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Running Head: Children's In-group Out-group Effect Children Predict Trustworthy based on In-group Out-group Effect

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Abstract: Does a new person's ethnic facial resemblance influence snap judgments? If so, when did people start to have an in-group and out-group concept? We are using a within-subject design in the experiment. The participant was separated into different rooms and did 20 tryouts to choose one of the two pictures (different races) based on our questions. As a result, we predict that the participant will choose their races more than other races, proving that children around age 3-4 had already developed the in-group out-group concept. This research could help educators know when children start to develop the in-group and out-group concepts at the earliest age. This could help those educators know when the earliest time could be to educate children that it is not hard to trust other races. This research is vital because it might be able to help society to achieve global citizenship.

Keywords: Snap judgment, In-group out-group, Impression formation, Face perception, Children

1. Introduction

When an individual meets a stranger, the individuals automatically detect gender, age, and race using characteristics like facial structure, eye width, and skin color. However, perceiving using facial data to derive a person's social group identity and using facial features to quickly assess a person's general character, as well as more thorough impressions of a person's traits, like their trustworthiness, dominance, and competence. Simply knowing someone belongs to a particular social group can lead to prejudices and preconceived notions about that person [1-3]. These will also lead an individual to have stereotypes on other snap judgments. The term "stereotype" is often used in social psychology literature to describe prejudices towards members of more or less distinct groups that can be distinguished by sex, age, ethnicity, occupation, or profession. Individuals also evaluated more positively Self-resembling faces under certain conditions. This is called Transference. It is the phenomenon wherein when a new individual has traits in common with an important person, the mental representation of that important other is automatically activated and is then used to assess the new person [4-6].

From the present research, we know that Children between ages 3-4 can make a congruent face-trait character evaluation. Moreover, by age 5, children's generalized character evaluations based on facial features appear to be indistinguishable from adult assessments [3]. So from this past research,

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we know who effect people's snap judgments, what makes them have positive or negative snap judgments about Strangers, and when is the earliest age to form facial structure evaluation. However, these studies lead us to a question, and lead us to our hypothesis for this study, will children between ages 3-4 have already developed the in-group out-group concept? Will those children show their trustworthiness to their group than other groups?

2. Experiment 1

2.1. Participants

Seventy healthy children aged 3-4 (35 men and 35 women) were born and raised in China in the study. They all came from a parental families.

2.2. Measure and Procedure

We are using a within-subject design in this experiment. Since this is a within-subject design, 70 people are enough for the experiment. There will be two dependent Variables the first dependent variable is to measure overall children's trustworthiness toward the in-group than the out-group. Participants will do a survey and they will be asked to choose one picture from different races pictures when we ask them," which person do you want to make friends with?", " Which person do you think is safer for you?", " Which person do you think you trusted most when they said they would give you a piece of candy". The second variable will be that the participants have to complete 20 try out. We will count the number of trials where participants selected an in-group member (assign 1). Thus, the dependent variable of preference for in-group members will range from 0 to 20, with ten meaning that participants selected in-group and out-group members equally.

In these 20 try out, we will always give them 2 pictures. One will always be an Asian picture and the other one will be one of the 2 different races.

There will be 40 pictures in total. These pictures use extreme exemplars of faces generated in FaceGen 3.1[7-8]. In these 40 pictures, 20 of them are of 2 different races, in these 20 pictures, there are 10 African female pictures and 10 Caucasian female Pictures. The other 20 pictures will be all Asian female pictures. All the faces in the picture will stay neutral and without any makeup. Then all the participants have to choose one of the two pictures when we ask them the questions, we prepare for them. After 20 traits, in the end, we will calculate how many points we got for different pictures in total.

To make sure there are no population effects, all the participants will be separated into different rooms. Each participant in each tryout will get a profile that has 2 pictures in it. In these 20 tryouts, the participant will have to choose one of these two pictures to respond to the questions we ask them. “which person do you want to make friends with?”, “Which person do you think is safer for you?”, “ Which person do you think you trusted most when they said they would give you a piece of candy". In the end, we will add up all those points in all the 20 try out and analyze the data.

We will calculate all the scores from every participant, add those scores up, and then make a bar graph for total scores. Once we get the total scores of all three races, we will calculate their average and make another bar graph of their average scores. In the end, we will do a t-test on the data we got from these 60 participants and calculate their p-value. We will compare the P-vale with Asian and African, Asian and Caucasian to see if they have differences between each other or not. Finally, we will compare to 3 figures and see who will get the most scores.

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3. Data Analytic Approach

3.1. Results

We predict ten participants will be excluded because some children are unwilling to cooperate with the procedure. From the data we will get, we expect that Chinese children already develop in-group and out-group effects between ages 3-4. we also expect that in all the 20 tryouts, all the participants will choose Asian much more over African and Caucasian. In the end, we also expected that in the data we are getting, the scores that participants gave between Asian, African, and Caucasian would be significantly different.

3.2. Descriptive Statistics

Aim 1. We expect the participants should choose Asian over other races in total in all the tryouts. Specifically, as illustrated in Figure 1, we predict that the total scores for choosing Asian are higher than both African and Caucasian.

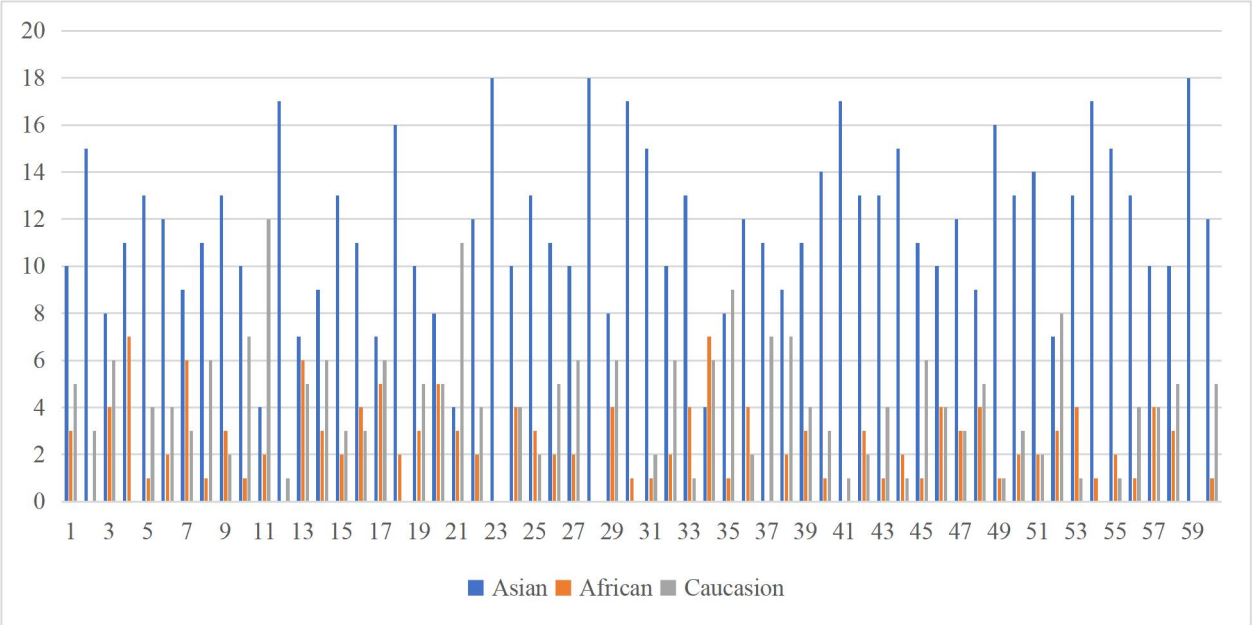

Figure 1: Total scores that Asian, African and Caucasian got based on 60 participants.

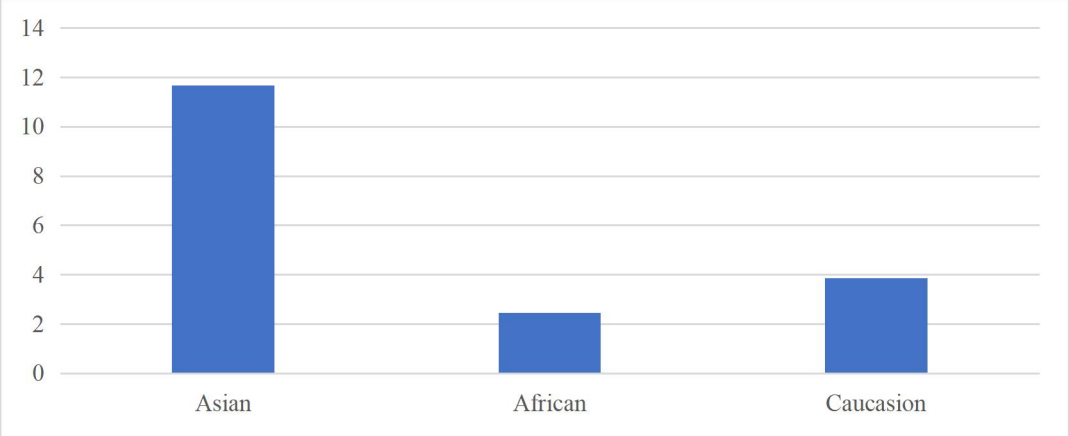

Figure 2: Average score bar graph. Asian:11.67; African:2.47; Caucasian:3.85

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Aim 2.

We expect to find on average participants choose more Asian than other races in all 20 tryouts. Precisely, as illustrated in Figure 2, we predict that there will be a significant difference between Asian and African/Caucasian with trustworthiness

Aim 3.

We expect the result of all 20 tryouts for each participant to show Asian choosing more than other races on average. As illustrated in Figure 3, we predict the p-value between Asian and African, and Asian and Caucasian are lesser than 0.05.

	Asian and African	Asian and Caucasian
P-valve	1.17545E-36	1.6747E-26

Figure 3: T-test chart of both Asian and African, Asian and Caucasian

4. Conclusion

In conclusion, from Figure1. we predict that the blue (Asian) bar is significantly over the red (African)and green (Caucasian) bars. From Figure 2. we also expect that Asian is over the other two regions in the average graph. Asian's average score is around 11, which also means that the participants do have to choose Asians more than other groups and it does prove that Chinese children do have preferences in choosing Asian which represents their own group. In the last figure, in the T-test, from what we predicted, the P-valve of Asian and African and Asian and Caucasian are all lesser than 0.05. This number means both Asian and African and Asian and Caucasian are significantly different from each other, over more, from the previous graph, with what we predicted, participants is going to choose Asian much more than African and Caucasian. And the data from the total score, average scores, and T-test P- value chart are going to prove what we expected our hypothesis will be again. Chinese children are already developing the in-group and out-group concepts at ages 3-4. The data and the materials will be available on the Open Science Framework database.

5. General Discussion

Our goal is to find out when is the earliest age for an individual to develop the on-group out-group concept. And we are expected to find that children between ages 3-4 already have in-group -and out-group concepts developed. Our experiment is well founded because our research is objective, and our experiment had multiple tryouts and objective pictures for the participants. However, since the participants are children, it is possible that some participants are not willing to cooperate with our experiment. In the future study, we would like to extend our research to different regions to see what other children in different countries would like. We would also like to change the female in the pictures to children to see if the participants will give different data. This work is important because our result could give more information to children researchers to know when the earliest age is that children develop their in-group -out-group concept so they could do more research on young children. The other reason our research is important is that it could help educators know when the children develop their concept between in-group and out-group so they could teach children that people of different races are all the same. They are all able to trust. And we hope that one day, our research could help our world to reduce racism and to achieve global citizenship.

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