

**The Early Development of Gender-related Gay/lesbian Stereotypes**

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May 2020

### **Abstract**

In this paper, we detail a theoretical research proposal to investigate the emergence of gender-related gay males' and lesbians' stereotypes using a model called COAT measures which was used in gender stereotypes studies (Liben et al, 2012). Our idea is based on people's tendency to attribute sexual orientation stereotypes with the opposite gender (Blashill & Powlishta, 2002). Extending on past literature on the early development of gender stereotypes on brilliance in children aged five to seven, we explored whether children in that age range start to perceive and associate gay males and lesbians with gender stereotypes of the opposite gender (Bian et al., 2019). Without carrying out the experiments, we have completed designing the framework of the study and corresponding analysis as well as addressing future ideas to enhance our understanding on the development of gay/lesbian stereotypes. Exploring the association between gender stereotypes, we hypothesize that gay/lesbian stereotypes emerge early at the same time with gender stereotypes.

*Keywords:* Gay/lesbian stereotypes; Gender stereotypes; Child development

### Introduction

Many major scientific fields lack representations of women, especially the ones that are believed to require innate brilliance such as math and philosophy (Leslie et al., 2015). Our replication of a recent study has confirmed the findings that girls started to acknowledge and endorse the gender stereotype that they are not as intelligent as boys at an early age of six years old (Bian et al., 2017). Using linear regression models in R on the original data sets with ages and stereotype scores, we were able to observe trends and results that, as the researchers previously found, for boys and girls aged five, the gender-intelligence stereotype had little to no effect, whereas, girls aged six and seven were much less likely to associate brilliance with their own gender (Figure 1). Furthermore, we have concluded that there is a significant difference between girls' and boys' interests in playing out a "game for smart people" at the age of six and seven, implying the beginning of endorsements on gender stereotypes about brilliance, which could have affected women's academic interests and may have a long-term effect on their career aspirations (Figure 2). In addition, social factors, such as parenting styles during adolescence, contribute to women's underrepresentation in certain scientific fields (Tenenbaum & Leaper, 2003). Gender stereotypes continuously affect women's career orientations during the age of development.

Interestingly, past literature on models of stereotypes find that gay men are typically considered to be high in warmth along with housewives (Fiske et al., 2002). The two dimensions of the stereotype model is composite of competence and warmth, where high warmth and low competence is measured by pity, and low warmth and high competence is captured by envy and contempt targets neither warm or competent. The similarity in ranking the stereotypical warmth

of gay men and housewives suggests that there may be a parallel between social understanding on stereotypical female images and gay men. Previous research on sexual-orientation stereotypes have investigated the overlap between gay/lesbian related stereotypes and the opposite gender stereotypes (Blashill & Powlishta, 2002). The study found that people are more likely to attribute gay men with female gender stereotypes and lesbians with typical male traits. Therefore, gender stereotypes could play a significant role in understanding sexual-orientation stereotypes. A past study has provided a model to measure gender stereotypes in three aspects: occupation, activities and traits which is called OAT (Liben et al., 2002). The corresponding one for children is referred to children's occupation, activity, and traits measure (COAT). The measure provides ratings for both children's attitudes towards others (AM) and their likelihood to associate themselves with the stereotypes (PM). COAT has provided a way to formalize the gender stereotypes in this paper in order to capture how children attribute gay males/lesbians to the opposite gender.

Due to the association of gay men with female stereotypes, gay men may also become vulnerable victims of stereotypical threats to females in the same way as female gender stereotypes shapes women's attitudes and undermines their interests and performance in STEM fields (Shapiro & Williams, 2011). The tendency to attribute gay men and lesbians with the opposite gender could harm their welfare and career ambitions during developments. Our study is based on past literature on gay/lesbian stereotypes and early development of gender stereotypes and aims to explore the emergence of stereotypes on sexual-orientations in children aged from five to seven. We have focused on how children relate homosexuality with stereotypes on opposite gender to

determine if stereotypes on sexual-orientations appear as early in development as when children begin to develop gender stereotypes.

## Method

### Participants and Procedures:

Ideally, 300 participants will be recruited from the same city in the Bay Area across three different age groups (five, six, and seven years old), with 100 participants in each group.. The participants will have an equal distribution of gender. Before the study, they will be first introduced the concept of homosexuality and heterosexuality as following:

- *Homosexuality*: A man who falls in love with a woman or a woman who falls in love with a man.
- *Heterosexuality*: A man who falls in love with another man or a woman who falls in love with another woman.

The children will answer a set of three questions to test their understanding on these key concepts. For each question, the experimenter will describe the relationship between two unfamiliar adults and ask children whether the concept of homosexuality could be applied to each group of adults. Sample questions will be:

*Cathy and Laura are friends, does that mean they are homosexual?*

*Tim and Rob are married, does that mean they are homosexual?*

The purpose of these questions is to test the children's ability to understand the concept of homosexual relationship and to differentiate it from same-sex friendship. The children must answer two out of three questions correctly in order to participate in the actual study.

After the children successfully pass the pre-study task, they will be randomly split into two sub-groups within their age group. Each sub-group will be presented scenarios with gay male subjects or lesbian subjects. For example, among 100 children aged five-years-old, 50 of them will be randomly assigned to tasks concerning gay male subjects (gay subjects group) and the other 50 will be assigned to tasks concerning lesbian subjects (lesbian subjects group).

The measure used in the study is based on the children's occupation, activity, and traits measure (COAT) on attitudes towards other (AM) and sex typing of self (PM), as proposed in the study "The Developmental Course of Gender Differentiation: Conceptualizing, Measuring, and Evaluating Constructs and Pathways" (Liben et al., 2002). The study will be composite of three tasks, each focusing on one aspects of COAT to test gender-related stereotypes of gay males and lesbians.

Task (i) - Occupation:

Participants will be presented with six total scenarios, each scenario is a trial. Two of the six scenarios use stereotypically masculine occupations, two use stereotypically feminine occupations, and two feature gender-neutral occupations. The occupations were chosen from

“Occupation Items On The COAT-AM and COAT-PM and Mean Ratings Of Cultural Stereotypes” (Liben et al., 2002).

Based on the stereotype score in the list, firefighter and construction worker were chosen for the masculine occupation scenarios, hair-stylist and florist were chosen for the feminine occupation scenarios, and writer and artist were chosen for the neutral occupation scenarios. The six trials will be presented in a randomized order.

For each scenario, the participant will be presented with an image of a male or a female depending on their subjects groups partaking in the activity itself and a brief situation description (e.g. “Jack/Cathy is a hair stylist who cuts people’s hair for them. He/She is really good at helping other people look fashionable”). The gay subjects group will be presented with a male figure and the lesbian subjects group will be presented with a female figure. Next, the participants will be asked whether they believe the person in the scenario is homosexual, heterosexual, or are not sure. If the participant answers the target answer-“homosexual”-in scenarios where the male (female) subject has a stereotypically feminine (masculine) occupation or “heterosexual” when the male (female) subject has a stereotypically masculine (feminine) occupation, they will receive one point; if they mismatches the expected pair or choose “not sure”, the participants will receive no points. Examples of stereotypically feminine occupations include hair stylist or florist; examples of stereotypically masculine occupations include firefighter or construction worker. The participant’s task score on the occupation domain will be the points they received in masculine and feminine trials averaged by 4, excluding their points in the neutral trial. The neutral trials take place in order to rule out a confounding factor that the participant randomly chooses between three answers in the task.

### Task (ii) - Activity:

Task (ii) looks very similar to task (i) except that the domain tested is activity. The six activities are chosen from the chart “Activity Items on the COAT-AM and COAT-PM and Mean Ratings of Cultural Stereotypes” (Liben et al., 2002). Based the stereotype scores in the chart, we identified two stereotypical male activities as hunting and building, two stereotypical female activities as cooking/baking and knitting, and two gender-neutral activities as listening to music and going to the movies.

As before, the participant will be presented with an image of a male or a female partaking in the activity itself and a brief situation description; the participant will then be asked whether they believe the person to be homosexual, heterosexual, or are unsure. Scoring will proceed as in task (i): targeted answers that correlate feminine (masculine) activities with gay men (lesbians) or heterosexual females (males) with feminine (masculine) activities will receive one point; other answers will receive no points. The participant’s points in four trials excluding the two neutral ones will be averaged by 4 to record their task (ii) score on activity domain.

### Task iii (Traits):

A card-distribution game will be played out on a total of six traits selected based on the “Traits Items on the OAT-AM and OAT-PM and Mean Ratings of Cultural Stereotypes” (Liben et al., 2002). Among the six traits, two will stereotypically describe females, two will be stereotypically



masculine, and the final two will be gender-neutral. Respectively, they are strong and athletic, emotional and neat, and friendly and honest.

The card-distribution game will six cards, each with one of the listed traits, and two cards each depicting a heterosexual couple or a homosexual couple depending on the group they are assigned to (gay subjects or lesbian subjects). An experimenter will identify the couples in the cards to the children and ask them to distribute the traits to the couples (e.g. "This couple is a heterosexual couple/homosexual couple. Which of these words/traits would best describe them?"). The participants will have the choice to distribute the trait cards to each couple card or both of them.

If the participant matches the homosexual couple with traits that are stereotypes of the opposite sex (gay males with emotional and neat, lesbians with strong and athletic), they will receive one point; for all other options, they will receive no points. If they distribute the trait to both couple cards, they will also get a 0. The participant's points excluding the neutral traits will be averaged by 4 to determine their task (iii) score on trait domain.

### **Data Analysis**

For each task, each participant will obtain a task score ranged from 0 to a maximum of 1. The three task scores will then be added averaged by 3 to produce a stereotype score between 0 and 1.

To determine whether sexual orientation stereotypes are present early at the ages of five, six, or seven, we used a chi-square test. The null hypothesis is that sexual orientation stereotypes do not occur at these ages. In this case, the expected frequencies will be 50% for each participant.

If the null hypothesis is rejected and sexual orientations in these age groups do exist, we can analyze the standard deviations and variances of the mean stereotype scores. T-tests between each two close age groups (five& six, six & seven) will be conducted in R-studio to determine if there is a significant difference between the stereotype scores or if the results are purely due to chance.

Next, the children's ages and stereotype scores will be submitted into a linear regression in R-studio in order to test whether there is a correlation between age group and stereotype scores.

The participants' ages will be independent variables and their stereotype scores will be response variables. Age group may be able to predict a child's stereotypes on sexual orientation.

Other potential and interesting tests given current experimental setting could include whether there is a difference between children's stereotypes scores towards gay males and lesbians.

Given the current design, the participants are either presented with females subjects or males subjects. A t-test could be carried out in order to show whether gay males or lesbians are more prone to be stereotyped. Furthermore, comparing girls' stereotype scores with boys' in each subject group could lead to discussions on how children's own gender influences their stereotypes on gay males versus lesbians, which would give insights to future researches on the

stereotype endorsements during the process of gay males/lesbians exploring their sexual-orientations.

### **Discussion**

It is difficult to speculate actual results and data without experimenting. In considerations of the experimental design, there are a few concerns worth discussing. First of all, our study is based on the belief that stereotypes on sexual orientations will emerge at the same time as gender stereotypes. Although children have not fully developed their sexualities early at the ages of five, six, and seven, they already possess the cognitive capacity to understand gender stereotypes. In addition, children do not necessarily have to develop sexuality in order to have stereotypes on sexual orientations, which build on their observations of the world and access to information. Our hypothesis is that even before children fully understand the concept of homosexuality, their views may have already been influenced and the corresponding stereotypes formed. Another concern is whether the children can understand the concept of homosexuality/heterosexuality, even after they are introduced to it, and if different age groups understand the concept differently. One confounding factor is that older children may understand the concept better than younger participants.

In conclusion, our study will be investigating how five, six, and seven-year-olds begin to associate homosexuals with opposite gender stereotypes. Future research could focus on the endorsement of gay/lesbian stereotypes in adolescents and how social factors complicates the development in ways either to change or reinforce people's beliefs to achieve a comprehensive understanding of developmental psychology behind sexual-orientation stereotypes.

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Figure 1:

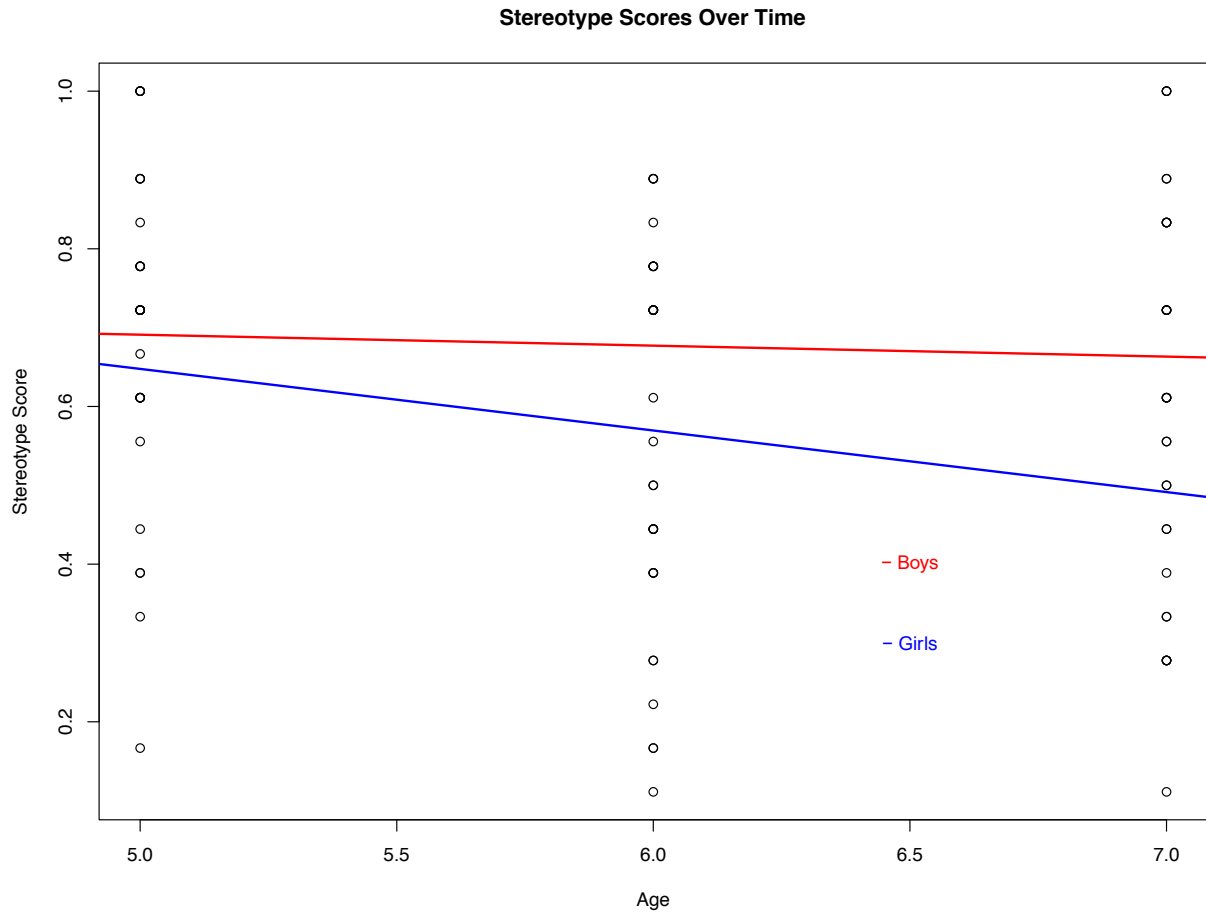
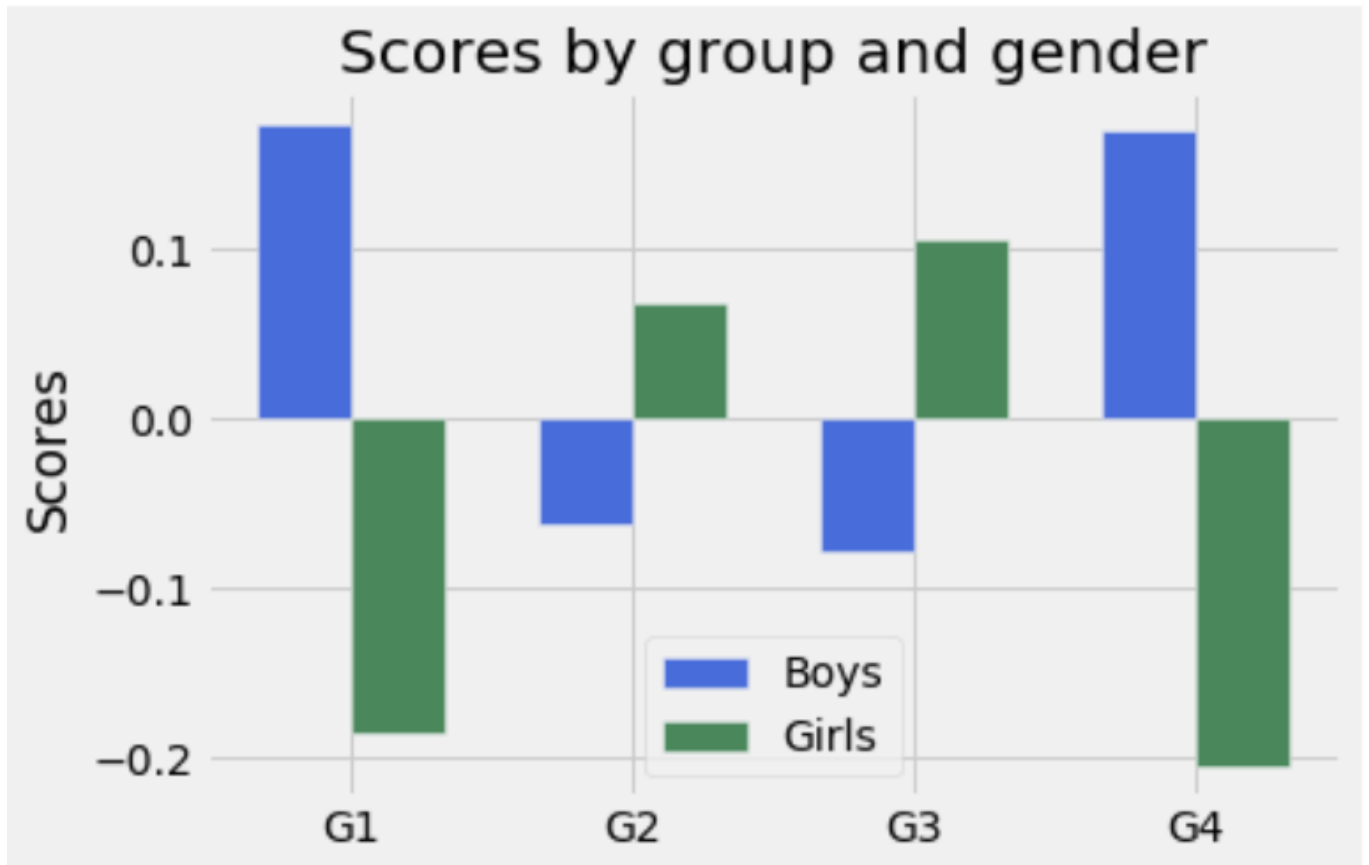


Figure 2:



G1(age: 6/7 years, task: smart game), G2(age: 6/7 years, task: try-hard game), G3(age: 5 years, task: smart game), G4(age: 6 years, task: smart game)

TABLE A.1  
OCCUPATION ITEMS ON THE COAT-AM AND COAT-PM AND  
MEAN RATINGS OF CULTURAL STEREOTYPES

Masculine		Feminine		Neutral	
airplane pilot	2.2	baby-sitter*	5.8	artist**	4.0
architect**	2.7	ballet dancer	5.7	baker**	3.7
auto mechanic	1.6	cheerleader+	6.3	comedian*	3.5
band/orchestra leader	2.5	dental assistant**	5.5	cook in a restaurant**	3.5
banker+	2.9	elementary school teacher	5.3	dishwasher in a restaurant*	3.5
bus driver	3.0	florist**	5.4	elevator operator+	3.5
chemist	2.8	hair stylist**	5.6	writer+	3.8
computer builder**	2.4	house cleaner*	6.4		
construction worker+	1.6	interior decorator	5.1		
dentist*	2.6	jewelry maker+	5.1		
doctor	2.9	librarian**	6.1		
engineer	2.5	nurse**	6.0		
factory owner*	2.2	perfume salesperson+	6.4		
farmer	1.9	secretary**	6.0		
firefighter	1.7	supermarket clerk**	5.4		
football broadcaster	1.8	telephone operator*	5.6		
garbage collector	1.8				
geographer+	3.4				
janitor	2.3				
jockey+	2.0				
lawyer+	3.2				
mail carrier	2.6				
mathematician	2.9				
parking lot attendant	2.5				
plumber*	2.0				
police officer*	2.6				
president of the U.S.	1.6				
professional athlete	2.3				
refrigerator salesperson	2.7				
school principal*	2.6				
scientist**	2.8				
ship captain**	1.8				
shoe repairer	2.6				
soldier	1.7				
spy**	2.4				
supermarket owner	2.5				
Supreme Court judge	2.3				
telephone installer	2.1				
traffic director	2.8				
truck driver	1.7				
umpire	1.5				

TABLE A.2  
ACTIVITY ITEMS ON THE COAT-AM AND COAT-PM AND  
MEAN RATINGS OF CULTURAL STEREOTYPES

Masculine		Feminine		Neutral	
build forts <sup>+</sup>	2.0	baby-sit <sup>**</sup>	5.9	act in a play	4.1
build model airplanes*	2.1	bake cookies <sup>**</sup>	6.1	do crossword puzzles*	4.2
build with tools <sup>**</sup>	2.0	cook dinner <sup>+</sup>	5.4	go bowling	3.5
collect baseball cards	2.0	do gymnastics <sup>**</sup>	5.3	go horseback riding*	4.2
draw/design buildings*	2.6	grocery shop*	5.4	go skating	4.5
draw/design cars or rockets <sup>**</sup>	2.1	iron clothes <sup>**</sup>	6.0	go to the beach*	4.1
fix bicycles*	2.2	jump rope <sup>+</sup>	5.4	go to the movies	4.1
fix a car <sup>+</sup>	1.8	knit a sweater	6.4	listen to music	4.0
fly a model plane*	2.1	make jewelry	4.6	paint pictures <sup>+</sup>	4.2
go fishing <sup>+</sup>	2.1	play hop scotch	5.7	play cards*	3.7
hunt <sup>+</sup>	1.6	practice cheerleading <sup>+</sup>	6.3	play checkers	3.6
play basketball*	2.4	set the table for dinner*	5.5	play hide & seek <sup>**</sup>	4.1
play chess	3.0	sew from a pattern*	6.3	play marbles	3.5
play darts <sup>**</sup>	2.8	sketch/design clothes*	5.4	play tag <sup>+</sup>	3.9
play dodgeball <sup>+</sup>	3.1	take ballet lessons	6.1	practice an instrument	4.1
shoot pool <sup>**</sup>	2.4	twirl a baton	6.1	read books	4.3
play video games*	2.8	vacuum a house <sup>**</sup>	5.8	ride a bicycle <sup>+</sup>	3.9
shoot a bow & arrow <sup>+</sup>	1.9	wash clothes <sup>**</sup>	5.7	sing in a choir	4.1
use a chemistry set	2.8	wash dishes <sup>+</sup>	5.2	watch game/quiz shows <sup>+</sup>	4.3
use a microscope	3.1	watch soap operas	6.0	watch nature shows	3.6
use maps	3.4	write poems	4.9	work jigsaw puzzles	4.2
wash a car	3.2				
watch crime/detective shows	3.2				
watch televised sports	2.3				



TABLE A.3  
 TRAIT ITEMS ON THE COAT-AM AND COAT-PM AND  
 MEAN RATINGS OF CULTURAL STEREOTYPES

Masculine		Feminine		Neutral	
act as a leader*	2.9	affectionate**	5.7	appreciative <sup>+</sup>	4.5
adventurous <sup>+</sup>	2.6	charming**	4.6	creative**	4.2
aggressive <sup>+</sup>	2.1	complain*	4.9	curious	4.1
ambitious <sup>+</sup>	3.4	cry a lot	6.0	enjoy art*	4.3
brag a lot*	2.7	dependent <sup>+</sup>	5.0	enjoy foreign languages	4.5
brave	2.5	emotional <sup>+</sup>	5.8	enjoy music*	4.2
competitive*	2.9	enjoy English	5.2	enjoy social studies	4.0
confident**	3.2	excitable <sup>+</sup>	4.6	friendly	4.5
cruel	2.8	follow directions*	4.6	good at art*	4.4
dominant**	2.4	gentle**	5.5	good at foreign languages <sup>+</sup>	4.5
enjoy geography**	2.9	good at English	5.3	good at music <sup>+</sup>	4.4
enjoy math	3.1	have good manners**	5.2	good at social studies <sup>+</sup>	4.1
enjoy physical education <sup>+</sup>	2.6	helpful**	5.0	happy	4.3
enjoy science	2.8	loving**	5.3	jealous	4.3
good at geography <sup>+</sup>	3.1	neat*	5.3	secretive	4.4
good at math <sup>+</sup>	2.9	sentimental	5.8	study hard*	4.5
good at science	2.8	shy	4.8	truthful	4.5
good at physical education	2.6	talkative	5.4		
good at sports	2.6	try to look good**	5.0		
independent	2.9	weak	5.8		
logical**	3.4				
loud*	3.1				
misbehave*	2.8				
smart*	3.4				
strong	2.2				