

The Pennsylvania State University

The Graduate School

College of the Liberal Arts

ORGANIZING AND LABELING PRESCHOOL CLASSROOMS BY GENDER:
EFFECTS ON CHILDREN'S GENDER ATTITUDES AND
IN-GROUP BIAS

A Thesis in

Psychology

by

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Submitted in Partial Fulfillment

of the Requirements

for the degree of

Master of Science

December 2008

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ABSTRACT

Past work suggests that children categorize their environment according to social groups and predicts that the functional use of gender (i.e., using gender to organize and using gendered language) increases children's gender stereotypes. In the present study, 57 preschool children were assessed through gender attitude, intergroup bias, and personal preference measures at the beginning and end of a two-week manipulation. Teachers in the experimental (*label*) condition categorized their classroom by gender whereas teachers in the control condition maintained a typical classroom environment. Children in the label condition (but not the control condition) had increased sex-typed responses, decreased preference for other-sex peers, and decreased observed play with other-sex peers after the manipulation. Children's personal activity and occupational preferences were not affected by the gendered environment.

TABLE OF CONTENTS

List of Tables	v
List of Figures	vi
Acknowledgments.....	vii
Introduction.....	1
Method	8
Results.....	14
Discussion.....	20
References.....	26

LIST OF TABLES

Table 1: Measures and Time Points	11
---	----

LIST OF FIGURES

Figure 1: Mean Responses on Gender Attitude Measure	16
Figure 2: Peer Preference Ratings.....	17
Figure 3: Peer Play Observations.....	19

ACKNOWLEDGMENTS

I would like to extend my heartfelt gratitude to my advisor, Lynn Liben, for her invaluable guidance, attention, and support at every step. I am grateful for her mentorship and look forward to many more projects together. I appreciate the help and direction from my committee members, Kristin Buss and Terri Vescio. I thank the directors, Janie Hilliard and Barbara Crosby, teachers, staff, families, and children of the participating schools for their enthusiastic cooperation. Special thanks go to my parents, family, and friends for their continued support, love, and encouragement.

Organizing and Labeling Preschool Classrooms by Gender:
Effects on Children's Gender Attitudes and In-Group Bias

People vary along many dimensions, some highly visible (e.g., age and race) and some less so (e.g., political party and favorite foods). How do children come to use some dimensions rather than others to categorize people into social groups? And what (if any) consequences result from sorting people into those groups? These questions are at the center of a recent formulation of *Developmental Intergroup Theory* (DIT; Bigler & Liben, 2006, 2007). The core claims of DIT are two-fold. First, particular qualities become important for sorting people into groups because those qualities are highlighted in the environment and observed by cognitively active children; second, stereotypes and prejudices emerge as a result of forming these social-group categories.

Bigler and Liben's (2006) developmental intergroup theory approaches the development of social stereotypes among children through a constructivist lens. DIT posits that children are active agents in processing social stimuli. Thus, they form social-group categories by applying their categorization skills to what they encounter in their environment. Those categories become the basis for the development of stereotype and prejudice. More specifically, and as detailed below, DIT suggests that the development and application of children's stereotyping and prejudice are formed in part from the psychological salience of social groups and the categorization of objects within children's surroundings.

First, some qualities of the environment render group membership more or less physically salient. When group membership is visually or perceptually distinct

(e.g., difference in skin color or in type of clothing), intergroup divisions assume more importance. Environments may serve to exaggerate or minimize perceptual differences between members of different groups (e.g., through clothing styles). Proportional group size (i.e., the relative number of people in various groups with uneven group sizes) also affects the psychological salience of a group. Thus, distributions of people within the encountered environment affect a group's salience. For example, a classroom with 15 European American students and 3 African American students would make race a more salient characteristic for forming groups than would a classroom with 8 European American students and 7 African American students. DIT suggests that explicit labeling of the groups further contributes to psychological salience of groups (Bigler, Jones, & Lobliner, 1997).

Categorization is a second process contributing to the formation of social group stereotypes. As a part of their general constructive, self-motivated drive to understand their interactions with their social and physical environment, children attempt to categorize their environment (see Fiske & Taylor, 1991). When children recognize differences between groups and are made aware of those groups through implicit and explicit categorization and labeling, children are likely to use those groups to divide people in their environment.

According to DIT, once children have categorized individuals into groups, they are internally and externally driven to attach meaning to those categories. Thus, for example, if gender is construed as a salient category in a child's environment (e.g., via differential clothing and labeling), young children will be more vigilant in looking for associations with gender. Children may also treat gender as an innate

category due to their tendency toward essentialism (Gelman, 2003). In other words, if the child's environment divides people by gender, children will infer that differences between men and women rest on fundamental differences between the groups.

Children also have a propensity toward an in-group bias (Bigler, Jones, & Lobliner, 1997) and tend to view their own gender as superior.

The final process involved in the formation of social group stereotypes, according to DIT, is the application of stereotypes. Children develop logical systems to make sense of the world. Once a social group is made salient and attributes are linked to it, children apply and enact the cultural stereotype for the self and others. When children apply these attributions to individuals, stereotypic information is reinforced, and counter-stereotypic information is often ignored, misremembered, or even distorted (Liben & Signorella, 1980).

Intergroup analyses have been used to study and understand stereotypes and prejudices specifically in terms of in-group and out-group attitudes. Early work showed that children in assigned groups made negative attributions toward the out-group and positive, internal attributions to their own group (Sherif, Harvey, White, Hood, & Sherif, 1961). Consistent with the core tenets of DIT, these intergroup assumptions are heightened when there is a physical difference between groups (e.g., race; see Aboud, 1988).

One important arena in which the processes identified in DIT may operate is gender. Many aspects of the environment appear to be organized in ways that DIT would predict would result in enhancing the salience of gender. In fact, the proposal made by Sandra Bem roughly three decades ago was consistent with this idea. Bem

(1983) suggested that society's emphasis on gender categorization leads to sex differences far beyond those associated with biological reproduction which, in her view, was the only legitimate arena for sex differences. She speculated that the functional use of gender teaches children that biological sex is an important grouping variable. Illustrations of functional use of gender include using gender-specific language, alternating boys and girls as daily helpers in a classroom, and establishing separate sports teams by gender. Although Bem made this suggestion roughly a quarter century ago, it remains culturally acceptable for teachers to use phrases such as, "Good morning, boys and girls," and it is common to see boys and girls separated by perceptually visible markers such as different-colored robes for graduation ceremonies.

Research on the functional use of gender is very limited. Studies have shown the effect of gender labels when attributing traits to individuals (see Stern & Karraker, 1989), but few experiments have tested the role of using gendered language in the environment, or examined whether increased gender stereotypes will affect behaviors linked to in-group preferences and out-group biases as predicted by intergroup theories. There has been some recent work demonstrating children's susceptibility to the functional use of gender. Specifically, Bigler (1995) examined the effects of teachers' functional use of gender in elementary school classes (with children aged 6- to 11-years old). Children in classes in which teachers used gender (e.g., to organize lines) showed greater gender stereotyping than did children in control classrooms. There is also evidence that younger children can develop in-group biases when the environment accentuates group membership. Patterson and Bigler (2006) used a

novel group paradigm with preschool children by randomly assigning children to wear red or blue shirts. In classrooms in which the teacher made functional use of the color groups (e.g., lining children up for recess by shirt color), children developed significantly stronger in-group biases.

The purpose of the present study was to examine this power of the functional use of gender in younger children in ways predicted by developmental intergroup theory. More specifically, the purpose of the present study was to test whether teachers' functional use of gender in preschool classrooms would lead to more highly gender stereotyped attitudes, and, if so, whether there would be evidence in children's actual behaviors of increased in-group bias (i.e., favoring one's own gender group over the other-gender group). An additional purpose of this study was to examine whether the teachers' functional use of gender would also have an impact on preschoolers' preferences for and participation in traditionally feminine versus masculine activities. Although it seemed unlikely to expect that this latter effect would occur given that earlier work had shown the stability of children's own gender-based interests even in the face of changing gender-stereotyped attitudes (e.g., Bigler, 1995; Bigler & Liben, 1990), data were collected as a means of examining how far the effects of functional use of gender might extend.

Children were assigned to an experimental or control condition for 2 weeks. In the experimental or "label," condition, children were exposed to teachers' use of gender categorization. That is, teachers made subtle changes to the classroom environment by using physical divisions (e.g., separate bulletin boards and seating arrangements for boys and girls) and verbal divisions (e.g., labeling group and

individual children's gender). Teachers in the control condition maintained their regular classroom environment which did not divide the classroom on the basis of gender. Children's sex-typed attitudes and preferences were assessed before and after the 2-week period, and children's behaviors were observed across the two weeks. It was hypothesized that functional use of gender in classrooms would lead to increases in children's gender stereotyped attitudes. To test this prediction, both prior to and following the classroom intervention, children were given the activity and occupation sub-scales of the Preschool Occupation, Activity, and Trait-Attitude Measure (POAT-AM, see Liben & Bigler, 2002). The POAT shows a series of culturally stereotyped activities and occupations, and children are asked for each whether it should be done by "only males," by "only females," or by "both males and females." Children in the label classrooms, but not the control classrooms, were expected to show a significant decrease in the number of flexible ("both") responses between pre- and post-testing.

If the functional use of gender in the classroom strengthens children's gender stereotypes, the labeling condition should also lead to stronger in-group/out-group bias. To test this prediction, children's interest in playing with peers of their own versus the other sex was assessed. Both prior to and following the classroom intervention, children were asked to rate their interest in playing with each of the other children in their class, and their average ratings for same- versus other-sex peers were compared. As an additional post-test measure, children were asked to select which of three groups of unfamiliar peers they would like to play with-- one that had only boys, one that had only girls, or one that had both boys and girls. Of interest was whether children in the label classrooms would show greater reluctance to play with

other-sex children than would children in the control classrooms. A third way of evaluating children's interest in same- versus other-sex peers, was to collect observational data on children's peer play. Specifically, we collected data on children's peer play at two observational sessions early in the study (just before and just as the classroom interventions began) and then again in two observational sessions late in the study (just as and just after the classroom interventions ended). We predicted that children in the label classrooms would show less play with other-sex peers than would children in the control classrooms at the late (but not at the early) observational sessions.

The predictions primarily concern children's gender attitudes about others and the consequences of those attitudes (i.e., in-group/out-group biases). Another aspect of gender development concerns the gendered nature of children's own interests and behaviors, for example, which toys children play with, and which educational or occupational pathways they pursue. As alluded to briefly above, we had no reason to predict that the classroom manipulation would have an impact on this aspect of gender because past work has shown that even when a brief intervention affects children's gender *attitudes*, it has little impact on their own play and job preferences (e.g., Bigler, 1995; Bigler & Liben, 1990). Nevertheless, as an exploratory aspect of this study, we collected pre- and post-test data on personal interests by using the activity and occupation subscales of the Preschool Occupation, Activity, and Trait--Personal Measure (POAT-PM, see Liben & Bigler, 2002). In addition, we collected observational data on children's participation in traditionally masculine versus traditionally feminine play centers in each classroom (*viz.*, the block area vs. the

family-play area). Specifically, we collected data on the number of boys and girls found within these areas during two observational sessions at the start of the classroom interventions and then again in two observational sessions at the end of the classroom interventions.

Method

Participants and School Context

Participants were 57 children ranging in age from 3 years, 1 month to 5 years, 6 months. Children were roughly evenly divided between two preschools, each approximately evenly divided between girls and boys (16 girls to 14 boys in one school; 13 girls and 14 boys in the other). The majority of participants were European-American from middle-class backgrounds. Informed consent was obtained from the directors of each school and teachers in each classroom. Parents and children were given the opportunity to decide not to participate in data collection (interviews and observations) if they desired, although none of the parents nor children chose to do so.

The schools involved in the study were located in a mid-sized city in the southwest and were matched across multiple levels (e.g., teacher education, class size, teacher-child ratio, policies implemented, and classroom arrangement). Despite these similarities, there exist differences between any two schools and even between any two classrooms within a given school and grade (e.g., different teachers, different peers). Thus, the design included both pre- and post-tests on critical measures so that analyses could take into account any initial differences between children in the two conditions.

Classroom Conditions

Classrooms in the label condition were arranged to make gender salient by exposing children to frequent uses of gender classifications in their environment. In this condition, teachers were encouraged to make frequent use of gender through physical separation (e.g., lining children up by sex), classroom organization (e.g., posting separate boys' and girls' bulletin boards), and gender-specific language (e.g., "I need a girl to pass out the markers" and "Good morning boys and girls"). Teachers in this condition were, however, asked to limit their attention to labeling and classroom organization. Thus, they were also asked to treat groups equally and to avoid encouraging competition between boys and girls. Researchers observed the classrooms every few days over the two weeks to ensure that the teachers were continuing to use gender as requested. Indeed, teachers in the label classroom followed instructions by using gendered language and separating their classroom activities according to gender. Teachers in the control classrooms were given no instructions about changing their behaviors in any way. It should be noted that apart from implementing the label instructions for this study, the ongoing policy in both preschools was to avoid using gendered language in the classroom.

Two classrooms were assigned to each condition. For administrative reasons and consistency among teachers within a school, the same conditions needed to be followed within each school (i.e., both of the experimental classrooms were at one school). Because of this, it was not possible for observational coders to be blind to condition. From the perspective of research design it might appear to have been better to assign classrooms to conditions randomly. However, the perspective of past

school-based intergroup research indicated that it was actually better to have had the manipulation between schools rather than classes because earlier work has demonstrated a contamination of group effects across classrooms (Patterson & Bigler, 2006).

Procedure

Specific measures given prior to and following the classroom intervention are listed in Table 1 and are explained in detail in the sections below. Following the completion of the classroom intervention and all measures, children participated in a debriefing and intervention program. Teachers and experimenters administered this program to counteract any possible increase in stereotyping and to use children's experience to understand prejudice and stereotypes. During the intervention, puppets, pictures, and posters were used to emphasize similarities and differences among people that were not based on gender.

Table 1. Measures and Time Points

Measure	Administered	
	Pre-test	Post-test
<i>Attitude</i>		
POAT-AM	X	X
<i>Peer</i>		
Familiar Peer Preference	X	X
Unfamiliar Peer Preference		X
Peer play observations	X	X
<i>Personal</i>		
POAT-PM	X	X
Classroom center observations	X	X

Following standard procedures for task administration, order of tasks was fixed for all participants. The sex typing of self measure (i.e., POAT-PM) was administered before sex typing of others (i.e., POAT-AM) in order to avoid biasing personal preferences after responding to questions tapping cultural stereotypes.

Attitude Measures

To assess children's endorsement of cultural stereotypes, items from the activity and occupation subscales of the POAT-AM (see Liben & Bigler, 2002) were administered. In this task, children are shown various pictures of activities or occupations, and for each are asked if men/boys, women/girls, or both men and women "should" perform each. Children were asked to rate 68 occupations and

activities, including 22 culturally masculine (e.g., use tools, be a firefighter), 20 culturally feminine (e.g., play with dolls, be a dancer), and 24 neutral (e.g., fly a kite, be a writer) items. Children were asked to point to one of three cards to show who they thought should do the activity. The three cards showed schematic (silhouette) pictures of people, with one card showing a man and boy, another showing a woman and girl, and the third containing all of these figures. Scores for this measure are the number of “both men and women” responses. Thus, higher numbers of “both” responses indicated lower endorsement of cultural gender stereotypes.

Peer Measures

Familiar-peer preference. To assess children’s preference of their peers in relation to peer gender, children were shown photographs of each of their classmates. For each photograph, the child was asked, “How much would you like to play with [name of classmate]”? Children rated their preference by pointing to one of three faces. The faces included negative, neutral, and happy expressions, and were explained as meaning they had no interest/liking at all, some interest/liking, or strong interest/liking. The choices corresponded to a 3-point scale. Two scores were calculated for each participant: average preference for children of their own sex, and average preference for children of the other sex.

Unfamiliar-peer preference. An additional measure of children’s gender-based peer preferences was administered at post-test. In this task, children were shown three photographs of groups of unfamiliar peers, one showing all girls, one showing all boys, and the third including both girls and boys. Each child was told,

“These are children from another school,” and asked, “If you were to go to that other school, which group of kids would you like to play with?”

Peer play observations. Children were observed during indoor free play periods through a one-way mirror in each classroom. Based on procedures developed by Martin and Fabes (2001), raters observed children according to a random list of children in the classroom. Once raters had observed each child on the list, they would start again at the top of the list, until each child had three observations.

Observers noted how many same- and other-sex peers the child played with. Observations were made independently by two researchers and examined for agreement by comparing results. There was high reliability between coders on the number of boys and girls with whom the child played ($ICC = .96$ and $.93$, respectively). Data from the primary observer were used in cases of disagreement.

Of main interest was the gender of peers with which children were engaged at the start and end of the two-week time period. Thus, scores were ratios of the total number of other- and same-sex playmates to the total number of observations taken at the beginning and end of the manipulation.

Personal Measures

Occupation and activity preference. To assess children’s sex typing of self, the activity and occupations subscales of the POAT-PM (see Liben & Bigler, 2002) were administered. In the POAT-PM, children are asked to indicate the strength of their own preferences for various occupations and activities by pointing to one of three faces, as described in the peer preference measure.

Instructions were explained with a gender neutral item (“How much would you like to eat ice cream?”), and, once understood, children were shown the pictures for the POAT-PM proper, and for each asked, “How much would you like to _____,” for each occupation or activity. Scores were two average preference ratings, one for masculine items and the other for feminine items. Higher scores thus indicated higher personal preference.

Classroom center observations. The second personal measure included observations of children’s behavior in gender stereotypical play areas. This method focused on two areas of the classroom, a wood-working or blocks area (which implied generally stereotypically male play) and a home-living center (which implied generally stereotypically female play). Observers recorded the number of children entering these centers, the gender of the children present, and the type of activities in which the children participated. Again, all observations were recorded independently by two researchers and observers were highly reliable. Raters had high agreement on number of boys entering the centers (ICC = .90) and number of girls entering the centers (ICC = .91). Of particular interest was gender of the children who played in each of the centers; therefore, the variables calculated at each time point were the total number of boys and girls. The number of girls and boys entering each center in 5-minute segments served as the dependent variable.

Results

Overview

Results are described in three major sections: first, data on children’s gender stereotyped attitudes; second, data related to children’s expressed interest in playing

with peers or their own or the other sex and behavioral data related to peer play; and, finally, survey and observational data relevant to children's expressed interests in, or actual participation in, stereotypically masculine versus feminine activities. Analyses conducted and reported are those relevant to pre-test versus post-test testing or observational sessions in interaction with classroom condition.

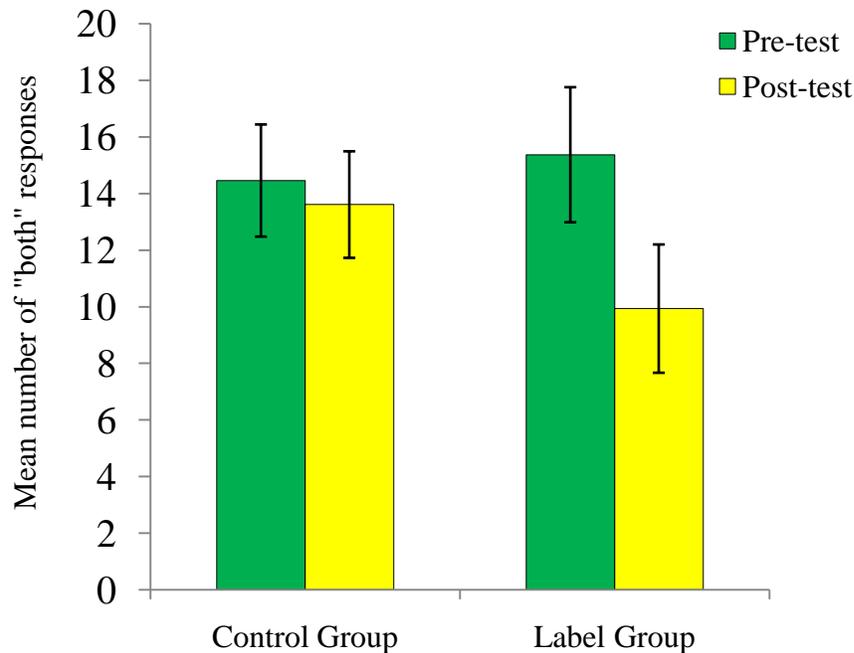
Attitude Measures

The dependent variable used to assess endorsement of gender stereotypes was the total number of "both" (i.e., flexible) responses given to masculine and feminine items on the POAT-AM. Given that the POAT-AM contains 22 masculine and 20 feminine items, scores could range between 0 and 44, with higher scores indicating more flexibility (i.e., lower gender stereotyping). Scores were analyzed with a repeated measures analysis of variance (ANOVA) in which between-subjects variables were condition (label vs. control) and participant sex (girls vs. boys), and the within-subjects variable was time (pre- vs. post-test). Here and in analyses described below, t-tests were used as follow-up tests as necessary. Differences reported below as significant were $p < .05$.

There was a significant interaction between condition and time, $F(1, 53) = 17.85, p < .001$. As shown in Figure 1, although there was not a significant difference in the control group's mean responses from pre- to post-test, $M (SD) = 28.59 (11.23)$ versus $27.67 (13.11)$, $t(26) = .33, p = .744$, there was a significant difference in the label group's mean responses from pre- to post-test, $M (SD) = 31.60 (10.85)$ versus $18.23 (11.24)$, $t(29) = 8.32, p < .001$. In addition, there was a significant interaction between time and participant sex, $F(1, 53) = 5.75, p = .020$. Girls gave more flexible

responses across conditions at pre-test than at post-test, 18.89 (6.23) versus 13.14 (8.15), whereas boys' responses did not change over time, 14.07 (7.00) versus 12.00 (8.00).

Figure 1. Mean Responses on Gender Attitude Measure

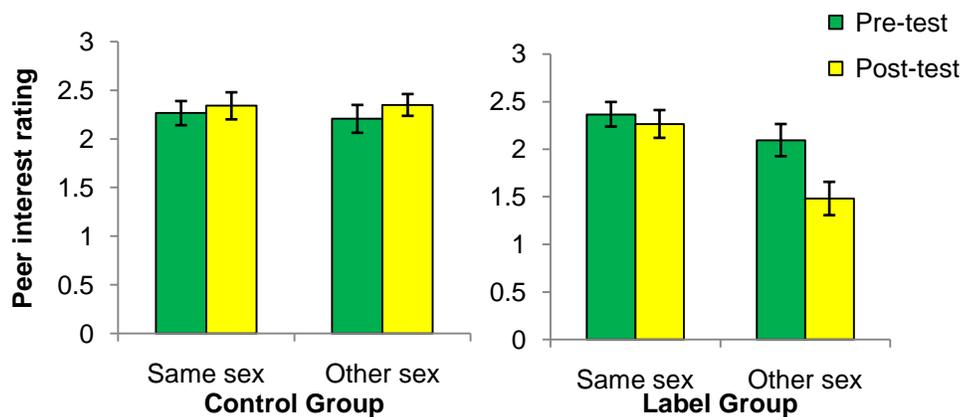


Peer Measures

Familiar-peer preference. The dependent measures for the familiar peer preference were the average preference ratings of boy and girl classmates. These preferences ratings served as the dependent variables in a repeated measures ANOVA in which between-subjects variables were condition (label vs. control) and participant sex (girls vs. boys), and the within-subjects variables were time (pre- vs. post-test) and peer type (other- vs. same-sex).

Analyses revealed a significant three-way interaction among condition, time, and peer type, $F(1, 48) = 8.46, p = .005$. Subsumed by the interaction were two-way interactions between time and condition, $F(1, 48) = 14.26, p < .001$, and peer type and condition, $F(1, 48) = 16.39, p < .001$. Most notable was the decrease from pre- to post-test in other-sex peer preference for children in the label group. As shown in Figure 2, although there was no significant difference between the label and control conditions at pre-test, 2.07 (.58) versus 2.16 (.46), $t(55) = .64, p = .150$, the two groups differed significantly at post-test, 1.48 (.36) versus 2.36 (.37), $t(50) = .8.58, p < .001$.

Figure 2. Peer Preference Ratings

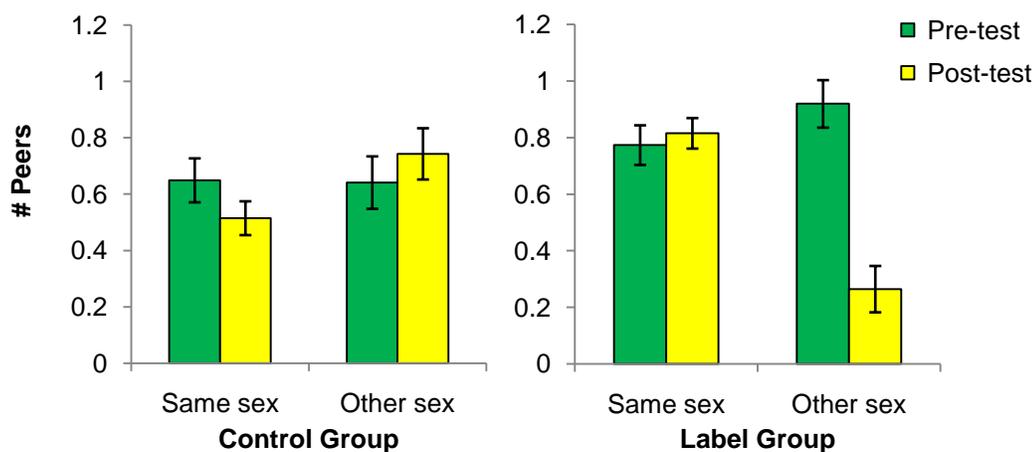


Unfamiliar-peer preference. The dependent variable for the unfamiliar peer preference was the participant's selection of either an unfamiliar own-sex group (i.e., the boy-only group for boys, or the girl-only group for girls) or an unfamiliar other-sex group (i.e., either the other- or the mixed-sex group). Data showed that children in the control condition chose other- or mixed-sex groups 37.5% of the time, whereas

children in the label condition chose other- or mixed-sex groups 14.3% of the time, yielding a marginal effect of group, $\chi^2(1) = 3.71, p = .054$.

Peer play observations. The dependent measure in the peer play data analysis was the number of boys and girls the target child interacted with, on average, for 15-second observational periods. The dependent variable was the ratio of play with same- and other-sex peers to the number of observations. A repeated measures ANOVA was conducted, in which between-subjects variables were condition (control vs. label) and participant sex (girls vs. boys), and within-subjects variables were time (beginning vs. end) and sex of peer.

Analyses revealed a significant interaction among condition, participant sex, time, and sex of peer, $F(1, 47) = 25.46, p < .001$. Most notably, children in the label group played with other-sex peers significantly less at the end of the study than at the beginning of the study, whereas children in the control group showed no significant difference in play with other-sex peers between the beginning and end (see Figure 3). Subsumed by the interaction were a three-way interaction between time, sex of peer, and participant sex, $F(1, 47) = 6.04, p = .018$, and an interaction between sex of peer and participant sex, $F(1, 47) = 13.64, p = .001$. As expected, across time and condition, girls were more likely to play with girls than boys, .74 (.52) versus .59 (.34), $F(1, 47) = 8.30, p = .006$, and boys were more likely to play with boys than girls, .79 (.39) versus .51 (.35), $F(1, 47) = 5.78, p = .020$.

Figure 3. Peer Play Observations

Personal Measures

Occupation and activity preference. Sex-typing of self was measured by the POAT-PM on a 0 to 3 scale. Preference scores were analyzed with a repeated measures ANOVA in which between-subjects variables were condition (label vs. control) and participant sex (girls vs. boys), and the within-subjects variables were time (pre- vs. post-test) and item type (feminine vs. masculine).

Analyses revealed a significant interaction between participant sex and item type, $F(1, 48) = 205.60, p < 0.001$. As expected, boys preferred masculine items more than feminine items, 2.50 (.24) versus 1.86 (.28), whereas girls preferred feminine items significantly more than masculine items, 2.48 (.21) versus 2.11 (.35). No other main effects or interactions were significant.

Classroom center observations. The dependent variable in the center observations were the number of boys and girls entering each of the centers. Two 5-minute observations taken at the start of the manipulation served as the “beginning” time point, and two 5-minute observations taken at the end of the manipulation served

as the “end” time point. A repeated measures ANOVA was conducted in which between-subjects variables were condition (label vs. control) and center (home-living vs. wood-working/blocks), and the within-subjects variables were time (beginning vs. end). There were no significant main effects or interactions.

Discussion

The major purpose of this study was to test predictions based on DIT in evaluating whether gendered classroom environments would affect preschool children’s gender stereotypes and intergroup biases. DIT proposes that highlighting social group categories in the environment would make qualities of groups appear important, creating stereotypes and in-group/out-group bias. Overall, findings were consistent with hypotheses and previous work, confirming that teachers’ use of gender labeling and gender-based classroom organization increased children’s gender attitudes and in-group biases.

Data showed a significant increase in children’s gender attitudes in the label condition. As measured by subscales of the POAT-AM, children in the label group were less likely to give “both” (i.e., flexible) responses than children in the control group at post-test. These findings are consistent with previous work with gendered classrooms in older children (Bigler, 1995) and novel group paradigms with younger children (Patterson & Bigler, 2006). However, no previous work had investigated the impact of gendered classroom environments on young children. It is likely that the increase of stereotypes could be partly due to the pre-existing salience of gender. Namely, children were already aware of gender as a social category before the study, yet the manipulation enhanced children’s awareness of group differences. Also, the

strong effect of condition could be due to the nature of young children's basic categorization skills; if a category is salient and children possess strict rules for categorizing, then highlighting gender as a social category would strengthen the preference for in-group (i.e., same-sex) over out-group (i.e., other-sex) peers.

In addition to addressing children's sex-typed attitudes, it was important to assess the impact of the classroom conditions on children's in-group/out-group bias. It was predicted that if gender attitudes increased, then the gendered environment would create stronger intergroup biases. Children's intergroup preferences were assessed through multiple measures. First, we measured children's preference of familiar peers. Consistent with predictions, there was an effect of condition on other-sex preference as measured by a peer preference measure. Specifically, children in the label group stated that they liked other-sex peers significantly less at post-test than at pre-test. This effect was not present for children in the control group. Children's same-sex preferences did not, however, change across time for either group. Thus, gendered classroom environment in the label condition did not affect how children rated their same-sex peers but created an out-group bias where children preferred other-sex peers less as a result of the gendered classroom environment.

Second, it was predicted that children's intergroup bias toward unfamiliar (i.e., potential future) peers would strengthen as a result of making gender a more salient category. Supportive of this hypothesis, children in the label classrooms preferred unfamiliar mixed-sex groups less than children in the control group. This finding suggests that that the teachers' use of gender categorization not only affected

children's gender flexibility and liking of familiar peers, but future peer preference choices as well.

Third, observational methods were conducted to directly assess children's in-group and out-group play preferences. Data showed a significant decrease in observed other-sex peer play from the beginning to the end of the manipulation for children in the label, but not in the control, condition. Children in the label condition were significantly less likely to choose other-sex peers as playmates at the end of the two week manipulation than were children in the control condition. Parallel to the familiar peer preference findings, children across conditions were not significantly more likely to play with same-sex peers at post-test than at pre-test.

Teacher's gender labeling made a significant change in children's individual behaviors after only a two week manipulation. The implications of these findings are important on two levels. First, this study contributes to existing literature by providing empirical evidence that a short-term change in children's environments can affect behavior. Second, it sets forth plausible explanations for and information about children's peer group choices. Previous work has shown that young children hold strong same-sex peer preferences (Fabes, Martin, & Hanish, 2003; Maccoby & Jacklin, 1987). It will be important for future research to investigate the long-term consequences of same-sex peer preference, such as differences in seemingly separate peer cultures of boys and girls and the development of children's activity and occupational choices. The present work provided evidence that an emphasis on gender categorization affects those with whom children choose to play.

Finally, the data bear on the impact of the labeling interventions on children's personal activity and occupation preferences. There was not an effect of condition on children's personal preferences as assessed with the POAT-PM. These findings are congruent with previous work (e.g., see Bigler, 1995; Bigler & Liben, 1990) and it is suggested that short-term manipulations are not powerful enough to change children's own sex typed preferences. As expected, children held sex-specific preferences across conditions; that is, boys preferred masculine items more than feminine items and girls preferred feminine items more than masculine items.

Children's personal preferences were also assessed with the classroom center observations; these focused on children's play choice in two classroom centers: home-living and wood-working/blocks. The notion that children in the label group would play more in traditionally sex typed centers (i.e., boys would play more in the wood-working center; girls would play more in the family center) as a result of the manipulation was not supported. Overall, sex of participant did not predict in which center they would play. In addition, classroom condition (e.g., label vs. control) did not affect the amount of sex typed play in the centers. One possible reason for these findings is that the assumption that the centers provided sex-typed play was not met and the centers chosen did not elicit stereotypical feminine or masculine play. Thus, boys and girls may be just as likely to play in either of the centers.

Overall, the data show that children are attentive to cues in their environment about social group categories. Further support for the powerful and quick effects of condition was noted anecdotally insofar as teachers in the label condition reported that children were quick to pick up on the gender categorization. Soon after the

implementation of the gendered environment, children organized themselves by gender. One teacher noted that on the second day of the manipulation, without prompting from the teacher, children were implementing separate “boys” and “girls” snack tables.

Limitations and Future Directions

The current study has various limitations as well as implications for future work. The study design did not include a follow-up measure of children’s attitudes after teachers stopped using gender in the classroom. Additional research is needed to determine the extent of the impact on the children’s stereotypes. For example, a follow-up measure might be used to determine how lasting the effects of the study were on the children’s gender attitudes, as the duration and malleability of these effects is uncertain.

The results of the present study provide a demonstration that even minimal categorization skills are sufficient to support the kinds of social-group processes that have been reported in older children. Gendered classroom environments strengthened children’s gender stereotypes, and, as hypothesized in DIT, led to stronger intergroup biases. The findings have important implications for the effects of the use of gender at a classroom and a societal level. Preschool and elementary schools continue to use gender organizationally and through language. In addition, it is very common to see gender used categorically (e.g., separate bathrooms, sports teams, toy aisles, etc.). The ways that environments are structured appear to play an important role in children’s developing attitudes. These effects occurred in preschoolers and after only

two weeks, making clear that even very young children are susceptible to the powerful effects of focusing on gender.

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