groups may escape from the gender brilliance stereotype by virtue of their non- prototypicality (Purdie-Vaughns & Eibach, 2008). However, there is some evidence otherwise. For instance, traditional gender brilliance favouring men is still seen with Black targets and in Study 1 above, south Asian men are associated more with brilliance. Furthermore, in study 1 South Asians were stereotyped the most strongly. This is despite both Black and South Asian targets being part of low-status racial groups, similar to East Asians. This could indicate that East Asians are an exception to male gender brilliance rather than

all non-prototypical groups. Therefore, this report hypothesises that prototypicality will not be able to significantly predict gender brilliance attribution.

References

Bian, L., Leslie, S.-J., & Andrei Cimpian. (2017). Gender stereotypes about intellectual ability emerge early and influence children's interests. *Science*, *355*(6323), 389–391. https://doi.org/10.1126/science.aah6524

Harter, S. (2012). *SELF-PERCEPTION PROFILE FOR CHILDREN: MANUAL AND QUESTIONNAIRES*. Apa.org. https://www.apa.org/obesity-guideline/self-preception.pdf

Lakshmi, A., Wittenbrink, B., Correll, J., & Ma, D. S. (2021). The India Face Set: International and Cultural Boundaries Impact Face Impressions and Perceptions of Category Membership. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.627678

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(4), 1122–1135.

Office for National Statistics, UK. (2025, July). *Employment by Occupation (SOC2020) by sex*. Nomisweb.co.uk. https://www.nomisweb.co.uk/datasets/aps218/reports/employment-by-occupation?compare=K02000001

Patel, K. S., Danovitch, J. H., & Noles, N. S. (2024). Children's beliefs about Black and White men's and women's scientific knowledge: An intersectional approach. *Developmental Psychology*. https://doi.org/10.1037/dev0001854

Shu, Y., Hu, Q., Xu, F., & Bian, L. (2022). Gender stereotypes are racialized: A cross-cultural investigation of gender stereotypes about intellectual talents. *Developmental Psychology*, *58*(7). https://doi.org/10.1037/dev0001356

Vidal Rodeiro, C. (2012). AS and A Level Choice Ethnicity has some effect. Research Division, Cambridge University Press & Assessment. https://doi.org/10.17863/CAM.114145

UNIVERSITY OF CAMBRIDGE

Participant Number

Enter Participant number

Trial questions

What colour is this?

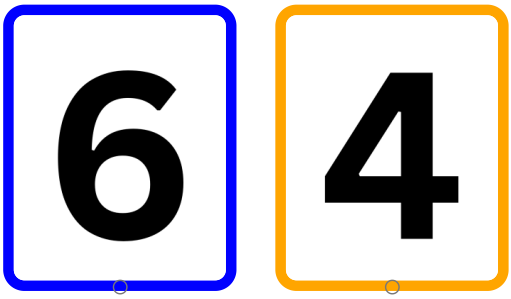
- 1
- 0

What colour is this?

- 1
- 0

Which is the number six?

Is it the blue or the orange?



Which is the number eight?

Which is the number two?

some more questions for you, is that ok?

Emojis - Happy Time 1

You are doing a great job answering all my questions! I have

013 - CLEVER - Preliminary Questions

In this game we are going to talk about what it means to be clever. I'm going to tell you about some children I know and ask if you think they're clever. Then, I'll show you the screen, and you can choose your option

I'm thinking of a child who learns things really fast. Is this child clever, not clever, or are you not sure?

You said the child is clever.
That's right! Part of being clever means that you learn things really fast.

You said the child is not clever.
Actually, I think this child is clever! Part of being clever means that you learn things really fast.

You said that you were not sure.
Actually, I think this child is clever! Part of being clever means that you learn things really fast.

I'm thinking of another child who can solve really hard puzzles. Is this child clever, not clever, or are you not sure?

You said the child is clever.
That's right! Part of being clever means that you can solve really difficult puzzles.

You said the child is not clever.
Actually, I think this child is clever! Part of being clever means that you can solve really difficult puzzles.

You said that you were not sure.
Actually, I think this child is clever! Part of being clever means that you can solve really difficult puzzles.

This child can always answer even the hardest questions from the teacher. Is this child clever, not clever, or are you not sure?

That's right! Part of being clever means that you can always answer very difficult questions

You said the child is not clever.
Actually, I think this child is clever. Part of being clever means that you can always answer very difficult questions.

You said that you were not sure.
Actually, I think this child is clever. Part of being clever means that you can always answer very difficult questions.

This child practices sports all the time. Is this child clever, not clever, or are you not sure?

You said the child is clever.
Actually it's hard to tell whether the child is clever or not. Lots of people practice sports all the time, but that doesn't mean that they're all clever. Being clever doesn't have much to do with how much you practice sport

You said the child is not clever.
Actually it's hard to tell whether the child is clever or not. Lots of people practice sports all the time, but that doesn't mean that they're all clever. Being clever doesn't have much to do with how much you practice sport

You said the you are not sure.
That's right! It's hard to tell whether the child is clever or not. Lots of people practice sports all the time, but that doesn't mean that they're all clever. Being clever doesn't have much to do with how much you practice sports

Break 1

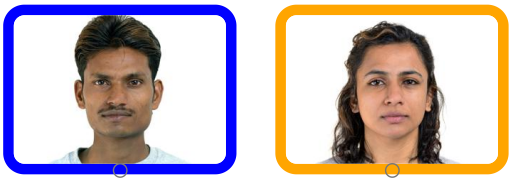
Good job! I have some more questions for you, is that ok?

Clever - Gender Stereotyping, same race

One of these two is a **really really clever** person.
Can you guess which one is **really really clever**?

One of these two is a **really really clever** person.
Can you guess which one is **really really clever**?

One of these two is a **really really clever** person.
Can you guess which one is **really really clever**?



Break 5 - Animals

Pick an animal to run away!

You are doing great on these questions! I'm going to ask you 3 more similar questions, is that ok?

Clever - Race Comparison - Female

One of these two is a **really really clever** person.
Can you guess which one is **really really clever**?

One of these two is a **really really clever** person.
Can you guess which one is **really really clever**?

One of these two is a **really really clever** person.
Can you guess which one is **really really clever**?

Emojis - Happy Time 2

You are doing great on these questions! I'm going to show you some people – these are some people that you haven't seen before! Is that okay?

Clever - Race Comparison - Male

One of these two is a **really really clever** person.
Can you guess which one is **really really clever**?

One of these two is a **really really clever** person.
Can you guess which one is **really really clever**?

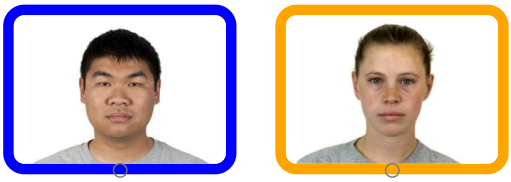
One of these two is a **really really clever** person.
Can you guess which one is **really really clever**?

Emojis - Happy Time 3

I have three more questions like this, is it okay if we continue?

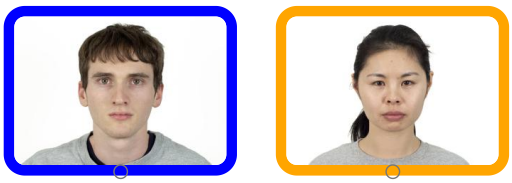
clever - Different race and Gender 1

One of these two is a **really really clever** person.
Can you guess which one is **really really clever**?



One of these two is a **really really clever** person.
Can you guess which one is **really really clever**?

One of these two is a **really really clever** person.
Can you guess which one is **really really clever**?

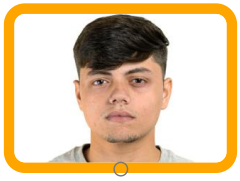


Break 2

You are doing great! I have another 3 similar questions, is that ok?

clever - Different race and Gender 2

One of these two is a **really really clever** person.
Can you guess which one is **really really clever**?

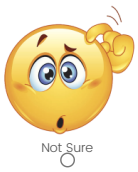
One of these two is a **really really clever** person.
Can you guess which one is **really really clever**?


One of these two is a **really really clever** person.
Can you guess which one is **really really clever**?


Nice - Preliminary Questions

In this game we are going to talk about what it means to be nice. I'm going to tell you about some children I know and ask if you think they're nice. Then, I'll show you the screen, and you can choose your option
Okay? All right, let's get started!

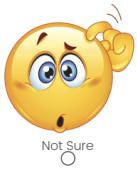
This child always shares their toys with other children. Is this child nice, not nice or are you not sure?



You said you are not sure
Actually, I think is child is nice. Part of being nice means that you share your things with others.

You said the child is nice.
That's right! Part of being nice means that you share your things with others

This child tries to make other children feel better when they're sad. Is this child nice, not nice or are you not sure?



You said the child is not nice.
Actually, I think is child is nice. Part of being nice means that you share your things with others.

You said the child is nice.
That's right! Part of being nice means that you try to make others feel better when they're sad

You said the child is not nice.
Actually, I think this child is nice. Part of being nice means that you try to make others feel better when they're sad

You said that you were not sure.
Actually, I think this child is nice. Part of being nice means that you try to make others feel better when they're sad

You said the child is not nice.
Actually it's hard to tell whether the child is nice or not. Lots of people listen to music, but that doesn't mean that they're all nice. Being nice doesn't have much to do with listening to music

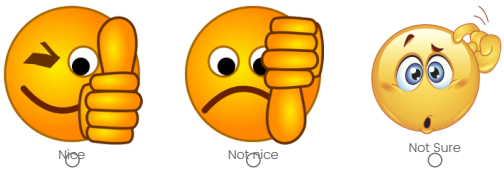
That's right! It's hard to tell whether the child is nice or not. Lots of people listen to music, but that doesn't mean that they're all nice. Being nice doesn't have much to do with listening to music

This child likes to help other people.. Is this child nice, not nice or are you not sure?

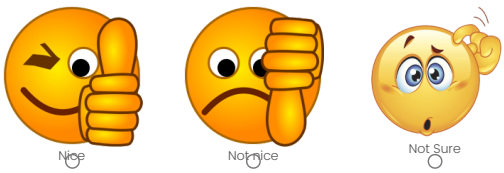
You said the you are not sure.
Actually, I think this child is nice. Part of being nice means that you help others

Break 3

This child likes to listen to music. Is this child nice, not nice or are you not sure?



You said the child is nice.
Actually it's hard to tell whether the child is nice or not. Lots of people listen to music, but that doesn't mean that they're all nice. Being nice doesn't have much to do with listening to music



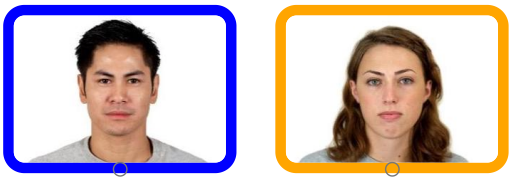
You said the child is nice,
That's right! Part of being nice means that you help others

You said the child is not nice.
Actually, I think this child is nice. Part of being nice means that you help others

You are doing a great job answering my questions!

Nice- Different race and gender 1

One of these two is a **really really nice** person.
Can you guess which one is **really really nice**?

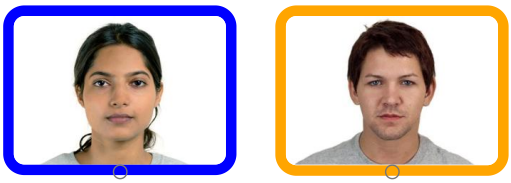


One of these two is a **really really nice** person.
Can you guess which one is **really really nice**?

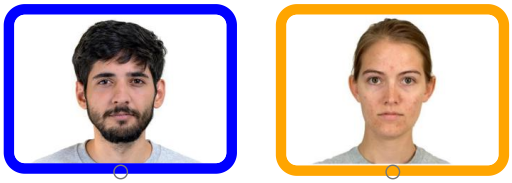
Break 6

You are doing amazing! I have three more similar questions, is that ok?

Nice - Different race and gender 2

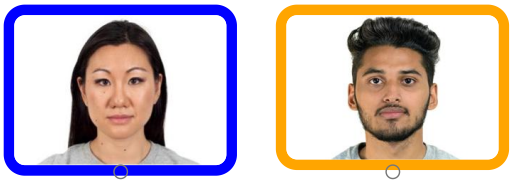


One of these two is a **really really nice** person.
Can you guess which one is **really really nice**?



One of these two is a **really really nice** person.
Can you guess which one is **really really nice**?

One of these two is a **really really nice** person.
Can you guess which one is **really really nice**?



One of these two is a **really really nice** person.
Can you guess which one is **really really nice**?

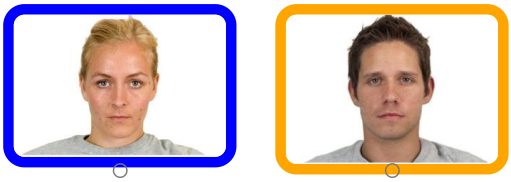
Break 7 - Vehical

Pick a vehicle to zoom away!

🚗 🚀 🚓 🛸 🚂

Nice - Gender (Fixed Race)

One of these two is a **really really nice** person.
Can you guess which one is **really really nice**?



One of these two is a **really really nice** person.
Can you guess which one is **really really nice**?

Nice - Race - Female

One of these two is a **really really nice** person.
Can you guess which one is **really really nice**?

One of these two is a **really really nice** person.
Can you guess which one is **really really nice**?

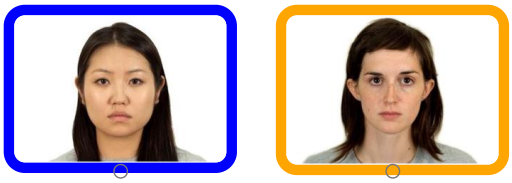
Break 8

You are doing amazing! I have some more questions for you, is that ok?

One of these two is a **really really nice** person.
Can you guess which one is **really really nice**?

Break 7

You are doing a great job! I have three more questions with more people, is that ok?

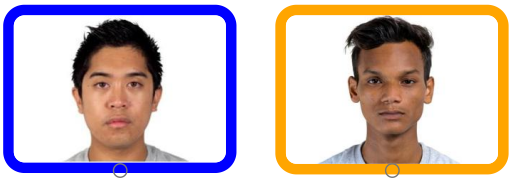


One of these two is a **really really nice** person.
Can you guess which one is **really really nice**?

Nice - Race - Male

One of these two is a **really really nice** person.
Can you guess which one is **really really nice**?

One of these two is a **really really nice** person.



Identity saliance - MCQ

If you were going to pick just one person who is the most like you, which of these people is **MOST** like you?

Feed the face

Pick a food to feed the face!

🍕 🍔 🍎 🍩 🍉

😃

Can you guess which one is **really really nice**?

One of these two is a **really really nice** person.
Can you guess which one is **really really nice**?

Thanks for choosing! Now who would you pick as the next person who is **MOST** like you?

Self perception intro

You are doing a great job! Now I am going to ask you some questions about yourself. I am going to read you some statements and I want you to tell me if the statements are True, False (so not true) or not True nor False about you. Is that ok?

Stop sharing screen

Self perception (Harter's, addapted SELF-PERCEPTION PROFILE FOR CHILDREN)

For each statement
- Read statement

- Is this True, False or neither True nor false for you?
- If True or false, is this very True/False for you or Sort of True/False for you?

	Really True for me	Sort of true for me	Not true nor untrue for me	Sort of false for me	Really false for me
	1	2	3	4	5
Some kids can finish their school work quickly.	○	○	○	○	○
Some kids feel that they are very good at their school work	○	○	○	○	○
Some kids feel like they are just as smart as other kids their age	○	○	○	○	○
Some kids do very well at their classwork	○	○	○	○	○
Some kids almost always can figure out the answers in school	○	○	○	○	○

	Really True for me	Sort of true for me	Not true nor untrue for me	Sort of false for me	Really false for me
	1	2	3	4	5
Some kids are happy with the way they do a lot of things	○	○	○	○	○
Some kids like the kind of person they are	○	○	○	○	○
Some kids are happy with themselves as a person	○	○	○	○	○

Aliens - 1

We are going to play some more games together! First, I want you to meet my friend, the **Caeliens**. The **Caeliens** come from another planet and don't know lots of the things you know.

One thing that the **Caeliens** really want to do is learn about our world!To teach the **Caeliens**, let's imagine that you're going to

teach the **Caeliens** about people, which one is the best one to show the **Caeliens** what a person is?

○  1

○  2

○  3

○  4

○  5

○  6

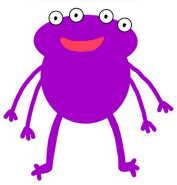
Thanks for choosing! Now who would you pick as the next best person to put in the book to teach the **Caeliens** about people?

	Really True for me	Sort of true for me	Not true nor untrue for me	Sort of false for me	Really false for me
	1	2	3	4	5
Some kids can remember things they learn easily	○	○	○	○	○

Answer how much you agree with each statement

	Really True for me	Sort of true for me	Not true nor untrue for me	Sort of false for me	Really false for me
	1	2	3	4	5
Some kids are pretty pleased with themselves	○	○	○	○	○
Some kids are very happy being the way they are	○	○	○	○	○
Some kids like the way they are leading their life	○	○	○	○	○

make a book about some different things so the **Caeliens** can learn.



Human1

Look at these people. Remember, the **Caeliens** want to learn about **people**.
If we were going to pick just o**ne** person to put in our book to

○  1

○  2

○  3

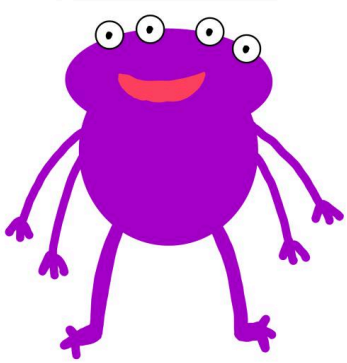
○  4

○  5

○  6

Aliens - Women

The **Caeliens** are also interested in learning about **women**!



Prototypically - woman

Look at these people. Remember, the Caliens wants to learn about **women**.
If we were going to pick just one person to put in our book to teach the Caliens about **women**, which one is the best one to show the Caliens what a **woman** is?

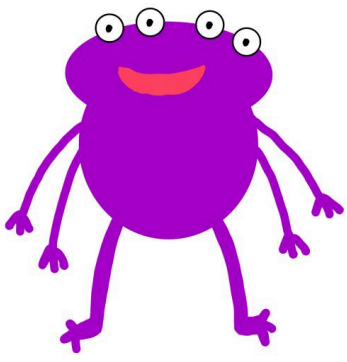
Thanks for choosing! Now who would you pick as the next best person to put in the book to teach the Caliens about **women**?

Break 4

Thank you for answering my questions! I have a few more questions for you, is that ok?

Aliens - Man

The **Caeliens** are also interested in learning about **Men**!



Prototypically - man

Look at these people. Remember, the Caliens wants to learn about **men**.
If we were going to pick just one person to put in our book to teach the Caliens about **men**, which one is the best one to show the Caliens what a **man** is?

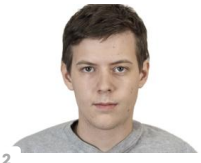
○  1

○  2

○  3

Thanks for choosing! Now who would you pick as the next best person to put in the book to teach the Caliens about **men**?

○  » 1

○  » 2

○  » 3

Appendix B: Procedure for additional tasks

Task 3: Self-perceived intelligence and Self-Esteem

Self-perceived intelligence and Self-esteem was measured using an adapted version of the revised version of Harther's Self-perception scale for Children. The Self-Perception Profile for Children (SPPC; Harter, 2012) is a 36-item measure of self-perception and self-esteem for children age 8 years and older. The measure provides scores in five domains of self-perception: scholastic, social, athletic, physical appearance, and behavioural, as well as a global self-esteem subscale, each with 6 questions. For the purposes of this study, only the items from the scholastic competence domain were used to assess self-perceived intelligence. The global self-worth subscale was included as a control measure for general self-esteem.

SPPC was selected for being a domain general measure of self-perceived intelligence. The original scale contains items on an adapted bipolar scale, where the first part contains statements in which the first part reflects high competency, and in the other half the first part reflects low competency. In order to make the questions simpler for children younger than 8, questions were converted to 5-point Likert scale (1 = *"Really True for me"*, 5 = *"Really False for me"*) by taking the positive statement from each item. The decision was made to only use statements that reflect high competency was made because children generally have positive self-views.

For this task only, the experimenter stopped sharing their screen with the participant. The experimenter read each statement and asked if the statement was "True for you", "False for you", or "Neither true nor false". If the child responded with "True" or "False" then the experimenter asked if the statement was "Really True/False" or "A little True/False." The experimenter then recorded answers in the Qualtrics form.

Task 4: Identity Salience

Participants were presented with six faces, one of each race (White, East-Asian or South-Asian) x gender (male or female) combinations. As with previous tasks, stimuli consisted of adult faces drawn from the Chicago Face Database (Ma, Correll, & Wittenbrink, 2005), matched on perceived age and attractiveness within trial. Stimuli were presented in a random order and numbered from 1-6 so participants could indicate a choice verbally. Participants were asked to choose the single option who is "most like you." The selected option was then removed, and participants were asked to indicate the choice who was next most like them.