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THE USE OF SOCIAL STORIES TO TEACH SOCIAL AND BEHAVIORAL SKILLS TO PRESCHOOL CHILDREN WITH MODERATE TO SEVERE AUTISM

A Thesis
Presented to
The Faculty of the Department of Psychology
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree
Specialist in Education

By
Michelle Lynne Antle

May 2004

THE USE OF SOCIAL STORIES TO TEACH SOCIAL AND BEHAVIORAL SKILLS TO PRESCHOOL CHILDREN WITH MODERATE TO SEVERE AUTISM

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First and foremost, I would like to thank my Lord God Almighty who has shown me that "I can do all things through Christ who strengthens me."

Thesis Director note. This thesis research project was completed in collaboration with Melissa Herrin. Thus, this thesis and Herrin's (2004) thesis contain the same literature review and a similar methodology.

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THE USE OF SOCIAL STORIES TO TEACH PRESCHOOL CHILDREN WITH MODERATE TO SEVERE AUTISM SOCIAL AND BEHAVIORAL SKILLS

Michelle Lynne Antle May 2004 66 Pages

Directed by: Dr. Carl Myers, Dr. Frank Kersting, and Dr. Melissa Hakman

Department of Psychology Western Kentucky University

Previous research has indicated success using Social Stories with preschoolers with mild levels of autism. The purpose of this study was to determine if Social Stories implemented in the home setting would be effective with preschool children diagnosed with moderate to severe autism. Social Stories were implemented with 3 male preschool-aged participants. Two were classified as in the moderate range and one was in the severe range of autism. A variety of socially inappropriate behaviors were addressed including inappropriate dinnertime behaviors, transitioning to bedtime, and inappropriate touching. Data revealed no significant change in target behaviors (dinnertime behaviors and transitioning to bedtime) exhibited by moderately functioning preschool children. However, data did reveal a decrease in the frequency of inappropriate touching from the child who fell in the severe range of functioning. It is not clear from the current research whether it was the severity level of autism or the types of target behaviors that may have resulted in a lack of success using the Social Story intervention.

Literature Review

The challenges of autism are significant, and the numbers of children with autism appear to be increasing in this country. According to the Diagnostic Statistical Manual - IV (American Psychological Association [APA], 1994), autism occurs in approximately two to five individuals out of every 10,000. However, current studies on the prevalence of autism show a growing number of children diagnosed with autism. The National Research Council (2001) estimated that the rate of autism is currently one in every 500 children. Symptoms of autism occur on a spectrum ranging from mild to severe (Siegel, 1996). An increased awareness of autism could account for the increased estimate in the rate of autism; however, even the current prevalence rate could be an underestimate of the true prevalence rate of autism (National Research Council, 2001). It is possible that the less pronounced or less severe cases of autism still go undiagnosed and uncounted.

Children with autism exhibit a number of behaviors that interfere with their communication, play, peer interaction, and learning. By definition, children with autism have impairments in social interaction and communication skills and display restricted, repetitive, and stereotyped patterns of behavior (APA, 1994). Indeed, one of the hallmarks of autism is the fact that children with autism experience difficulty in social interactions and relationships. Children with autism often lack the desire for social interactions; attention and peer approval are usually unimportant to these children (Siegel, 1996).

Social impairments are often a major barrier for children with autism when functioning in every day life. Children with autism are often described as “aloof,” “isolated,” or “in their own

world" (Siegel, 1996). These children are good at isolating themselves, even in a crowded room. Typically developing children show attachment to their parents or caregivers; however, children with autism spend less time around and exhibit fewer attachment behaviors with their loved ones. These children struggle to read and respond to the social world and from their perspective social situations typically occur without reason (Gray, 2000). Improving the social deficits in children with autism continues to be a struggle for professionals. There is no identified "cure" for autism; however, there are several specific intervention programs available that can lessen the symptoms of autism. In particular, early intervention programs show promise for improving the lives of children with autism.

Early Intervention

Autism is increasingly identified in the early childhood years. Young children with autism typically display difficulties in social interactions, shared attention, and motor imitation (Dawson & Osterling, 1997). These identified characteristics are usually present within the child's first year (Dawson & Osterling, 1997). With the ability to identify autism at an early age, interventions are now implemented earlier. There is a greater knowledge of how to best serve preschool-aged children. Early implementations of interventions are shown to produce greater effects rather than implementing interventions later in life (Prizant & Wetherby, 1989).

The results of one study in particular created an awareness that intensive early intervention can have a major impact on the lives of children with autism. Lovaas (1987) conducted a study where he provided intensive one-on-one behavioral treatment for a group of 19 children all under the age of four and compared them to a control group of 19 children who received less intensive services. All children were diagnosed with autism. All children were re-evaluated at the age of seven. Children who received intensive services were found to have an

average increase in IQ of 20 points and were showing advances in educational achievement over the children who were placed in the control group. McEachin, Smith, and Lovaas (1993) conducted a follow up study on these children several years later. The mean age of the children in the study at the time of this evaluation was 13 years. McEachin et al. (1993) looked at school placement by asking the parents if their child was either in special education or regular education. They also administered three standardized instruments: Wechsler Intelligence Scale for Children – Revised, The Vineland Adaptive Behavior Scales, and The Personality Inventory for Children. The authors found that within the experimental group only one of the subjects was in a special education class. However, within the control group none of the children was placed in the regular education classroom. The results of testing intellectual functioning revealed that the experimental group had a significantly higher IQ than the control group. The results of the adaptive functioning revealed that the experimental group had overall more adaptive behaviors and fewer maladaptive behaviors that did the control group. The results of the personality assessment did not show a difference between the experimental and control group (McEachin et al., 1993).

Impaired social interactions are primary characteristics of children with autism. These children have difficulty reading social situations and understanding what is expected of them. Having these social impairments results in a higher risk for the development of inappropriate behaviors by merely misunderstanding the social situation. Early intervention may benefit the child in preventing these inappropriate behaviors by addressing the social impairment at an early age (Dawson & Osterling, 1997). A number of interventions have been developed to address social deficits.

Interventions to Address Social Deficits

Socialization and communication skills are important to the development and education of children, but are especially important for children with autism. Teaching appropriate social skills is an essential part of a behavior intervention plan. Interventions used in these plans should take into account the individual child and address his/her specific areas of concerns. An overview of a variety of interventions useful for addressing social deficits will be described. The intervention technique of Social Stories is the primary focus of this thesis research and will be described in detail.

It has been noted that proximity alone is not sufficient to teach socialization skills. In other words, children with autism do not learn social skills by observations alone (Taylor, 2001). In order for the behavior to be learned it must be taught and then reinforced. Most children with autism are not intrinsically motivated to engage in social interactions with their peers; therefore, in order to increase the amount of social interaction, extrinsic reinforcers should be paired with appropriate social interactions. An intervention cited by the National Research Council (2001) that takes this into account is Peer Mediated Techniques. These techniques involve teaching typical peers to initiate appropriate social behaviors, such as sharing, helping, giving affection, and praise. The National Research Council described numerous positive results from the use of Peer Mediated Techniques. Using the techniques reinforces interactions with same-aged peers. It is believed that using peers results in a greater amount of generalization and maintenance of skills than when using adult-child interactions. It has been shown to have powerful results when provided in a preschool setting as well as a home setting.

Not only do children with autism need instruction on peer interaction, but typical peers also need “training” on how to interact with children with autism. Taylor (2001) described that

when children, both typical and autistic, were trained and social interactions reinforced, the amount of social interaction increased. DiSalvo and Oswald (2002) reviewed several different peer-mediated techniques found to be helpful in enhancing social skills in children. These interventions reviewed were organized into (a) manipulation of the situation or contingencies to promote interaction, (b) peer instruction in social interaction strategies to promote interaction, and (c) target child instruction in initiation strategies to promote interaction.

Manipulation of the situation or contingencies to promote interaction involves arranging the child's situation to promote peer interaction. This intervention involves different techniques, which include: Integrated Play Groups, Peer Buddy/Peer Tutoring, and Group Oriented Contingency. Peer instruction in social interaction strategies to promote interaction is a technique that involves teaching typically developing children specific social skill strategies that will facilitate interaction. These techniques help children have a more favorable view of children with autism, and this increases interactions between children with and without autism. These strategies involve methods that include: Peer Networks, Pivotal Response Training, and Peer Initiation Training. Target child instruction in initiation strategies to promote interaction involves teaching the child with autism initiation skills. These strategies involve methods, which include: Target Child Initiation Training and Initiation Training for Target Child and Peers.

Other effective methods that are used to teach social skills to children with autism are found under the methods of applied behavioral analysis. Teaching social skills using these strategies ensures that the instructions are individualized and focused on the child's individual skills. For example, if a child relies mainly on imitation to learn, the therapist may use modeling as a prompt. There are a number of applied behavioral analysis techniques that include verbal modeling, textual prompts, photographic prompts, and tactile prompts (Taylor, 2001).

Social Stories

Social Stories are another intervention used to increase social interactions in children with autism (Gray, 2000; Gray & Garand, 1993; National Research Council, 2001). Persons with autism often have difficulty "reading" social cues and, as a result, miss vital information that could allow them to respond to situations in an appropriate way. Social Stories are short stories that define a social situation in terms that is most appropriate for the child. These stories present situations to the child in such a way that it is easy for them to understand and it also presents an appropriate response in place of the current inappropriate one displayed by the child (Gray & Garand, 1993). These stories are designed to define social cues that children with autism often miss. Gray (2000) describes Social Stories as a process that results in a product. The process is the consideration and respecting of the perspective of the child with autism. The product is the Social Story that defines situations, concepts, or social skills. The Social Story is presented in a format that is appealing and meaningful to the child. Gray (2000) describes the results of this process as a better social understanding for both sides of the social equation. Adults have a newly found sensitivity for individuals with autism and the individual with autism has an improved social understanding.

Social Stories have been used in a variety of ways to aid in the learning of a child with autism. Social Stories are often used in troubling situations where the child lacks the social skills to respond to certain situations, and they have been used to aid the process of inclusion into a general education classroom. These stories could include situations that are often presented in a general education classroom, such as having a substitute teacher. Social Stories are also used when a child will be introduced to a new routine, either at home or school. These stories can

often make it easier for the child to move into a new situation, since the child will have a general idea of what to expect (Gray & Garand, 1993).

Situations where Social Stories could be used are easily identified. These situations are where the child is "misreading" social cues and needs more information for him/her to completely understand the situation (Gray, 2000). Another purpose of a Social Story that is often overlooked is acknowledging an accomplishment. Typically, the first Social Story that is initially presented to a child is a skill or situation that is trouble free. The idea of presenting a "trouble-free" story is to allow the child to identify with the story from beginning to end with few complications. This will allow future stories to be easier to apply. The other idea of presenting this type of story to begin with is to provide written praise to the child with autism. This provides a permanent record of positive achievement that the child does, since children with autism accept written praise easier than verbal praise (Gray, 2000). Each Social Story will be unique to each situation and will be specifically tailored to the child.

Social Story sentences. When writing a Social Story there are very specific guidelines that should be followed. Each sentence in a Social Story should be written with an individualized perspective of the child. The author should use vocabulary that is appropriate for the child's ability level (Gray & Garand, 1993). Authors of the Social Story can include, but are not limited to, parents, professionals, teachers, grandparents, therapists, and siblings. Virtually anyone who is closely involved with the child can potentially be an author of a Social Story. There are four basic sentence structures that should be included into a Social Story. The four sentence structures are (a) descriptive, (b) perspective, (c) directive, and (d) affirmative. Each sentence provides a specific purpose within the Social Story. A fifth type of sentence that the

author can use to ensure that the child with autism completely understands the meaning of the story is a partial sentence.

Descriptive sentences are statements of fact. These types of sentences describe what people do in specific situations and why. These sentences identify the most important aspects of a situation. Descriptive sentences are required when constructing a Social Story; they provide the backbone of the story. When writing a story, this type of sentence will likely be the most often used. When these sentences are used, it is important for the author to remain objective and not assume how the child will react to a certain situation. For example, instead of writing, "Going to the park is fun," one should write a sentence such as "Children play games at the park" (Gray, 2000).

Perspective sentences provide information on how persons are feeling, or their internal state. Most often these sentences are used to describe how others are feeling or their reaction to a situation. These sentences rarely describe the reaction of the individual with autism. This sentence is referred to as the "heart" of the Social Story. They provide the emotional states that are visible in social situations that individuals with autism often miss. Such a sentence might include, "My mother is happy when I brush my teeth before I go to bed" (Gray, 2000).

Directive sentences suggest options or choices for the individual with autism. These sentences must be written carefully, in that the author must pay attention to the literal interpretation of the sentences. They must not be sentences that start with "I will" or "I can." Directive sentences should start with phrases such as "I will work on" or "I may try to." These sentences should focus on what the child with autism can do in order to be successful in a situation. In writing these sentences it is important for the author to state the desired behavior rather than merely stating what not to do. For example, a more desired sentence is, "I can wait

while my mom talks on the phone" instead of "I will not yell while my mom talks on the phone" (Gray, 2000).

Affirmative sentences stress important points, usually referring to a law or a rule. These sentences are also used in situations where reassurance is needed for the child with autism. When affirmative sentences are used to reassure the child they are usually referring to a situation that makes the child anxious such as loud noises. Affirmative sentences are used to enhance the meaning of the other sentences. They are used to express a commonly shared value or opinion. An example of an affirmative sentence is in italics: "Most people drive the speed limit. *This is a safe thing to do."* This affirmative sentence references a law. Another example including a reference to a reassurance is in italics: "Most fireworks make loud noises. *This is okay."* Most often these sentences will follow a descriptive, perspective, or a directive sentence (Gray, 2000).

Partial sentences are used to ensure that the individual understands the situation. These sentences encourage the child to make a guess on what will happen next either in a situation, a response of another person, or his/her own response. Partial sentences require the individual to "fill in the blank" of what should follow next in the situation. Any of the four basic sentences may be written as a partial sentence, with a portion of the sentence replaced with a blank space. In situations where partial sentences are used, the individual with autism is encouraged to fill in the blank space when reviewing the story (Gray, 2000). If the student is able to fill in the blank space, then it can be assumed that he/she understands the situation presented in the Social Story.

Sentence construction is vital when writing a Social Story in that it impacts the entire Social Story and its effectiveness. While the different types of sentences are vital in writing a Social Story the correct ratio of the various types of sentences and following other story guidelines are equally as important. The Social Story should contain two to five descriptive,

perspective, and/or affirmative sentences combined for every directive sentence written (Gray, 2000). Each Social Story should follow this ratio of each type of sentence in the story.

Guidelines for writing Social Stories. There are other specific guidelines that should be carefully followed when writing a Social Story. As mentioned earlier, the Social Story should be tailored to a child's specific needs. To ensure that the Social Stories maintain a certain quality for the individual there are four basic guidelines that should be followed when writing the story (Gray, 2000). These guidelines set basic standards that should be followed while still allowing the author to be creative and inventive when writing the Social Story.

The first guideline is to *picture the goal*. The primary purpose of this step is to share relevant social information. This step is accomplished by explaining social situations to the child with autism through meaningful terms and illustrations. Often this step is carried out by explaining abstract concepts with visual or concrete references. This will allow the child with autism to easily understand and respond appropriately. Ultimately the goal of a Social Story is to change the response of the child to a more appropriate one; however, initially the priority is to share meaningful social information to the child in a way that he/she can comprehend and understand (Gray, 2000).

The second guideline is to *gather information*. This guideline specifically tailors the Social Story to the intended individual. The author of the Social Story must gather information such as where and when the situation occurs, who is involved in the situation, what occurs, and why the situation occurs. To gather all the relevant information the author of the Social Story might even attempt to experience the situation first hand, such as getting a hair cut at the particular place the child would receive his/her haircut. In addition to gathering information about the situation, information about the individual with autism must also be gathered, such as

learning style, reading ability, and interests. Such information could be gathered through interviewing parents and teachers and conducting observations of the individual.

The third guideline is to *tailor the text*. This guideline allows the author to individualize the Social Story to the child. The child's interests, abilities, and needs should be addressed and incorporated into the Social Story. This guideline results in a completed Social Story, which should contain certain characteristics: (a) an introduction, body, and conclusion; (b) answers "wh" questions; (c) written in a first person perspective; (d) written using positive language; (e) up to four basic types of Social Story sentences; (f) written so that it is literally accurate; (g) written, if needed, in an alternative vocabulary to maintain a relaxed and positive quality; (h) uses concrete, easy to understand text which can be enhanced by visual support (if appropriate); (i) illustrations, if deemed appropriate; and (j) reflects the interest of the specific child with a motivating theme (Gray, 2000).

The final guideline is to *teach with the title*. The title of a Social Story is important in that it defines the overall meaning of the story. The title may be a statement or a question. If the title is in the form of a question, the information in the Social Story will answer the question. For example, if a title of a Social Story is "What will we do at Grandma's House?" the story should tell the child with autism what is expected of them when they go to Grandma's house. Either way, the title should identify the most important information within the Social Story (Gray, 2000).

Implementing a Social Story. The specific technique for implementing the Social Story is mainly dependent upon the child's unique needs and abilities. Gray and Garand (1993) report that Social Stories are more likely to be effective with students who function intellectually in the "trainable mentally impaired" range or higher and also who have basic language skills; however,

a Social Story can be modified to address the child's specific ability and needs. It has also been reported that Social Stories have shown to be successful with elementary and secondary-aged children (Gray & Garand, 1993). The authors stated, "Experience with social stories indicates that they are not effective for all students in all situations," (Gray & Garand, 1993, p. 5), but further explanation of what population of children has been ineffective using social stores was not provided. Gray (2000) emphasized that implementing Social Stories is based on common sense and that the author of the Social Story should specifically consider the individual child when deciding how to implement the story. There are however, recommendations to guide the author in implementing the story. First authors of the Social Story should completely review the story before introducing it to the child. It is suggested that all important individuals involved with the child be familiar with the story. The Social Story should be introduced to the child in a relaxed and non-anxious situation. The story should never be introduced to the child when an upsetting or problematic event is occurring as this could adversely affect the results of the Social Story. The author of the story can introduce the story to the child with simple statements such as "I wrote a story for you, would you like to read it?" or "I wrote a story for you about lunch time, would you like to read it?"

The second suggestion for implementing a Social Story is to review the Social Story. It is vital that the Social Story is reviewed in a positive environment. This is very important for the child to view the Social Story as something positive. Gray (2000) warns that implementation of the Social Story is likely to fail without a positive and patient environment surrounding the story. Individuals other than the primary author can also review the Social Story with the child. Stories are often reviewed once a day; however, common sense underlies when it is appropriate to review a Social Story (C. Gray, personal communication, April 4, 2003). For example, if a story

is about a specific holiday it can be reviewed periodically before the holiday. The story should be reviewed at least once a day; however, it can be reviewed more than that upon the request of the child.

The final suggestion after successfully using a Social Story is to fade the story. When attempting to fade a story it is important that the author takes into account the child that the story is written for. It may not be beneficial or possible to fade a Social Story from use. There at least two strategies that could be followed if the story is faded. First, the story could be re-written if the child competently displays the main ideas of the story. When re-writing a story, the directive sentences can be omitted or re-written as partial sentences. Re-writing the story in such a manner encourages the child to recall the information on his/her own. Second, the number of times the Social Story is reviewed can be gradually decreased. Often times, the child will provide feedback about the reviewing of the story either by refusing to read it or by indicating that they already know the information (Gray, 2000).

Research on Social Stories

Social Stories are individually written to address a variety of issues for children with autism. Thus, any research studies conducted on Social Stories have been with very small samples of participants, which limits the generalization of results to the general population of children with autism. Few studies have been found that have evaluated the effectiveness of Social Stories. Studies that have evaluated the effectiveness of Social Stories addressed issues in school and home settings. Research on Social Stories will be critically reviewed.

Swaggart and Gagnon (1995) used Social Stories to address the problems of three children in school. The ages of the three children were: Danielle - 11 years, Adam - 7 years, and Darrell - 7 years. Social Stories in this study were constructed in a book-like format. The pages

of the book were laminated and bound for each child. Each page consisted on one to two sentences with a corresponding picture or icon. The target behavior identified for the first child in this study, Danielle, was inappropriate greeting behaviors. Danielle was identified as displaying physical aggression during her greeting behaviors. She would display behaviors such as pulling hair, squeezing arms, or scratching. Two Social Stories were developed for Danielle to address her greeting behaviors and her aggressive tendencies. The target behaviors for the other children involved in the study, Adam and Darrell, were related to sharing materials. Adam and Darrell displayed aggressive behaviors when approached by another person.

Results of the study showed positive outcomes for all the children involved. After implementing the Social Story intervention, Danielle's greeting behaviors improved from 7% appropriate to 74% appropriate. Her aggressive behaviors also showed a decrease after implementation, resulting in days with no aggressive episodes at all. During baseline data collection, the mean number of Danielle's aggressive episodes per day was approximately six (based on a visual interpretation of a graph in the article). After the implementation of the second Social Story, the mean number of aggressive behaviors per day appeared to be two (visual interpretation of graph).

Adam and Darrell's behaviors also improved after implementation of the Social Stories. During the baseline data collection, Adam showed no sharing 100% of the time and he also screamed 100% of the time. After implementation of the Social Stories, Adam was shown to share 22% of the time and he was observed to scream 56% of the time. During the baseline data collection for Darrell he was not observed to share and was observed to grab 100% of the time. Darrell did not exhibit aggressive behaviors and behaved appropriately 80% of the time. He was also observed to engage in parallel play 80% of the time. After implementation Darrell shared

independently 35% of the time and grabbed toys only 35% of the time. He was observed to not exhibit aggression and he also engaged in parallel play 94% of the time.

Kuttler and Myles (1998) used Social Stories with a 12-year-old boy, Jon, who was diagnosed with autism and had a severe communication impairment. Jon used one and two-word utterances, which were often difficult to understand. He relied on a picture schedule to complete activities throughout the day. Jon also had difficulty with social situations. He would exhibit tantrum-like behaviors in situations of transitions, waiting, and free time. The classroom staff attempted interventions to address these behaviors that included a classroom picture schedule, sticker/point chart, and verbal and physical prompting from the classroom staff.

Two Social Stories were constructed to address the precursor behaviors to his tantrums; the most prevalent behaviors were inappropriate vocalizations and dropping to the floor. The two most difficult times of the day for Jon were morning work time and lunchtime. The Social Stories were read to Jon by a classroom staff member immediately prior to morning work time and lunchtime, as well as being available to him throughout the day. If Jon displayed the target behavior, he was prompted by the staff to remember the story and then the story would be reviewed to remind Jon what he was expected to do. Both Social Stories were implemented and data were collected for a total of 19 days using a single subject ABAB design. Interventions provided prior to the implementation of the study continued to be provided during the initial baseline data phase of the study. Results indicated that when the Social Stories were introduced, there was a decrease in his inappropriate behaviors. Returning to the baseline phase resulted in an increase of inappropriate behaviors. During the initial baseline data phase the mean frequency of precursor behaviors during morning work time was 15.6 and during lunch time was 11.6. After introducing the Social Stories in the second phase, the mean frequency of precursor

behaviors showed a reduction to a mean of 0 during morning work time and a mean of 2.0 during lunch time. Reversing back to the baseline phase resulted in the mean frequency of precursor behaviors to increase to 15.3 during morning work time and 18.0 during lunch time. During the final phase when, the Social Stories were reintroduced, precursor behaviors were a mean of 0 during morning work time and a mean of 1.0 during lunch time.

Norris and Dattilo (1999) also used Social Stories to address issues in a school setting. Social Stories were constructed in a book-like format with each page laminated and bounded. Each page consisted of two to four sentences with a corresponding picture or icon. They implemented Social Stories with an 8-year-old girl, Jennifer, to address her problem behaviors at lunch. Jennifer was observed to have inappropriate behaviors during lunch such as singing and talking to herself. Three Social Stories were developed for Jennifer to increase interest by providing a variety of stories. The order of the Social Stories was randomized to ensure that Jennifer did not anticipate the story that would be read to her. Jennifer was instructed to read one of the three Social Stories 10-15 minutes before lunch. All three Social Stories were also placed in her room and were available to her at any time during the day. While Jennifer read the story, a professional sat near Jennifer to answer any questions that she had and to ensure that she fully understood the material. Results from this study did show a decrease in inappropriate behaviors. Norris and Dattilo reported that there was a 48% decrease in inappropriate behaviors. There was no increase in appropriate behaviors. During both the baseline and intervention phases, appropriate social interactions were near 4%. Norris and Dattilo also noted that there was an inverse relationship between inappropriate social interactions and the absence of social interactions. Therefore, when the inappropriate social interactions decreased, the absence of

social interactions increased. Norris and Dattilo reported that the decrease in inappropriate social interactions was correlated with the Social Story intervention.

Rowe (1999) addressed the issue of whether or not Social Stories would be beneficial to children placed in mainstream primary schools. The story in this article was presented in a 3-page booklet. Social Stories were implemented with one boy, George, diagnosed with Aspergers syndrome. George was in his second year in primary school and was experiencing difficulties at lunchtime (a specific age for George was not cited in the study). His behaviors consisted of screaming at his peers and acting out. These adverse behaviors resulted in the removal of George from the dining hall and from his peers. The adults working with George collaborated in writing a Social Story titled "Lunch Time," which was presented to him before lunch. In this study the Social Story was presented to George over a 12-week period. During the first 6 weeks of the intervention the Social Story was presented to George every day prior to lunchtime. After the 6th week, the frequency of the story was gradually reduced until on the 12th week the story was completely discontinued. Observations and interviews carried out before and during the intervention showed that the Social Story had a positive effect on his inappropriate behaviors. Specific data were not reported for the target behaviors. After implementing the Social Story on the first day it was observed that George finished his entire lunch, whereas prior to the use of the Social Story he would only finish a small portion. It was also reported that George was able to transfer skills learned to different situations. For example, he was observed to exhibit the inappropriate behavior at the beginning of an assembly; however, when prompted to remember his story he responded appropriately. The effects of implementation of Social Stories were reported to be immediate and long lasting although the authors did not specifically define what was meant by "long lasting."

Smith (2001) indirectly evaluated the effectiveness of Social Stories through a two-part training session, with each session one month apart. Individuals involved in the training sessions included mainstream teachers, learning support assistants, and parents/caregivers working with children with autism. During the first training session the experimenter instructed the participants on the basic concept of Social Stories and instructed them on how to write a story. Individuals involved were encouraged to draft a story and meet back in a month to discuss the progress of these stories. Nineteen stories were written for 19 children as a result of this training session. Fifteen of the children were diagnosed with autism, two with learning difficulties, one with Tourettes Syndrome, and one with Semantic Pragmatic difficulties. Child-specific data were not presented but the participants verbally reported that 16 of the 19 stories were successful. Smith reported the individuals implementing the Social Story indicated that they were enjoyable, practical, and effective. This article was the first to provide support for the use of Social Stories with populations outside the autism spectrum disorders.

Rogers and Myles (2001) used Social Stories and Comic Strip Conversations to address the issue of an adolescent diagnosed with Asperger Syndrome. Tom was a 14-year-old male who reportedly was having difficulty at lunch. He was confused about the conversations that his friends were having, which upset him. After lunch his behavior would escalate and would make it difficult for him to transition to his next class, PE. Two Social Stories were written for Tom, the first Social Story outlined what occurred during lunch and the steps he needed to take to transition into PE class. After five days of reviewing this story daily, the story was revised with more detail about lunch activities. He reviewed this story for the remainder of the time. Social Stories were introduced to Tom for a total of 12 days and then Comic Strip Conversations were utilized. The authors reported that Tom's behaviors changed due to the use of the Social Stories

and Comic Strip Conversations; however, specific data were not reported. Rogers and Myles hypothesized that the behavior change seen in Tom was due to a better interpretation of the social situation. He was better able to read the situation than he was before the Social Stories.

The few studies published on Social Stories examined the technique in a school-based setting. Apparently, only one study has directly examined the effectiveness of Social Stories in a home-setting. Lorimer, Simpson, Myles, and Ganz (2002) implemented Social Stories as a method to address inappropriate behaviors of a boy, Gregg, in his home. Gregg was a five-year old male diagnosed with mild to moderate autism. He had average to above average cognitive abilities and could communicate his wants and needs similar to his same-aged peers. Gregg exhibited tantrums, which were characterized by hitting, kicking, screaming, and throwing objects. A functional behavioral assessment was conducted and revealed that the tantrums were motivated by attention and tangible reinforcement. Gregg was shown to inappropriately verbally express his wants and needs before displaying the tantrum behavior. Gregg's parents and therapists noted that these behaviors were likely to occur when an adult was talking to a person other than Gregg or when he wanted something and could not obtain it. Prior to implementation of the Social Story, Gregg's parents reported that the tantrums occurred at least five times per day, lasting from 45 to 90 minutes.

Two Social Stories were written for Gregg to address his inappropriate behaviors. The Social Stories were constructed in a book-like format with each page laminated and bound. Each page consisted of one to two sentences with a corresponding picture communication symbol. "Talking with Adults" was written for Gregg to address his need for attention and "Waiting" was written to address the issue of inappropriate waiting. The stories were read to Gregg by his parents or therapists each morning and just prior to a situation that would normally provoke a

tantrum (i.e., waiting). The Social Stories were also kept in Gregg's view and were available to him at any time. An ABAB design was employed in this study to examine the effectiveness of the Social Stories. Results from this study showed positive results. During the baseline data phase, the mean number of tantrums was 4.7. When the stories were introduced, his inappropriate behaviors decreased to a mean of 0.1. Specifically, during 6 of the 7 days Gregg exhibited no tantrums. With the second baseline phase, Gregg had tantrums 2 out of the 3 days. The mean number of tantrums during this phase was 5.7. When the Social Stories were again implemented his tantrums were reduced to a mean of 1.3.

Results of the second Social Story with Gregg's precursor behaviors (i.e., inappropriately verbally express his wants and needs) were similar to his tantrum behaviors. During the initial baseline data phase his mean number of precursor behaviors were 0.9 per day. When the stories were introduced, his precursor behaviors decreased to a mean of 0.1 per day. During the second baseline data phase his mean precursor behaviors increased 1.0 per day. When the stories were re-introduced, his behaviors decreased to a mean of 0.1 per day.

In an unpublished study, Sansosti and Powell-Smith (2003) examined the effectiveness of Social Stories with three children diagnosed with Aspergers Syndrome in a school setting. Social Stories were constructed and presented in a book-like format with corresponding picture communication symbols on each page. Using a multiple baseline design across participants, the examiners indicated that after implementing the Social Stories prosocial communication behaviors increased. The results of their study were presented at the annual meeting of the National Association of School Psychologists. Results presented do provide support for using Social Stories to teach children diagnosed with Aspergers Syndrome social skills.

A second unpublished study used Social Stories to address problem behaviors in "normal" developing preschool children (Clark & Martin, 2004). Participants in this study included 22 children in a preschool classroom, ages 3 and 4. Social Stories were constructed in a book-like format with digital photographs or illustrations on each page. The consultant and the classroom teacher met to identify the target behaviors and then conducted baseline observations in order to identify the antecedent to the behaviors. Clark and Martin then developed a Social Story for the entire classroom to address the target behaviors, hitting and touching. The classroom teacher read the story to the class several times during the day and allowed the children to obtain the book at any time throughout the day. Results indicated that the Social Story was an effective treatment in reducing the incidence of problem behaviors and teaching socially appropriate behaviors with typically-developing preschoolers.

In a third unpublished study, Herrin (2004) addressed problem behaviors in the home setting with preschool-aged children diagnosed with autism. The three children in her study were identified as having mild autism as indicated by the *Childhood Autism Rating Scale* ([CARS] Schopler, Reichler, & Renner, 1988). Social Stories were written to address a variety of problem behaviors. Each story was presented in book form with the pages being bound and laminated. One to two sentences were placed on a page with a corresponding picture or icon relevant to the desired behavior. The children's parents read the Social Stories to the participants and collected data on the target behaviors.

The first child in the Herrin (2004) study was a 4 year, 9 month old male whose target behavior was inappropriately obtaining attention by being aggressive toward others. After three weeks of implementation his target behaviors had extinguished from 6.5 times a day to zero times a day. The second child was a 3 year, 2 month old male whose target behaviors included

hitting, tantruming, and/or pushing others. After two weeks of implementation his behavior had decreased from 2 times a day to .34 times a day. The third child was a 4 year, 10 month old female whose target behavior was listed as tantruming. Baseline data indicated that these behaviors were exhibited for 30 minutes a day before implementation. After two weeks of having the Social Story read to her, her behavioral outbursts had decreased to an average of 7.6 minutes a day. Results of this study indicated that the implementation of Social Stories in the home setting by parents were effective with preschool children diagnosed with mild autism.

Limitations of Social Stories Research

Research in the area of Social Stories is quite limited. Investigators in this area of research seem to be enthusiastic and encouraged; however, published studies implementing this intervention are few. Only seven published studies were found in a search of the literature. The majority of information on Social Stories is available only from books, websites, and videos. Such information is descriptive but not research-based.

Previously, studies evaluating the effectiveness of Social Stories have employed a small number of participants. Six published studies in this literature review directly examined the effects of Social Stories, but only represented eight children. A seventh published study, Smith (2001), reported a larger number of successes (16 of 19), but only reported second-hand intervention results; child-specific data were not available. With such a limited number of studies and participants, it is unknown how the Social Story intervention would generalize across a broader variety of participants and settings. The National Research Council (2001) stated that employing a single subject design has methodological problems and limitations, which lessen the applicability or generalization of the results to other children. More participants would help the experimenter rule out external variables that might be responsible for producing the change in

behavior. This would allow the experimenter to be more confident that it was the intervention (i.e., the Social Story) that produced the change in behavior.

Children who participate in research on Social Stories are typically in elementary school. The study of the effectiveness of Social Stories with preschool children has been limited to one five-year old boy (Lorimer et al., 2002). No published studies were found on the use of Social Stories with children with autism younger than five years of age. The published research on Social Stories in the home setting is also limited to the one study by Lorimer et al. (2002) that examined the effects of Social Stories with the five-year old boy.

In an unpublished study, Herrin (2004) found Social Stories used in the home setting by parents of three preschool children with autism were effective at reducing problem behaviors. However, a limitation of her study was that only children with higher functioning or mild autism were investigated. Apparently, no research has focused on the effectiveness of Social Stories based on a child's severity level. Additional research is needed to investigate the effects of using Social Stories with children identified as falling in the moderate to severe range on the autism spectrum.

Purpose of the Current Study

The purpose of this current study is to add to the literature pertaining to the effectiveness of Social Stories. It is clear that children with autism should be identified early so that interventions can begin when they are in their preschool years. When children start to receive services earlier, more positive results are likely to occur. Social Stories may be a very valuable tool to assist in early intervention efforts. More research is needed, however, to evaluate the effectiveness of Social Stories with preschoolers with moderate to severe levels of autism in the home setting.

Social Stories were designed to provide children with autism information to help them understand certain situations, specifically social situations, more clearly (Gray, 2000). Because these social situations can be extremely complex, a certain level of higher level cognitive processing would likely be needed. Higher functioning children with autism will be more likely to possess the needed cognitive skills than lower functioning children with autism. The purpose of this study was to look at the effectiveness of Social Stories with preschool children with autism who have been identified as falling in the moderate to severe category as defined by the *Childhood Autism Rating Scale* (Schopler et al., 1988). This study will employ single-subject research methodology to evaluate the effectiveness of using Social Stories on preschoolers with moderate to severe autism with parents implementing the procedure. It is hypothesized that lower functioning preschool children with autism will not benefit from the use of Social Stories.

Method

Participants

The experimenter and professionals at two local agencies, Regional Child Development Clinics and Family Options, worked collaboratively in recruiting volunteers for this study. Children referred for this study were reviewed for possible inclusion in this study. Children were included if (a) they fell in the 3 to 5-year age range, (b) the parents desired the services and agreed to the commitment of collecting data and implementing the Social Stories, (c) English was the primary language used in the home, (d) the family lived within driving distance of the experimenter, and (e) the children were suspected as having a moderate to severe level of autism. All participants who were referred met the given criteria and were accepted for the current study. The three children participating in this study were between the ages of 3 and 5 years with a mean age of 4 years, 2 months. All participants were male. This research was reviewed and approved by the Human Subject Review Board of Western Kentucky University (see Appendix A).

Child 1. Child 1 is a 5-year, 2-month-old male diagnosed with autism. Completion of the CARS by the experimenter resulted in a score of 35, indicating that he falls in the moderate range of autism. Child 1's target behavior was indicated as inappropriate dinner behaviors. His behaviors included using his hands to eat, not using a napkin to clean his face, and getting out of his chair during dinner. Child 1 lives at home with his parents and two siblings, ages 3 years and 9 months. Both of his parents are college educated and are estimated by the experimenter to have a middle class socioeconomic status.

Child 2. Child 2 is a 3-year, 11-month old male diagnosed with autism. Completion of the CARS by the experimenter resulted in a score of 36.5, indicating that he falls in the moderate range of autism. Child 2's target behavior was indicated as not appropriately transitioning to bedtime. The main inappropriate behavior identified was not staying in his bed alone. The behaviors that were monitored included transitioning to bathtime, putting on pajamas, brushing teeth, saying "Goodnight" to Mommy/Daddy, and staying in bed alone. Child 2 lives at home with his parents and one sibling, age 2 years. Both of his parents are college educated and are estimated by the experimenter to have a high socioeconomic status.

Child 3. Child 3 is a 3-year, 5-month old male diagnosed with autism. Completion of the CARS by the experimenter resulted in a score of 44.5, indicating that he falls in the severe range of autism. Child 3's target behavior was indicted as inappropriate touching others. His behaviors included intentionally hitting his sister or parents and touching others in a forceful way. Child 3 lives with his parents and one sibling, age 4 years. Both of his parents have completed a high school diploma and are estimated by the experimenter to have a low socioeconomic status.

Instrument

The primary instrument utilized in this study is the Social Story. The experimenter constructed the stories in collaboration with the parent(s) and other relevant professionals. The Social Stories were written in accordance with the Gray (2000) guidelines. After writing the Social Stories, each story was sent to a doctoral level psychologist with a background in autism to complete the Gray's Social Story Checklist (Appendix B). This was intended to ensure that the stories were written in accordance with the Gray guidelines. Table 1 contains the text of all Social Stories.

Table 1

Social Stories Written for Each Child

Child	Story
1	**"Dinner Time Manners"** Our family eats dinner at the table. Mommy and Daddy like it when I sit at the table in my seat. When I eat dinner, Mommy and Daddy like it when I use my spoon instead of my hands. I will try to take one bite at a time. This is a good thing to do. Sometimes my hands and face get messy when I eat. I should try to wipe them with my napkin. Mommy and Daddy like it when I use my napkin. It is good to sit at the table and use my manners.
2	**"Getting Ready for Bed"** H. gets ready for bed every night. Mommy and Daddy say, "It's time to take a bath." This means H. goes to the back and get undressed and take his bath. Next, H. puts on his pajamas and tries to brush his teeth. Mommy and Daddy like it when H. brushes his teeth. Brushing your teeth is a good thing to do. H. should try to brush his teeth every night. Next it is time to tell Mommy and Daddy night-night and go upstairs to bed. I will try to get in my bed all by myself. Mommy and Daddy will try to help me by pulling up my covers and turning out the lights. Mommy and Daddy will say, "I will see you tomorrow." Mommy and Daddy will go downstairs to their room to sleep in their bed. This is okay. H. will try to stay in his bed. Mommy and Daddy like it when H. stays in his bed by himself.
3	**"Keeping My Hands to Myself"** Sometimes I get mad and want to hit or cry. Hitting hurts. Instead, I will try to keep my hands to myself. Mommy, Daddy, and Sissy like it when I keep my hands to myself. Keeping my hands to myself is a good thing to do.

Gray and Garand (1993) described the format of constructing the Social Stories. It is indicated that each story should be presented on a single page. It was recommended to not include photographs in Social Stories due to the possibility of distracting the child from the main focus of the story. However, seven studies have been found that modified the construction of the Social Story to address the needs of the children in their studies (Clark & Martin, 2004; Herrin, 2004; Lorimer et al., 2000; Norris & Dattilo, 1999; Rowe, 1999; Sansosti & Powell-Smith, 2003; Swaggart & Gagnon, 1995). In each of the seven studies, the Social Stories were presented in a book-like format with only one to four sentences per page. In three of these studies, photographs or pictures were added that matched the sentence(s) written on that page. All of these studies reported positive changes in the behaviors of the children as a result of using the Social Story.

The Social Stories in the current study were constructed in order to meet the needs of the children in the study. Similar to the previously mentioned studies that modified the construction of the Stories, pages were constructed, laminated, and bound in order to present each Social Story in a book-like format. Photographs were taken of the child depicting the behaviors presented in the story and included on the corresponding page. For example, if the story talked about the child appropriately brushing his teeth, a photograph was taken of the child appropriately brushing his teeth. The story was read to each child by his or her parent or other caregiver. The child was encouraged to participate in the reading of the Social Story by asking the child questions about the story or by having the child point to pictures.

The experimenter used the *Childhood Autism Rating Scale* ([CARS] Schopler et al., 1988) to assess each child's severity of autism. The CARS is a behavior rating scale used to identify children with autism and to distinguish those in the mild to severe range. The CARS uses a 7-point Likert rating (i.e., 1, 1.5, 2, 2.5, 3, 3.5, 4) to measure the following 15 behavior

characteristics: (a) relating to people; (b) imitation; (c) emotional response; (d) body use; (e) object use; (f) adaptation to change; (g) visual response; (h) listening response; (i) taste, smell, and touch response and use; (j) fear or nervousness; (k) verbal communication; (l) nonverbal communication; (m) activity level; (n) level and consistency of intellectual response; and (o) general impressions of the presence of autism (Schopler et al., 1988). The CARS was completed by the experimenter with the help of the parent in order to ensure accuracy in completing the instrument. Scores were summed on the CARS and scores between 30 and 37 are considered mildly to moderately autistic, while scores greater than 37 are considered severely autistic. The CARS does not provide a specific demarcation between mild and moderate levels of autism but scores in the lower 30 can be considered mild while scores in the mid-30s can be considered moderate.

For the current study, the experimenter constructed a Behavior Information Sheet (Appendix C), Daily Data Logs (Appendix D), and a Weekly Observation Sheet (Appendix E). During the initial meeting and for the baseline data collection phase, the parents were asked to complete a Behavior Information Sheet. This document was used to collect information about the target behavior. The parents were asked to answer the questions about what happens immediately before the target behavior, what happens immediately after the behavior, and what they believe caused this behavior to occur. On the Behavior Information Sheet the parents were also asked to record the frequency of the baseline behavior on a daily graph. After implementation of the Social Stories, the parents were given an individualized Daily Data Log in order to record the times the Social Story was read and the frequency or severity of the target behaviors. In addition, the parents were asked to check when the child requested the Social Story outside of scheduled reading times.

The Weekly Observation Sheet was constructed for the experimenter to monitor the following factors in the home: (a) implementation of the story, (b) how the child was responding to the story, (c) improvement of the target behavior, and (d) other necessary information relevant to the study. The experimenter used this Weekly Observation Sheet to verify the correct implementation of the Social Story by completing a "guidelines checklist" constructed by the experimenter. This checklist was constructed from the Gray (2001) guidelines for correct implementation of the Social Story. Each week the experimenter would observe the parent reading the Social Story and complete this checklist to ensure correct implementation.

Procedure

The following procedures were used in the development of the Social Story. The experimenter met individually with the parent(s) for each step of the process. First, the parent(s) and experimenter collaborated to determine what behaviors were problematic and needed to be addressed. A target behavior was identified and defined with specific examples. Next, the experimenter instructed the parent(s) on how to collect data and provided them with the "Behavior Information Sheet" in order to record the frequency of the behavior. In addition to recording data on the Behavior Information Sheet, the parents were asked to record what specifically happened immediately before and after the problematic behavior. The determination of antecedents and consequences provided essential information for writing the Social Story. During the initial meeting, the parent was also trained on how to write a Social Story. Training the parent on how to write a Social Story provided them with this skill so they could choose to implement Social Stories on their own at a later time. Materials for developing Social Stories were also provided to them for future reference.

Each parent collected baseline data for 3 to 4 days. After the baseline data were collected, the experimenter met again with the parent(s). All information collected during this time was compiled and reviewed. The experimenter, in conjunction with the parent(s), wrote the Social Story for the identified behavior. The experimenter had years of experience with preschoolers with autism and has had extensive training in Applied Behavior Analysis. In addition, to learn the correct procedure and guidelines for Social Stories, the experimenter attended a one-day workshop presented by Carol Gray in April of 2003. The Gray Center was contacted about reviewing and approving the stories; however, due to conflicting schedules and time limits the Gray Center did not review the stories in a timely manner. A doctoral level psychologist with a background in autism and Social Stories agreed to utilize the Gray Guidelines Checklist (Gray, 2000) to ensure all necessary components were present.

During the implementation of the Social Story, the parents were responsible for reading the story daily and recording the identified target behaviors on an individualized Daily Data Log (Appendix D). Prior to implementation of the Social Story, the examiners met with the parents in order to instruct them on correct implementation of the story. The examiners provided the parents with a copy of the guidelines checklist and modeled the correct implementation of a Social Story. After modeling the story, the parents were then asked to read the story to their child to ensure the parents understood the administration concepts. After the Social Story was developed and the baseline data reviewed, the experimenter collaborated with the parent(s) to determine when the story should be read based on the time of day the majority of the target behaviors occurred. The Social Stories in this study were read to the participants immediately prior to the difficult situation (e.g., dinner time), as defined by the baseline data provided by the parent. This strategy, known as a Priming strategy, was shown to have a positive effect on

decreasing inappropriate behaviors (Norris & Dattilo, 1999). The Social Story was also available to each child if he requested it or if the parent felt that an additional review of the story would be helpful.

The length of implementation for each Social Story in this study varied for each child. Implementation of the Social Stories averaged a length of 2.1 weeks. Factors that affected the length of implementation included the success or lack of success of the Social Story, sickness of the child or parent, or other outside factors unable to be controlled by the experimenter (e.g., preschool schedules). According to guidelines, the amount of time that a Social Story should be implemented is highly individualized; however, it was estimated that the average amount of time for implementation is two to three weeks (C. Gray, personal communication, April 4, 2003).

The experimenter met with the family on a weekly basis to conduct observations of the child, answer pertinent questions related to the study, review data collected, observe the parent implementing the Social Story, and provide feedback about the usage of the Social Story. A checklist depicting guidelines set forth by Gray (2000) for correct implementation of a Social Story was reviewed with the parents on a weekly basis for each child. Through these meetings the experimenter was able to ensure that the integrity of the intervention was being upheld.

Results

Social Stories were implemented in the home setting by parents of three preschool children diagnosed with moderate to severe autism as defined on the *Childhood Autism Rating Scale* (Schopler et al., 1988). To assess the correct implementation of the Social Stories, the Weekly Observation Sheet, which contained seven guidelines for correct implementation, was completed by the experimenter during weekly visits. Each parent received ratings indicating 100% accuracy on these guidelines. Accuracy was believed to be high because the examiner modeled the correct presentation of the Social Story and gave the parents the guidelines prior to the parents' using the Social Stories. At the weekly observations, the suggestions offered to the parents by the experimenter were related to the specific times Social Stories could be read and how to redirect the child's attention back to the story. Specific times the Social Story could be read were made based on the data recorded weekly. For example, if the weekly data indicated that tantruming behaviors were occurring prior to dinnertime, the experimenter suggested that the Social Story be read before this time. All parents wanted assistance on how to redirect the child back to the story. The examiner provided suggestions on additional redirection techniques, such as verbal cues the parents could use to ensure attention to the story.

Baseline and implementation data on the target behaviors were collected in the homes by the parents. A Social Story was introduced to each child after 3 to 4 days of baseline data and was implemented for approximately two weeks. During the baseline data phase, the parents were asked to record the frequency or rate the severity of the target behaviors on the Behavior Information Sheet. After implementation of the Social Stories began, the parents were provided

with the Daily Data Logs and asked to record the frequency or rate the severity of the target behaviors during implementation.

Child 1. Baseline data were collected for three days on the target behavior of inappropriate dinnertime behaviors. Specifically, the main behavior of concern was the child getting out of seat during dinnertime. All behaviors that were monitored included using his hands to eat, not using a napkin to clean his face, and getting out of his chair during dinner. Collecting only frequency data did not seem to capture all of the behaviors of concern. Thus, the parents were also asked to complete Likert scales on how cooperative the child was with regard to each behavior. Two behaviors, using a spoon and using a napkin, were rated on a 5-point scale (1 to 5) with 1 being cooperative and 5 being uncooperative. The parents were asked to complete a 10-point Likert scale (1 to 10) on the primary behavior - getting out of his seat. A 1 meant that the child demonstrated full cooperation while a 10 meant the child was completely uncooperative. In addition to completing the rating scales, the parents also documented the number of times he was observed to leave the table during dinner. The baseline data phase indicated that the child was rated an average of 2.3 on using his spoon and using his napkin (behavior ratings combined). The baseline data indicated that he was rated an average of 4.3 for staying in his seat. Finally, the baseline data indicated that the child left the table an average 2.3 times during each dinner.

Figures 1 and 2 show the results of this Social Story. During the two weeks of implementation, Child 1 was rated an average of 2.5 on using his spoon and using his napkin (behavior ratings combined). Child 1 was rated an average of 2.6 for staying in his seat and left the table an average of 0.7 times per dinner. Initially, the weekly observations indicated that Child 1 had difficulty sustaining attention to the Social Story; he was observed to have only

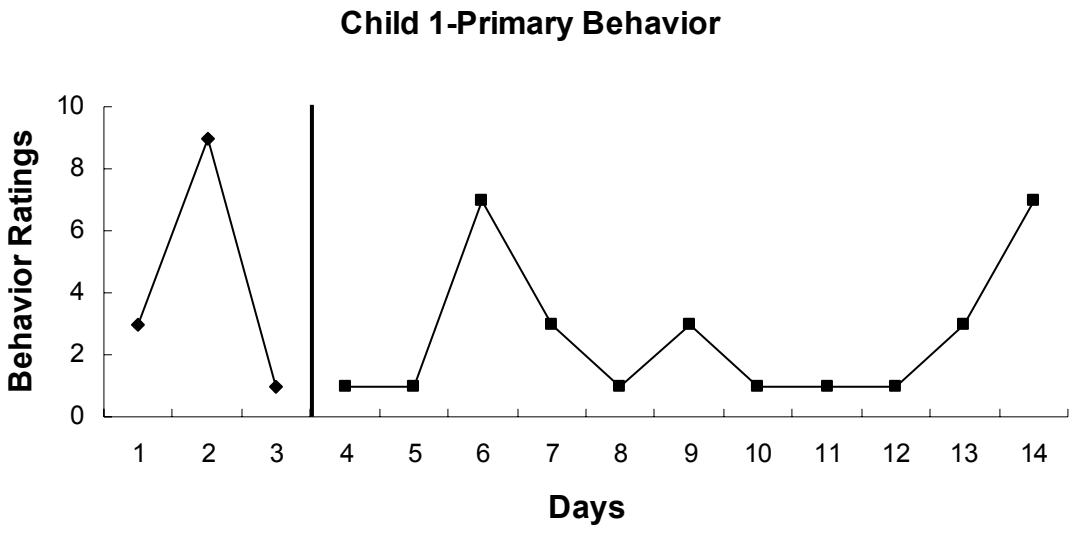

Figure 1. Child 1's inappropriate leaving the dinner table behaviors.

Figure 2. Child 1's inappropriate use of napkin and spoon.

fleeting glances at the pictures. However, the parent appropriately and consistently redirected his attention back to the story. By the final observation in the home, Child 1 was observed to be much more receptive and attentive to the story. While reading the story he was observed to fill in pertinent sentences and answer questions about the story. His mother reported that she feels that the story has made some difference in his behaviors; however, she reported that any difference was not significant. Child 1's parent requested the termination of the Social Story intervention due to the limited success of the intervention.

Child 2. Baseline data were collected for three days on the target behavior of inappropriately transitioning to bedtime. Specifically, the main behavior of concern was staying in bed alone. All behaviors that were monitored included transitioning to bathtime, putting on pajamas, brushing teeth, saying "Goodnight," and staying in bed alone. Due to the difficulty of recording such behaviors with a frequency data collection method, the parents were asked to complete Likert scales on how cooperative the child was with regard to each behavior. The following behaviors were rated on 5-point (1 to 5) scales: (a) transitioning to bathtime, (b) putting on pajamas, (c) brushing teeth, and (d) saying "Goodnight." A rating of 1 indicated that the child cooperated fully while a 5 meant that the child was completely uncooperative. The parents were asked to complete a 10-point scale (1 to 10) on the primary behavior, staying in bed alone. The parents' rating of 1 indicated the child was cooperative while a 10 indicated he was uncooperative. The baseline data phase indicated that the child was rated an average of 2.3 on transitioning to bathtime, putting on pajamas, brushing teeth, and saying "Goodnight" (behavior ratings combined). The baseline data indicated that he was rated on average a 5.0 for staying in his bed alone.

Figures 3 and 4 shows the results of this Social Story. For the two weeks of implementation, Child 2 was rated on average as a 2.7 on the combined behaviors of transitioning to bedtime, bathtime, putting on his pajamas, brushing his teeth, and saying "Goodnight" to his Mommy/Daddy. He received a mean score of 3.0 for staying in his bed alone. During the weekly observations, the experimenter observed the story being read approximately two hours before the typical time the parents read the story to the child (due to the lateness of when the story was typically read). The child was observed to become upset because he apparently thought it was time for the bathtime/bedtime routine due to the story being read. After the parent and the experimenter explained to the child that this was just an early reading and that it was not bathtime yet, he was observed to calm down. Weekly observations indicated that Child 2 continued to have difficulty transitioning to bedtime. His mother reported that Child 2 seems to be better because he appears to understand the story as "written rules;" however, the inappropriate behaviors persisted. His mother reported that during the implementation phase, the following circumstances occurred which may have altered the success of the story for Child 2: (a) he was out of preschool for spring break, (b) he was briefly hospitalized for sickness, (c) the family went out of town, and (d) the family had grandparents visiting. However, the Social Story was continuously implemented throughout each of these events. The parent explained to the experimenter that these conditions occur frequently in the child's life and are not out of the ordinary.

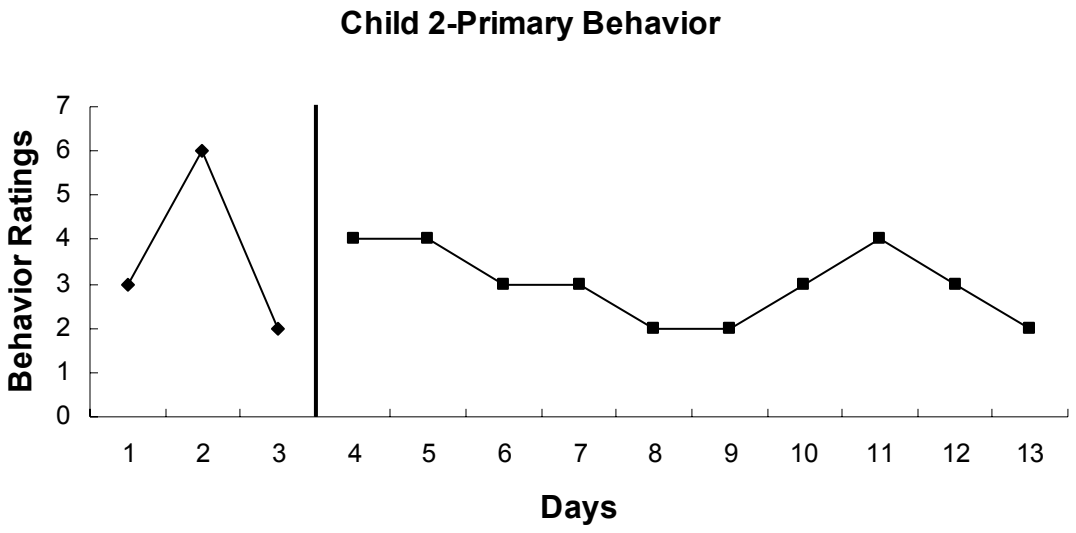

Figure 3. Child 2's lack of staying in bed.

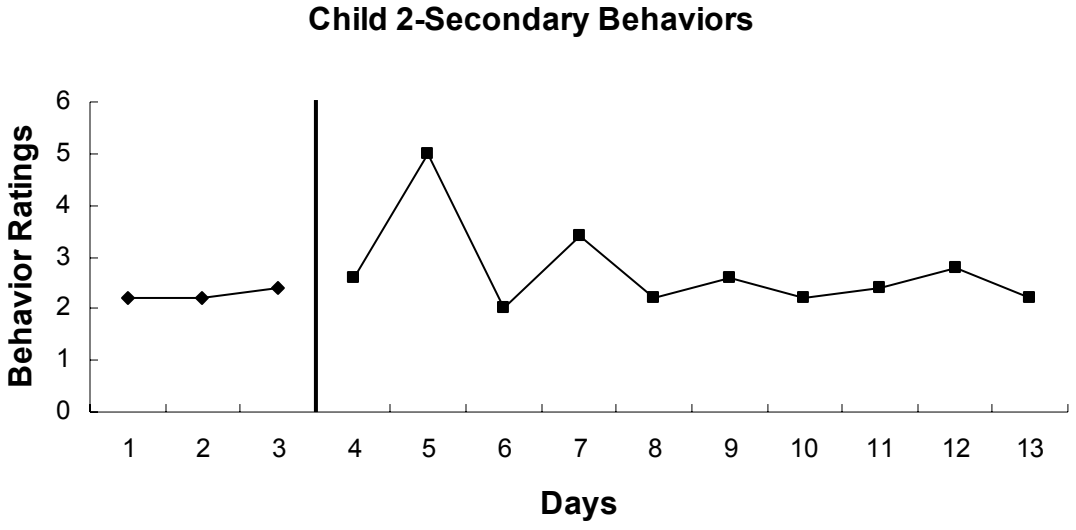

Figure 4. Child 2's inappropriate transitioning to bedtime behaviors.

Child 3. Baseline data were collected for four days on the target behavior of inappropriate touching. All behaviors monitored included intentionally hitting his sister or parents and touching others in a forceful way. The baseline data phase indicated that the inappropriate behavior occurred on average 13.0 times a day. The information sheet completed by his mother indicated that immediately prior to the inappropriate behavior the child either was not given his way or was in an "over-stimulated" environment. Immediately following the inappropriate behavior, the mother indicated that Child 3 was verbally reprimanded by telling him, "No Hitting," or "Hitting Hurts." The mother reported that she feels that these behaviors were caused by over-stimulation or being mad.

Figure 5 shows the results of this Social Story. During the two weeks of implementation the inappropriate behaviors occurred a mean of 2.3 times per day. Weekly observations indicated that Child 3 was not initially interested in the book. His mother prompted him to listen to the book, and he began following along and pointing at the pictures. After his mother finished the book, Child 3 took the book to the floor and began looking through it alone. His mother indicated that after implementing the Social Story, Child 3's inappropriate behaviors decreased. Anecdotally, she reported that the weekend, which is usually the most difficult time, was now "livable." The mother reported to the examiners that she enjoyed the story and wanted to continue writing further stories for other behaviors of concern.

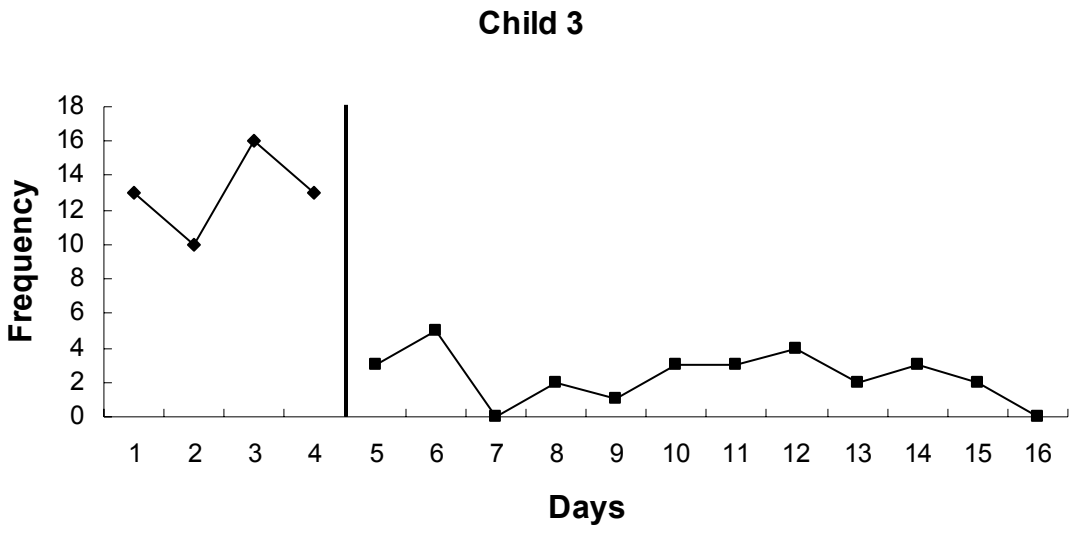

Figure 5. Child 3's inappropriate touching behaviors.

Discussion

To date there appears to have been only three studies conducted on the effects of Social Stories with preschool aged children. Only one of those studies was published. The published study found a Social Story to be effective with a single 5-year-old boy with autism (Lorimer et al., 2002). The second study that provided support for Social Stories with preschool-aged children was presented at the annual meeting of the National Association of School Psychologists (Clark & Martin, 2004). Clark and Martin used Social Stories in a preschool classroom to address general behavioral concerns on "normal" functioning 3 and 4-year-old children. Herrin (2004) found Social Stories to be successful with three children with a mild level of autism. Additional research on Social Stories with preschoolers with autism, and more severe levels of autism, was clearly needed.

Gray and Garand (1993) stated that Social Stories are more effective with higher functioning children with autism but provided no supporting evidence for such a claim. The current research attempted to determine if the use of Social Stories could also be effective with preschool-aged children with moderate to severe autism. However, the present study did not provide a clear answer to the question of whether or not Social Stories are effective for children with moderate to severe levels of autism. The results of this study indicated that the use of Social Stories was not effective for the two participants with a moderate level of autism but it was effective for one child identified as having severe autism. However, the difference in results may be that more complex behavioral issues were addressed with Child 1 and Child 2. That is, sitting at the dinner table and going to bed could be considered more "behavioral" issues than

"social" issues. Social Stories are meant to increase social interactions by providing social information or cues that children with autism often miss (Gray, 2000; Gray & Garand, 1993). Inappropriate behaviors at dinnertime and bedtime may be maintained by other reasons than a lack of social interaction information that Social Stories provide.

The role severity of autism plays in the effectiveness of Social Stories is not clear. The present results suggest that Social Stories are not as effective for children with moderate levels of autism. The severity level of autism is not specified in many of the studies examining the effectiveness of Social Stories. Only three studies have specifically noted the participants' severity level of autism and only two of those studies have been published. Herrin (2004), Lorimer et al. (2002), and Norris and Dattilo (1999) implemented Social Stories with children with mild to moderate levels of autism and found the use of Social Stories to be successful in decreasing negative behaviors or increasing the use of identified replacement behaviors. However, the Herrin (2004) study was the only one of the three studies to indicate that an instrument was used in determining the severity level of the child. The other two studies describe the placement of the participants on the autism spectrum as what was reported by a licensed medical or other clinical professional (Lorimer et al., 2002; Norris & Datillo, 1999).

Children who participated in the study were 3 to 5 years of age. Gray and Garand (1993) stated that although Social Stories are more likely to be effective with elementary and secondary students, modifications may be made in order to address the child's specific needs and abilities. Past studies have modified the Social Stories in order to individualize the story to each child (Herrin, 2004; Clark & Martin, 2004; Lorimer et al., 2000; Norris & Dattilo, 1999; Rowe, 1999; Sansosti & Powell-Smith, 2003; Swaggart & Gagnon, 1995). In the current study, similar modifications in the Social Stories were made because of the children's young ages. First, the

stories were presented in a book-like format; each page consisted of only one to two sentences. Second, photographs were taken of the children and included in the book. This was intended to personalize the stories and allow for easier processing of the concepts. Finally, for obvious reasons, the parent sat with the child and read the stories to him, instead of having the child read the story.

One of the strengths of the present study included the training of the parents. This training began with a meeting between the parents and the examiner to explain the concept of Social Stories. The parents were then given a package of information to prepare them for the Social Story implementation, as well as the possibility of writing stories in the future. During this training the experimenter also modeled the correct implementation of a Social Story. The parents were provided with the guidelines checklist that the experimenter completed during weekly visits. Finally, the parents were instructed on how to collect data (i.e., baseline, implementation).

A second strength of the study was the development of parent-friendly forms, which included the Behavior Information Sheet and the Daily Data Log. These were provided to the parents for data collection. Prior to the beginning of the study, the experimenter trained the parents on how to correctly use these forms to ensure accuracy of data collection.

A third strength of the study included weekly visits conducted by the experimenter. After the parents began to implement the Social Story, the examiner visited the homes once a week to observe the parent read the Social Story to their child and to complete the Weekly Observation Sheet. During this weekly visit the parents were given opportunities to review issues, ask questions, or address problems that had arisen since the last visit. Feedback was given to the

parents after observing the parent read the Social Story to their child. The experimenter believes that this ensured the integrity of the Social Story intervention.

A fourth strength of this study is that parents with high, middle, and low socioeconomic statuses were used in this study. All parents, regardless of their education level, were able to implement the Social Stories at home with a high degree of intervention integrity. Thus, these results imply that families from a variety of backgrounds can successfully implement Social Stories.

Finally, another strength of the study was defining the severity level of each participant. The current study employed the Childhood Autism Rating Scale (CARS) in order to define each child's severity level. Some of the previous studies examining Social Stories listed characteristics of their participants but did not define the severity level with any type of instrument. Research examining Social Stories in the future should specify the participants' severity level of autism.

Limitations

There are some limitations to this study. A possible limitation is that the current study lacks inter-rater verification of data reported by the parents. The parents in the study were responsible for reading the Social Story and keeping a record of the target behaviors. The examiner cannot be 100% confident that the data collection and daily implementation were conducted consistently and correctly. However, the experimenter conducted weekly observations in the home to monitor data collection and the implementation of the stories to address this potential limitation.

Another limitation is the small number of children who participated in the study. Only three children participated in the study. The children were chosen in accordance to a criteria set

in place by the experimenter. It is unknown whether the intervention would have produced the same results with a different group of children with autism. However, the majority of previously published research investigating the effectiveness of Social Stories used only one participant in each study. The present study attempted to override this limitation by evaluating the use of Social Stories with three participants rather than with only one subject.

Another possible limitation of the current study is that two of the Social Stories addressed multiple problem behaviors rather than a single target behavior. Results from Child 1 and Child 2 may have been different if only one behavior had been addressed in each Social Story. Similarly, it is plausible that the complexity of the target behaviors for Child 1 and Child 2 resulted in a lack of success. That is, the behaviors may have been maintained by reasons other than a lack of social information.

Future Research

Additional studies are needed to further address the issue of whether or not Social Stories are effective for children with moderate to severe levels of autism. Researchers studying Social Stories need to report the severity level of autism for their participants. This research did not result in successful outcomes for two of the three children with moderate to severe levels of autism. However, in the two unsuccessful cases, the target behaviors were not social interaction problems per se. Future research needs to examine if the type of target behavior is critical to the success of a Social Story intervention. The current study only evaluated three children who fell in the moderate to severe category. As always, it would be helpful if future research could include a larger sample of children with moderate to severe levels of autism. The present study provided support for successful implementation by parents from low, middle, and high

socioeconomic backgrounds. However, samples of children from a variety of socioeconomic backgrounds would also increase the generalization of future studies.

Gray and Garand (1993) stated that the Social Story should be presented to the child on one page and illustrations or photographs were not recommended because of the possibility that the illustrations could be distracting or cause misinterpretation of the Social Story. However, Gray and Garand also stated that photographs may be used in some instances. Seven studies (Herrin, 2004; Clark & Martin, 2004; Lorimer et al., 2000; Norris & Dattilo, 1999; Rowe, 1999; Sansosti & Powell-Smith, 2003; Swaggart & Gagnon, 1995) have shown positive effects after incorporating modifications to the Social Story by presenting it in a book-like format and adding photographs or icons. The current study employed such modifications but positive results were documented for only one of the three children. Further research should be conducted in this area in order to further examine what physical aspects or modifications of a Social Story, such as presenting in a book-like format or adding illustrations, does or does not impact intervention success.

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Appendix A

Human Subjects Review Board Approval

WESTERN KENTUCKY UNIVERSITY
Human Subjects Review Board
Office of Sponsored Programs
104 Foundation Building
270-745-4652; Fax 270-745-4211
E-mail: Phillip.Myers@Wku.Edu

In future correspondence please refer to HS03-127, June 13, 2003

Michelle Antle
1304 Valley Ridge Road
Franklin, KY 42134

Dear Michelle:

Your research project, "Using Social Stories to Enhance Social Skills in Children with Autism," was reviewed by the HSRB and it has been determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects' welfare and producing desired outcomes; that indications of coercion or prejudice are absent, and that participation is clearly voluntary.

1. In addition, the IRB found that: (1) signed informed consent will be obtained from all subjects. (2) Provision is made for collecting, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data. (3) Appropriate safeguards are included to protect the rights and welfare of the subjects.

a. Your research therefore meets the criteria of Full Board Review and is Approved.

2. Please note that the institution is not responsible for any actions regarding this protocol before approval. If you expand the project at a later date to use other instruments please re-apply. Copies of your request for human subjects review, your application, and this approval, are maintained in the Office of Sponsored Programs at the above address. Please report any changes to this approved protocol to this office. A Continuing Review protocol will be sent to you in the future to determine the status of the project.

Sincerely,

Phillip E. Myers, Ph.D.
Director, OSP and
Human Protections Administrator

Appendix B

Gray's Social Story Checklist

Gray's Social Story Checklist
(Gray, 2000)

Directions: *This checklist compares a story with the defining characteristics of a Social Story. The comparison helps to identify strengths and areas that may need revision.*

*Title of story*_____ *Author*_____
*Story is written for*_____
Carefully read the story aloud and place a check (tick) in the appropriate blank:

	YES	NO
1. Is there an introduction, body, and conclusion?	_____	_____
2. Does the story answer the relevant "wh" questions? Sometimes, many of these questions may be answered in a single (often opening) statement.	_____	_____
3. If the story is written for a younger student, is it written from a first person perspective, as though the student is describing the event? Or, if the story is for an older student or adult, is it written from a third person perspective?	_____	_____
4. Does the story have a positive tone? If negative information is included, is it stated carefully using a third person perspective?	_____	_____
5. Does the story adhere to either Social Story Ratio (Basic or Complete)? (0-1 partial or complete directive and/or control sentences for every 2-5 partial or complete descriptive, perspective, affirmative, or cooperative sentences = The Complete Social Story Ratio).	_____	_____
6. Is the story literally accurate? Can it be interpreted literally without altering the intended meaning?	_____	_____
7. Is alternative vocabulary used in place of terms that may cause the person with ASD to become upset or nervous?	_____	_____
8. Is the text written with consideration of reading ability and attention span of the person with ASD, using visual supports to enhance the meaning of the story?	_____	_____

9. If illustrations are used, are they developed and presented with consideration of the ability of the person with ASD?	_____	_____
10. Has an effort been made to incorporate the student's interests into the format, content, illustrations, or implementation of the story?	_____	_____
11. ***Overall,*** does the story have a patient and reassuring quality?	_____	_____

Gray, C. (2000). *The new social story book.* Arlington, TX: Future Horizons, Inc.

Appendix C

Behavior Information Sheet

Daily Data Log

Date_____

Using a Spoon

Cooperative				Uncooperative
1	2	3	4	5

Using a Napkin

Cooperative				Uncooperative
1	2	3	4	5

Staying in Seat

Cooperative									Uncooperative
1	2	3	4	5	6	7	8	9	10

# of Times Left the Table:

Comments:

_____

_____

_____

_____

_____

		Check if Child Requested
Time Read:	_____	___
	_____	___
	_____	___
	_____	___
	_____	___
	_____	___

Daily Data Log

Date_____

Transition to Bathtime

Cooperative				Uncooperative
1	2	3	4	5

Bathtime

Cooperative				Uncooperative
1	2	3	4	5

Putting on Pajamas

Cooperative				Uncooperative
1	2	3	4	5

Brushing Teeth

Cooperative				Uncooperative
1	2	3	4	5

"Goodnight" to Mommy/Daddy

Cooperative				Uncooperative
1	2	3	4	5

Staying in Bed (alone)

Cooperative									Uncooperative
1	2	3	4	5	6	7	8	9	10

Comments:

_____

_____

_____

_____

_____

Baseline Data Information Sheet

Behavior:

_____

What happened immediately before the behavior?

_____

_____

What happened immediately after the behavior?

_____

_____

What do you believe caused this behavior to occur?

_____

_____

Time	Day 1	Day 2	Day 3	Day 4
7:30-8:30				
8:30-9:30				
9:30-10:30				
10:30-11:30				
11:30-12:30				
12:30-1:30				
1:30-2:30				
2:30-3:30				
3:30-4:30				
4:30-5:30				
5:30-6:30				
6:30-7:30				
7:30-8:30				
8:30-9:30				
9:30-10:30				
10:30-11:30				

Comments:

Day 1 _____

_____

_____

Day 2 _____

_____

_____

Day 3 _____

_____

_____

Day 4 _____

_____

_____

Appendix D

Daily Data Logs

Daily Data Log

Date_____

Using a Spoon

Cooperative				Uncooperative
1	2	3	4	5

Using a Napkin

Cooperative				Uncooperative
1	2	3	4	5

Staying in Seat

Cooperative									Uncooperative
1	2	3	4	5	6	7	8	9	10

# of Times Left the Table:

Comments:

_____

_____

_____

_____

_____

		Check if Child Requested
Time Read:	_____	___
	_____	___
	_____	___
	_____	___
	_____	___
	_____	___

Daily Data Log

Date_____

Transition to Bathtime

Cooperative				Uncooperative
1	2	3	4	5

Bathtime

Cooperative				Uncooperative
1	2	3	4	5

Putting on Pajamas

Cooperative				Uncooperative
1	2	3	4	5

Brushing Teeth

Cooperative				Uncooperative
1	2	3	4	5

"Goodnight" to Mommy/Daddy

Cooperative				Uncooperative
1	2	3	4	5

Staying in Bed (alone)

Cooperative									Uncooperative
1	2	3	4	5	6	7	8	9	10

Comments:

_____

_____

_____

_____

_____

ID#_____

Daily Data Log

Date_____

Time Read:	Check if Child Requested
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____
_____	____

Times Target Behavior Occurred:

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Appendix E

Weekly Observation Sheet

ID # _____

Weekly Observation Sheet

1. Is the parent implementing the Social Story correctly?

Guidelines for Implementation	Results
a. The parent introduced the story in a relaxed, quiet setting with minimal distractions.	Y N
b. The parent started the review of the story with a simple, honest phrase (e.g. "I wrote this story for you" or "I have a story about Lunchtime. It's time for us to read it together."	Y N
c. The story was reviewed with a positive, casual and comfortable attitude.	Y N
d. The parent sat at the child's side or positioned the child comfortably on the adult's lap with joint attention focused on the story.	Y N
e. The parent reads the story with a friendly, gentle tone of voice.	Y N
f. If there are other important individuals to the situation, they also reviewed the story with the child.	Y N
g. The story was reviewed at the appropriate time (e.g. immediately before the difficult situation).	Y N

2. How is the child responding to the Social Story?

_____

_____

_____

_____

_____

3. Is the behavior improving?

_____

_____

_____

_____

_____

4. Other Comments:

_____

_____

_____

_____

_____