Researchers and theorists have long regarded play as an important stimulus for diverse aspects of child development. Through play, children develop the social, emotional, cognitive, and verbal skills necessary to interact and maintain relationships with peers. Interaction with peers allows children to learn about perspective taking, self-regulation, cooperation, and negotiation (Welsh, Bierman, & Pope, 2000).

Katz, McClellan, Fuller, and Walz (1995) proposed that social skills are learned mostly through interactive processes and the give and take of peer play. During play, a child learns to be gentle or aggressive, a friend or a bully. Often, the preschool classroom provides an important opportunity for children to explore and attain these needed social skills. Most of the play that occurs, however, takes place in a formal setting in the presence of a teacher or other adult. Katz and colleagues (1995) maintain that methods of discipline used by teachers can influence children’s social development. The conflicts and social problems that arise in play give the teacher the ideal opportunity to advance children’s social development. However, they warn that while intervention is a part of the teacher’s role, more intervention is not necessarily better. In their view, children must be allowed a chance to work things out for themselves in order to learn to communicate and cooperate effectively. Competent preschool children are not as dependent on an adult’s guidance and supervision to contain impulses, follow rules, and cooperate (Elicker, Englund, & Sroufe, 1992).

One question that arises from the literature is whether the mere presence of a teacher in a classroom (without interacting) has an impact on the play behavior of preschool children. Piaget (1952) suggested that play, in and of itself, is free from conflict; “in play... the conflicts are transposed in such a way that the ego is revenged, either by suppression of the problem or by giving it an acceptable solution” (p.149). According to his view, the presence (or absence) of a teacher in a classroom would not affect the aggressive behavior of children during play because that behavior does not exist. Unfortunately, current empirical research has not been conducted on adult supervision of preschool children. Perhaps preschool children are assumed to need adult supervision at all times. The research that does exist, however, suggests otherwise.

Siegel (1957) examined changes in the aggressive behavior of children in the absence of an adult. She found that aggression significantly decreased from
one play session to the next. This finding contradicted early research conducted by Ruth Phillips (1945; as cited in Siegel, 1957) who found that aggression increased from one session to the next when an adult was present. Thus, Siegel hypothesized that the differences in the two studies might have been due to the presence or absence of an adult.

Siegel and Kohn (1959) conducted a second study to test this hypothesis. They randomly assigned boy-boy pairs to two conditions: Adult-Absence and Adult-Presence. The results indicated that participants in the Adult-Absence condition showed less aggression in the second session. Thus, they concluded that the children were less aggressive in the absence of an adult. Siegel and Kohn did seem to be eliciting aggression for their study by using aggressive toys with boy participants who knew each other.

Besevegis and Lore (1983) attempted to take a broader look at the effects of adult supervision on play. Up until this time, little research had been conducted on the role of adult supervision on cooperative play. For their experiment, Besevegis and Lore used 12 like-sex pairs (both boy-boy and girl-girl) in two sessions with an adult present. The remaining 12 like-sex pairs participated in two sessions with an adult absent. They defined negative behavior as any movement, gesture or verbalization that intentionally injures a child or reduces the possibility for friendly and cooperative play, and positive behavior as any movement, gesture or verbalization that promotes positive social contact, interaction, and cooperation. They also defined play strategies as cooperative, parallel or independent. Besevegis and Lore found that child pairs in the adult absent condition exhibited significantly less negative behavior than children in the adult present condition. They also found more positive behavior (although not significantly more) in the adult absent condition. In addition, more cooperative play was evident in the absence of the adult. Besevegis and Lore suggested that children learn that when no adult is present to intervene, a peer is likely to respond to an aggressive act with a counterattack, thus lowering initial instances of aggression.

The research findings on adult supervision thus far have been very fascinating and counterintuitive; yet with the limited amount of research conducted, many questions remain unanswered. For example, Siegel (1957) and Besevegis and Lore (1983) used only same-sex and similar age pairs for their experiment. An interesting area for further exploration concerns the effects of adult supervision for mixed-age and mixed-sex pairs. The literature suggests that in normal play situations, same sex pairs engage in more cooperative play, while opposite sex pairs engage in more independent play (Ausch, 1994; Fehr, 1996). The absence or presence of an adult may also have an effect on overall gender differences. In normal play situations, girls tend to engage in more cooperative play and boys in more parallel play (Neppl, 1997; Rubin, Watson, & Jambor, 1978). Also, most of the research conducted on this subject has focused on a passive, unfamiliar adult present. The presence of a familiar adult may cause children to engage in different play strategies.

The purpose of this study was to explore the effects of a familiar adult’s presence (or absence), and gender, on the play strategies and behavior of preschool children (grouped into same and opposite-sex pairs). Specifically, the goals of this study were to determine if preschoolers engage in more cooperative play and positive behaviors when an adult is absent or present; whether there are basic gender differences in play strategies and behaviors; and if pairing children of different ages into same and opposite-sex pairs has any effect on play strategies and behavior. Based on the previous literature, it was hypothesized that children would engage in more cooperative play and positive behavior when the familiar adult is absent, and more aggression and negative behavior when that adult is present. Girls were hypothesized to engage in more cooperative play, while boys engaged in more parallel play. Also, based on research findings, boy-boy pairs were hypothesized to engage in more parallel play, girl-girl pairs in more cooperative play, and boy-girl pairs in more independent play.

Method

Participants

Thirty-two preschool children, 17 boys and 15 girls, from the Heights of Learning Childcare Center in Topeka, Kansas were selected to participate in this study. The ages of the children ranged from 35 months to 72 months with a mean age of 46.1 months. All of the children (except one) were Caucasian. Based upon parental income level, all participants were from middle-class homes.

Each child was randomly assigned to one of 16 pairs (six boy-boy pairs, five girl-girl pairs, and five boy-girl pairs) with two restrictions. First, the children had to be of different ages. Eleven pairs of children were separated in age by one year and four pairs of children were two years apart in age. One pair was the same age due to unforeseen consequences of random assignment to pairs. The mean age difference for all of the pairs was 1.19 (.54). The second restriction was that there were an equal number of “adult present” and “adult absent” sessions. Each pair participated in two 10 min counterbalanced play sessions. In one
All participants were treated in accordance with the ethical standards of the APA (American Psychological Association, 2001).

Procedure
All sessions took place in a 4 m X 5 m room that had an open observation window to look through. A glass plate was inserted into the open window in order to make sure the participants did not notice the experimenter. A video camera in the corner of the room recorded the play sessions. The camera began recording before the children entered the room so that they would be less likely to notice its presence. There was a large 1 m X 2 m table in the back of the room for the adult to work at in the adult present condition. The room had many toys including a garage with cars, a farm set, puzzles, Barbies®, Bob the Builder’s Learning Workshop, Buzz Lightyear, a Monsters Inc. book, and a Taz bobo doll. These toys were arranged along the length of the floor. The room also had two chalkboards.

For each play session, the adult supervisor asked the pair of children if they wanted to play with some fun toys. After agreeing, the children were directed to the playroom. On the way there, the adult told the children, “You can play with any of the toys [in the playroom] and then tell me which ones you liked the best.”

If the adult was to be present in the room, the children were then told, “I have some work to do at the table, so you go ahead and play.” If the children initiated interaction with the adult, they were passively responded to by either nodding or asking them to play with the toys. The adult then did her work and, after approximately 10 min, the children were asked which toys they liked the best. They were then taken back to their classroom.

If the adult was to be absent from the room, the same basic procedure was followed. After instructing the children to play with the toys she told them, “I have to go get something and I’ll be right back.” The adult returned approximately 10 min later. Both play sessions were identical, and the orders of the sessions (absent or present) for each pair were randomized to limit any carryover effects. Most of the paired sessions were separated by five to 10 days, with four sessions only three days apart due to time constraints.

Behavioral Measures
The experimenter later coded the tapes. To ensure reliability, an advanced undergraduate student (who was blind as to the purpose of the experiment) coded 12 of the 32 sessions. The rating system used to quantify behaviors and play strategies was adapted from Besseygis and Lore (1983). Behaviors were defined as positive or negative according to verbal, physical, or bodily expressions. Positive verbal behaviors were characterized by propositions for play and cooperation, acceptance of offers, compliance, initiating conversation, share of information, or praise. Negative verbal behaviors were threats of physical violence, commands, refusals to comply, demands, rejections, name calling, and possession claims. Positive motor/physical behaviors included any non-aggressive physical contact, active assistance, patting, hugging, toy offer, toy acceptance, attempts to initiate interaction, and acceptance of initiations. Conversely, hitting, kicking, punching, struggling over a toy, chasing, wrestling, and pushing were recorded as negative motor/physical behaviors. Finally, a smile or laugh was labeled as positive bodily gestures/facial expressions and a frown, grimace, tongue out, threatening stance, raising hand, and clenching teeth were coded as negative bodily gestures/facial expressions. An event sampling technique was used to record each and every occurrence of these behaviors.

Behavior was also coded for the dominant form of play exhibited by each child using time sampling.

### Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>boy-boy</th>
<th>girl-girl</th>
<th>boy-girl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooperative Play</td>
<td>4.33</td>
<td>2.00</td>
<td>2.80</td>
</tr>
<tr>
<td>Parallel Play</td>
<td>4.83</td>
<td>6.80</td>
<td>3.80</td>
</tr>
<tr>
<td>Independent Play</td>
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<td>1.00</td>
<td>3.20</td>
</tr>
<tr>
<td>Positive Behavior</td>
<td>19.50</td>
<td>21.40</td>
<td>17.30</td>
</tr>
<tr>
<td>Negative Behavior</td>
<td>1.08</td>
<td>1.80</td>
<td>1.20</td>
</tr>
<tr>
<td>Present</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooperative Play</td>
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<td>2.20</td>
<td>.80</td>
</tr>
<tr>
<td>Parallel Play</td>
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<td>7.00</td>
</tr>
<tr>
<td>Independent Play</td>
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<td>2.00</td>
</tr>
<tr>
<td>Positive Behavior</td>
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<td>11.10</td>
<td>8.90</td>
</tr>
<tr>
<td>Negative Behavior</td>
<td>2.08</td>
<td>1.00</td>
<td>.80</td>
</tr>
</tbody>
</table>
Again using Beseguis and Lore’s (1983) system, play was defined as cooperative (peers act together to perform a common task), parallel (children play next to each other, with or without interaction taking place), or independent (children play independently from each other, using different toys in different activities). Each session was divided into one-minute play periods and at the end of each minute, the experimenter recorded, in her judgment, the dominant play type for that minute.

The data coding sheets consisted of a column of the six behaviors and four types of play described above. Two other columns were identified as Subject 1 and 2. The name of the coder, pair number and condition was also indicated on the sheet. Tally marks were used to count positive/negative behaviors, which were later summed for analysis purposes. Tally marks were also used to count the number of intervals in which each type of play occurred. Coding play type and counting positive and negative behaviors were conducted in separate viewings to ensure accuracy in coding.

Results

Reliability

The interobserver reliability of the experimenter and undergraduate student was calculated by dividing the total number of agreements by A (experimenter) and B (student coder) by the total errors made by A and B (Beseguis & Lore, 1983). The reliability was .80 for twelve of the play sessions.

Statistical Analyses

Two mixed design Analysis of Variances (ANOVAs) were performed on the type of play (cooperative, parallel, and independent) and behavior (positive and negative). One mixed design ANOVA included a two level within factor (adult presence/absence) and a three level between factor (boy-boy, girl-girl, and boy-girl). The other mixed design involved two between subject factors (sex of participant and presence/absence of adult).

Play Type (Cooperative, Parallel and Independent). There was a significant main effect of gender in that boys tended to engage in more cooperative play, $F(1,31)=12.015$, $p<.001$. Girl-girl pairs tended to engage in the most parallel play, $F(1,21)=10.545$, $p<.001$. Boy-girl pairs tended to engage in the most independent play, $F(1,21)=5.097$, $p=.009$. Table 1 shows the mean frequency and standard deviations for the effects of condition and pair type on play strategy (cooperative, parallel, and independent) and behaviors (positive and negative).

There was also a significant interaction between condition and pair type for parallel play, $F(1,21)=9.98$, $p<.0001$. Boy-girl pairs (when the adult was present) exhibited the most parallel play. Boy-boy pairs (when the adult was absent) exhibited the least amount of parallel play (see Table 1). All other main effects and interactions for play strategies (cooperative, parallel, and independent) were not significant ($p > .13$).

Positive Behaviors. Due to a lack of significant individual effects, all instances of positive verbal, motor, and bodily expressions were combined into a sum total for positive behaviors. A significant main effect was found for experimental condition (adult present vs. adult absent), $F(3,1)=10.361$, $p = .002$; children in the adult absent condition exhibited the most positive behaviors than children in the adult present condition. The mean number (and standard deviation) of positive behaviors were 19.41 (12.12) for children in the adult absent condition, and 11.41 (7.11) for children in the adult present condition. All other main effects and interactions were not significant ($p > .47$).

Negative Behaviors. Due to a lack of significant individual effects, all instance of negative verbal, motor, and bodily expressions were combined into a sum total for negative behaviors. Neither the main effects nor the interactions were significant ($p > .41$).

Discussion

This study hypothesized that preschool children would engage in more cooperative play and positive behavior when a familiar adult was absent and more aggression when that adult was present. The results of this study support the notion that children do engage in more positive behavior overall when an adult is absent. However, children in the adult absent condition did not display more cooperative play than in the adult present condition.

Since more positive behaviors occurred in the absence of an adult, one would expect there to be more negative behaviors in the presence of an adult. However, this was not the case. When taking a closer look at the total occurrences of negative behavior, the lack of significant differences was probably due to the low occurrence of negative behavior overall. Children in the adult absent and present condition had a mean of 1.34 occurrences of negative behavior during one
10 min play session as compared to 17.41 positive behaviors in the same session.

Many possible explanations exist for the low occurrence of negative behaviors (aggression) in this study. First, the pairs of children were assigned according to different ages. This age difference may have inhibited conflict because older children are taught to play nice around those who are younger than they are. The younger children may have been fearful or intimidated by the older children. Second, the two children were not from the same classroom and did not know each other. Even young children are taught by their parents that they are to “use their manners” around strangers. Thus, a child may be hesitant to behave aggressively and may in fact engage in positive interactions with unfamiliar playmates. Third, a variety of toys were available in this experiment. Perhaps the multitude of toy options did not provide enough opportunities for conflict. Fourth, the division of pairs into like and opposite-sex pairs may have been a contributing factor for low aggression because opposite sex pairs are less likely to interact with each other (Edwards, 1992). However, if this were the case, one would expect a decrease in, or lack of, positive behavior as well, which did not happen. Fifth, in Siegel and Kohn’s (1959) study, boy-boy pairs were utilized for the specific purpose of eliciting aggression. The present study looked at boy-boy pairs, as well as boy-girl and girl-girl pairs. Girls are typically not as aggressive as boys (Fehr, 1996), and therefore their behavior may have contributed to a lower mean for negative behaviors. Finally, and perhaps most convincingly, the mere presence of a familiar adult may have restricted the amount of aggression the children were willing to display. In this study the familiar adult was a teacher for most of the children and they knew quite well the boundaries of acceptable behavior in the daycare center. Even in the absence of the adult, the children may have been fearful that the adult was watching or was going to return to the classroom at any moment. Therefore, they may not have engaged in aggressive behavior due to the fear of being caught.

Some of the results of this study are different from those of the Besevegis and Lore’s (1983) study. Besevegis and Lore found more aggressive behavior in the presence of an adult, while this study did not. They also found more cooperative play in the absence of an adult, while this study did not. They did not find a significant difference for positive behavior, which this study did. Many differences exist between our study and Besevegis and Lore’s study, and these differences may account for the discrepancy among the results. One difference was in the procedural method. When the adult was to be absent for the play session, the children were told that the adult would knock before coming back into the room. The children would have to say it was okay for the adult to come in. In this study, knocking was not made apparent. When the adult was absent, perhaps the children feared that the familiar adult would come back and catch them engaging in an unacceptable manner.

This study also hypothesized that overall gender differences would show that girls tend to engage in more cooperative play and boys more parallel play. The results of this study indicate just the opposite. The boys engaged in more cooperative play and the girls engaged in more parallel play. Also, differences among pair types (boy-boy, girl-girl, and boy-girl) were hypothesized. Boy-boy pairs would engage in more parallel play, girl-girl pairs in more cooperative play, and boy-girl pairs in more independent play. Boy-girl pairs engaged in more independent play; but, once again, boy-boy pairs engaged in more cooperative play and girl-girl pairs engaged in more parallel play. One possible explanation as to why the hypothesis in this study was not supported is that the gender specific toys fostered such a result. Most of the girls who participated in this study were interested in playing with one of three available Barbies. The girls played beside each other with their own Barbies and clothes, interacting only occasionally. Therefore, playing with Barbies appeared to be a task involving parallel play. On the other hand, most of the boys wanted to play with either the Taz bobo doll or the Bob the Builder workshop. Because there was only one bobo doll and one workshop, the boys had to take turns sharing them. Thus, playing with either of these two toys required cooperative play.

One other major limitation of this study was that the coders were not blind to the conditions during the coding process. The coders were aware, when watching the videotape, whether or not the adult stayed in the room and thus the data may reflect that bias.

Further research may focus on eliciting more aggression by reducing the number of toys present and pairing children of the same age and gender, in order to see the differences between experimental conditions. Significant differences, as in the case of cooperative play, might also be obtained simply by gathering a larger sample size of preschool children. Replicating this experiment with an active adult or examining the effects of condition (adult present/absent) order might also be beneficial.

A very important implication can be derived from this study. Edwards (1992) reminds us that so often preschool classrooms are “the organized product of parents’ intention and selection of a peer setting where children will be supervised in modes of playing and
interacting beneficial for school success” (p. 313). The findings of this study support the notion that this method may not be necessary, as children tend to engage in more positive behaviors when a familiar adult is absent. Although this is counterintuitive, it does suggest that children may actually be kinder to one another in the absence of an adult. Perhaps all adults should be made aware that supervision of preschool children while playing may not be as necessary as once thought.

References