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African American Children's Inferences Based on Race, Sex and Age

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AFRICAN AMERICAN CHILDREN'S INFERENCES

BASED ON RACE, SEX, AND AGE

A Thesis Proposal
Presented to
The Faculty of the Department of Psychology
Western Kentucky University
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In Partial Fulfillment
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Specialist in Education

By
Erica Dionne Hightower
December 2006

AFRICAN AMERICAN CHILDREN'S INFERENCES BASED ON RACE, SEX, AND

AGE

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ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

AFRICAN AMERICAN CHILDREN'S INFERENCES

BASED ON RACE, SEX, AND AGE

Erica Dionne Hightower   December 2006   32 Pages

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Abstract

Previous studies (Madole, Eastman, Stone, & White, 2005) have suggested that children do not make inferences about people on the basis of race until around 8 years of age. The present study was a replication of a study performed by Madole et al. The distinction between the two studies was in the sample used. In the previous study the majority of children used were Caucasian. The present study sought to examine whether African American children were more likely to make inferences on the basis of race than Caucasian children. Children ages 6 to 11 years were asked to perform an inference task. The inference task consisted of the children looking at a target picture and two comparison sets of pictures. The children were then asked to choose which set of pictures was more comparable to the target picture based on a novel characteristic. These characteristics were social, biological, and individual in nature. There was also a control task in which trivial characteristics were used. The children were able to make their choices based on age, race, or sex. I hypothesized that the sample of African American children would more often choose their matches in the inference task based on race. I believed that this choice would be made across all characteristics as well as the control tasks. I also believed that older children would more often make matches according to race than younger children. Lastly, I expected that the sample in the current study would

more often make matches based on race than the sample in the Madole et al. study. The analyses indicated that the children in the current study made more age-based inferences than race- or sex-based inferences. They only made more race-based inferences when given social attributes. They did not make more race-based inferences than the children in the Madole et al. study.

Introduction

Categorization is one of the first steps in understanding our world. According to Gelman (1988) the fact that humans are able to classify objects allows them to comprehend the complexities of the world by making new information manageable. Without this ability, each person and thing in one's world would be its own class. For example, there would be no such category as birds, or even cardinals for that matter. Each bird would be its own kind. If this were true, it would be nearly impossible to completely take in the world around us. Our minds would be "overloaded" with new information every day. Thankfully, we begin to categorize information very early in life (Madole & Oakes, 1999).

One of the main beneficial functions of categorizing the objects and people in our world is that it allows us to make inferences about novel objects or people (Gelman & Markman, 1987). Although there has been considerable work on children's ability to make inferences about novel objects and animals (Gelman & Markman, 1986, 1987; Heyman & Gelman, 1999, 2000), less is known about children's ability to make inductive inferences using social categories. Because of this we must extrapolate from the research that has been done pertaining to objects and animals. Gelman and Markman, using animals, found that children make inductive inferences about novel stimuli. In this study children were shown two pictures (picture A and picture B) of animals and told a novel fact about each animal. A third picture looked similar to picture A, but the children were told that it was from the same category as picture B. For example, the children had to decide whether a shark is more like a tropical fish or a dolphin after being told that the shark is a fish, though it looks like a dolphin. Based on this information, the children

were asked to conclude which novel trait the third picture possessed. The results of this study showed that children made inferences based on category membership much more often than based on physical appearance. These findings have important implications for studying children's inductive inferences because it tells us that children use much more than what they can physically see when forming categories. It also tells us that when given a label, children will make assumptions about objects that have this label even when no other information or proof is provided.

Although the results gathered from this and similar studies yield valuable information, the application of the results is limited when it comes to understanding social category inferences. The first obvious limitation is the fact that animal categories were used in the Gelman and Markman study (1986). Because animals were used instead of humans, we do not know if we can readily apply what was learned about children's inductive inferences to humans. Another limitation is the fact that in these studies, the researchers provided children with category labels (for example, fish). In the social world children are not always so easily given labels for things. In the real world they are often left to form their own category labels, thus perhaps grouping things differently than the way they would be grouped when given a category label. It is critical that children be able to form their own categories when research is conducted as well, especially when human categories are being considered. The assignment of individuals to meaningful categories is a complicated matter and can be based on a variety of attributes. For example, it is possible to conceptualize an individual's sex in terms of biological characteristics (e.g., genitalia, chromosomal, and hormonal features) or in terms of social characteristics. Adults may use all of these characteristics when assigning categories, but

children's understanding of characteristic attributes experience developmental changes, therefore possibly differing from an adult's understanding (Sani, Bennett, Agostini, Malucchi & Ferguson, 2000).

The process of social categorization consists of labeling and putting order to one's social environment by assigning individuals to categories based on a real or implied shared characteristic (Sani et al., 2000). It would be reasonable to expect that the more salient a characteristic, such as race, becomes to children, the more assumptions children make based on this salient social category. They may begin to infer that all persons with this characteristic share certain qualities that may be social, physical, and/or biological in nature.

Much research has been done in an attempt to understand which social categories are salient to children and when their salience becomes apparent. For example, researchers have found that children as young as 3 years old label individuals on the basis of gender and that by ages 3 and 4 children are able to differentiate one ethnic group from another (Sani et al., 2000). Although children as young as 3 and 4 may be able to distinguish between ethnic groups with close accuracy, it is important to note that it is not until ages 6 or 7 when they can do so with close to 100% accuracy (Aboud, 1988). Because of these realizations at such early ages, we assume that these categories of sex and race are important ones to a child. However, is one social category more salient than another?

McGraw, Durm, and Durnam (2001) examined the relative salience of sex, race, age, and glasses in human facial features using children ages 2 to 6 years. In this task children were to discriminate between head-and-shoulder color photographs of adults.

The children were presented with two pictures at once and a star was placed on one picture. The children were to tell the examiner which picture had the star. Pictures were contrasted in terms of sex, age, race, and glasses. For example, an older White man with glasses could be paired with a young Black woman without glasses. The child might say that the man had the star or they might say the old person. Researchers in this study found that children most often used sex as an identifier. When sex was removed as a possible identifier, children more often made choices on the basis of race. McGraw et al. also found that Blacks were more likely to be identified by their race than were Whites. The researchers also investigated whether children's choices were affected by their own age, sex, or race and found that none of these factors alone predicted children's choices. This study has important implications because it lends reliability to sex and race as salient, significant social categories to children. Its interpretations, however, are not without limitations.

One of the major limitations of this study and others like it is that they give us limited information about social categorizations in the African American child. McGraw et al. (2001) had an extensive population (n = 69), but only 8 of these 69 children were African American. Also, the mean age of these children was 4.62. With such a young sample, we do not learn from this study at what age race becomes a salient category for children. We also do not learn whether older children also will more often choose on the bases of sex. Another limitation of this study is that only adult photographs were used. It leaves us to wonder if children were able to sufficiently identify with the individuals in the photographs on the sex or race tasks, in that children form groupings based on perceived similarity (McGraw et al., 2001). From this research we understand that

children view sex and race as important social categories, but when do they begin to make inferences based on those categories and what types of inferences do they make? For example, when would a child begin to infer that members of the same social categories enjoy the same types of things or go to the same places? Also, what types of social categories are salient to African American children or children over the age of 4?

In addition to the use of sex, race, and facial features, there is also research that investigates children's use of trait labels to make social inferences. Heyman and Gelman (1999, 2000) sought to determine whether describing characters as "shy" or "not shy" would lead young children to make certain nonobvious inferences about the character's state. These researchers used story themes to describe a character that was either given a trait label or given no label. Participants were asked why they thought the character did what he/she did. Researchers found that participants as young as 4 years old made inferences about a character's actions depending on the character's trait label. This research is important because it helps us to understand that children use a complex framework for making inferences in novel situations (Heyman & Gelman, 1999, 2000). They are able to draw upon this framework to understand the world around them beyond descriptions that they may be given.

Diesendruck and haLevi (n.d.) sought to determine whether language, appearance, and culture played a part in children's social category based induction. These researchers did a series of studies employing the triad methodology made popular by Gelman and Markman (1986, 1987) and Heyman and Gelman (1999, 2000). In the first study there were four social categories used with preschool children: gender, social status, religiousness, and ethnicity. The four personality traits used were "niceness," "shyness,"

"artisticness," and "activeness." The researchers described 16 novel properties having to do with preferences, desires, and behaviors. Based on this study and subsequent studies, researchers found that children made social category-based inferences more often than personality trait inferences. For example, children in this study assumed that individuals of the same ethnicity liked to do the same things versus individuals who held the same "nice" personality trait. The children even made these inferences more often when the target and comparison did not resemble one another physically. Based on this study it seems that giving a category a familiar label is enough for children to generate an idea of what that person is like (Diesendruck & haLevi, n.d.). Once children learn a person's social category, they assume what that person likes/dislikes and how that person behaves. Little else has to be known, including what the individual looks like or the individual's personality traits. Children's use of social categorization is worthwhile information to know, but it leaves us to wonder, what can be said of children's inferences about humans as social categories when not given labels?

Madole et al. (2005) examined this question in a study when they interviewed 40 children and asked them to make inductive inferences based on social categories. The researchers in this study presented participants with 24 different trials using a triad design of various photographs. There were two comparison sets of photographs and one target set. The target set shared one social attribute with each comparison set: age, sex, or race. Participants were given a characteristic (social, biological, or individual) about each comparison set and asked which characteristic the target set held. They were forced to choose on the basis of one of the social attributes. For example one comparison set was White males and the other was Black females, while the target set was Black males. In

this example the children could make inferences on the social category of race or sex and age would remain constant.

Examiners in this study were able to discern which social categories children more often used to make inferences. They were also able to identify if this salient social category was used across characteristics or if it differed based on whether the characteristic described was biological, social, or individual in nature. Lastly, they were able to determine the prevalence of social category based inferences among various age groups to gain information as to the developmental changes in the salience of a social category.

Results from this study showed that the type of attribute being used for comparison sets (i.e., social, individual, biological) did influence which social category was used for making inferences. Specifically, age-based inferences were made in individual preferences; sex-based inferences were applied to biological attributes, while race-based inferences were applied to social attributes. Because of the design, researchers in this study were able to draw from the ideas that worked from previous research (the triad design) while making necessary changes. Changes made included using humans instead of animals or objects, using children as well as adults in photographs, using an older population, and not providing participants with a label with which to categorize. Labels were not needed in this study because social categories used could be compared visually between the comparison sets and target set (Dawson, 2005). These changes expand the generalizability of the results and provide us with more information as to the understanding of how children comprehend the world around them. The only limitation is the ability to generalize the results to African American children.

Due to a limited sample of African American children, little can be said as to whether these results apply to them as well.

While much research has been done to examine children's inferences as a whole, research comparing Caucasian children's inferences to African American children's inferences is almost non-existent. Is race a more salient social category than sex or age to African American children? Race appears to be more salient at an earlier age for African American children because of the racial socialization that occurs in African American homes. This racial socialization is what primes African American children for dealing with racism (Thomas & Speight, 1999). Racial socialization occurs through these implicit and explicit teachings (Hughes, 2003). Parents are the ones most responsible for guiding their child's socialization. Although some form of racial socialization occurs in most families, it is thought to be more pertinent to ethnic minority families because of negative group stereotypes that may make child-rearing difficult to accomplish (Hughes, 2003). After conducting surveys in African American churches, Thomas and Speight found that African American parents often talk to their children about race and engage in racial socialization. For example, African American parents discuss with their children how others view them as African Americans, and they may discuss incidents of racism or discrimination as they arise. The researchers found that 96% of their sample of 104 African-American parents felt that racial socialization was important in order to prepare children to cope with the world.

Research that allows us to compare African American children's inferences and Caucasian children's inferences has important implications in that it helps us to know and possibly understand the differences between these two groups of children. It would also

give us a starting point for tracking those differences into adulthood. Additionally, it may help us to know when to adjust the way in which we relate to Caucasian children versus African American children and also the way in which we approach various subjects with the two groups. Our limited sample of African American children has restricted our application of African American children's inferences of social categories. In order to understand African American children it is important that we actually study them. The current study sought to increase the knowledge and understanding of African American children's social category inferences.

The current study was a replication of the study performed by Madole et al. (2005). It attempted to remove some of the limitations of the previously mentioned studies (i.e., nonhuman tasks, category labeling, small African American population, and only adult photographs) while mimicking the triad design formerly used. The distinction between the two studies was the sample. The current study used a population of only African American children ages 6 to 11. This study examined the extent to which African American children made inferences about people when given novel attributes.

Madole et al. (2005) found conflicting evidence as to the developmental changes in children's use of social categories to draw inferences. They found that age-based inferences were made in individual preferences; sex-based inferences were applied to biological attributes, while race-based inferences were applied to social attributes.

In the current study, I hypothesized that older African American children would more often make inferences on the basis of race rather than sex or age across all attributes than younger African American children. Because Hughes (2003) found that there is an age difference in which parents engage in racial socialization, I also believed that this

shift would be seen at an earlier age than previously seen with Caucasian children. Also, based on this information, I hypothesized that older African American children (ages 9, 10, and 11) would more often make inductive inferences based on race due to their awareness of their own race and possible racial socialization by their parent or guardian. Hughes also found that parents are more likely to racially socialize their children based on the child's ability to understand racial issues and ethnic families are more likely to racially socialize than Caucasian families. For this reason, I also hypothesized that the African American children in the current study would make more inferences based on race than the Caucasian children in the Madole et al. (2005) study.

The hypotheses for this study were as follows:

Hypothesis 1 - Children in the current study would make more race-based inferences than either sex- or age-based inferences.

Hypothesis 2 - Older children as a group, ages 8.5-11, would make more inferences based on race than younger children.

Hypothesis 3 - Children in the current study would make more race-based inferences when compared to the children in the Madole et al. (2005) study.

Method

Participants

Participants included 23 children, all African American, ages 6 to 11 years. There were 9 males and 14 females. The children attended mixed-race public elementary schools in a rural town. They were recruited from local churches and asked to participate in the study. They were given a small token (e.g., pencil) for participating. In order to obtain parental permission, letters of informed consent were given to parents and signed before child participation (Appendix A).

Stimuli

Materials included comparison triads, target photographs, photo album, paper logs, and cue cards. The researcher presented a picture album to each participant, replicated from Madole et al. (2005), which held comparison triads and target pictures. The comparison triads consisted of three individual photographs pasted onto a 4 x 6 inch index card and placed in the photo album. Each photograph used was obtained from high school yearbooks and web-based modeling agencies. Photographs measured approximately 2 x 1.5 inches and were printed on plain printer paper. All photographs were of the upper body. Cue cards were used to ensure that each participant's trials were the same. Participants' responses were recorded by hand on paper logs.

Design

The experiment consisted of 24 trials. In each trial, participants were simultaneously shown two comparison picture sets and a target picture set. Participants were told that their participation was strictly voluntary and they could quit at anytime. They were also told that there were no right or wrong answers and they would receive a

token even if they chose to discontinue with the trials. Participants were interviewed in a quiet room, separate from any other participants in 15-20 minute sessions.

There were eight combinations that could be used for comparison sets: young White females, young White males, young Black females, young Black males, older White females, older White males, older Black females, and older Black males. Photographs in the same group were similar in that they shared a social category (i.e., race, age, or sex). Each triad contained different combinations of photographs so that no two combinations were identical.

Two sentences were read, one for each comparison triad. Attributes were individual, social, or biological in nature. The sentences were completely identical with the exception of one word. For example, a biological set read, "These kids have _____ in their bodies, while these kids have _____ in their bodies." The participants were asked which attribute the target picture possessed based on the information provided. After seeing the target photograph, participants were asked, "Does this kid have _____ or _____ in his body?" Appendix B lists sentences used for each trial. Unfamiliar, novel vocabulary words were used to prevent participants from making inferences based on pre-existing knowledge or stereotypes. Sample words can be found in Appendix C.

There were three different types of contrasts presented: age versus race (photographs shared same sex), age versus sex (photographs shared race), and race versus sex (photographs shared age). In each trial the target photograph shared one social attribute with each comparison picture and differed on another social attribute. For example, an age versus sex trial included one set of older White females and one set of

younger White males, with an older White male as the target. In this example, race is constant while the target is older like the first set and male like the second set.

There were six control trials in an attempt to ensure the participants were paying full attention and not choosing their answers at random. These items also served to measure participants' ability to draw on pre-existing stereotypes. Participants had two opportunities for each type of social category (social categories being race, age, and sex). For example, in the control trial the experimenter might have said, "These people drive cars, while these people ride bikes. Do these other people drive cars or ride bikes?" In this trial participants were expected to make inferences on the basis of age.

The order of trials were presented in a quasi-random order in order to ensure that no more than two types of trials or characteristic types were presented consecutively. All subjects received a different order of trials.

Results

In all, the participants were given 24 questions including 6 control questions.

Control questions were excluded from additional analysis. Each social category (race,

age, or sex) could be chosen a minimum of 0 times and a maximum of 12 times across

the different attribute types (individual, biological, and social). The total numbers of

race-based, age-based, and sex-based inferences were summed for each participant.

Hypothesis 1 predicted that children would make more race-based inferences than

either sex- or age-based inferences. Hypothesis 2 predicted that older children as a

group, ages 8.5-11, would make more inferences based on race than younger children.

Hypothesis 3 predicted that the children in the current study would make more race-based

inferences when compared to the children in the Madole et al. (2005) study.

With regard to the first hypothesis, one would expect by chance to get an average

of 6 inferences of each type (race-based, sex-based, age-based) for a total of 18 questions,

not including the 6 control questions. To determine if there were more race-based

inferences made than either sex or age-based inferences, three t-tests were conducted on

the number of inferences of each type and compared to an expected number of six.

Based upon those t-tests, it was determined that children did not make more race-based

inferences than would be expected by chance, $M = 5.30$, $t(22) = 1.16$, $p = .26$. Children

also did not make more sex-based inferences than would be expected by chance, $M =$

4.96, $t(22) = 1.71$, $p = .10$, but they did make more age-based inferences, $M = 7.74$, $t(22)$
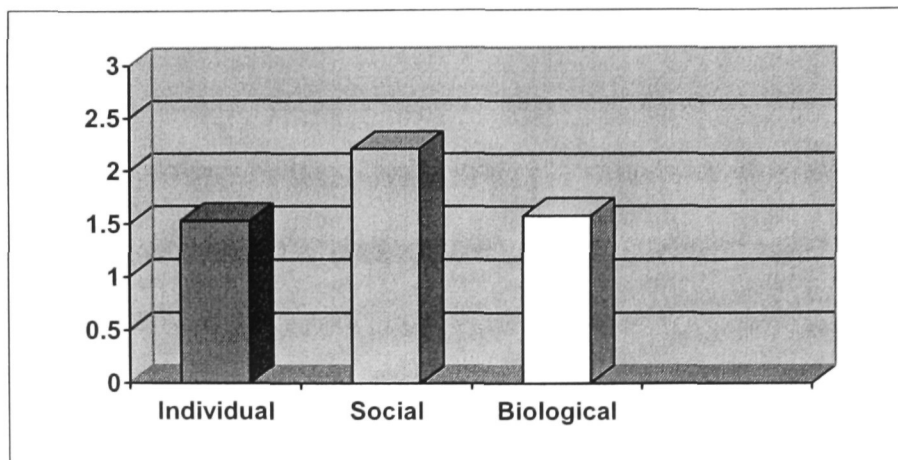
$= 3.01$, $p < .01$.

Although I hypothesized there would be developmental differences, due to the

low number of children between the 6-8.4 years of age, their results could not be

analyzed as a group. There were only 4 children in this age group as compared to 19 in the older age group. However, the above analysis was the same even if children under 8 years were excluded. Excluding the children below 8 years of age yielded very similar results. Children did not make more race-based than would be expected by chance, $M = 5.32$, $t(18) = .95$, $p = .35$, nor did they make more sex-based inferences, $M = 5.16$, $t(18) = 1.18$, $p = .25$, but they did make more age-based inferences, $M = 7.53$, $t(18) = 2.24$, $p < .04$.

Because Madole et al. (2005) found that children younger than 8 years of age performed differently than children older than 8 years of age, the 4 children younger than 8 years of age were excluded from additional analyses. Subsequent results reported are for the older age group only in that results on the younger age group could not be fairly reported. In order to determine whether the kinds of attributes described influenced the kind of inferences children make, three separate one-way ANOVAs were conducted for each of the social categories with the number of inferences being the dependent variable and the attribute type was the repeated measure. One analysis was conducted on the number of race-based inferences, one on the number of sex-based inferences, and one on the number of age-based inferences. The analysis of race-based inferences resulted in a main effect of attribute type, $F(2, 36) = 3.33$, $p < .05$ (See Figure 1). It was found that children were more likely to make race-based inferences when given a social attribute type than either the individual or the biological attribute types. There was no main effect found for the sex-based inferences, $F(2, 36) = .44$, $p = .65$ or age-based inferences, $F(2, 36) = 1.6$, $p = .22$ (See Figures 2 and 3).

Figure 1. Race-based Inferences.
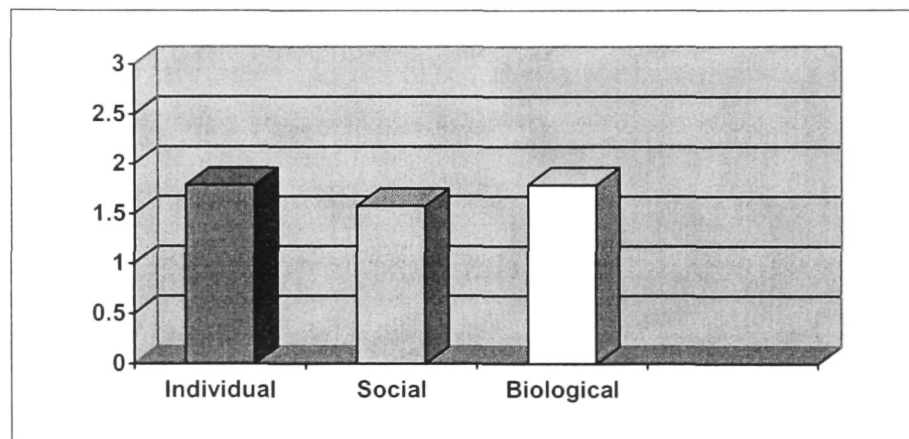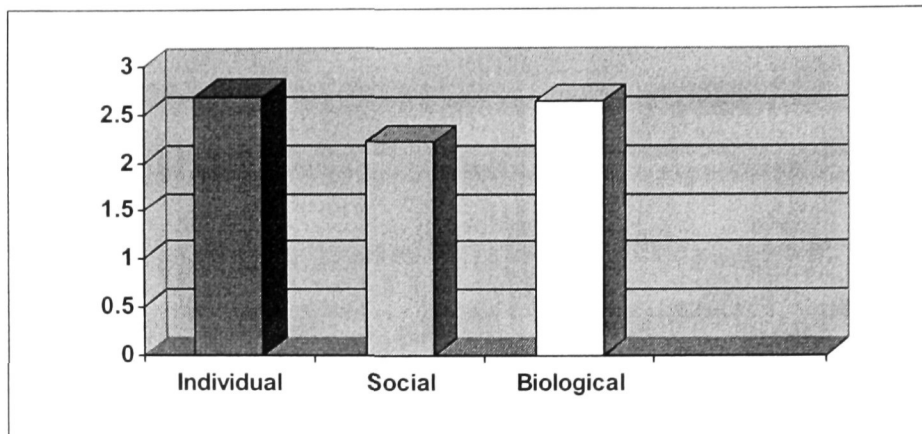

Figure 2. Sex-based Inferences.

Figure 3. Age-based Inferences.

Next the results of this study were evaluated along with the results from the Madole et al. (2005) study. There were 19 African American children ages 8.5-11 years and 14 Caucasian children of the same ages. Children's responses were entered into 3 separate 3 (attribute type: individual, social, and biological) x 2 (child's race) ANOVAs with attribute type being a repeated measure. As above, one analysis was conducted on the number of race-based inferences, one on the number of sex-based inferences, and one on the number of age-based inferences. These ANOVAs yielded only a significant effect of attribute type for race-based inferences, $F(2, 62) = 5.137, p < .05$. It was found that both African American and Caucasian children were more likely to make race-based inferences when given a social attribute type than either the individual or the biological attribute types. A post-hoc comparison was done to determine if there was a significant main effect of child's race and the number of inferences (race, age, or sex) chosen overall. Contrary to prediction, this comparison yielded no main effect for race-based inferences, as shown in Table 1.

Table 1.

Race-based Inferences

Sample	Mean	Std. Dev.
African American children	1.772	1.296
Caucasian children	1.548	1.152

There was also no main effect for number of sex-based inferences or age-based

inferences, as shown in Tables 2 and 3.

Table 2.

Sex-based Inferences

Sample	Mean	Std. Dev.
African American children	1.719	1.206
Caucasian children	2.143	1.026

Table 3.

Age-based Inferences

Sample	Mean	Std. Dev.
African American children	2.509	1.227
Caucasian children	2.262	1.127

In other words, there was no significant difference in the number of race, age, or sex-

based inferences made based upon a child's race. Again, no developmental comparisons

could be made due to the low number of children in the younger age group.

Discussion

The current study provides evidence that older African American children do not make more race-based inferences overall than older Caucasian children, contrary to my hypothesis. When looking at only race-based inferences, African American children more often make these inferences when given social attributes. However, this tendency was not significantly more than Caucasian children's race-based inferences on the social attribute questions. Also, participants in the current study did not show a propensity to give more race-based inferences as compared to age and sex-based inferences overall. Thus, the only thing that made a difference in whether or not the African American children were more likely to make race-based inferences was the social attributes. This is a very interesting finding and is consistent with what Madole et al. (2005) found with older Caucasian children.

It is also interesting to note that in the Madole et al. (2005) study the older children more often made sex-based inferences for biological and individual attributes, but this was not found with the current study. This finding suggests that the African American children's sex-based and age-based responses were more evenly distributed across all attributes than were the responses of the Caucasian children. This finding is consistent with the Bardwell, Cochran, and Walker (1986) study that examined the relationship of race to sex-role stereotyping. The researchers in the 1986 study examined the relationship of parental education, race, and gender to sex-role stereotyping. They found that Caucasian children gave more sex-role stereotyped responses than did African American children, thus leading us to believe that Caucasian children have more stereotypical sex views than do African American children.

In the current study the results also showed that children made more age-based inferences than would be expected by chance. They made more age-based inferences than either race or sex-based inferences. In my opinion the explanation for this is fairly simple. This was found because one would anticipate that the children would make some choices more often than others. They did not make many inferences based on sex or race, so this left age-based inferences. The study design required forced-choice responses and since data are rarely split evenly across all choices one would expect one selection to be chosen more than the others.

There are a couple of theories as to why none of my hypotheses were supported. One reason could be that I overestimated the salience of race to the African American adolescent. While race may be very salient to certain individuals or in certain situations, it may not be as salient to the entire group as a whole at all times. This study was conducted in an African American church setting with African American children, given by an African American researcher. If the racial awareness and consciousness of these adolescents was overestimated, then in order for them to consider race in the given task perhaps something would be needed to trigger those thoughts. It could be argued that the pictures could have served as this trigger, but since the race of the individuals in the photographs was never mentioned and race was a constant in the environment, this theory is definitely worth considering.

Another theory as to why my hypotheses were not supported takes into consideration the questions asked of the participants. Many of the social, individual, and biological questions are things that adults consider to link a group such as what neighborhood one lives in or where a person's father works. However, it could be that

children do not consider certain groups of people to have these things in common. It seems that many times young children do not regard these things as important until an adult or older child acknowledges them.

Children's tendency to make race-based inferences for social attributes was the only main effect found in the entire study. It is important to address the question of why this was found. Why was this trend not found for individual and biological attributes as well? One possible answer to this question is that while race may be important in a social context, it is not as important when discussing people on an individual level. Although African American children are very aware of their race as a social category, it does not seem to affect what they like to do or watch to the same extent that it does their family life or their neighborhood. This is to say that race may be influential in the social world, but it is equally as significant as or less significant than age and sex when discussing what a person likes to do, their favorite things, or what makes up their biological being. Perhaps race only comes into play for children when encountering their social world, while one's individual aspects and biological characteristics have little to do with race. For example, though a person's scalp may be perceived as being related to one's race, what makes up a person's cells or muscles may be perceived as being related to one's sex or age. Also, what is in a person's home or how their families talk may be, to some children, related to whether or not that individual is African American or Caucasian. On the other hand, what individuals like to do in their free time or what their favorite books are would depend upon whether the individual was a girl or boy or whether he or she was older or younger.

Also, it could be that it is the presence of another race that makes one's own race more salient. If everyone in a particular environment was of the same race, race would become noted less and therefore discussed less. Because the presence of another race is more apparent in social contexts, perhaps this is why more race-based inferences were chosen when given a social attribute. Race could be more often used for comparing groups in social situations and circumstances and less often used when comparing individuals.

<div align="center">Limitations</div>

Perhaps it could be argued that a great deal of assumptions are made from two small samples of children in the current study and the previous study. Therefore, one has to wonder how valid different results would be if larger samples of children were acquired.

This study has a small sample of younger African American children. The current sample of children was a sample found at the same church in the same town. Children between the ages of 6 and 8.4 were simply unavailable. Because of the small sample of these children, nothing could be said of the developmental changes of African American children's inferences versus Caucasian children's inferences. Also, nothing could be said of the difference in the responses between the younger African American children versus the older African American children. In the previous study, Madole et al. (2005) found developmental differences in the kinds of inferences made. They noted that younger children made significantly more sex-based inferences for all attribute types than would be expected by chance than did the older children. It would have been interesting to know if this same trend could be said of the younger children in the current study. The

current study found that the older children gave more race-based inferences when given social attributes than individual and biological attributes. Would the same have been true for the younger African American children as well? In order to address some of the unanswered developmental questions, data from more children in the younger age range will be collected and reported in a subsequent study.

Future Research

Future research on this topic could use African American adults as a sample. The Madole et al. (2005) study was also done with Caucasian adults to compare their responses to the responses of the children. They found that adults more often used age-based inferences when given individual preferences, while rarely using sex-based inferences at all. It would be interesting to be able to compare African American adults' responses to the responses of the children in the current study. It would also be interesting to compare African American adults' responses to Caucasian adults' responses.

Another possibility for future research could involve using an examiner of a different race. In the current study, the examiner was African American, as were the children in the sample. It was previously mentioned that with race being a constant in the environment perhaps nothing "triggered" the children's thoughts of race. Future research could explore using a Caucasian and an African American examiner to see if there were any examiner effects in this study. An examiner of a different race could serve as the trigger.

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Appendix A

Informed Consent and Child Assent Documents

Dear Parent/Guardian:

We would like to ask for your help in a study of children's understanding of social categories. Dr. Kelly Madole and Erica Hightower of Western Kentucky University are conducting this study at the church you attend. The purpose of our study is to gain a better understanding of how children think about and understand the people in their world. Your child will receive a small token (such as a pencil) for participating and their name will go in a drawing to win $5.00.

If you decide to take part, your child will participate individually in a 15-20 minute session at your church. During the session your child will be read simple, brief sentences about people. He or she will be asked to respond to some questions based on their beliefs about the kinds of things these people like to do, how they behave, or qualities they possess. In particular, we are interested in children's beliefs about the kinds of characteristics members of different categories share.

We would like to emphasize that your child's participation is entirely voluntary. If you or your child decides not to participate, there will be no negative consequences for you or your child in any way. Furthermore, your child has the right to refuse to answer any question and may withdraw from the study at any time. All information will be kept strictly confidential. Your child's name will only appear on the consent forms. The results may be part of a published manuscript in which all results would be reported in terms of group averages, and no children will ever be identified by name or individual answers.

We have been given permission by your pastor to conduct this study at your church. The ideas and thoughts discussed in this study do not necessarily reflect the ideas of your church or religious affiliation. This study is in no way religious or spiritual in nature. It is being completed to fulfill the degree requirements of the graduate student involved.

The procedures in this study have been reviewed and approved by the Western Kentucky University Committee for the Protection of Human Research Participants. Furthermore, the University has filed a form called "Assurance of Compliance with DHHD regulations for the Protection of Human Subjects" with the Department of Health and Human Services. No problems are anticipated.

Specific questions about this study may be directed to Dr. Kelly Madole, Research Director for this project at (270) 745-6475. She will be happy to answer any questions of concerns that you may have regarding this study. Please leave a message if no one is there.

We hope that you will allow your child to participate in our study and help us explore this area of child development. We promise that it will be a pleasant experience for your child. If you agree to participate, please fill in the required information below. Regardless of your decision to allow your child to participate, upon returning this letter to the graduate student, your child will receive a small token of our appreciation for you and your child's time.

Thank you for your help.

Sincerely,

Kelly Madole, Ph.D.
Research Director

Erica Hightower, B.A.
Graduate Student

Western Kentucky University

Parental Consent Form

Child's name:_____

Date of Birth:_____

School:_____

____No. I do not give my permission for my child to participate in this study.

____Yes. I have read the information provided about this study and give my consent for my child to participate in this study conducted by Dr. Kelly Madole and Erica Hightower of Western Kentucky University. I understand that the anonymity and security of data will be maintained. I also understand that I may withdraw my child from the study at any time without penalty.

_____   _____
Parent/Guardian Signature   Date

Child/Minor Assent Form

I, _____, understand that my mom or
dad has said it's okay for me to take part in a project about what things go
together with Kelly Madole and Erica Hightower.

I am taking part because I want to. Also, I have been told that I can stop at any
time and nothing will happen to me if I want to stop.

_____   _____
Signature   Date

Appendix B

Characteristic Sentences

Individual	Social	Biological	Control
These kids like to _____ in their free time.	These kids all have _____ in their homes.	These kids all have _____ cells.	These kids go to the pink/blue bathroom at school.
These kids' favorite foods are _____.	These kids' daddies all work at _____.	These kids have _____ muscles.	These kids play with dolls/fighting games.
These kids like to drink _____.	These kids live on a street where all the houses are _____ .	These kids have a _____ body.	These kids skin burns easily/does not burn easily.
These kids like to watch movies about _____ .	These kids have parents who are _____ .	These kids have _____ blood.	These kids have light-skinned/dark-skinned mommies and daddies.
These kids' favorite books are about _____.	These kids' families all talk _____.	These kids have _____ DNA.	These kids drive cars/ride bikes.
These kids like to learn about _____.	These kids live on a street where everyone is _____.	These kids have a _____ scalp.	These kids go to bed early/late.

Appendix C

Nonsense Words

udons	marimbas	jiving	puritanical
patinas	lapidaries	finicky	alliterative
halmas	warble	nascent	burnished
sagos	forbade	reportorial	hermetic
swindlers	germinal	arigato	abrogative
tillets	renal	endogamous	gimbaled
riboflavins	totemic	virulent	yeddos
quagmires	saccadic	consorted	nikkos
dowers	inflective	equatorial	precepts