

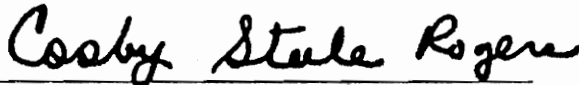
THE EFFECTS OF TOY EXPOSURE ON CHILDREN'S
PROSOCIAL AND ANTISOCIAL BEHAVIOR

by

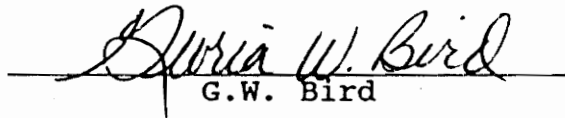
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Thesis submitted to the Faculty of the
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in partial fulfillment of the requirements for the degree of
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in
Child Development

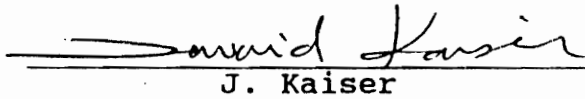
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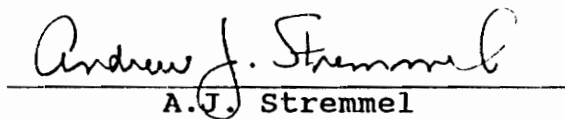
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THE EFFECTS OF TOY EXPOSURE ON CHILDREN'S
SOCIAL BEHAVIOR

by

Tara Snyder

Committee Chairperson: Cosby S. Rogers

Family and Child Development

(ABSTRACT)

The purpose of the present study was to examine the relationship between exposure to prosocial and antisocial toys and the subsequent effects on children's short-term prosocial and antisocial behavior. The behaviors examined were physical antisocial behavior, verbal antisocial behavior, physical prosocial behavior, and verbal prosocial behavior. The dependent measures for these behaviors were constructed based upon Turner and Goldsmith's (1976) measures for antisocial behavior, Potts, Huston, and Wright's (1986) measures for prosocial behavior, and Radke-Yarrow, Zahn-Waxler, and Chapman's (1983) description of prosocial behavior. The theoretical basis for this study lies in the social learning theories offered by Bandura (1977) and Berkowitz (1974).

Multivariate Analyses of Variance and Wilcoxon's signed-rank tests were used to test the hypotheses. Main effects were found for toy condition and for gender. The antisocial toy condition yielded the highest rates of antisocial behavior. The prosocial toy condition yielded

the highest rates of prosocial behavior. The girls' behaviors tended to be of a verbal nature, and the boy's behaviors tended to be of a physical nature.

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CHAPTER 1

Introduction

Play, its role in preschool curriculum, and the ways in which it contributes to the development of children continue to be recurring themes in early childhood education literature. Only recently, however, has play emerged as a viable area of study for the "psychologist-researcher". Carmichael's Manual of Child Psychology (Mussen, 1970), an important reference text utilized by researchers, did not contain a chapter on play in its 1970 edition. Of its 2,400 pages, only 24 even mentioned the terms play, doll play, games, or playfulness. Now, however, play is an important component of the manual. One volume of The latest edition of the manual (Mussen & Hetherington, 1983) devoted one chapter, authored by Rubin, Fein, & Vandenberg, exclusively to play. Monighan-Nourot, Scales, and Van Hoorn (1987) pointed out that the chapter cited 450 references, with 60% of them pertaining to post-1970 research.

Background of the Problem

Martin, Brady, and Williams (1991) noted a research area related to play which has received little research attention: the effects of environmental arrangements on children's social interactions. Martin (1988) demonstrated that the following environmental variables tend to influence

social behavior: scheduling, spacing of children, and availability of materials. As Martin and her associates (1991) pointed out, a few research projects have been centered specifically around the relationship between toy types and the social behavior displayed by children (e.g., Hendrickson, Strain, Tremblay, & Shores (1981). A frequently cited study which focused primarily on the influences of playing with war toys was conducted over twenty-five years ago by Turner and Goldsmith (1976). As described in the Review of Literature, more recent studies have considered topics ranging from the effects of aggressive play on subsequent play behavior, to the effects of violent television content on social behavior. However, in the 1990s, very little research has focused on the effects of exposure to prefabricated prosocial and antisocial toys on children's subsequent prosocial and antisocial behavior.

Research into children's prosocial behaviors (behaviors which demonstrate concern or caring for another person) has not typically centered around toys. Moore (1977) reviewed research in the area of television's effects on children's prosocial behavior. Other studies (e.g., Yarrow & Waxler, 1976) have considered various dimensions of prosocial behavior, such as its relationship to aggressive behavior. Radke-Yarrow, Zahn-Waxler, and Chapman (1983) reported that, in the area of children's prosocial behavior, parent/child

interactions and peer interactions have been studied fairly frequently. However, the effects of other "personal socializers" on children's prosocial behavior, such as teachers, neighbors, and police, have rarely been examined. Other socializing agents receiving little to moderate attention include cultural variables and social class. Still less attention has been devoted to children's toys. In fact, a chapter devoted exclusively to children's prosocial dispositions and behavior, authored by Radke-Yarrow and her colleagues (1983), does not include even a small section on research concerning the effects of toys on children's prosocial behaviors. Research in the area is extremely limited. The personal socializer which receives the most research attention is television (Radke-Yarrow et al.).

A recent investigation into the effects of toys on social behavior was conducted by Martin, Brady, and Williams (1991). They examined social behaviors such as verbal interactions with peers and social gestures directed to an adult or peer. These social behaviors are not equivalent to prosocial behaviors, however. Prosocial behavior is a specific type or category of social behavior. The term social behavior refers to the many actions that children use to help them to operate effectively in their social environments. Social behaviors include

displaying responsibility, independence, self-control, and purpose. Prosocial behaviors include nurturing, cooperation, and turn-taking. There is a lack of empirical research which specifically focuses on the effects of prosocial toys on the prosocial and antisocial behaviors displayed by children.

Statement of Purpose

Turner and Goldsmith's (1976) classic study is described by Thomas Radecki (1986), chairman of the National Coalition on Television Violence , as "the most detailed study to link violent toys with violent behavior...In it, violent toys were associated with twice the level of anti-social behavior as non-violent toys" (p. 26). The present study was intended to follow, yet expand upon, the research conducted by Turner and Goldsmith. Their classic study will be reviewed and discussed in the Review of Literature. To briefly summarize their research, Turner and Goldsmith examined the effects of toy guns and toy airplanes on children's antisocial behavior. The toy guns treatment resulted in a higher rate of antisocial behavior than the toy airplanes treatment and the usual toys treatment. The present study extended upon this research by also examining the influences of prosocial toys on children's prosocial and antisocial behavior. The purpose of the present study was to investigate the short-term effects of toy exposure on the prosocial and antisocial behaviors that children display

during free play. Novel antisocial toys, novel prosocial toys, and usual toys were utilized in the experiment.

Operational Definitions of Terms

1. Prosocial Behavior. Behavior which demonstrates caring or concern for another person, or which benefits another person. This behavior does not necessarily originate as an unselfish act; both parties may benefit from a prosocial act. The behavioral definitions for prosocial behavior employed by Potts, Huston, and Wright (1986) were utilized for this study. These definitions were cooperation, turntaking, helping/sharing, and suggests rules/requests help. Four additional definitions for prosocial behavior were constructed based upon the prosocial actions described by Radke-Yarrow and her associates (1983): physical affection to person, physical affection to object, nurturant behavior to person, and nurturant behavior to object.
2. Prosocial Toys. Commercially made toys which tend to promote the prosocial behaviors described above.
3. Antisocial Behavior. Antisocial behavior refers to "the intentional infliction of some type of harm upon others" (Barron, 1977). It also includes antisocial acts: those acts which are intended to destroy, damage and/or punish both animate and inanimate objects.

More specifically, antisocial behavior is measured in a manner consistent with Turner and Goldsmith's (1976) method. Physical antisocial behavior includes hitting, biting, kicking, pushing, shoving, grabbing, destroying, and breaking rules. It should be noted that many research articles tend to use the terms aggression and antisocial behavior interchangeably. Also, the behavioral definitions designed to measure aggression in one study are often seen in another study serving to measure antisocial behavior. For the present study, a clear distinction is not drawn between antisocial behavior and aggression; they are treated as interchangeable terms.

4. Antisocial Toys. "Those commercially available playthings which, by design, imitate real objects used for killing, destruction, and/or other acts requiring the exercise of extreme force" (Mendoza, 1972).

CHAPTER 2

Review of Literature

Research into the effects of children's toy choice or toy exposure on children's social behavior has declined since the late 1970s. Current research concerning children's prosocial and antisocial behavior seems to be influenced by technology and the deregulation of children's television. Research that has focused on the effects of war toys on children's antisocial behavior is presented below. The research is grouped into two categories: (a) those studies which demonstrate no effects of war toys on antisocial behavior or aggression; and (b) those studies which demonstrate some effect of war toys on antisocial behavior or aggression. This categorization is borrowed from Brian Sutton-Smith (1988). Due to the lack of empirical studies designed to investigate the effects of prosocial toys on prosocial behavior, no similar categorization is used for prosocial toys. Research concerning children's prosocial behavior in relation to other variables is presented below. The study which serves as a model for the present experiment (Turner & Goldsmith, 1976) is thoroughly outlined and discussed below.

For clarity, the outline of this Review of Literature is provided:

1. The Role of Toys in Children's Play
2. Effects of Toy Realism and Structure on Dramatic Play

3. Effects of Toys on Children's Social and Cognitive Play Levels
4. Research on Preschoolers' Prosocial Behavior
5. Research on Preschoolers' Antisocial Behavior
6. Effects of War Toys on Children's Antisocial Behavior
7. Gender Difference in Children's Play
8. Theoretical Explanations for Antisocial and Prosocial Behavior
9. Summary
10. Hypotheses

The Role of Toys in Children's Play

Toys have considerable meaning and importance in the lives of children. McLoyd (1986) pointed out research which has demonstrated that preschoolers devote 25% of their waking hours playing with store-bought (manufactured) toys, household utensils, and natural play objects (e.g., sticks and stones). Research has also demonstrated that children play with store-bought toys about three times as often as they play with materials that are not designed to be used as toys (Giddings & Halverson, 1981).

McLoyd (1986) has examined Vygotsky's and El'Konin's views on the development of object pretense in preschool children. According to Vygotsky (1934/1967), children initially view the object as superior to the object's meaning. Thus, children tend to allow the object to set the

stage for their actions. With the onset of pretend play in the preschool years, this scenario changes. Meaning and immediate reality begin to separate, and the child is able to apply meanings to an object which are not typically attached to the object.

Elder and Pederson (1978) examined the relationship between age and preschoolers use of materials in symbolic play. The researchers asked children ranging in age from 2 1/2 to 3 1/2 years to pretend to apply an action (e.g., hair combing) to an object usually associated with the action (e.g., a comb). The children were to first perform the action using no object, then using a substitute object with no specific purpose (but which resembled the imagined object), and then using an object which held a specific purpose (but which did not resemble the imagined object). The 2 1/2-year-olds performed better in the similar condition than in the no object and the dissimilar conditions. There was no significant difference in any condition among the 3 1/2-year-olds. McLoyd (1986) concluded that the study suggests that, at some point in the third year of life, a child is able to mentally represent common objects without concrete and realistic objects which are physically and functionally dissimilar to the imagined objects.

The present study was conducted on four- and five-year-olds. One reason for using this age range is that four- and

five-year-olds typically have developed object substitution. Thus, they are able to use prefabricated toys (such as a prosocial doctor kit or an antisocial machine gun) in a variety of ways: ranging from ways consistent with the objects' intended purposes to ways completely in conflict with objects' intended purposes.

Effects of Toy Realism and Structure on Dramatic Play

Smilansky (1968) offered several advantages and disadvantages of filling children's play environments with highly realistic and structured toys. She suggested that play with such toys is "at once both highly satisfying, from an emotional point of view, and limiting, from a play-potential point of view" (p. 23). Such toys are emotionally satisfying since children who play with them feel that they are really behaving in an adult (or superhero, or bad guy, etc.) manner and they they are imitating exactly a specific behavior. Unfortunately, highly realistic and structured toys are limiting in that they lend themselves only to play that is consistent with conventional uses of the objects. Thus, children's creativity is limited.

Vygotsky (1934/1967) and El'Konin (1966) viewed the emergence of pretense play as being dependent on an older peer or adult. They noted that, in their play interactions with children, adults tend to model and/or instruct actions to children. So adults instruct children on how to play

with and apply actions to manufactured toys. Eventually children are able to apply the actions to objects similar to and, later, not-so-similar to the original object. Thus adults are important contributors to children's play. An adult can help guide a young child to play with prefabricated toys in a variety of creative and imaginative ways. For example, a teacher or parent may encourage a child to use a toy truck to substitute for several different objects, such as a spaceship or bus.

Johnson, Christie, and Yawkey (1987) reported several studies on the effects of toy realism and structure on pretend play. They concluded that young preschoolers (ages three and under) benefit from highly realistic and structured toys in that these toys encourage dramatic play. These young children seem to require such toys in order to become involved in make-believe. They do not have the representational skills necessary to use abstract toys in dramatic play. Pulaski (1973) found the opposite scenario existing in older children. Children older than age three tend to not need exact replicas to become involved in make-believe. In fact, highly realistic and structured toys tend to decrease the level of imaginativeness expressed by older children.

Effects of Toys on Children's Social and Cognitive Play Levels

Johnson, Christie, and Yawkey (1987) summarized

research which concentrated on the effects of various play materials and toys on preschoolers' social play. A general finding was that some materials tend to promote solitary and parallel play while others tend to promote group play. More specifically, toys such as cars, trucks, housekeeping tools, and dolls are linked to increased levels of group play (considered to be social play). Instructional materials and construction materials are linked to increased levels of parallel and solitary play (considered to be nonsocial play). Block play falls somewhere between these two play endpoints.

Rubin (1977) and Rubin and Seibel (1979) considered the social and cognitive contributions of various toys and play materials. Johnson, Christie, and Yawkey (1987) summarized the findings, noting a relationship between play materials and toys and cognitive play levels. Materials associated with social group play, such as housekeeping tools and dolls, tended to encourage dramatic play, while art supplies (e.g., markers and scissors), which require the use of fine motor skills, seemed to promote constructive play. Functional play usually resulted when sand, water, and clay were readily available, while constructive and dramatic play tended to result from play with blocks.

Research on the relationship between toys and children's social and cognitive play levels suggests that

toys have a powerful impact on children's play. Toy choice or exposure is related to whether children play alone or with peers. Toy choice also affects the types of play in which children engage. These findings lead to the conclusion that toys are strong influences on behavior. Therefore, if a parent wants to promote prosocial behaviors in a child, the parent should provide the child with prosocial toys. An underlying assumption of the present study was that toys indeed tend to elicit accompanying behaviors.

Research on Preschoolers' Prosocial Behavior

As Radke-Yarrow and her colleagues (1983) pointed out, most of what early childhood researchers and psychologists know about preschoolers' prosocial behavior was obtained by studying children in nursery schools. Very little is known about children who are raised primarily with only adult or older peer contact. Murphy (1937) led the first investigation into nursery school children's sympathy. Murphy reported finding a large range of prosocial actions in children (e.g., protecting and defending, warning a peer of impending danger, comforting, requesting adult assistance to aid a peer). Individual differences were also reported. While some children appeared to ignore a peer in distress, others showed large degrees of sympathy and comfort. Sawin (1980) reported results that were consistent with those offered by Murphy. Sawin observed the reactions of children

(on a nursery school playground) witnessing a child who was clearly upset and could not stop crying. The children's reactions ranged from threatening the child who had upset the crying child (5%) to seeking adult assistance for the crying child (10%) to directly comforting the crying child (17%). About one-half of the children appeared to be concerned and empathetic (judged by their facial expressions).

Radke-Yarrow and her colleagues (1983) also pointed out that several studies (e.g., Barnes, 1971) have confirmed children's abilities to cooperate with peers. Children are especially cooperative when striving toward common goals. As children grow older, their tendency to perform cooperative acts increases. Radke-Yarrow and her colleagues also concluded that, based on the available research, very little is known about why children behave or do not behave in prosocial ways. These researchers, looking back on all of the varied published research concerning preschoolers' prosocial behavior, ultimately stated that preschoolers are: not only egocentric, selfish, and aggressive; they are also exquisitely perceptive, have attachments to a wide range of others, and respond prosocially across a broad spectrum of interpersonal events in a variety of ways and with various motives. (p. 484)

Though investigations into children's prosocial

behaviors typically report data for girls and boys, very few investigations have been designed solely to examine gender differences (Radke-Yarrow et al., 1983). Many researchers expect to find gender differences due to societal and cultural stereotypes that portray males as assertive, aggressive, and non-emotional, and females as compassionate, compliant, and nurturing. Reviewing the laboratory investigations into sharing behavior, no significant gender differences have been reported. In some studies, girls demonstrate more sharing than boys. In other studies, boys demonstrate more sharing than girls. The same inconsistencies are witnessed in studies examining cooperative behavior in children; consistent gender differences do not exist in children's frequency of cooperative incidents. The frequency of helping and comforting behaviors of girls and boys also seem to be similar.

Overall, observable prosocial behaviors in children do not seem to be marked by gender differences. Berman (1980) added to this conclusion that by noting that the methodology employed by researchers tends to affect results. Self-report studies usually find females to be more prosocial. Physiological studies result in no observable gender differences. Behavioral studies tend to report mixed findings.

The present research did not hypothesize gender

differences in the frequency of prosocial behaviors displayed by girls and boys. This decision was based on the vast research indicating that no consistent gender differences exist in this area. Radke-Yarrow and her associates (1983) would probably cheer this decision. These researchers stated that:

We would hazard the hypothesis that there are differences between boys and girls in how and when and why they perform prosocial acts and that such qualitative differences are more revealing of the nature and nurture of sex differences in prosocial behavior than are quantitative differences in frequency. (p. 523)

Research on Preschoolers' Antisocial Behavior

Parke and Slaby (1983) reviewed the extensive research on children's antisocial behavior or aggression. Much research attention has been devoted to development and control of antisocial behavior. Several themes can be seen in the literature. A common theme concerns children as active contributors to the growth of their own antisocial behaviors. Also, the effects of the child's environment on antisocial behavior has been recognized. Another common theme concerns the multitude of factors which contribute to the development of antisocial behaviors. Research tends to cite "biological-genetic" factors and "situational-

environmental" factors as the major influences on the development of antisocial behavior. A third theme which has evolved from, and also served to guide, research on children's antisocial behavior is the awareness that children's behaviors can be understood only by examining the social systems and situations in the child's world. These systems and situations (e.g., peer groups, the community, cultural guidelines) continually influence each other as well as the development of antisocial behavior.

Radke-Yarrow and her associates (1983) reviewed the extensive research on gender differences in children's aggression or antisocial behavior presented by Maccoby and Jacklin (1980). Maccoby and Jacklin reported definite gender differences; boys are more aggressive than girls. This finding included both verbal and physical aggression; boys are both physically and verbally more aggressive than girls. McCandless and Trotter (1977) reviewed several studies and reported similar findings, with one exception; the evidence in support of gender differences in verbal aggression is not consistent.

Effects of War Toys on Children's Antisocial Behavior

Carlsson-Paige and Levin (1990) noted that many children show a strong desire for war play. These children may go through periods of playing only war-related games. Parents often report that children display more passion and intensity when engaging in war play than in any other form

of pretend play. Parents tend to be divided on the issue of war toys and war play. Some parents who engaged in war play as children feel that such play is natural and harmless; after all, they turned out just fine as adults. Other parents worry that war play involvement will teach their children to behave violently and will "contribute to militaristic values in adulthood" (p. 31).

As Brian Sutton-Smith (1988) pointed out, war toys are very often considered to be "the offending agent for the warping of young minds" (p. 57). According to Sutton-Smith, there are several good reasons for citizens' protests against war toys; the era in which we live is threatened by nuclear danger, over the past ten years the United States has spent record billions on defense materials, and international terrorism is on the rise. Several good reasons also exist for not becoming alarmed about children's play with war toys; concern about this type of play is reminiscent of concerns about children's exposure to certain books, games, and television shows. Attempts to control exposure to these and other media have often resulted in smaller and smaller amounts of free play and recess time. Also, as Sutton-Smith noted, attempts to ban war toys require "children to achieve what the parents and politicians will not" (p. 57). In other words, since adults have not given up war, why should children give up war play?

Sutton-Smith (1988) did not attempt to "solve" the war toy debate. He simply set out to present two sides of the issue. In his presentation, Sutton-Smith discussed the eight major studies which have focused on the effects of war toys on children's aggression or antisocial behavior. Below are presented these eight studies; three of these studies concluded that war toys have no effect on aggression, while five of these studies concluded that war toys have some effect on aggression.

Research demonstrating no relationship between war toys and children's aggression. Wright (1983) examined the effects of war toys on peer aggression. In this experiment, boys were observed during 13 minutes of free play. The available toys in the first category were: a helmet, toy rifle, and cartridge belt. The available toys in the second category were: a construction worker's belt equipped with a screwdriver, hammer, flashlight, pliers, and wrench. The toy conditions were reversed on later trials. Wright reported no differences between the groups on the following behaviors: hitting, grabbing, threatening, pushing, and destruction. Both groups were found to prefer the war toys to the construction worker's belt. When the toys from each category were removed, the boys showed increased levels of aggression. Sutton-Smith (1988) noted that the boys in the experiment were repeatedly reminded that their teacher was nearby (outside of the classroom). Sutton-Smith added that

"In our culture a major function of teachers is to inhibit aggression" (p. 58); aggression is unlikely to occur when teachers are in the vicinity.

Sutton-Smith (1988), in his review of the Wright (1983) study, stressed the teacher component. He asserted that teacher presence almost entirely rules out the possibility of aggression. Obviously this is not the case; the boys indeed displayed aggression when the toys were removed. Neither Wright nor Sutton-Smith commented on individual differences in teaching styles; some teachers interfere at the onset of rough-and-tumble play, while others allow such play with certain limits.

Wolff (1976) included both girls and boys in her investigation into the effects of war toys on children's aggression in the classroom. She studied six children who were classified as not aggressive, moderately aggressive, or very aggressive. The subjects were exposed to aggressive toys (e.g., toy rifles, cowboys and cowgirls, and boxing gloves) and neutral toys (e.g., tinker toys, toy telephone, and puzzles). Each treatment condition was presented for one-week intervals. The children's aggressiveness was rated before and after each condition. Wolff found no relationship between toy exposure and subsequent behavior in the classroom. However, the two boys who were initially categorized as very aggressive displayed increased levels of

aggression in the experimental room after being exposed to the war toys.

Sutton-Smith (1988) attributed Wolff's (1976) lack of significant results to the "novel permissiveness" of the experimental conditions. In other words, the children, who were used to experiencing little permissiveness in the classroom, were suddenly given the opportunity to behave in any manner. Hence, the two highly aggressive boys became even more aggressive in the experimental room. Back in the classroom, however, the children returned to their usual behavior due to the restricted environment. Sutton-Smith may have been correct in his assertions that children behave very differently when in the presence of a teacher vs when they are not. Again, however, he needed to consider individual differences among teachers. He also needed to question whether teacher presence or the cues associated with toys exert more influence on children's behaviors.

The present study did not face the potential problem of "novel permissiveness" faced by Wolff (1976). In the present study, the subjects experienced the treatments in their usual classrooms; the subjects were not taken to a testing room. Therefore, the subjects were in familiar surroundings, with familiar teachers, children, and materials. The prosocial and antisocial toys were the only novel additions to the environment.

In 1979, Etaugh and Happach investigated the effects of

an aggressive experimental condition on children's subsequent aggressive behavior. In the control group, six 2-year-olds were encouraged to play with a chalkboard and chalk. In the experimental group, six two-year-olds were encouraged to hit a punching bag. The subjects experienced 19 trials, and no significant differences were found between the two groups' subsequent aggressive behavior. Again, Sutton-Smith (1988) reviewed this study and stressed it's lack of attention to the effects of the environment: the classroom vs an outside experimental room. Sutton-Smith seemed to suggest that the results of the Etaugh and Happach study, like other aggression studies, would have been different had the study been conducted in a different context.

Research demonstrating some relationship between war toys and children's aggression. Feshbach (1956), examined the catharsis hypothesis of aggression. Feshbach hypothesized that children who were initially low in aggressiveness would, following several free play sessions, display a significantly higher level of aggressive behavior in comparison to low aggressiveness children who were not afforded free play sessions. It was assumed that the children were low in aggressiveness as a result of high inhibition, rather than as a result of a low level of drive strength. So an increase in aggressiveness would indicate a

decrease in inhibition due to the free play experiences. The subjects were read stories about either: (1) soldiers, cowboys, Indians, and pirates, or (2) circuses, trains, farms, and stores. They were then allowed to play with toys related to the stories. No teachers were present.

Feshbach found the hypothesis (that low aggressiveness children would show higher levels of aggressiveness following free play experiences) to be true for boys. The treatment had no effects for girls. It was also discovered that aggressive play objects (soldier and cowboy toys) elicited significantly higher levels of "antisocial aggressive" play than did neutral play objects. The catharsis-related hypothesis that children (except those initially showing very low aggressiveness) would display less aggressiveness following exposure to aggressive toys was therefore not supported.

Sutton-Smith (1988), in his review of the Feshbach (1956) experiment, called attention to the teacher aspect of the experiment; once the children were back in their classrooms, their aggression levels decreased (with the exception of the low aggressiveness boys who had become more aggressive). Sutton-Smith added to this observation by citing literature (e.g., Schaefer & O'Connor, 1983) which showed that the presence of a permissive adult can lead to children becoming more aggressive (no matter what type of toy condition they are experiencing). In his review of the

Feshbach experiment, Sutton-Smith seemed to suggest that the permissiveness of the present adult is an important factor. Another important point made by Sutton-Smith is that the Feshbach study is not really an investigation into the effects of playing with war toys; it is more of an investigation into the effects of exposure to a story, and then exposure to story-related props.

Toy exposure and its effects on children's prosocial and antisocial behaviors was the focus of the present study. By not including additional variables (e.g., exposure to a violent story), the present study was better able to examine the direct consequences of exposure to prosocial and antisocial toys.

Berkowitz (1968) reviewed several studies which examined how seeing a weapon would influence subjects' willingness to deliver shocks to other humans. He noted that, in one study, children who were permitted to play with toy guns knocked down their peers' block buildings more frequently than did children who were not permitted to play with toy guns (in the experimental setting). Berkowitz asserted that the presence of the toy guns lowered the subjects' threshold for aggression. Sutton-Smith (1988) suggested that the subjects' threshold for play aggression (but not real aggression) was lowered.

Sutton-Smith (1988) made a valid point by calling

attention to the potential differences between real and thematic aggression. However, it is not always possible to discern whether children are acting in an antisocial or aggressive manner because they know that, in "real life", people act rough when carrying machine guns, rifles, etc., or whether they are acting in an antisocial manner because their toys elicit real aggression.

Mendoza (1972) attempted to answer two questions: (1) to what degree do antisocial toys (toys conducive to violence) elicit or motivate aggressive behavior?, and (2) to what degree does exposure to antisocial toys determine children's interpretation of neutral drawings as depicting violence?. It was found that children who were exposed to antisocial toys (e.g., daggers, machine guns, G.I. Joe dolls) displayed significantly more antisocial behaviors (e.g., hitting, kicking, biting, and name calling) than children who were exposed to neutral toys. This finding was magnified in the females. That is, female subjects who played with antisocial toys displayed five times as many aggressive incidents as female subjects who played with neutral toys.

With respect to the second question, Mendoza discovered that no relationship existed between exposure to antisocial toys and a child's tendency to bestow a violent interpretation to neutral drawings. The author hypothesized that the absence of such a relationship demonstrates that

although a child's overt behavior is largely influenced by the environment (including the toys, people, etc. in the environment), her environment minimally affects her thought and reasoning modes. Mendoza reviewed two important theories of aggression: (1) aggression as instinctive, and (2) aggression as a learned response. Mendoza based her study in the latter model of aggression.

Sutton-Smith (1988) provided an adequate review of the Mendoza (1972) study, with one exception. Sutton-Smith reported that Mendoza found no gender differences. To the contrary, Mendoza found girls to display a much wider range of aggressive incidents than boys. Mendoza stated that the relationship between war toys and aggressive behavior "exists even more strongly in the case of girls than with respect to boys" (p. 73).

Sutton-Smith discussed Mendoza's (1972) "lumping together" of aggression that causes injury (e.g., hitting and biting), aggression that doesn't cause injury (e.g., threatening and name calling), and play (pretend) aggression. Sutton-Smith cited research that shows that most preschool children are capable of distinguishing between the first type of aggression and the second two types. Yet children still usually display all three types. Sutton-Smith appeared to suggest that the only important type of aggression is aggression that causes real physical

harm. As previously mentioned, it is difficult to distinguish between real and pretend or thematic aggression. More importantly, verbal aggression should not be viewed as less destructive or less important than physical aggression. Mendoza's experiment was well-designed (i.e., the violent toys were selected by a panel of experienced educators, toy exposure was the only variable studied in relationship in aggressive behavior, the violent and non-violent toys were each presented on three occasions) and demonstrated that both verbal and physical aggression result when children are exposed to war toys.

In 1986, Potts, Huston, and Wright examined the effects of television's action levels and violence, and subsequent exposure to prosocial or antisocial toys, on boys' attention and social behavior. On measures of social behavior, toy cues elicited strong effects independent of the television treatments; antisocial (aggressive) toys elicited antisocial behavior (e.g., noncompliance, object aggression, and interpersonal aggression), and prosocial toys elicited prosocial behavior (e.g., turntaking, cooperation, and suggesting rules). Potts and his colleagues included fantasy aggression and verbal aggression in addition to physical aggression as the dependent measures. Sutton-Smith (1988) suggested that verbal and fantasy aggression are not real aggression; physical aggression is the only type of real aggression.

The present study followed Mendoza's (1972) and Potts, Huston, and Wright's (1986) lead by including verbal antisocial behavior and thematic aggression among its dependent measures. Several categories of verbal antisocial behavior (e.g., acting bossy and swearing) were included on the data sheet. Categories were not established specifically for thematic aggression. Instead, the observers were trained to record instances of thematic aggression in the appropriate related categories. For example, if a child displayed thematic aggression through threatening another child, the incident was recorded in the category established for threatening behaviors.

Turner and Goldsmith (1976) authored the most discussed study relating to children's antisocial behavior and war toys. Their study served as the basis for the present study. Turner and Goldsmith investigated the effects of playing with novel, aggressive toy guns vs novel, nonaggressive toy airplanes on children's antisocial behavior. The experiment was broken into two separate studies. In Study I, 10 four- and five-year-old children (seven boys, three girls) were observed for 30 minutes of free play (for 16 mornings). The three experimental toy conditions were: usual toys, toy guns, and toy airplanes. The order of treatments was: usual toys (days 1-2 and 4-6), guns (7-10), usual toys (11-12), guns (13-14), airplanes

(15-16), usual toys (17). The experimenters introduced the usual toys to establish a base rate of the children's antisocial behaviors. They introduced the toys guns twice to determine if the effects would reoccur and to determine whether the effects would last over several days. Each treatment lasted for at least two days to detect the existence of consistent patterns.

The conditions employed the following toys:

(1) usual - blocks, coloring books, tinker toys, dolls, puzzles, toy boats, etc.; (2) toy guns - cowboy guns made of lightweight metal; (3) toy airplanes - brightly colored plastic airplanes. The reason for including the toy airplanes related to toy novelty effects; Turner and Goldsmith (1976) noted that it was possible that any novel toy could increase the intensity of play behavior or the rate of antisocial responses. Since the toy guns were new to the children, Turner and Goldsmith felt that it was necessary to include novel, nonaggressive toys in the study.

In the Turner and Goldsmith (1976) study, a supervisor and two observers were present in the testing room. They interacted as little as possible with the children. The observers recorded antisocial behaviors in 15-second intervals. Verbal antisocial behavior included: cursing, swearing, making neagative or insulting remarks, acting very bossy, bragging or boasting, and threatening to hurt another. Physical antisocial behavior included: hitting,

kicking, biting, pulling or pushing someone, shoving, damaging property, grabbing objects from someone, breaking a major rule, and hurting one's self. Thematic aggression was not counted as antisocial behavior. The results from Study I showed that the toy guns condition yielded a significantly higher rate of antisocial behavior than either the usual toy condition or the toy airplane condition. Turner and Goldsmith (1976) concluded that, "since the novel toy airplanes did not stimulate more antisocial behavior, the results suggest that the toy gun effect was not solely due to their novelty for the children" (p. 309).

Study II was different from Study I in the following ways: (1) 13 male (no female) children served as subjects, (2) the order of presentation of conditions was reversed, (3) the children's teacher served as the supervisor and was therefore present in the testing room, (4) the observers viewed the children from behind a one-way mirror and could therefore not record verbal antisocial behavior, and (5) the observation procedure was changed. In Study I, the behaviors of a single child were observed during 15-second-intervals. Using this type of procedure, a low response rate was reported. Therefore, for Study II, the observers watched the behaviors of all 13 subjects during 15-second-intervals. The results from Study II mirror those from Study I; the toy gun treatment resulted in a significantly

higher rate of antisocial behavior than either of the other two treatments. Turner and Goldsmith (1976) based their experiment in the conditioning model presented by Berkowitz (1974) and the social learning model offered by Bandura (1973) (explanations of these theories are provided in a later section).

Turner and Goldsmith's (1976) experiment is an excellent model. The experiment focused on the direct effects of playing with toys on children's antisocial behavior. No other variables (e.g., television viewing, violent story exposure) were studied. Another positive aspect of the experiment is that the subjects were first exposed to the usual toy condition in order to establish a baseline of the children's typical rates of antisocial behavior. In the Turner and Goldsmith experiment the dependent measures are clear and the observer reliability is high. Sutton-Smith (1988) suggested that the observer reliability may have been lower than was reported due to the fact that, in Study II, the observers were observing 13 children. However, since in Study I it was determined that one child elicited a very low number of antisocial responses in a 15-second-period, it seems reasonable that the observers could observe an entire classroom. After all, they were not recording every behavior displayed, only the antisocial behaviors. Sutton-Smith noted the "teacher factor" again; in Study II the children's teacher served as

the supervisor. As the supervisor, she was more permissive and less interactive with the children. Sutton-Smith pointed out that children are less inhibited by adults in situations in which the adults take on more permissive and less interactive roles. In his review of the Turner and Goldsmith study (but not in his review of Wright's (1983) or Feshbach's (1956) studies), Sutton-Smith cited individual differences among teachers as important factors in determining children's behaviors.

The present study attempted to address an issue that Sutton-Smith (1988) mentioned: the influence of teachers on research in the classroom. Sutton-Smith reviewed several studies and concluded that teacher presence tended to inhibit children's antisocial behavior. He also noted, however, that children may become less inhibited if the teacher takes on a more permissive role than usual. The two teachers in the present study could be classified as permissive. That is, the teachers tended to allow all types of play (including rough-and-tumble play) in the classroom. The teachers tended to discourage certain types of play only when the play became dangerous or upsetting to other children. While the present research was being conducted in the classrooms, the teachers became more permissive than usual. In other words, for the sake of the present study, the teachers intervened very little (if at all) when

children displayed antisocial behaviors.

One limitation of the Turner and Goldsmith (1976) experiment is its failure to include thematic aggression among the dependent measures. According to Turner and Goldsmith, "thematic aggression, which naturally arises in the context of object-oriented play, was considered appropriate for the situation and not counted as antisocial behavior" (p. 308). This explanation does not seem sufficient enough to justify excluding thematic aggression from the dependent measures. As previously discussed, thematic aggression is difficult to distinguish from other types of aggression. Additionally, thematic aggression can cause injury and can be destructive. The present study included thematic aggression among the dependent measures.

Another "limitation" of the Turner and Goldsmith (1976) experiment was its exclusion of prosocial behavior as a dependent measure. This limitation may have been intentional and justified. That is, perhaps Turner and Goldsmith felt that a more reliable study would result from examining one social behavior rather than two. In any case, the present study extended upon Turner and Goldsmith's study by examining both antisocial and prosocial behavior.

Gender Differences in Children's Play

Fagot and Patterson (1969) reported finding several trends in preschoolers' play. These findings have been supported by subsequent as well as previous research by

various authors. The overall trend reported by Fagot and Patterson revealed that children's play behaviors are consistent with traditional societal gender stereotypes; girls are more involved in doll play, dancing, and housekeeping play, while boys are more involved in woodworking, block play, and play with trucks and cars. Boys' play tends to be more physical in nature; they are more likely than girls to participate in rough-and-tumble play.

Tizard, Phipps, and Plewis (1976) also found that boys tend to choose activities that require physical movement. These activities often involve fighting and killing games. Girls' activities, which typically revolve around doll and house play, often involve rehearsing or acting out scenes (Fagot & Patterson, 1969). This finding seems to support the belief that the play of girls tends to be more verbal than the play of boys, which is physical in nature. Perhaps one reason for the verbal nature of girls' play is Fagot and Patterson's finding that girls more than boys incorporate music, books, and other listening activities into their play. Maccoby and Jacklin (1974) reviewed over 1500 studies and concluded that girls have a greater verbal ability than boys. Also, girls develop verbal skills earlier in life than boys. Gender differences in verbal abilities in the preschool years are not as noticeable as in the adolescent

years; however, they are present even in these early years. According to Piaget (1951/1962), adaption occurs when a child first learns a new skill. Later practice play affords the child the opportunity to consolidate the new skill. From this explanation it can be concluded that, since girls display greater verbal skills early in life, girls will tend to practice these verbal skills through play.

Block (1978) reported that girls who participate in rough-and-tumble play receive more parental discouragement than do boys who engage in this type of play. According to MacDonald and Parke (1982), parents are much more physical and active in their play with sons than in their play with daughters. These findings add support to the assertions that boys' play tends to be more physical in nature, while girls' play tend to be more verbal in nature. As previously noted, Johnson, Christie, and Yawkey (1987) found that doll play and housekeeping play are characteristic of social group play. Since girls more than boys engage in these types of play, it can again be asserted that girls more than boys tend to involve themselves in verbal activities.

The present study utilized the findings concerning girls' verbal play and boys' physical play to extend upon Turner and Goldsmith's (1976) research. That is, the present study expected to find gender differences in preschoolers' prosocial and antisocial behaviors. Boys were expected to display more physical behaviors than verbal

behaviors. Girls were expected to display more verbal behaviors than physical behaviors.

Theoretical Explanations for Antisocial and Prosocial Behavior

Social learning theories. Turner and Goldsmith based their study in the aggression theories of Berkowitz and Bandura. Berkowitz (1974) asserted that war toys (antisocial toys) may serve as cues to elicit aggressive behavior if a child sees war toys modeled in an aggressive manner. His conditioning model holds that antisocial stimuli (e.g., war toys) may cause an increase in antisocial behavior in children. Such stimuli, when repeatedly associated with an antisocial character or behavior, begin to elicit a similar character type or behavior in the observer. In Berkowitz's conditioning model, prosocial behaviors could be learned in the same manner; prosocial stimuli (e.g., a baby or baby doll) become associated with a prosocial character or behavior. An observer sees the stimuli in connection with the behavior or character. Subsequent exposure to the prosocial stimuli serves to elicit a prosocial response.

Bandura's social learning theory holds that aggressive behaviors are shaped through modeling processes and through direct feedback (the term observational learning is frequently used). Direct feedback refers to the rewards or

punishments that an individual experiences as a result of his/her actions (Bandura, 1973). The individual does not need to be rewarded or punished in order for a behavior to occur or not occur; if the model is rewarded for behavior A, the observer may later perform behavior A. If the model is punished for behavior B, the observer is unlikely to later perform behavior B. Social learning theories view the acquisition of prosocial behavior in the same light as the acquisition of antisocial behavior; prosocial behavior is learned via modeling and reinforcement. Radke-Yarrow and her associates (1983) noted that Skinner, in his operant learning view, asserted that social behavior is guided by external or environmental contingencies. Thus he rejected the notion that the behavior a person emits is determined by intentions or emotions. He stated that "a person does not act for the good of others because of a feeling of belongingness or refuse to act because of feelings of alienation. His behavior depends upon the control exerted by the social environment" (Skinner, 1971, p. 105).

Bandura's observational learning model has at least three distinct features which set it apart from the operant model: (1) acquisition occurs simply through observation, (2) delayed performance through cognitive mediation (an observer can perform an imitative response much later and in the absence of the model), and (3) a vicariously reinforced

modeled response is more likely to be imitated than a non-reinforced one.

Catharsis hypothesis of aggression. Several studies have focused on the catharsis hypothesis of aggression, which contends that aggressive play, such as is seen with war toys, serves as a means of reducing the level of one's physical and emotional tension. In response to frustration, Freud (1957) explained, individuals transfer psychic tension into active energy and direct it toward the external world in acts of aggression. In doing so, they release built-up excitations and experience tension release. With the tension release, fewer subsequent acts of aggression occur.

Freud's catharsis hypothesis was accepted by Dollard et al. (1937). These writers further theorized that "the expression of any act of aggression...(direct or indirect)...was cathartic and reduced the instigation to all other acts of aggression" (p. 54). Feshbach (1955) maintained that situationally induced aggression can be partially reduced through fantasy aggression. He explained that fantasy aggression reduces the drive to aggress either through response generalization from direct overt aggression or through a gradient of reward.

Acceptance of the catharsis hypothesis has not been universal, and critics have been quick to refute it. Most vocal of these critics have been social learning theorists.

These include Bandura and Berkowitz and their followers. They have published an impressive body of literature which has concluded that catharsis leads to more, rather than fewer, acts of aggression (Bandura, 1969).

Summary

Toys are a very important component of early childhood and development. However, little research has been devoted to examining the effects of toys on children's social behavior. Little research has focused on the effects of exposure to antisocial toys on children's social behavior. Most of the research that has been conducted in this area dates back to the 1960s and 1970s. The majority of the research suggests that antisocial toys lead to antisocial behavior. A research area that has received even less attention than the antisocial toy topic is the prosocial toy topic. Few investigators have examined whether prosocial toys lead to prosocial behavior. Potts, Huston, and Wright (1986) authored the major study in this area. These researchers discovered that prosocial toys tend to elicit prosocial behavior, while antisocial toys tend to elicit antisocial behavior. No published experiment has attempted to replicate Potts, Huston, and Wright's findings.

The purpose of the present study was to reexamine Potts, Huston, and Wright's (1986) findings. The present study, however, was modeled after the classic war toys study conducted by Turner and Goldsmith (1976). The Turner and

Goldsmith study was chosen as a model because of its clear methodology (i.e., the observational procedure was thoroughly explained, and was revised half-way through the experiment to allow for a more reliable study) and its concentration on the effects of toy exposure. Other studies (e.g., Potts, Huston, & Wright) included variables such as television viewing in addition to toy exposure. The present study was conducted to examine the direct effects of toy exposure on children's prosocial and antisocial behaviors.

The theoretical basis for the present study lies in social learning theory. The children comprising the sample have likely seen at least one scene (live or on television) involving antisocial behavior (e.g., fighting) and a weapon (real or pretend). These children have also likely viewed at least one scene involving prosocial behavior (e.g., feeding) and a prosocial object (e.g., a real or pretend bottle and a real or pretend baby). Therefore, according to the observational learning model, these children will perform similar behaviors when prosocial or antisocial stimuli are present. The catharsis hypothesis of aggression, investigated by numerous researchers, has yielded little support. Therefore, it was not viewed as a viable theory to explain the findings generated from this experiment.

Hypotheses

Based upon the cited literature and theory, several hypotheses were established to answer the following research questions:

- (1) Are there significant differences between the rates of physical and verbal prosocial behaviors that occur when children are exposed to antisocial toys or usual toys or prosocial toys?
- (2) Are there significant differences between the rates of physical and verbal antisocial behaviors that occur when children are exposed to antisocial toys or usual toys or prosocial toys?

These research questions led to several hypotheses. Each hypothesis (and its direction) has been supported above in the Review of Literature.

- (1) Prosocial toys elicit a higher frequency of prosocial behaviors than do antisocial toys or usual toys.
- (2) Antisocial toys elicit a higher frequency of antisocial behaviors than do prosocial toys or usual toys.
- (3) Boys exhibit more antisocial behaviors than girls overall.
- (4) The behaviors exhibited by girls tend to be of a verbal nature, while the behaviors exhibited by boys tend to be of a physical nature.

Note that these hypotheses, though stated in a directional manner, were tested as non-directional hypotheses.

CHAPTER 3

Methodology

Subjects

The sample for this experimental study consisted of 31 four- to five-year-olds (14 females and 17 males) enrolled in the Child Development Laboratories (Lab School) at Virginia Polytechnic Institute and State University. The parents of each child were sent an informed consent form (see Appendix A). All of the parents granted permission for their children to be involved in the study.

Design

Four toy conditions were established: usual toys (usual-I), prosocial toys, antisocial toys, and usual toys (usual-II). The order of presentation of toy conditions was: usual-I, prosocial, antisocial, and usual-II. The 31 subjects experienced each condition (treatment) for two days in order to determine whether the subjects' behaviors were consistent over time. After it was determined (by examining the data) that the subjects' behaviors were consistent over time, the results from the two days of each condition were averaged. The elapsed time between the two days of each condition was between one and three days. The elapsed time between each condition was between one and three days. The subjects experienced the treatments during their routine inside free play ("centers") time at Lab School.

Observational Method and Instrument

The methodology for the present study was patterned after two separate studies (Study I and Study II) conducted by Turner and Goldsmith (1976). The present study followed those studies in terms of the order of presentation of toys. That is, the present study employed usual toy conditions at the beginning and end of the observational period. The present study introduced usual toys at the onset to establish a baseline for the subjects' typical rates of prosocial and antisocial behavior. Usual toys were presented at the end of the observational period to determine whether carry-over effects from the previous toy conditions existed.

In Turner and Goldsmith's experiment, the observational method was revised after Study I because the children exhibited low response rates. In Study I, the behaviors of a single child were studied for 15-second intervals. In Study II, the behaviors of all the children were observed for 15-second intervals. This was presumed to be possible due to the low response rates noted in Study I. The subjects in the present study were observed in two groups: 15 subjects in one group, and 16 subjects in the second group. The groups were determined simply by the subjects' classes. That is, the subjects in the morning class comprised one group, while the subjects in the afternoon class comprised the second group. The present

study followed the lead of Turner and Goldsmith's Study II; the subjects were observed as a group. This was presumed possible since the present study involved observing no more than 16 children at one time.

Two observers (undergraduate students) were trained to use a precoded data sheet. They were instructed on what to observe for and how to record the data. They practiced recording for antisocial and prosocial behavior in the observation booths and in the classrooms at the Child Development Laboratories. Observer reliability was tested during these practice runs and during the initial experimental trials. Discrepancies in the observers' recordings were discussed until the observers and the experimenter could reach a consensus on how to classify a subject's behavior. The practice trials continued until the observers reached high (95%) reliability for four consecutive practice trials.

As is the case with many observational studies, observer bias may have had an effect on the results generated from the present research. The observers for the present study were aware of the hypotheses and the theory which contributed to the hypotheses. The experimenter chose to provide the observers with this information since it was concluded that, on their own, the observers would be able to accurately guess the research questions. The observers were well-educated and knew that research had linked antisocial

toys to antisocial behavior, and could probably reason that prosocial toys would be expected to elicit prosocial behavior. The observers were probably also aware, before being provided with the research questions, that gender differences have been found to exist in children's aggressive behavior.

Several steps were taken to decrease the probability of observer bias: (1) The observers were thoroughly instructed on the dependent measures (they learned the meaning of every behavioral measure); (2) The observers practiced observing and recording during many practice trials; (3) The practice trials continued until the observers reached 95% agreement for four consecutive trials; (4) All discrepancies in the two observers' recording were discussed until the observers and the experimenter could agree on how to classify a behavior; (5) A taped recording instructed the observers on when to begin observing and when to begin recording for each 15-second interval; (6) The observers learned the names of each of the subjects (the first two or three letters of a subject's name were indicated on the data sheet when he or she displayed a behavior); (7) The observational periods lasted only fifteen seconds, which meant that the observers had to record only a small amount of behavior during the recording periods; (8) The entire observation and recording period for one classroom for one day was limited to five

minutes.

The precoded data sheet employed by the observers is presented in Appendix B. The antisocial measures were constructed based upon Turner and Goldsmith's (1976) measures of physical antisocial and verbal antisocial behavior. As indicated in Appendix B, verbal antisocial behavior includes cursing or swearing at a person, acting bossy, making critical, negative, or insulting comments, bragging or boasting, and making threats to perform violence or hurt another person. Physical antisocial behavior includes hitting, biting, or kicking a person or object, pushing, pulling or shoving a person, grabbing an object away from a person, and damaging or destroying property.

The prosocial measures were derived from the measures for social behaviors employed by Potts, Huston, and Wright (1986). Physical prosocial behavior includes turntaking, cooperation, helping, and sharing. Verbal prosocial behavior includes suggesting rules and requesting help. Added to these measures for prosocial behavior suggested by Potts, Huston, and Wright are four measures for physical prosocial behavior described by Radke-Yarrow and her associates: physical affection to a person, physical affection to an object, nurturant behavior to a person, and nurturant behavior to an object.

A possible limitation to the present research relates to the controversy surrounding thematic aggression;

should it be considered as real aggression? Sutton-Smith (1988) suggested that thematic aggression should be distinguished from real aggression in empirical research. However, it is often difficult to detect whether an aggressive behavior is real or pretend. Sutton-Smith shared this belief. He noted that "children quite often alternate between the two, using playful aggression to hide real aggression and often being called by teachers for real aggression when all that is involved is play" (p. 65). The present study did not attempt to distinguish between real and thematic aggression due to the difficulty of such a task. Also, even though thematic aggression is not "real" (the term Sutton-Smith frequently used), it is often dangerous in that children are often injured as a result of it. Therefore, for the purpose of the present study, thematic aggression was viewed as equal to non-thematic aggression.

One last note on the controversy surrounding thematic aggression: prosocial behavior can be thematic or non-thematic. Consider two of the dependent measures: physical affection to an object, and physical affection to a person. The latter could be considered as real prosocial behavior. The former could be considered as thematic prosocial behavior. After all, a child bestowing physical affection to a baby doll is probably pretending that it is a real

baby. In the same way, a child displaying thematic aggression by hitting a peer in the same manner in which he watched his television hero hit a "bad guy" is probably pretending that he is the hero and that his peer is the bad guy.

The observers recorded each group for five minutes per day; they observed for 15 seconds and then recorded for 15 seconds. A tape recorder cued the observers at the end of each 15-second increment. At the end of each 15-second observational period, the observers recorded the frequency of each behavior. The first two or three letters of the child's name performing a behavior listed on the data sheet was indicated. For example, if a child named George displayed two instances of turntaking during the 15-second observational period, the observers marked "Ge, Ge" in the row reserved for recording turntaking behavior.

The observers recorded from inside the classrooms. After initially using the Lab School observation booths and listening equipment during one practice trial, the observers and the experimenter concluded that much more accurate data could be obtained by observing from inside the classroom. Observing from inside the classroom allowed the observers to see and hear the subjects much more clearly. The observers interacted with the subjects for several days before the experiment began so that the subjects would be familiar with

them. The subjects were told that the observers would be in the classroom for several days doing some writing and watching the children play. The experimenter (who was also the subjects' teacher) asked children not to interfere with the observers while they were doing their writing.

A video camera was set up in the classrooms and was operated on at least one day of each condition for each classroom (group of subjects). The video tape of the subjects' play behaviors was not used for recording data since the audio portion of the camera involved attaching a microphone to the person speaking. It was not feasible to attach microphones to 16 children. Also, one video camera could view only a small portion of the room at any one time. The video camera was employed simply for possible future use by the experimenter. The subjects were very familiar with the video camera, since it had been used on various previous occasions in the classrooms to observe teacher activities.

A possible limitation to the present study relates to concerns that teacher presence may cause children to be inhibited in their aggressiveness. Sutton-Smith (1988) mentioned this concern several times. He did, however, add that individual differences among teachers should be taken into account. The subjects in the present study had head teachers who permitted rough-and-tumble play in the

classroom (the subjects came from two separate classrooms, each with its own head teacher). Their teachers typically intervened only when the play became "too rough" or when it was apparent that one of the children was upset by the play. In other words, the subjects' head teachers were permissive, but did not encourage antisocial behavior.

Toys Used

The toys employed for this experiment are described below. Turner and Goldsmith (1976) proposed and found that novel toys (violent or non-violent) tend to elicit behavior which may be viewed as antisocial. Walters and Brown (1963) suggested that such a finding was possible since a new toy might increase the enthusiasm of the children's play. This high enthusiasm level could be the result of a reduction in inhibitory cues or an increase in arousal state. Since there are no antisocial toys available at Lab School, these toys are new to the children (in the Lab School setting). Therefore, in order to control for Turner and Goldsmith's finding concerning novel toys, the prosocial toys employed in this experiment were also novel to the children (in the Lab School setting).

Usual toys. The usual toys included toys that the children are exposed to on a regular basis in Lab School: bristle blocks, dinosaurs, cars, and plastic animals.

Antisocial toys. The antisocial toys included toys classified as violent by a panel of educators for Mendoza's

(1972) experiment: G.I. Joe Doll, revolver, rifle, sword, and toy soldiers.

Prosocial toys. The prosocial toys included toys which tend to present prosocial cues. One toy was borrowed from the Potts, Huston, and Wright (1986) experiment: a foam basketball and hoop. The hoop did not have a stand to support itself. Therefore, cooperation among the subjects was required to play basketball. The other toys were baby dolls, stuffed animals, a paramedic kit, and baby bottles. These toys are consistent with the prosocial behaviors described above and in the Introduction.

Data Analysis

The mean rates of each dependent variable (verbal antisocial, physical antisocial, verbal prosocial, and physical prosocial responses) across each condition were computed. Four multivariate analyses of variance were run (one for each dependent variable) in order to test for main effects of condition and gender. Four Wilcoxon signed-ranks tests (one for each dependent variable) were run in order to test for significant differences between physical and verbal behaviors in males and physical and verbal behaviors in females. Twenty-Four Wilcoxon signed-ranks tests (12 for girls and 12 for boys) were run in order to test for significant differences in the four dependent variables across the usual-I, prosocial, and antisocial conditions.

A criterion level of .002 was chosen as significant for these analyses based on Bonferroni's inequality. This was used to control for chance differences due to the large number of Wilcoxon signed-ranks tests used in this set of analyses.

CHAPTER 4

Results

The rates of physical antisocial, verbal antisocial, physical prosocial, and verbal prosocial responses across each of the four conditions are displayed in Figures 1 - 4, respectively. The means for boys' and girls' responses under various toy conditions are reported in Table 1.

In order to test the hypothesis that boys would exhibit more physical antisocial behaviors overall than girls a MANOVA was run. The MANOVA revealed a statistically significant effect for gender (\bar{M} for boys = 3.79; \bar{M} for girls = .71) with regard to physical antisocial behavior, $p < .001$. A statistically significant effect was also found for toy condition, and for toy condition by gender with regard to physical antisocial behavior, $p < .001$. The results are reported in Table 2.

In order to test the hypothesis that boys would exhibit more verbal antisocial behaviors overall than girls a MANOVA was run. As reported in Table 3 the MANOVA revealed a statistically significant effect for gender (\bar{M} for girls = 2.21; \bar{M} for boys = .82) with regard to verbal antisocial behavior, $p < .001$. With regard to verbal antisocial behavior, the same analysis revealed a significant effect for toy condition, and for toy condition

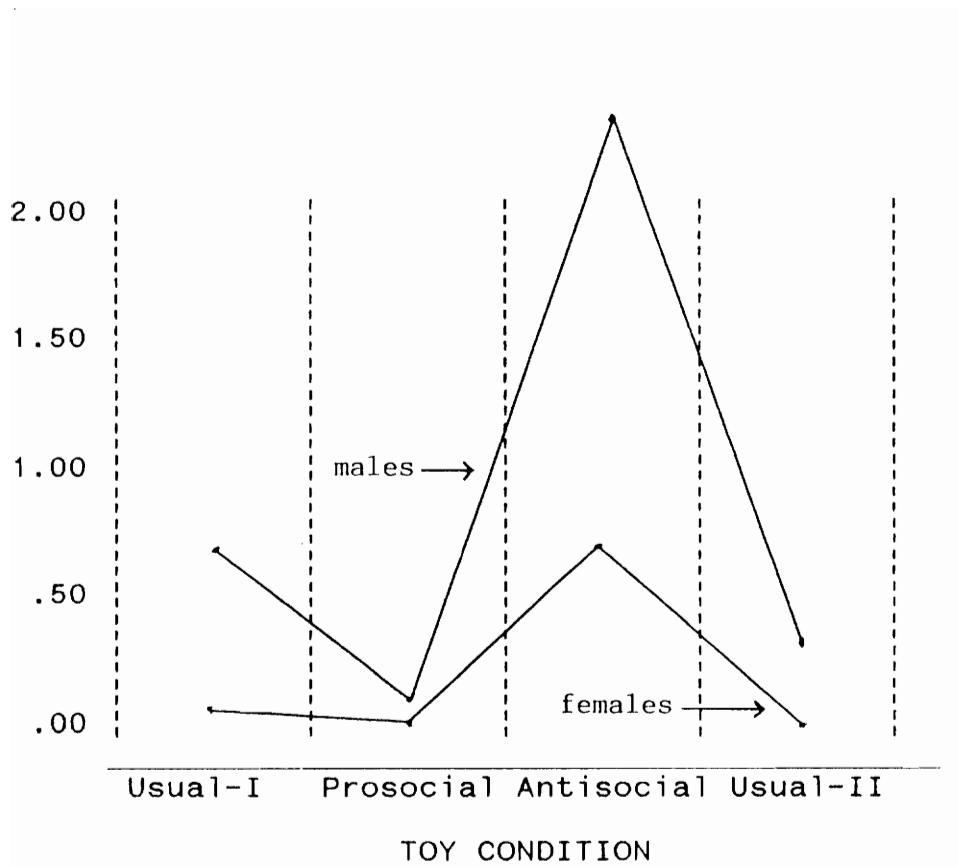


Figure 1. Mean rates of physical antisocial responses across each toy condition.

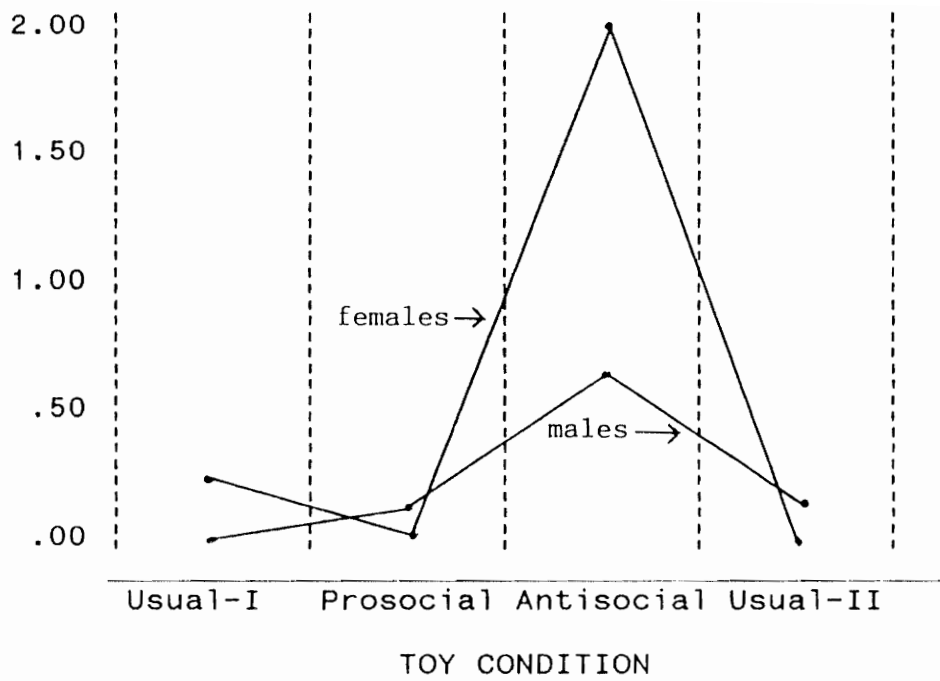


Figure 2. Mean rates of verbal antisocial responses across each toy condition.

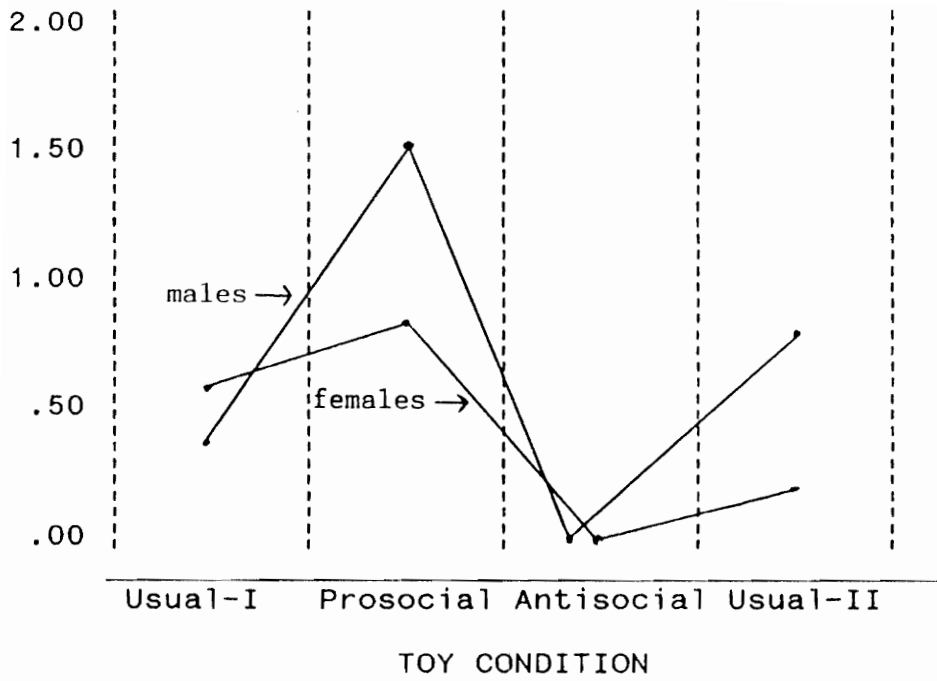


Figure 3. Mean rates of physical prosocial responses across each toy condition.

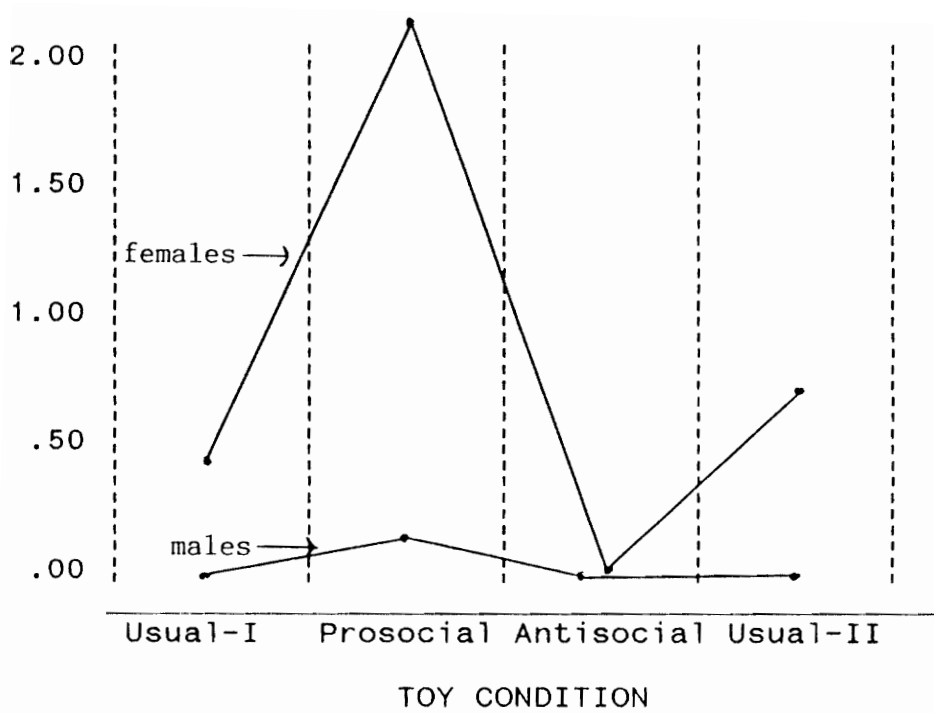


Figure 4. Mean rates of verbal prosocial responses across each toy condition.

Table 1

Mean Rates of Dependent Behaviors Across All
Toy Conditions for Boys and Girls

Dependent Behavior	Gender			
	Boys		Girls	
	M	SD	M	SD
Physical Antisocial Behavior	3.79	1.53	.71	.802
Verbal Antisocial Behavior	.82	.749	2.21	.642
Physical Prosocial Behavior	2.76	1.18	1.57	1.43
Verbal Prosocial Behavior	.21	.398	3.39	1.18

Table 2

Multivariate Analysis of Variance with Repeated Measures on Physical Antisocial Behavior Across Toy Conditions

Source	Wilks's Lamda	df	F	p
<u>Within-Subjects</u>				
Toy Condition	.2427	3, 27	28.08	p < .001
Toy Condition by Gender	.4604	3, 27	10.54	p < .001
<u>Between-Subjects</u>				
Gender	not-applicable	1, 29	46.02	p < .001

Table 3

Multivariate Analysis of Variance with Repeated Measures on Verbal Antisocial Behavior Across Toy Conditions

Source	Wilks's Lamda	df	F	p
<u>Within-Subjects</u>				
Toy Condition	.1796	3, 27	41.11	p < .001
Toy Condition by Gender	.3675	3, 27	15.49	p < .001
<u>Between-Subjects</u>				
Gender	not-applicable	1, 29	30.06	p < .001

by gender with regard to physical antisocial behavior , $p < .001$.

With regard to physical prosocial behavior, a MANOVA revealed a statistically significant effect for toy condition, $p < .001$. A statistically significant effect for gender (M for boys = 2.76; M for girls = 1.57) was found with regard to physical prosocial behavior, $p < .05$. The analysis also revealed a statistically significant effect for toy condition by gender, $p < .001$. These results are found in Table 4.

With regard to verbal prosocial behavior, the MANOVA revealed statistically significant effects for toy condition, gender, and toy condition by gender ($p < .001$). The mean prosocial behavior for boys and girls was .21 and 3.39, respectively. The results of MANOVA are reported in Table 5.

In order to test the hypothesis that girls tend to demonstrate a higher number of verbal antisocial behaviors when they are exposed to antisocial toys than when they are exposed to prosocial toys or usual toys Wilcoxon signed-ranks tests were run. The results as reported in Table 6 indicated that girls demonstrated significantly more verbal antisocial behavior when they were exposed to antisocial toys as compared to when they were exposed to either prosocial toys or usual toys ($p < .002$).

Table 4

Multivariate Analysis of Variance with Repeated Measures on Physical Prosocial Behavior Across Toy Conditions

Source	Wilks's Lamda	df	F	p
<u>Within-Subjects</u>				
Toy Condition	.1352	3, 27	57.52	p < .001
Toy Condition by Gender	.3198	3, 27	19.14	p < .001
<u>Between-Subjects</u>				
Gender	not-applicable	1, 29	6.41	.017

Table 5

Multivariate Analysis of Variance with Repeated Measures on
Verbal Prosocial Behavior Across Toy Conditions

Source	Wilks's Lamda	df	F	p
<u>Within-Subjects</u>				
Toy Condition	.2269	3, 27	30.66	p < .001
Toy Condition by Gender	.2784	3, 27	23.32	p < .001
<u>Between-Subjects</u>				
Gender	not-applicable	1, 29	109.68	p < .001

Table 6

Differences in Girls' Behavior When Compared

Across Various Toy Conditions

 Dependent Variable--Verbal Antisocial Behavior

<u>Conditions Compared</u>	<u>Z-score</u>	<u>2-tailed P</u>
Antisocial and Prosocial	-3.295	.0010**
Antisocial and Usual-I	-3.295	.0010**
Prosocial and Usual-I	-2.201	.0277

 Dependent Variable--Physical Antisocial Behavior

<u>Conditions Compared</u>	<u>Z-score</u>	<u>2-tailed P</u>
Antisocial and Prosocial	-2.803	.0051
Antisocial and Usual-I	-2.534	.0113
Prosocial and Usual-I	-2.201	.0277

 Dependent Variable--Verbal Prosocial Behavior

<u>Conditions Compared</u>	<u>Z-score</u>	<u>2-tailed P</u>
Prosocial and Antisocial	-3.233	.0012**
Prosocial and Usual-I	-3.170	.0015**
Antisocial and Usual-I	-2.665	.0077

 Dependent Variable--Physical Prosocial Behavior

<u>Conditions Compared</u>	<u>Z-score</u>	<u>2-tailed P</u>
Prosocial and Antisocial	-2.803	.0051
Prosocial and Usual-I	-.888	.3743
Antisocial and Usual-I	-2.201	.0277

** significant at .002 or less

The hypothesis that girls tend to demonstrate a higher number of physical antisocial behaviors when they are exposed to antisocial toys than when they are exposed to prosocial toys or usual toys was tested by using Wilcoxon signed-ranks tests. No statistically significant differences were found in the physical antisocial behaviors when girls were exposed to antisocial, prosocial, or usual toys ($p > .002$). The results are reported in Table 6.

In order to test the hypothesis that girls tend to demonstrate a higher number of verbal prosocial behaviors when they are exposed to prosocial toys than when they are exposed to antisocial toys or usual toys Wilcoxon signed-ranks tests were run. The results as reported in Table 6 indicated that girls exhibited significantly more verbal prosocial behavior when exposed to prosocial toys than when exposed to antisocial or usual toys ($p < .002$).

The hypothesis that girls tend to demonstrate a higher number of physical prosocial behaviors when they are exposed to prosocial toys than when they are exposed to antisocial toys or usual toys were tested with Wilcoxon signed-ranks tests. As reported in Table 6 there were no statistically significant differences found for girls in physical prosocial behavior across the prosocial, antisocial, and usual-I conditions.

In order to test the hypothesis that the antisocial

behaviors exhibited by girls tend to be of a verbal nature rather than a physical nature a Wilcoxon signed-ranks test was run. Results indicated that girls exhibited significantly greater frequencies of verbal antisocial behaviors compared to physical antisocial behaviors, $p < .01$.

To test the hypothesis that the prosocial behaviors exhibited by girls tend to be of a verbal nature rather than a physical nature a Wilcoxon signed-ranks test was run. Results indicated that girls exhibited significantly greater frequencies of verbal prosocial behaviors compared to physical prosocial behaviors, $p < .01$.

The hypothesis that boys tend to demonstrate a higher number of verbal prosocial behaviors when they are exposed to prosocial toys than when they are exposed to antisocial toys or usual toys was tested with Wilcoxon signed-ranks tests. As indicated in Table 7, for boys, no statistically significant differences were found for verbal prosocial behavior when they were exposed to the prosocial, antisocial, and usual-I conditions. In order to test the hypothesis that boys tend to demonstrate a higher number of physical prosocial behaviors when they are exposed to prosocial toys than when they are exposed to antisocial toys or usual toys Wilcoxon signed-ranks tests were run. The

Table 7

Differences in Boy's Behavior When Compared
Across Various Toy Conditions

Dependent Variable--Verbal Prosocial Behavior

<u>Conditions Compared</u>	<u>Z-score</u>	<u>2-tailed P</u>
Prosocial and Antisocial	-1.825	.0679
Prosocial and Usual-I	-1.825	.0679
Antisocial and Usual-I	-0.000	1

Dependent Variable--Physical Prosocial Behavior

<u>Conditions Compared</u>	<u>Z-score</u>	<u>2-tailed P</u>
Prosocial and Antisocial	-3.516	.0004**
Prosocial and Usual-I	-3.128	.0018**
Antisocial and Usual-I	-2.520	.0117

Dependent Variable--Verbal Antisocial Behavior

<u>Conditions Compared</u>	<u>Z-score</u>	<u>2-tailed P</u>
Antisocial and Prosocial	-2.481	.0131
Antisocial and Usual-I	-2.803	.0051
Prosocial and Usual-I	-.913	.3613

Dependent Variable--Physical Antisocial Behavior

<u>Conditions Compared</u>	<u>Z-score</u>	<u>2-tailed P</u>
Antisocial and Prosocial	-3.516	.0004**
Antisocial and Usual-I	-3.550	.0004**
Prosocial and Usual-I	-26651	.0077

** significant at .002 or less

results indicated that boys exhibited significantly greater frequencies of physical prosocial behavior when they were exposed to the prosocial toy condition as compared to when they were exposed to the antisocial and usual-I toy conditions, $p < .002$.

The hypothesis that boys tend to demonstrate a higher number of verbal antisocial behaviors when they are exposed to antisocial toys than when they are exposed to prosocial toys or usual toys was tested with Wilcoxon signed-ranks tests, and the results obtained are reported in Table 7. For boys, no statistically significant differences were found for verbal antisocial behavior across the antisocial, prosocial, and usual-I conditions, $p > .002$. In order to test the hypothesis that boys tend to demonstrate a higher number of physical antisocial behaviors when they are exposed to antisocial toys than when they are exposed to prosocial toys or usual toys Wilcoxon signed-ranks tests were run. The results indicated that boys exhibited significantly more physical antisocial behavior when they were exposed to the antisocial condition as compared to when they were exposed to the prosocial or usual-I condition, $p < .002$.

In order to test the hypothesis that the antisocial behaviors exhibited by boys tend to be of a physical nature rather than a verbal nature a Wilcoxon signed-rank test was

run. Results indicated that boys exhibited a significantly greater frequency of physical antisocial behaviors compared to verbal antisocial behaviors, $p < .001$. In order to test the hypothesis that the prosocial behaviors exhibited by boys tend to be of a physical nature rather than a verbal nature a Wilcoxon signed-rank test was run. Results indicated that boys exhibited a significantly greater frequency of physical prosocial behaviors compared to verbal prosocial behaviors, $p < .001$.

To summarize the results, the hypotheses have been broken down into simplest form below. The statistical test used to test each hypothesis is noted. Also, following each hypothesis is a statement describing to what degree the hypothesis was supported.

(1) A significantly higher number of physical antisocial behaviors occur when children are exposed to antisocial toys than when they are exposed to prosocial toys or usual toys.

- Wilcoxon signed-ranks test

- hypothesis was supported, but difference was not significant for girls (see Tables 6 and 7)

(2) A significantly higher number of verbal antisocial behaviors occur when children are exposed to antisocial toys than when they are exposed to prosocial toys or usual toys.

- Wilcoxon signed-ranks test
 - hypothesis was supported, but difference was not significant for boys (see Tables 6 and 7)
- (3) A significantly higher number of physical prosocial behaviors occur when children are exposed to prosocial toys than when they are exposed to antisocial toys or usual toys.
- Wilcoxon signed-ranks test
 - hypothesis was supported, but difference was not significant for girls (see Tables 6 and 7)
- (4) A significantly higher number of verbal prosocial behaviors occur when children are exposed to prosocial toys than when they are exposed to antisocial toys or usual toys.
- Wilcoxon signed-ranks test
 - hypothesis was supported, but difference was not significant for boys (see Tables 6 and 7)
- (5) Boys exhibit significantly more physical antisocial behaviors than girls overall.
- Multivariate analysis of variance
 - supported (see Table 2): a main effect was found for gender
- (6) Boys exhibit significantly more verbal antisocial behaviors than girls overall.
overall.

- Multivariate analysis of variance
 - not supported, girls exhibited more verbal antisocial behaviors (see Table 3): a main effect was found for gender
- (7) The antisocial behaviors exhibited by girls tend to be of a verbal nature rather than a physical nature.
- Wilcoxon signed-ranks test
 - supported
- (8) The prosocial behaviors exhibited by girls tend to be of a verbal nature rather than a physical nature.
- Wilcoxon signed-ranks test
 - supported
- (9) The antisocial behaviors exhibited by boys tend to be of a physical nature rather than a verbal nature.
- Wilcoxon signed-ranks test
 - supported
- (10) The prosocial behaviors exhibited by boys tend to be of a physical nature rather than a verbal nature.
- Wilcoxon signed-ranks test
 - supported

CHAPTER 5

Discussion and Conclusions

The present study was conducted to assess the effects of exposure to antisocial and prosocial stimuli on children's short-term antisocial and prosocial behavior. The findings were consistent with literature (e.g, Potts, Huston, & Wright, 1986) demonstrating that antisocial toys lead to antisocial behavior, while prosocial toys lead to prosocial behavior. The antisocial toy condition elicited higher rates of physical and verbal antisocial behaviors. The prosocial toy condition elicited higher rates of physical and verbal prosocial behaviors.

The findings demonstrate overwhelming support for the beliefs that boys tend to be more physical than verbal in their play (Tizard, Phips, & Pleis, 1976), while girls tend to be more verbal than physical in their play (Fagot & Patterson, 1969). For both boys and girls the findings were demonstrated in relation to antisocial and physical behaviors.

An interesting finding was that in none of the comparisons between usual toys and the condition that was "opposite" to the behavior being examined were there found any significant differences. For example, there was no significant difference between physical prosocial behavior for either the usual-I condition or the antisocial

condition. This finding suggests that toys elicit specific behaviors. It also suggests that only certain toys can elicit these certain behaviors.

Consider the example just mentioned: there was no significant difference between physical prosocial behavior for either the usual-I condition or the antisocial condition. This finding could be interpreted to mean that if a parent wants to promote physical prosocial behavior in a child, the parent needs to expose the child to prosocial toys. The finding could also be incorrectly "over interpreted" to mean that neither usual toys nor antisocial toys can elicit prosocial behavior. The suggestion that toys elicit specific behaviors can be expanded to suggest that children's play may be facilitated by specific toys. This suggestion is supported by the finding that girls exhibited more verbal prosocial behaviors when they were exposed to prosocial toys as compared to when they were exposed to usual toys. Also, boys exhibited more physical prosocial behaviors when they were exposed to prosocial toys as compared to when they were exposed to usual toys.

The results of this study lead one to offer several suggestions for parents and educators who wish to minimize children's antisocial play and maximize their prosocial play: (1) consider limiting children's exposure to antisocial toys; (2) consider adding more prosocial toys to

children's play environments; (3) offer boys more opportunities to practice their verbal capabilities; (4) offer girls more opportunities to practice their physical capabilities.

Great effort was put forth to reduce the number of possible limitations to this study. Observer bias, for example, was controlled for by providing the observers with extensive training and by establishing a reasonable observational method (e.g., the observational periods lasted only 15 seconds). This study addressed the controversy surrounding thematic aggression by presenting both sides of the the issue (i.e, thematic agression is real aggression vs. thematic aggression is not real aggression). It was ultimately decided to include thematic aggression among the dependent measures because:_(1) it is difficult to distinguish it from so-called real aggression; and (2) thematic aggression can be dangerous and destructive.

While the present study did not make a clear distinction between antisocial behavior and aggression, it should be noted that researchers do not always view the two terms as synonymous. That is, aggression is one type of antisocial behavior, and not all aggression is antisocial. Antisocial behavior is typically defined as deliberate actions that harm or threaten others. Such actions include hurting, cheating, killing, and lying (Liebert, Wicks-Nelson, & Kail, 1986). Aggression is "any behavior that

results in physical or emotional injury to a person or animal, or one that leads to property damage or destruction (Kolstel'nik, Stein, Whiren, & Soderman, 1988). The definitions for antisocial behavior and aggression are thus similar. This is the precise reason for the present study's lack of distinction between the two terms. The major difference between the typical definitions for the two terms is that antisocial behavior assumes intent to harm or injure.

Aggressiveness and assertiveness are two terms that should not be confused. Wolpe and Lazurus (1966) defined assertiveness as the "socially acceptable expression of personal rights and feelings" (p. 38). Assertive actions are goal-directed and show proper respects for the rights of others. Conversely, aggressive actions do not show respect for the rights of others. Aggressive actions may be instrumental (goal-directed), hostile (deliberately violent), accidental, or expressive (serving as a pleasurable sensory experience) (Kolstel'nik et al., 1988). Future research could serve to further delineate the differences between aggressive and assertive actions, as well as the differences among the four types of aggressive actions.

According to Sutton-Smith (1988), teacher presence may present a strong limitation to a study. Sutton-Smith noted

that teacher presence may lead children to inhibit their display of antisocial behaviors. In the present study, the researcher attempted to control for this possible limitation by noting that the head teachers involved with the subjects were generally permissive. That is, most forms of play were permitted in the classroom. While the study was being conducted, the head teachers assumed even more permissive roles in the classroom.

Another important factor related to the question of whether teachers inhibit children's aggressiveness or antisocial behaviors is the question of which is more important: teacher presence, or the cues associated with toys. The ultimate question is, "Which of these two factors exerts more influence on children's behaviors?". The present study assumed that the cues associated with the toys are more important in determining whether children will behave prosocially or antisocially. These cues were linked with the toys through observation. In other words, if a child witnessed his mother (the model) bottle-feeding a baby, the baby and the bottle would become associated with feeding behavior. Therefore, when the child encountered a baby bottle and a baby doll on a later occasion, he would be likely to apply feeding actions to the baby doll.

Mendoza (1972) stated that "while a child's overt behavior is greatly influenced by the environment in which he is placed, ...his environmental surroundings have little

if anything to do with his thought processes and mode of reasoning" (p. 75). From this statement it can be argued that the toys in the present study contained cues to elicit certain types of behaviors. Furthermore, it is unlikely that before displaying one of these behaviors (e.g., biting a peer) a child would stop and think "my teacher is here, so I shouldn't do this." The exception would be if the child had seen a model be punished for performing the same behavior. In this case, the child would not likely perform the behavior.

Directions for Future Research

Future research relating to toys and their effects on children's social behaviors could examine many research questions. Some suggested research questions that logically follow from the present research include:

- (1) Is it possible to accurately distinguish between real and pretend antisocial behaviors? Is it even necessary?
- (2) Does exposure to antisocial toys and prosocial toys lead to antisocial and prosocial behavior (respectively) in children who do not attend day care or preschool, or in children who watch no television?
- (3) Do children's pre-existing overall levels of antisocial and prosocial behaviors influence

the effects that toys have on the children's subsequent social behaviors?

- (4) Do children who frequently engage in antisocial behavior develop into antisocial adults? Do children who frequently engage in prosocial behavior develop into prosocial adults?
- (5) Would the same results found in this study be found in a school setting that stressed verbal achievements in boys and that encouraged girls to participate in more physical activities?

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APPENDIX A
Consent Form

Informed Consent Form for Research Project

To: Parents of children enrolled in Lab School

From: Tara Snyder, A.M. four-year-olds' teacher and graduate researcher

Dear Parents,

On April 1, 1992 I will be collecting data for my Master's thesis. The purpose of the study is to investigate the effects of toy exposure on the social behaviors that children display.

If your child is chosen to participate in the study, he or she will be placed in a group of about eight children. Each group will leave "center time" for approximately five minutes on nine separate days. I will escort each group to the conference room (next to Dr. Sawyer's and Mrs. Vogler's offices). Toys from three toy categories (one toy category per day) will be available for the children. The three toy categories are: Usual Toys (e.g., Legos), Antisocial Toys (e.g., a toy sword), and Prosocial Toys (e.g., a baby doll and bottle). Depending on the response to this informed consent form, I may choose to bring the above mentioned toys into the classroom. In this case, the children would not be asked to leave the classroom.

No child will be forced to participate. Each child will have the opportunity to refuse to play with any of the toys.

If you have any questions concerning this study, please call me at (703) 951-8140 (or speak with me at Lab School).

Thank you!

I _____ agree to allow my son/daughter
_____ to participate in the research
conducted by Tara Snyder. I have read the above description
and understand the role my child will play in the research
project.

signature

date

APPENDIX B

Data Sheet

Observer: _____ Date: _____ # of children present: _____
 Starting Time: _____ Ending Time: _____
 Toy Condition: (circle) Prosocial Antisocial Usual

1 2 3 4 5 6 7 8 9 10

Turntaking										
Physical Affection to person										
Physical Affection to object										
Nurturant behavior to person										
Nurturant behavior to object										
Cooperation										
Helping/Sharing										
Suggest Rules/ Requests help										

Hits, bites, kicks person										
Hits, bites, kicks object										
Pushes, pulls, or shoves person										
Grabs object away from person										
Damages or destroys property										
Curses or swears at person										
Acts very bossy										
Makes critical, negative, and/or insulting remarks										
Braggs or boasts										
Makes threat to do violence or hurt another										

TARA D. SNYDER

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EDUCATION

M.S., Child Development, July 1992
Virginia Polytechnic Institute and State University
(VPI & SU), Blacksburg, VA
Thesis: The effects of toy exposure on children's
prosocial and antisocial behavior
Advisor: Dr. Cosby S. Rogers

B.S., Psychology, December 1990
The Pennsylvania State University (Penn State),
University Park, PA

AFFILIATIONS

Society for Research in Child Development (SRCD), 1992
National Association for the Education of Young Children
(NAEYC), 1992
Center on War and the Child, 1990 - present
PSI CHI 1988 -1990

RESEARCH INTERESTS

- Children's war play and war toys
- Aggression and antisocial behavior in children
- Prosocial behavior in children
- Eating disorders in adolescence

EXPERIENCE

Teaching

**Head Teacher, Laboratory School of the Department of
Family and Child Development, VPI & SU, Blacksburg, VA
August 1991 - present**

- Coordinated the four-year-old classroom by
developing all class content and activities.
- Supervised undergraduate student assistant teams.
- Conducted parent-teacher conferences.
- Provided student assistants with direction and
evaluative comments.

**Co-Teacher, Sundays Preschool, State College, PA
May 1989 - December 1990**

- Designed and implemented classroom activities for
three- to five-year-olds.

- Coordinated bi-monthly parent meetings.

Research

Research Assistant, Department of Psychology, Penn State, University Park, PA, August 1989 - December 1989

- Supervised experimental trials of reaction time.
- Analyzed subjects' data.
- Wrote and edited research reports.

Research Assistant, Project Upward Bound, University Park, PA, May 1989 - December 1990

- Administered achievement, aptitude, and self-esteem tests to high school students.
- Scored tests and analyzed results in monthly progress reports.

CERTIFICATES

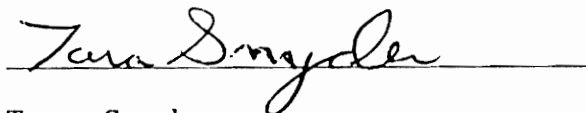
- Certification in CPR

PRESENTATIONS

Snyder, T.D., Dodd, A., & Dollins, R. (1992, March). War and Peace: Toys, teachers, and tots. Paper presented at the 43rd annual conference of the Southern Association on Children Under Six, Tulsa, OK.

Snyder, T.D., Dodd, A., & Dollins, R. (1992, March). War and Peace: Toys, teachers, and tots. Paper presented at the 36th annual conference of the Virginia Association for Early Childhood Education, Norfolk, VA.

Snyder, T.D. (1992, May). Parenting and stress: Building peace of mind as a parent. Seminar presented at the parenting workshop of the Covington Junior Woman's Club, Covington, VA.



Tara Snyder