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# PARENT TRAINING FOR MANAGING SIBLING CONFLICT: A CLINICAL TRIAL

by

Stephanie C. Babbitt

## A thesis

submitted in partial fulfillment
of the requirements for the degree of
Master of Science in the Department of Psychology
Idaho State University

Spring 2015

To	the	Graduate	Facul	lty:
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The members of the committee appointed to examine the thesis of STE	PHANIE
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February 25, 2014

Stephanie Babbitt, B.S. Stop 8112 Pocatello, ID 83209

RE: Your application dated 1/8/2014 regarding study number 4029: Helping Your Children Get Along

Dear Ms. Babbitt:

Thank you for your response to requests from a prior review of your application for the new study listed above. Your study is eligible for expedited review under FDA and DHHS (OHRP) designation.

This is to confirm that your application is now fully approved. The protocol is approved through 1/8/2017.

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Sincerely,

Ralph Baergen, PhD, MPH, CIP Human Subjects Chair

## Dedication

I dedicate this document to my family, especially my husband Ted Babbitt iv and my two wonderful boys, Hunter F. Babbitt and Gunner J. Babbitt. I feel blessed to have such special people surrounding me, who make my life a happier place to live and constantly encourage me. I am so happy to have them by my side on this journey.

Thank you for your love and support.

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#### Abstract

Conflict among pre-adolescent siblings is normal, but can escalate to a clinical problem. Effective treatments exist using parent-mediated motivational strategies to reduce aggression. Aggressive children, however, may lack the social repertoires to manage conflicts, suggesting repertoire building, over motivational interventions. However, generalization of new skills from the clinic to home has been ineffective. The current project evaluated the feasibility of a parenting approach to achieve setting generalizability. Eight families, with at least two siblings between the ages of 4.0 and 11.9 years completed the seven-week protocol. Parent-collected home data suggested that children independently demonstrated the skills, but sometimes required parental prompts. Both siblings acquired skills as shown by pre/post testing on the Sibling Conflict Resolution Scale III. Parents reported an increase in the younger siblings' social competence controlling for pre-existing social aggression, but not the older siblings' social competence. Specific limitations included the lack of a measurement/wait-list control group, small sample size, a homogeneous rural Idaho sample, and measurement conundrums associated with home displays of sibling conflict resolution. Future research options are discussed.

#### Introduction

The following literature review is based on previous work provided by Grimes (2013), supplemented by a recent review of findings from the literature. For an exhaustive examination of the sibling conflict literature, see Grimes (2013). This review will briefly discuss sibling conflict, assessment of sibling conflict, as well as the available interventions for aggressive siblings, respectively. The thesis project was informed by the literature review. The project involved developing a parent training intervention to decrease sibling aggression and to increase conflict resolution skills in the home. The purpose of the study was to determine if parent training is a reasonable intervention to reduce sibling conflict by increasing conflict resolution skills. The project extended current research by evaluating the feasibility of an established conflict resolution skill training method using a parenting approach, rather than child skill building approach, to achieve setting generalizability of known effects from an established child skill building protocol (Grimes, 2013; Thomas & Roberts, 2009).

#### **Sibling Conflict**

Conflict among siblings is a normal phenomenon; however, it can escalate to a clinical problem. Normal sibling conflict can be expected to emerge after the birth of a second child (Vandell, 1987). In most cases, the older sibling begins to display oppositional behavior patterns or "deliberate naughtiness" as the maternal attention is shifted to the younger sibling (Kendrick & Dunn, 1980; Vandell, 1987). As the second child develops, sibling interactions increase in frequency (Abramovitch, Corter, & Lando, 1979; Lawson & Ingleby, 1974) and can be positive or negative in nature (Abramovitch et al., 1979). Conflict among siblings normally occurs in high rates and intensity in young

children, but decreases in frequency and intensity as the siblings mature (Dunn 1988; Dunn & Munn, 1985; McHale & Gamble, 1989). For example, children between the ages of 18-24 months can be expected to experience eight high-intensity conflict episodes per hour on average (Dunn & Munn, 1985), while this number usually decreases to one to two conflict episodes per hour in middle childhood (McHale & Gamble, 1989). Although young children experience high rates of conflict with their siblings, siblings are often a primary source of companionship during this time (Buhrmeister & Furman, 1987).

Sibling conflict can serve several functions, as well take on different styles. For example, Vandell and Bailey (1992) found that siblings either display constructive or destructive conflict styles. Siblings with a constructive conflict style engage in brainstorming to resolve conflicts and do not discuss past conflicts, unlike their destructive counterparts. Children with a constructive conflict style tend to have healthier relationships with their siblings. Possessing a destructive conflict style is associated with high levels of negative affect and poor sibling relationships (Vandell & Bailey, 1992).

Conflict among siblings can serve a number of functions including increasing social skills, but can also lead to undesirable outcomes. Some researchers suggest that younger children particularly benefit from sibling conflict because they adopt more sophisticated resolution skills displayed by their older siblings, such as verbal justification and perspective taking (Dunn & Herrera, 1997; Shantz & Hobart, 1989). Thus, younger children can actually increase their repertoire of social skills by engaging in conflict resolution with an older sibling. However, high rates of sibling conflict can also lead to negative outcomes in later life. For instance, unhealthy relationships with siblings have been linked to bullying, antisocial behavior, and substance abuse (Ensor,

Marks, Jacobs, & Hughes, 2010; Low, Short, & Snyder, 2012). It is proposed that aggressive clinic-referred children have failed to develop the linguistic/cognitive skills to resolve routine sibling conflicts, have been allowed by parents/teachers to access intermittent reinforcement for aggression (Patterson, 1982), or both. Patterson's observational data have clearly linked social aggression in middle childhood to long-standing patterns of sibling aggression in the home (Patterson, 1984; 1986). Indeed, poorly monitored and ineptly disciplined siblings have even been hypothesized as "...the key pathogens in the deviancy process (Patterson 1984, p. 184)." In addition, internalizing disorders, such as anxiety and depression, have also been associated with sibling conflict in middle childhood (Kim, McHale, Crouter & Osgood, 2007; Stocker, Burwell, & Briggs, 2002). Therefore, it is imported to assess and intervene when high frequency sibling conflict continues unabated across development from the pre-school period to middle childhood.

## Sibling Conflict Resolution Skills Assessment

Several measures of sibling conflict have been developed. Current assessment tools for sibling conflict and sibling conflict resolution skills include self-report, informant report, observational measurements, and role-play analogs. Each assessment technique will be reviewed in turn.

**Self-Report Measures.** Self-report measures include interviews as well as questionnaires completed by children. Such methodologies directly sample the beliefs of children and have the distinct advantage of low cost. A variety of child interviews have been used to assess sibling conflict. One example is the structured interview utilized by Rose and Ascher (1999) to measure conflict resolution skills. The interview was

originally developed to gauge children's conflict resolution skills with friends and involves 30 hypothetical scenarios. Results from the interview correspond with the child's adjustment as rated by sociometric ratings by their peers (Rose & Ascher, 1999). Rose and Asher's structured interview was adapted by Troop-Gordon and Asher (2005), who suggest that antisocial strategies to resolve conflicts are often unsuccessful and correspond with behavior problems. Similarly, other researchers (i.e., McGuire et al., (2000); Wilson, Smith, Ross, & Ross, (2004); Ross, Siddiqui, Ram, & Ward, (2004) have adapted the original structured interview put forth by Rose and Ascher (1999) to evaluate sibling conflict resolution skills.

An alternative to conducting a structured interview with children are item-based questionnaires. Measures do exist to help clinicians and researchers understand aspects of the sibling bond. One such example is the Sibling Relationship Questionnaire (SRQ) developed by Furman and Buhrmester (1985). The SRQ has both self-report (for older dyads) and parent informant versions (for dyads with siblings under the age of 8). The SRQ was designed to measures several qualities of the sibling relationship including warmth, power, conflict, and rivalry (Buhrmester & Furman, 1990). Validity work with the SRQ has revealed relationships demonstrating developmental differences within the sibling relationship that are thought to occur with normal development (Buhrmester & Furman, 1990; Furman & Buhrmester, 1985).

Another self-report measure of sibling relationships is the Brother-Sister

Questionnaire (BSQ; Graham-Berman, 1994). Much like the SRQ, the Brother-Sister

Questionnaire has a parent informant version to sample younger sibling dyads. The BSQ was designed to understand qualities of the sibling relationship such as empathy,

boundary maintenance, similarity, and coercion. Furthermore, the BSQ has been used with college students to identify sibling relationships with reciprocal conflict or low conflict.

For adolescent samples, the Sibling Issues Checklist (SIC; Campione-Barr & Smetana, 2010) is often used to measure intensity and frequency of sibling conflict. The SIC has two scales: (1) Equality and Fairness, and (2) Invasion of the personal domain. Research with this population suggests that teenage siblings are more likely to experience conflict due to invasions of the personal domain (i.e., issues regarding property or personal space), rather than equality (Campione-Barr & Smetana, 2010).

The Sibling Inventory of Behavior (SIB), developed by Hetherington, Henderson, and Reiss (1999) has both self- and parent informant versions (Menesini, Camodeca, & Nocentini, 2010; Meunier et al., 2011). The SIB was designed to address six subscales of the sibling dyad including empathy, teaching, involvement, rivalry, aggression, and avoidance, which can be examined separately or combined to measure a separate construct. For example, sibling conflict has previously been investigated using the SIB by combining the rivalry and aggression subscales (Kolak & Volling, 2011). All six subscales have exhibited adequate internal consistency (Volling & Blandon, 2005, as cited by Meunier, et al., 2011).

Sibling conflict, rivalry, and affection can be measured by another self-report measure called the Sibling Relationship Inventory (SRI; Stocker & McHale, 1992).

Research has established that this tool is adequately internally consistent and has been shown to correlate with other parent informant measures of sibling relationships, such as the SBI (Lecce, Pagnin, & Pinto 2009; Meunier et al., 2011). Importantly, this

assessment tool can be administered as a full scale or by utilizing any of the 5-item subscales.

Mendelson, Aboud, and Lanthier (1994), developed an alternative self-report measure called the Sibling Behavior and Feelings Questionnaire (SBFQ). The SBFQ asks children to rate their siblings on companionship, positive feelings, closeness, support, identification, and conflict on a 7-point scale. Howe and Recchia (2005) further adapted the SBFQ for younger children. The adaptive version includes a 3-point pictorial rating scale. Like other self-report measures discussed previously, this measure has adequate internal consistency.

Overall, self-report measures of sibling conflict have both strengths and limitations. Such instruments sample the beliefs of the children reliably; however, this is limited in several ways. First, research on these self-report measures is limited and the psychometric properties of these tools have not always been investigated. Specifically, the lack of treatment validity for all of the instruments listed above is apparent. Also, these assessment tools can only be used with older dyads (usually over the age of 8). Therefore, while self-report measures are useful to researchers, other forms of assessment are needed to fully understand the nature of the sibling bond.

Parent Report Measures. Informant-completed ratings of sibling conflict resolution have also been constructed and evaluated. Parent report measures are the most common and widely used assessments tools for sibling conflict resolution. Four different rating scales are available. The first parent report measure is the Home and Community Social Behavior Scales (HCSBS; Merrell & Caldarella, 1999). This scale requires parents to rate their children's behavior and perceived social skills with siblings and peers.

Research with the HCSBS suggests that it possesses discriminant, convergent, and construct validity (Lund & Merrell, 2001; Merrell, 1998; Merrell & Boelter, 2001).

Furthermore, the HCSBS has shown to be sensitive to treatment. Thomas and Roberts (2009) found that children were rated as more socially competent on the HCSBS after sibling conflict resolution skills training, compared children in a wait-list control group. In a recent effort to partially replicate Thomas and Roberts, Grimes (2013) found improved HCSBS following a similar sibling conflict resolution skill-building program. Unfortunately, the HCSBS is not specifically designed to assess sibling conflict resolution skills, but more general social acceptance and competence.

The Parental Expectations and Perceptions of Sibling Relationship Questionnaire (PEP-SRQ) was created to gauge the divergence between expected and actual levels of warmth, agonism, and rivalry between siblings (Kramer & Baron, 1995). This measure is internally consistent and has shown good test-retest reliability; construct validity, and sensitivity to treatment (Howe, Karos, & Aquan-Assee, 2011; Kennedy & Kramer, 2008; Kramer & Baron, 2011; Kramer & Rady, 1997). For example, Kennedy and Kramer (2008) found that parent reports of sibling relationship quality revealed significantly increased warmth, and decreased agonism and rivalry after participating in a sibling social skills intervention. Also, they suggest the PEPC-SRQ converged with observational measurements of sibling conflict in that both systems detected reductions in conflict behaviors and increases in prosocial skills (Kennedy & Kramer, 2008).

Two parent report measures have been specifically developed to assess sibling conflict resolutions skills. First, the Sibling Conflict Questionnaire (SCQ) was designed to assess children's abilities to solve conflicts with their siblings (Reed, 1992). This

measure contains 10 items that depict common sibling conflict scenarios and can be used to understand the skill set of the children within the sibling dyad. Reed (2007) found an "SCQ Dyadic" score to significantly predict sibling physical agonistic behavior display in a play analog, although association was quite modest (r = .370). However, Nakaha (2010) failed to replicate the earlier finding, nor did the SCQ scores correspond at all with overt child performance on the Sibling Conflict Resolution Scale (discussed below). Interestingly, moderate to strong correlations have been found for two different samples of normal siblings between the SCQ Dyadic score and an independent measurement of parent beliefs about child misbehavior, the Child Behavior Checklist Aggressive Behavior Scale. It appears that these two measurements of parent beliefs about the siblings correspond moderately (r = .498; Nakaha, 2010) or strongly (r = .834; Reed, 2007), but when tasked to predict the actual behavior of the siblings, yield only weak and isolated relationships if at all.

Similarly, the Sibling Social Behavior Scale (SSBS) was created to assess relationships between siblings based on three factors: (1) Cooperative Sibling Behavior, (2) Sibling Victimization, and (3) Aggressive Sibling Behavior. This measure was adapted for parents from the Brother-Sister Questionnaire developed by Graham-Bermann and Cutler (1994). The SSBS has been used to measure rates of sibling aggression which were found to be similar to previously obtained national prevalence rates (Miller et al., 2012). Further, Miller and colleagues (2012) investigated the relationship between sibling aggression and several family and contextual variables using the SSBS. They found that maternal depression and exposure to violent media were associated with increased levels of sibling aggression. Also, this study reported that

exposure to community violence was related to increased sibling aggression when paternal violence was also present.

In summary, parent-report measures are a common form of assessment used to understand sibling conflict. These measurement tools are especially helpful in attempts to evaluate relationship quality in younger dyads that are too immature to use self-report measures. It does appear that two scales, the HCSBS and the PEP-SRQ, are both sensitive to the improved social and sibling functioning that occurs with intervention. Either or both instruments could be used as a pre-post intervention tool that supplements more direct sibling interaction patterns at home and skills in clinic analogs. Certainly, an effective intervention program should yield reliable parent changes in beliefs about their child's social functions. Much like child self-reports, however, outcomes are limited to parents' beliefs about their children. This information is subjective and qualitative in nature and, therefore, more objective tools are needed to evaluate the need for intervention and the effectiveness of that intervention.

Observational Methods. Thomas (2004) reported that a limited number of observational methods for assessing sibling conflict resolution skills have been developed; however, few have exhibited acceptable psychometric properties (Blackford, 1993; Williams, 1990; Wood, Michelson, & Flynn, 1978).

Ram and Ross (2001) developed a coding technique for conflict resolution with sibling dyads. Specifically, sibling pairs were instructed to collaborate in accomplishing a task. They examined and classified the siblings' behavior as problem solving, contention, or struggle. Importantly, they found that siblings were more likely to come to

an agreement that satisfied both children when using problem-solving strategies (Ram & Ross, 2001).

Ross, Ross, Stein and Trabasso (2006) performed another observational coding system regarding problem solving between sibling dyads. As expected, older siblings acted as leaders and guided the problem solving efforts, while younger children typically complied with the suggestions put forth by their older siblings. Indeed, the majority of the conflicts were solved by compromise or a "win/loss" agreement. Furthermore, they found that the quality of the sibling bond influenced problem solving. Older siblings were less likely to engage in compromises and were more likely to pursue their own self-interests if they had a negative view of their younger sibling.

Coding systems designed to measure sibling conflict and prosocial actions have also been established. For example, Kramer and Rady (1997) observed siblings for 30-minutes during unstructured free play, using a 30-second interval sampling coding method. They were interested in the older sibling's demonstration of six coded skills: initiating play, accepting an invitation to play appropriately, perspective-taking, refusing an invitation to play appropriately, dealing with angry feelings appropriately, and management of conflict. They found that older siblings most frequently demonstrated skills such as initiating play, accepting an invitation to play appropriately, and perspective taking (Kramer & Rady, 1997). Kennedy and Kramer (2008) performed a follow-up study using the Sibling Interaction Quality coding system (Kramer, Perozynski, & Chung, 1999). Sibling dyads were filmed and observed during a 20-minute free play in their home. Coders rated the prevalence of warmth and involvement, agonism, control, and rivalry/competition in 5-minute intervals using a Likert Scale. High

inter-rater agreement and significant correlations between free play observations and parent report of sibling relationship was reported. Moreover, siblings who completed a social skills intervention showed significantly higher levels of warmth and involvement during the observation compared to pre-intervention levels.

The Sibling Play Analog (SPA) was developed by Nakaha (2007; 2010) in order to measure the quality of preschool and middle childhood sibling interactions during unstructured free play in a clinic analog. The SPA is a 20-minute play observation in a laboratory setting where siblings are asked play with pre-selected toys while the parent is occupied. Older sibling dyads (at least 7 to 11 years old) are instructed to play without the presence of an adult. Younger dyads (ages 2 to 6), however, play in the presence of a parent. Parents of pre-school children are instructed to remain busy and only involve themselves when siblings need help. Research with the SPA suggests that it is sensitive to the expected developmental advancements in interaction quality of normally developing siblings. Specifically, preschool sibling dyads used fewer justifications and manifest less cooperative play than middle childhood dyads on the SPA. Additionally, performance on the SPA was related to SCRS-III scores (Nakaha & Roberts, 2010). SCRS-III scores quantify the degree of contextually appropriate verbal solutions to specific sibling conflicts. Specifically, increased use of justifications displayed during the SPA corresponded to higher SCRS-III total scores.

Observational measurements have also been obtained in extended role-play tests of sibling repertoires for resolving conflicts. Thomas (2004) and Grimes (2012) reported on the Children's Constructive Conflict Resolution Scale (CCCRS), which asks children to provide solutions to a series of conflict situations (Secor, 1997). In children 11-13

years of age, high CCCRS scores covaried with better social behavior at school.

Similarly, the Sibling Conflict Resolution Scale (SCRS-III; Thomas & Roberts, 2009; Grimes, 2012) is a 16-item behavior-analog designed to gauge each child's conflict resolution skills. Each item is based on content validity work reported by Roberts, Arnold, and Mangum (1992). The SCRS-III is internally consistent, reliable, sensitive to treatment, and shows moderate correspondence to sibling play in the SPA analog discussed above. Recently, Grimes (2012) found that the SCRS-III yields reliable average item scores on tests of two parallel forms. Grimes proposed that the SCRS-III scores of 3.8 or higher would not be good candidates for sibling conflict resolution training. Given the error of measurement (0.2 SCRS-III units), children who score 3.8 or higher on SCRS-III already possess good repertoires of verbal reasoning. SCRS-III score of 4.0 equals consistent use of context appropriate verbal solutions to resolve core sibling conflicts.

In summary, observational measures of sibling conflict and aggression add objective information about sibling functions, independent of the general beliefs of either a parent informant or grammar school aged child. Both Kramer's work with the Sibling Interaction Quality assessment system and the Idaho State University research program using the joint Sibling Play Analog (Nakaha) and the SCRS-III (Grimes) are good candidates for continued research.

#### **Sibling Conflict Intervention**

There are numerous effective treatments available for aggressive children, specifically those diagnosed with ODD and CD (Eyberg, Nelson, & Boggs, 2008; cf. McMahon et al., 2006). Research in this area suggests that aggressive children lack the

necessary social skills to manage sibling and peer conflicts (e.g., Spivack & Shure, 1985). Therefore, most intervention programs for aggressive youth focus on teaching social skills (Lochman & Wells, 1996; McMahon et al., 2006). However, there have been fewer interventions designed specifically for aggression among siblings (Kramer, 2004; Vandell & Bailey, 1992). A brief review of treatment studies targeting sibling aggression will be presented below.

Parent Management Training. Many programs have been developed to teach parents how to manage disruptive behavior in both early childhood (e.g., Eyberg & Robinson, 1982; McMahon & Forehand, 2003; Webster-Stratton & Reid, 2007) and middle childhood (e.g.,; Kazdin, 2005; Patterson, Reid, & Eddy, 2002). These interventions, known as Parent Management Training (PMT), educate parents on the benefits of reinforcing prosocial behaviors and punishing disruption (e.g., token fines and/or timeout). Reviews of PMT indicate such interventions have proven an effective therapeutic strategy for childhood disruption (Eyberg et al., 2008; Chambles & Ollendick, 2001). Notably, some projects seem to extend beyond the referred child and can decrease sibling aggression in both the target and non-target children (O'Learly, O'Leary, & Becker, 1967). Arnold, Levine, and Patterson (1975) found when parents are trained to use a token reinforcement system coupled with time-out, sibling aggression, and coercion within the home decreased. This generalization effect is important because children in the same home typically do not significantly differ in their rates of misbehavior (Arnold et al., 1975).

Parent management training techniques have also been applied specifically to aggressive siblings. The earliest reference available was published by O'Leary, O'Leary,

and Becker (1967) in which a combination of differential adult attention and timeout for aggression was used effectively in one family. Similarly, Jones, Sloan, and Roberts (1992) utilized a timeout routine for sibling aggression. The results suggest that this technique effectively reduced fighting among preschool siblings. PMT principles have also been demonstrated to decrease physical fighting among aggressive brothers (Kelly & Main, 1979). Many studies have attempted to teach parents to intervene in sibling conflict. One study by Vickerman, Reed, and Roberts (1997) suggests that teaching parents to manage conflicts through reprimands, explanation, and reinstruction can reduce rates of sibling conflict in normal children. Additional research has focused on teaching parents similar techniques, such as differential reinforcement and overcorrection. These too, have shown to be effective in reducing sibling conflict (Adams & Kelley, 1992; Leitenberg, Burchard, Burchard, Fuller, & Lysaght, 1977).

Parent Management Training techniques have been adapted in a number of ways to increase prosocial skills among sibling dyads. Tiedemann and Johnston (1992) adapted a PMT approach designed to promote sharing among siblings. Behavioral techniques were taught in both individual and group formats. Compared to a wait-list control group, both treatment groups demonstrated enhanced sharing among siblings. However, families who were administered the program individually performed best overall. This study is unique in that the direct focus was increasing siblings' prosocial behaviors, instead of decreasing sibling aggression. Smith and Ross (2007) also revealed that PMT can be beneficial in mediating sibling disputes. In this study, parents were instructed to remain impartial to their children's conflict, establish ground rules for discussion, and encourage communication and problem solving. Siblings whose parents were trained to mediate

conflicts had increased rates of problem solving when compared to a control group. This finding remained even when the parent-mediator was not present.

Recently, PMT has been utilized as a preventative measure for disruptive behaviors for siblings (Malmberg, 2013). The focus of this study was to teach parents to manage their child's misbehavior successfully, thus decreasing the likelihood of future development of conduct problems. Malmberg (2013) suggests that PMT can be an effective technique for preventing clinical levels of noncompliance, tantrums, and aggression. Specifically, parents reported decreased stress and increased parenting efficacy and demonstrated significantly more parenting strategies after completing the program. Additionally, children endorsed fewer disruptive behaviors at post-participation.

Lavigueur (1976) designed a hybrid study to utilize an older sibling as aid in a parent training routine with two families. Parents and older siblings used differential attention to modify the target child's disruptive behavior. When the older sibling consistently acted as a behavioral modifier to the target child, there was a decrease in disruptive behaviors in both the older sibling and target child, as well as an enhancement in the sibling relationship. This study suggests that siblings can be successfully incorporated to participate in a parent management routine.

Overall, Parent Management Training has proven to be an effective intervention for treating a multitude of clinical problems (i.e., child disruption, sibling aggression). While PMT has been applied successfully in managing sibling conflict, some families need additional support. Children may need to acquire alternative strategies to coercion

for resolving conflicts. Consequently, PMT alone might not be able to fully address these needs.

Parent Management Training plus Social Skills Training. In order to increase children's repertoire of skills, some PMT strategies have added a social skills training component. For example, Olson and Roberts (1987) demonstrated that including either a timeout component for aggression was important, relative to social skills or timeout alone. In a sample of aggressive, clinic-referred children (mean age = 5.4 years) with a sibling between the ages of 1.7 and 10.3, families were assigned to one of three treatment conditions designed to reduce the frequency of sibling aggression: (1) social skills training, (2) timeout, or (3) combination of both. Parents in the timeout condition were trained with a combination of videotape and role-play to recognize and implement a timeout routine when their children were aggressive. Children in the social skills condition were trained similarly using videotaped modeling and role-play to use a variety of skillful alternatives to aggression, such as: ignoring, using appropriate verbal assertion, requesting adult assistance, sharing, and negotiation. Overall, parents in the timeout and combined conditions reported the least amount of child aggression, while parents in the social skills condition reported the highest frequencies of child aggression. However, children in all three experimental conditions displayed a decline in sibling aggression although the reduction was maintained only for the two conditions that included the timeout element. These results suggest that including timeout, or similar form of discipline for aggression, might be important (Olson & Roberts, 1987).

Clearly, more scientific effort needs to combine these approaches using more sensitive measurements to evaluate the effects of discipline and social skill building on misbehavior and context relevant social skill use by targeted siblings.

Social skills approaches without PMT. Social skills' training is often considered to be the standard treatment for antisocial behavior. For example, Loesl and Beelman (2003) conducted a meta-analysis and reported that high-risk samples benefitted the most from this type of intervention (d = .45). Conversely, when age groups were compared, 4 to 6-year-olds were shown to have the largest post-intervention effect when the dependent variable was measured by improvement in social skills. However, there have been few social skills interventions developed specifically for siblings as most programs have been developed and evaluated for peer-based social interaction (i.e., Webster-Stratton, Reid, & Hammond, 2001).

Some researchers postulated that repertoire deficits were the primary factor in sibling aggression. Therefore, their interventions focused primarily on improving children's social skills. For instance, Kramer and Radey (1997) taught non-clinic referred children social skills, such as: initiating play, accepting and declining an invitation, perspective taking, coping with anger in others, and conflict resolution. They manipulated the delivery of the social skills training, where children received instruction via live social skills training, through books, videotapes or group discussion. The results suggest that children who received live social skills training were perceived as most improved in levels of warmth and interactions with their siblings (Kramer & Radey, 1997). Alternatively, children in the videotape, books, or discussion condition did not

experience these benefits. This suggests that overt practicing is an important component of social skills interventions.

Thomas and Roberts (2009) examined methods to assess and intervene with sibling conflict. In this study, siblings performed a behavioral analog measure of social skills. In the experimental condition, siblings participated in a social-skill training targeting verbal reasoning, assertiveness, and acceptance skills. The results indicate children in the sibling conflict resolution skills training condition significantly improved in their demonstration of skills on the behavior analog measure and on parents' perception of social functioning at home. In contrast, children in the measurement/wait control condition did not improve on either measurement. Similarly, Grimes (2013) demonstrated that sibling conflict resolution skills training was associated with an increase children's repertoire of skills in a laboratory setting. Families attended a 1-hour social skills training for five weeks. Siblings between the ages of 5.0 and 11.9 demonstrated significant differences from pre to post in conflict resolution skills. This finding did not generalize, however, to the home or laboratory settings.

In summary, current interventions for decreasing sibling aggression include PMT, with or without additional social skills training, as well as social skills training without PMT. All have been demonstrated to be effective treatments for decreasing sibling aggression; however, these interventions are not created equally. With young children, or children without a repertoire of alternative, prosocial skills, social skills training might be needed in order to replace aggression with effective, non-aggressive interaction.

## **Current Project**

The focus of the current project was to further extend the available intervention techniques (SCRST) initially tested by Thomas and Roberts (2009) and extended by Grimes (2013). Significant improvement in sibling skill repertoires were manifest on the SCRS-III, relative to wait-list control participants by Thomas and Roberts (2009), and replicated by Grimes (2013) with children in the transitional age group between 5.0 - 6.9years, as well as in middle childhood (above 7.0 years). Neither project, however, documented changes in the home or in play analogs that corresponded to increased skills observed on the SCRS-III, other than parent beliefs on the HCSBS. Decades of research with pre-school and middle childhood participants presenting with externalizing disorders has indicated that parent training can effectively decrease disruptive behaviors in the home (See reviews by Chambless & Ollendick, 2001 and Eyberg et al., 2008.). Theoretically, when child skills do not generalize from a treatment setting to a more natural setting, using participants in those natural settings to prompt, reinforce, and then fade prompts has proven invaluable in gaining acquisition and routine use of new skills in a natural setting by children. The current project was designed to focus on a newly devised parent training strategy (i.e., SCRST-PV) in an effort to increase children's repertoire of conflict resolution skills and functional use in the home setting.

#### Method

## **Participants**

A total of 11 families were recruited for this study. Eight families completed the SCRST-PV protocol, while three families elected to withdraw from the study following the first parent training session. To be considered for the study, each family had at least two typically developing siblings between the ages of 4.0 and 11.9 years, born within five years of one another. No children met DSM-5 criteria for Intellectual Deficiency or Autism Spectrum Disorder. If more than one sibling dyad met age criteria, the youngest was selected. Any family where both siblings had average item scores of 3.8 or above on the SCRS pre-intervention would have been excluded; however, no families met this criterion. Families who participated in prior sibling studies offered by the Psychology Department at Idaho State University were excluded. All other siblings in the home were encouraged to participate in the project's home components (i.e., the parent help and positive reinforcement system), but were not measured pre- and post-intervention.

Table 1
Demographic Information for the Completing Participants

	$\overline{X}$	$(S_x)$	Range
Younger Sibling (Age in Years)	5.8	(2.0)	4 - 10
Older Sibling (Age in Years)	8.3	(2.0)	6 - 11
Parent age	39.8	(6.5)	28 - 49
Total number of children in the home	3.3	(1.0)	2 - 5

*Note.* N = 8; For the younger sibling 7 were female and 1 was male. For the older siblings 6 were male and 2 were female.

#### **Procedures**

#### Measures.

#### 1. Behavior Record Card

During the 5-session SCRST – Parent Version (hereafter SCRST-PV) period, parents counted prompts (i.e., Help) administered to encourage siblings to use targeted skills and token reinforcement administered for unprompted use of targeted skills (See Appendix A).

## 2. Sibling Play Analogue (SPA)

The Sibling Play Analog is a play observation in a laboratory setting. The siblings are asked play with pre-selected toys. The presence or absence of antisocial and prosocial behaviors was coded during each 20-second interval during the SPA

observation (See Appendix B). Parents were present for the SPA and instructed to help their children as needed, just as they would at home. Meanwhile, parents were asked to complete questionnaires (CBCL and HCSBS for each child). The observation continued at least 20 minutes for each family.

#### 3. The SCRS-III Forms A & B

The SCRS is a behavioral role-play task where each sibling was independently exposed to 16 scenarios. The scenarios in the SCRS-III are typical of interactions in which siblings are asked to solve minor conflicts using "their best behavior." The children are given a score from 1 to 5 for each role-play. These scores are averaged to provide an average item score indicative of the child's sibling conflict resolution skill level (See Appendix C).

## 4. Parent Rating Scales

The Home and Community Social Behavior Scales (HCSBS) is a parent self-report measure designed to gauge child's behavior and social skills specific to conflict resolution. The parents completed the HCSBS for each of the two targeted siblings at pre- and post-intervention. In addition, the Child Behavior Checklist (CBCL) was completed for each targeted sibling during pre-intervention assessment only.

#### Overview of Project Methodology.

Participants were a community sample recruited via public announcements (e.g., flyers, Facebook, Craigslist). Eligible participants completed the pre-intervention assessments at the ISU Psychology Clinic. First, the research consent forms were reviewed and signed. Second, the two targeted siblings were administered the SPA, while parent completed all forms and "helped" as needed, followed by the SCRS-III

(Form A or B counterbalanced among families). Parents were scheduled for the first of the 5-session SCRST-PV training protocol adapted for parent training. Parents then completed the 5-session SCRST-PV protocol, with session spacing at approximately 1-week intervals when possible. The post-intervention measurements were administered upon completion of the SCRST-PV, repeating all pre-intervention measurements other than the CBCL. The targeted sibling dyad repeated the SPA and the parent was encouraged to use all the reinforcement and helping skills she/he learned as needed, while completing the two questionnaires at the same time. Finally, each child completed the alternate SCRS-III form. Children were present for pre- and post-intervention sessions only.

## General Session Outline Applicable to all five SCRST-PV sessions.

The five parenting sessions occurred approximately once a week for a five-week period. For the eight families completing the project, the average duration from the completion of the pre-intervention measurements to the completion of the post-intervention measurements was 67.8 days (median days = 63; range = 42 to 115). Each session was led by a primary therapist with the aid of an assistant therapist(s) who served as actor(s) during role-plays. Generally, the actors portrayed the child roles during training sessions, while the therapist portrayed parent roles. If only one actor was available during a session, the therapist performed both parent and child roles. Both parents were encouraged to attend without their children. For the eight families completing the project, 22.5% SCRST-PV sessions included both parents (i.e., 9 of 40 sessions), involving 3 of the 8 families. Each session begun with a discussion of the topic, structured by a handout that was sent home (Handouts are found in Appendix D). Each

handout specified the conflict situations and optional conflict resolution skills a child could use to resolve the conflict. Each conflict (e.g., an unsharable toy/family resource that both siblings want to use at the same time) was modeled, as well as skillful and unskilled child reactions, and parenting reactions to child efforts. First, parents practiced (via role-playing) using the targeted skill in at least two different contexts to ensure understanding of the desired behavior. Next, parents practiced detecting the conflict, waiting and observing child efforts, using a combined labeled social reinforcer and token reinforcer for unprompted independent skill demonstrations by children. Finally, parents practiced prompting the child(ren) when mistakes were made in use of the targeted skill (i.e., Help). Only social reinforcers were used following skillful resolutions that were preceded by a parental prompt. Upon completion of the first defined targeted skill for that session, the next skill was introduced and the sequence of training was repeated (i.e., model by therapist with actor, parent role-play of skill, parent reinforcement delivery, and parent help for unskillful child reactions, always in that order). In subsequent sessions, a review of previously learned scenarios preceded the introduction of the next lesson on the conflict scenario/skill list. Behavior record cards (BRCs) were introduced during the first session and parents were instructed to track unprompted use of specific SCRS-III skills (i.e., praise and token reinforcers given) and prompts used following mistakes made by children (i.e., Help; See the BRCs in Appendix A). At the beginning of subsequent sessions, the BRC was reviewed. After each session a new BRC card was given to the parents with the newly introduced skills added to the card.

#### Family Council

On the evening following each clinic session, parents were instructed to lead a "family council" at home. At the council parents gathered all children in the 4.0 to 11.9 age ranges around a table, showed them the BRC for that week that came from the "...class Mom (Dad) is taking about helping her (his) children get along", described the skills, and indicated that Mom (Dad) will help if the children need it. Additionally, parents provided tokens (i.e., a sticker under the child's name on the card) when the child(ren) used the skill(s) without reminders. Children exchanged tokens on the agreed upon evening for agreed upon backup reinforcers (e.g., 5 cents/points per sticker; or a menu of activity/material reinforcers which could be obtained for an agreed upon number of stickers; or both). See the handout on the Family Council Process and Exchange Night Decisions Form in Appendix E.

Session 1. The first session focused on sibling disputes that occur over toys or household equipment that belong to the whole family. This included items that can be shared (e.g., blocks or Legos), as well as items that are not shareable (e.g., a computer), and considers instances when a decision about who can use the object first arises. The therapist and actors demonstrated common conflicts and conflict resolution strategies for each of three classes of conflict:

- 1. Requesting access to shareable items currently in use by a sibling
  - a. make a polite request
  - b. provide a reason
  - c. provide another reason
  - d. wait quietly

- e. socially reinforce the sibling for granting joint access
- 2. Request taking turns with non-shareable items
  - a. making a polite request
  - b. provide a reason
  - c. suggest turn-taking turns
  - d. request to be informed when that turn can be taken
  - e. socially reinforce the sibling for allowing the turn to be granted
- 3. Suggest a tie-breaking strategy when both want to go first
  - a. acknowledge that both want to go first
  - b. allow the other to go first, and that it will you turn first next time, OR
  - c. suggest a tie breaking strategy
    - "Rock/Paper/Scissors"
    - Coin Toss
    - Cultural Jingle/ alternating pointing (e.g., "Eenee, Meenee, Minee Mo,
       Catch a tiger by the toe, if he hollers let him go, my mother says you go first").

#### Use of the Skill

Each conflict (3 for Session 1) was modeled, as well as the skillful sibling response. To help the parents remember the skill, parents were required to role-play the sibling's skillful response options correctly in at least one social context, for a minimum total of three role-plays. See the Session 1 data sheet used by the trainer to manage Session 1 (Appendix F).

## Practice Awarding Token Reinforcement

Parents observed the therapist model labeled social reinforcement plus putting a sticker on the BRC for correct use of the skill by both children without any reminder. The parent then role-played this skill and recorded it on a practice BRC with a sticker at least once for each scenario for a minimum total of three role-plays per session. The BRC for Week 1 included categories for Share, Take-Turns, and Tiebreak. The parent was sent home with a blank BRC and with a handout for Session 1, which formed the structure for that evening's Family Council.

## Practice Helping

Each conflict was then re-enacted, but this time the actor perseverated with an inadequate response. The therapist modeled "Helping" for the parent (e.g., approach the children, instruct Child 2 to ask nicely and provide reasons for sharing, socially reinforce the child for so doing, and then leave, locate the BRC, and make a check mark under "Help" Column). Then, the parent was asked role-play the same scenario using "Help" and record it on a practice BRC. This process continued until the Parent correctly "Helped" an unskillful child (or children) for each scenario at least once for a minimum total of three role-plays. The Exchange Night Decision form was reviewed, possibly supplemented, and returned home with the parent.

## Session 2.

## Review

Before the new material was introduced, the parent and therapist reviewed the BRC from the prior lesson, discussed any concerns raised by the parent, and problem solved any issues. Mechanics of the Family Council and the token exchange were

discussed and any problems addressed. At least one review trial for each of the three conflicts was presented with the parent instructed to, "Show me how to be your children's teacher as we suggested last week". On some trials the "siblings" should have been helped, while on others the sibling(s) should have been awarded a token reinforcement for a minimum of three role-plays. See the Session 2 data sheet for therapist prompts/reminders of how to manage the lesson (Appendix F).

The second session was designed to introduce conflicts that arise in response to ownership (i.e., one sibling owns a toy or article of clothing that other child wishes to use or borrow). The child who receives the request has the right to deny the request, grant the request, or grant with request with specific limitations. When a sibling violates the rules established by the owner (e.g., breaks the limit established or does not accept the denial), the sibling skill is to seek the parent's assistance, rather than be aggressive or victimized. The therapist and actors demonstrated common conflicts and conflict resolution strategies for each of three classes of conflict:

- 1. Denying a request to access personal property
  - a. Politely decline (say "no")
  - b. provide a reason (e.g., "It belongs to me and I don't want to you to use it")
  - c. acceptance by the request-giving sibling
- 2. Granting Permission to access personal property
  - a. Give permission
  - b. provide a limit (e.g., "You can only play with my toy until dinner.")
  - c. request property be returned when limit is fulfilled (e.g., "It's dinner time, please give me my toy back.")

- d. acceptance of limit by request-giving sibling
- 3. What to do when a limit is violated
  - a. polite request
  - b. remind sibling of limit
  - c. get assistance from parent if sibling still does not cooperate

## Use of the Skill

Each conflict (3 for this session) was modeled, as well as the skillful response. Parents correctly role-played the skillful response at least once per skill, for a minimum total of three role-plays. See the Session 2 data sheet used by the trainer to manage Session 2 (Appendix F).

## Practice Awarding Token Reinforcement and Practice Helping

The parent was asked to review labeled social reinforcement and token reinforcement delivery on a practice BRC for one or both children and role-play this skill at least once for each scenario with the therapist, a minimum total of three role-plays. Additionally, each conflict was re-enacted, but this time the actor perseverated with an inadequate response. The parent role-played the same scenario using "Help" and recorded it on the practice BRC. This process continued until the Parent "Helped" one sibling or the other in each scenario at least once, a minimum total of three role plays. By the end of the session, the parent participated in a minimum total of nine role-plays, excluding the review (i.e., three demonstrating the sibling skill, three offering social/token reinforcement for unprompted skill use, and three "Helping" the siblings get along). The parent was sent home with a blank BRC and a handout for Session 2, which forms the structure for that evening's Family Council. The new BRC included the previous skills

from Session 1 (i.e., share, take-turns, and tie-breaking), and added Session 2's skill of "Ownership Resolutions", and a Help column.

#### Session 3.

## Review

Before the new material was introduced, the parent and therapist reviewed the BRC from Session 2, discussed any concerns raised by the parent, and problem-solved any issues. At least one review trial for each of the skills from Sessions 1 and 2 was presented. The parent was instructed to "Show me how to be your children's teacher as we suggested last week". During the review, the order of Session 1 and 2 conflicts were counterbalanced. On some trials the "siblings" required help from the parents; on others the sibling should have been awarded token reinforcement for a minimum of four role-plays.

The third session introduced sibling noncompliance. In this session, the assisting therapists (siblings) acted out scenarios in which one child is being uncooperative with a request to which there is a legitimate choice. For example, the sibling might ask the child to play or to allow him/her to enter his/her room. The therapist and actors will demonstrate common conflicts and conflict resolution strategies for each of the classes of conflict:

- 1. Polite requests with giving reasons
  - a. ask nicely
  - b. provide a reason
  - c. give more reasons
  - d. sibling complies

## 2. Making a deal

- a. polite request with a reason
- b. provide more reasons
- c. make a deal
- d. sibling complies

## 3. "Taking no" for an answer

- a. polite request with reasons
- b. make a deal
- c. sibling continues to resist
- d. take "no" for an answer

## Use of the Skill

Each conflict (3 for this session) was modeled, as well as the skillful response. Parents correctly role-played the skillful response at least once per skill, for a minimum total of three role-plays. See the Session 3 data sheet used by the trainer to manage Session 3 (Appendix F).

## Practice Awarding Token Reinforcement and Practice Helping

The parent was asked to review labeled social reinforcement and token reinforcement delivery on a practice BRC for one or both children and role-play this skill at least once for each scenario with the therapist, a minimum total of three role-plays. Additionally, each conflict was re-enacted, but this time the actor perseverated with an inadequate response. The parent role-played the same scenario using "Help" and recorded it on the practice BRC. This process continued until the Parent "Helped" one sibling or the other in each scenario at least once, a minimum total of three role plays. By the end of

the session, the parent participated in a minimum total of nine role-plays, excluding the review (i.e., three demonstrating the sibling skill, three offering social/token reinforcement for unprompted skill use, and three "Helping" the siblings get along). The parent was sent home with a blank BRC and a handout for Session 3, which forms the structure for that evening's Family Council. The new BRC included the previous skills from Session 1 and 2 (i.e., share, take-turns, tie-breaking, and ownership), added Session 3's skill of taking "No" for an answer/Making a deal, and a Help column.

#### Session 4.

## Review

Before the new material was introduced, the parent and therapist reviewed the BRC from the prior lesson and discussed any problems. A minimum of five role-plays were led by the therapist, mixing up the order of Session 1, 2, and 3 conflicts and mixing the "correct" (token reinforce) verses "error" (help) trails. This allowed the therapist to gauge the parent's ability to discriminate Help versus token reinforcement for the five conflicts.

The fourth session introduced appropriate sibling assertiveness. Skills learned in Session 4 focus on verbal assertions when one sibling is violating the other's rights.

Conflict conditions include cheating at a game and teasing. The therapist and actors demonstrated common conflicts and conflict resolution strategies for each of the classes of conflict:

## 1. Teasing

a. ask the sibling to "join in" on activity (e.g. "there are plenty of materials here if you'd like to play too")

- b. polite request to stop teasing with reason/assertive statement
- c. walk away and/or ignore, OR
- d. seek assistance from parent if previous strategies fail

## 2. Cheating at a game

- a. verbal assertion to stop plus reason
- b. warning that sibling will quit playing if cheating continues
- c. calmly leave context for continued cheating, OR
- d. sibling stops cheating

## Use of the Skill

Each conflict (2 for this session) were modeled, as well as the skillful response.

Parents role-played the skillful response at least one time per skill for a minimum total of two role-plays. See the Session 4 data sheet used by the trainer to manage Session 4 (Appendix F).

## Practice Awarding Token Reinforcement and Practice Helping

The parent was asked to review labeled social reinforcement and token reinforcement delivery on a practice BRC for one or both children and role-play this skill at least once for each scenario with the therapist, a minimum total of two role-plays. Additionally, each conflict was re-enacted, but this time the actor perseverated with an inadequate response. The parent role-played the same scenario using "Help" and recorded it on the practice BRC. This process continued until the Parent "Helped" one sibling or the other in each scenario at least once, a minimum total of two role plays. By the end of the session, the parent participated in a minimum total of six role-plays, excluding the review (i.e., two demonstrating the sibling skill, two offering social/token reinforcement

for unprompted skill use, and two "Helping" the siblings get along). The parent was sent home with a blank BRC and a handout for Session 4, which forms the structure for that evening's Family Council. The new BRC included the previous skills from Sessions 1, 2, and 3 (i.e., share, take-turns, tie-breaking, ownership and taking "no" for an answer), added Session 4's skill of "Assertive", and a Help column.

#### Session 5.

The fifth and final session of the social skills training course was a review of all skills presented during Sessions 1 through 4. Parents reviewed the skills in the same format as the review component of Sessions 1-4 by role-playing with the actors. Each of the conflict scenarios were sampled at least once for a minimum total of six role-plays. The actors created a Help situation or a token reinforcement situation, mixing up the scenarios, help/reinforce, with 1 or both siblings making mistakes. See the Session 5 data sheet, which guides the therapist in managing the session (See Appendix F). Parents repeated the Week 4 BRC for a second week, as well as counted Help or Skill categories established at the end of SCRST-PV Session 4 in the same public fashion as following all training sessions.

The fifth session also introduced additional conflicts involving sibling assertiveness. Skills learned in Session 5 focus on seeking assistance from an adult when one sibling is violating the other's rights and several problem-solving strategies have failed. Conflict conditions include teasing that results in touch (i.e., one sibling pushes another) and a violation of one sibling's rights. The therapist and actors demonstrated common conflicts and conflict resolution strategies for each of the classes of conflict:

## 1. Teasing that escalates to Touch

- a. stand to demonstrate assertiveness with body
- b. assertive statement (e.g., "Don't touch me!")
- c. seek assistance from parent if previous strategies fail
- 2. Violation of Rights (takes personal property without permission OR enters room without permission)
  - a. verbal assertion to return property or leave room
  - b. provide reasons
  - c. seek assistance from an adult for continued sib violation of rights

Treatment Fidelity Procedures. For all participating families, the SCRST-PV sessions were videotaped and coded in terms of session activities prompted by the therapist. Specifically, the number of models presented was tracked, as well as the number of role-plays parents practiced the desired skill, awarding token reinforcement, and helping the children. This information was obtained to provide descriptive data about SCRST-PV sessions. The SCRST-PV was designed to be flexibly administered in order to adjust to the specific needs of the participating families. Consequently, the actual number of presented models, role-plays, and questions varied somewhat across families. The treatment fidelity data are presented in Table 2 as mean session frequency for each teaching strategy across participating families.

Table 2

Descriptive Data for SCRST-PV Sessions

	Models $\overline{X}$ ( $S_x$ )	Parent Role- Play of Sibling Skill $\overline{X}$ ( $S_x$ )	Parent Role- Play of Reinforce $\overline{X}$ (S <sub>x</sub> )	Parent Role-Play of Help $\overline{X}$ (S <sub>x</sub> )
Session 1	8.3 (1.3)	3.1 (0.4)	5.4 (1.3)	5.1 (0.8)
Session 2	5.3 (2.8)	2.1 (0.4)	2.5 (0.5)	2.9 (0.6)
Session 3	3.8 (1.9)	2.1 (0.4)	2.9 (1.0)	3.0 (0.5)
Session 4	7.8 (1.0)	6.6 (0.7)	1.8 (0.5)	2.1 (0.4)
Session 5	2.6 (1.2)	1.1 (0.8)	1.1 (0.8)	2.1 (0.4)

*Note.* N = 8. Data presented as mean frequency per session.

#### Post-Intervention Measurement Session.

All participating families were asked return to the clinic for the Post-Intervention assessment approximately one week after Session 5. The sibling dyad participated in the SPA, while the parent completed the HCSBS for each child. Then, each sibling was independently administration of the alternate SCRS-III Form A or Form B (i.e., whichever form was not administered during the Pre-Intervention) and awarded a prize upon completion of the SCRS-III. The BRC that followed SCRST-PV Session 5 was reviewed with the parent(s) and children. Children were socially reinforced for all their productive efforts to resolve sibling conflicts and asked to comment on what they learned. Families were thanked for their participation. Parents were awarded a \$20 gift-card to a local grocer for their participation.

## **Hypotheses**

- Targeted children will display significantly improved HCSBS at post-intervention relative to pre-intervention when variability associated with CBCL Aggressive Behavior is statistically removed.
- Targeted children will display significantly improved SCRS scores at post-intervention relative to pre-intervention when variability associated with CBCL Aggressive Behavior is statistically removed.
- 3a. The targeted sibling dyad will display significantly improved Justification and Cooperation percentages on the SPA relative to pre-intervention, while Verbal Harassment percentages will decline significantly.
- 3b. Parent HELP and REINFORCE will display significant increased percentages on the SPA from pre- to post-intervention.
- 4. The total number of prompts (HELP counts) recorded on BRC cards during the 5-week period of SCRST-PV will correlate positively with change scores on the SCRS (for individuals), HCSBS (for individuals), and the three SPA codes (for the dyad).
- 5. The total number of token reinforcements recorded on BRC cards during the 5-week period of SCRST-PV will correlate positively with change scores on the SCRS (for individuals), HCSBS (for individuals), and the three SPA codes (for the dyad).

#### Results

## **Observer Accuracy**

Data analyses were performed to estimate the accuracy of the SCRS-III using the scoring system described by Nakaha (2012) and utilized by Grimes (2014). Two reliability coders were trained to score the SCRS-III Forms A and B. Training included an initial instructional session with the researcher. The coding system was explained and modeled using a videotaped SCRS-III administration. The two reliability coders and the researcher coded three practice videotapes together, then independently scored three additional SCRS-III administrations and compared their scores, discussing discrepancies. Videotapes were available from children whose parents consented to the project, but subsequently discontinued their participation. Each coder was required to reach 80% agreement with the researcher across the 16-items for both Form A and Form B before they were allowed to code the research tapes independently. After passing the criterion, the reliability coders independently scored all SCRS-III pre-test and post-test for both younger siblings and older siblings. The coders' ratings were then compared to each other. The accuracy estimates were performed on all SCRS-III presentations (16 pretest: 8 younger siblings and 8 older siblings; and 16 post-test: 8 younger siblings and 8 older siblings). Coders were unaware of administration order (i.e., whether the tape was pre vs. post).

The results of the SCRS-III accuracy estimates are presented in Table 3 on the next page. First, the average item scores of each child obtained independently by each observer were compared. Group mean scores for the two reliability coders were tested for significant differences. See the means, standard deviations, *t*-scores, and *p*-values in

Table 3. All tests of differences were insignificant. The average item scores obtained by the two independent coders were correlated and reported as "Inter-observer reliability coefficients" (.88  $< r_{xy} <$  .92). Finally, agreement at the item level was calculated. The number of agreements (i.e., both coders independently rating a child's performance at the exact same score for each specific item) was divided by the number of opportunities. These agreement ratios are also reported in Table 3.

Table 3 SCRS-III Inter-Observer Accuracy Estimates

Form: Sibling	Coder1 $\overline{X}$ (S <sub>x</sub> )	Reliability Coder $\overline{X}(S_x)$	t	p	Item Agreement Ratios	Inter- observer Reliability Coefficients
Pre-SCRS: Target Child	3.4 (0.4)	3.6(0.3)	0.58	ns	80% (103/128)	.90**
Pre-SCRS: Older Sibling	3.8 (0.3)	3.9 (0.3)	-1.16	ns	80% (102/128)	.89**
Post-SCRS: Target Child	3.6 (0.6)	3.8(0.4)	0.76	ns	85% (109/128)	.88**
Post-SCRS: Older Sibling	4.0 (0.4)	4.0 (0.4)	1.00	ns	90% (115/128)	.92**

*Note.* SCRS scores are presented as average item scores. \*\* denotes significance beyond p <.01. An independent samples t-test was conducted to assess for mean differences on scores assessed by the separate coders.

Reliability estimates were also produced for the SPA. Like the SCRS-III, two independent reliability coders were trained to score the SPA. Coder training included an initial instructional session with the researcher. The coding system was explained and modeled using videotaped SPA administrations from families who withdrew from the study prior to project completion. The reliability coders and the researcher independently scored three SPA administrations and compared their scores, discussing discrepancies. The coder completed the training when she/he had successfully scored an SPA videotape with 50% or higher occurrence ratios for low probability behavior classes (i.e., Angry-Cry-Yell, Verbal Harassment, Physical Antagonism, and Justifications) and 80% or higher occurrence ratios for the higher probability behavioral class (i.e., Cooperative Play). Practice videotaped SPA administrations (maximum of six) were reviewed until the coder had demonstrated criterion performance. Only then was the reliability coder authorized to independently score the SPA administrations. The coders' ratings were compared to each other.

Observer accuracy was evaluated in two ways: Occurrence Ratios and Reliability Coefficients. First, the number of agreements (i.e., both coders independently coding the presence of an occurrence during the same 20-second interval) was divided by the number of opportunities to calculate an agreement of occurrences within an interval. Occurrence ratios do not consider agreements on the absence of the response class during an interval. Further, isolated occurrences that were coded in two successive intervals by two independent coders were considered an agreement for low probability codes. For example, if Coder 1 detected Physical Antagonism in Interval 49 (but not in Intervals 48 and 50), while Coder 2 detected Physical Antagonism in Interval 50 (but not Intervals 49

or 51), an occurrence agreement was recorded. Occurrence Ratios are presented in Table 4. Second, the percent occurrences of each of the five response classes (see Table 7) for each dyad were computed for each coder. The correlations between these two session scores were calculated as the "Inter-rater Reliability Coefficient". Inter-rater reliability coefficients for the SPA and are displayed in Table 5.

Table 4

Pre/Post SPA Inter-Observer Occurrence Ratios

Behavior Class	Pre-SPA	Post-SPA
Angry-Yell	78% (7/9)	50% (2/4)
Physical Antagonism	100% (3/3)	50% (2/4)
Verbal Harassment	100% (1/1)	0% (0/1)
Justification	93% (14/15)	65% 11/17)
Cooperative Play	95% (157/165)	89% (118/133)
Help (Parent)	_ A	43% (3/7)
Reinforce (Parent)	90% (9/10)	86% (18/21)
Attention (Parent)	99% (95/96)	92% (113/123)

A Neither coder detected an occurrence of Help at Pre-SPA

Table 5
Pre/Post SPA Inter-rater Reliability Coefficients

Behavior class	Pre-SPA	Post-SPA	
Angry-Yell	.93**	.93**	
Physical Antagonism	1.0**	.74*	
Verbal Harassment	.65	_ A	
Justification	.99**	.78*	
Cooperative Play	1.0**	1.0**	
Help (Parent)	_ A	.68	
Reinforce (Parent)	.98**	.99**	
Attention (Parent)	.99**	1.0**	

<sup>&</sup>lt;sup>A</sup> A reliability coefficient could not be computed for Verbal Harassment or Help since one or both coders did not detect an occurrence episode

## **Descriptive Statistics and Hypothesis Testing**

Descriptive statistics for the pre and post measures are presented. Specifically, Table 6 presents SCRS-III average item scores (and standard deviations) for younger and older siblings at both pre- and post-SCRST-PV.

Since it was also hypothesized (Hypothesis 2) that pre-intervention individual differences might influence a child's SCRS-III performance, the pre-SCRST-PV levels of the Aggressive Behavior subscale on the CBCL (Achenbach & Rescorla, 2000; 2001) were used as covariates. The analysis of covariance failed to detect a significant change in the SCRS-III performance in both younger and older siblings (both p-values > .05). The adjusted means were identical to the unadjusted means (Table 6), suggesting that associations between the parent beliefs of child pre-existing aggression and SCRS-III

<sup>\*</sup> p < .05

<sup>\*\*</sup>p < .001

performance were negligible. The correlations among parent beliefs on the Aggressive Behavior subscale and pre-test SCRS-III average item scores were evaluated for both younger and older siblings. Younger siblings yielded an insignificant association, despite a substantial correlational value r(6) = .594, p = .120, n.s.; similarly, older siblings yielded, r(6) = .342, p = .407, n.s. In addition, the analysis of covariance reduced the degrees of freedom for the hypotheses testing by one (df = 6); moreover, the SPSS program for ANCOVA only provides a two-tailed test. The ANCOVA may have been insensitive to the effects that might well be detected with a larger sample size. Therefore, a one-tailed t statistic was analyzed, since it was hypothesized that children's post-test SCRS-III scores would significantly improve from pre-intervention (Hypothesis 2). Table 6 presents the descriptive data and dependent t-tests in each child group (n = 8 in all groups), comparing the pre-SCRS-III means with the post-SCRS-III means. As indicated in Table 6, both younger and older siblings significantly improved their performance on SCRS-III after completing the SCRST-PV, partially supporting Hypothesis 2.

Table 6
Average Item Scores for SCRS-III Form A and Form B

	Younger Siblings			Older Siblings		
	Pre-Test	Post-Test	t	Pre-Test	Post-Test	t
$\overline{X}$	3.4	3.8	2.0*	3.9	4.2	2.2*
$(S_x)$	(0.4)	(0.6)		(0.3)	(0.4)	
Adjusted $\overline{X}$	3.4	3.8		3.9	4.2	
Range	2.7-4.0	2.6-4.3		3.4 - 4.3	3.3 - 4.4	

<sup>\*</sup> p < .05.

Table 7 shows SPA results for each of the five response classes coded for children as a dyad. One-tailed matched samples t-tests were computed to compare pre/post mean differences (df = 7 for all t-analyses). The purpose of the analyses was to test for generalization of improved SCRS-III performance (which was partially supported above) to sibling play quality. Hypothesis 3a predicted significant improvement from pre to post-training on Cooperative Play and Justifications, and a significant decline in Verbal Harassment. Verbal Harassment scores on the SPA were near zero and identical from pre- to post-intervention (M = 0.2%), precluding analysis. The remaining four matched samples t-tests were computed; however, none of the comparisons were significant, failing to support Hypothesis 3a.

Table 7
Sibling Play Analog Results Displayed in Percent Occurrence

Behavior Class	Pre-SPA $\overline{X}$ (S <sub>x</sub> )	Post-SPA $\overline{X}$ (S <sub>x</sub> )	t	
Angry-Yell	1.5% (2.9)	0.6% (1.2)	0.89	
Physical Antagonism	0.6% (1.2)	0.7% (1.2)	0.00	
Verbal Harassment	0.2% (0.6)	0.2% (0.6)		
Justification	2.9% (5.0)	2.7% (3.3)	-0.22	
Cooperative Play	34.0% (27.8)	27.0% (25.7)	0.45	

Table 8 shows SPA results for the three parent codes (i.e., Help, Reinforce, and Attention). Hypothesis 3b predicted significant improvement from pre to post-test SPA measures on Help and Reinforce. Two one-tailed matched samples t-tests (df = 7) failed to find significant differences between pre-and post-intervention means for Help and Reinforce percentages (both p-values > .05). Therefore, no evidence in support of Hypothesis 3b was evident.

Table 8
Sibling Play Analog Parent Results Displayed in Percent Occurrence

Behavior Class-Parent	Pre-SPA $\overline{X}$ (S <sub>x</sub> )	Post-SPA $\overline{X}$ (S <sub>x</sub> )	t	
Help	0.0% (0.0%)	1.4% (3.0%)	1.35	
Reinforce	2.0% (2.8%)	4.3% (4.3%)	0.94	
Attention	19.9% (7.5%)	26.4% (13.6%)	0.57	

*Note.* df = 7 for all groups; all t-tests were insignificant.

Data from the parent-completed Home and Community Social Behavior Scales are presented in Table 9 at both pre- and post-SCRS-PV. Hypothesis1 predicted significant improvement from pre- to post-test measurements for the younger siblings on the HCSBS when variability associated with CBCL aggressive behavior was statistically removed. See Table 9 for descriptive data. A repeated measures ANCOVA comparing the pre- and post- Peer Relations subscale means of the HCSBS found significant mean differences between HCSBS Pre-Test and Post-Test, F(1, 6) = 38.75, p = .001, supporting hypothesis one. Additionally, significant differences were detected on the Social Competence subscale for younger siblings when controlling for CBCL aggression, F(1, 6) = 30.98, p = .001. However, younger siblings did not significantly improve on the HCSBS Antisocial Behavior subscale from pre-test to post-test, although this approached significance, F(1, 6) = 5.23, p = .062. See Table 9. Note that data in Table 9 are presented as T-scores, where higher scores on Social Competence scale indicate parent perceptions of desirable child behavior, while higher scores on Antisocial Behavior scale indicate parent perceptions of problem child behavior.

Improvement from pre- to post-test on the HCSBS was also investigated for older siblings.

Again, mean changes on the HCSBS were evaluated for the Peer Relations scale using a repeated

measure ANCOVA with pre-test Aggressive Behavior as the covariate. Older siblings were not significantly different from pre-test to post-test on HCSBS Peer Relations, F(1,6) = .023, p = n.s., Social Competence, F(1,6) = .41, p = n.s., or Antisocial Behavior, F(1,6) = 1.39, p = n.s., subscales. See Table 9. Therefore, only partial support was found for Hypothesis 1.

Table 9

Descriptive Data for Home and Community Social Behavior Scales at Pre/Post test

	You	nger Siblings	Older Sibling	gs
	Pre-test $\overline{X}$ (S <sub>x</sub> )	Post-test $\overline{X}$ (S <sub>x</sub> )	Pre-test Post- $\overline{X}$ (S <sub>x</sub> ) $\overline{X}$ (	
Peer Relations Scale	49.4 (7.2)	49.6 (4.4)	47.1 (6.9) 48.4 (	8.5)
Social Competence	47.4 (7.5)	50.0 (4.2)	46.6 (4.1) 48.6 (	7.7)
Antisocial Behavior	59.1 (8.2)	57.8 (6.7)	55.1 (9.0) 52.9 (	7.1)

A summary of social skills demonstrated in the home as reported on BRC cards are reported in Table 10 for younger siblings and Table 11 for older siblings. Data from BRCs returned by parents were summed for each category of skill, divided by the number of days collected, and multiplied by 7 to yield a rate per week for each individual child. Each occurrence of skill on Tables 10 and 11 represents a positive reinforcement episode in the home provided by the parent for overt child display of the targeted skill. These data are descriptive. Hypotheses 5 evaluated the relationship between the total number of positive reinforcement in the home and change scores on other outcome measures. These relationships are explicated below.

Table 10
Descriptive Data for the Younger Siblings Social Skills Behavior Record Card

	Sharing $\overline{X}$ (S <sub>x</sub> )	Turn- Taking $\overline{X}(S_x)$	Tie-Breaking $\overline{X}$ ( $S_x$ )	Ownership $\overline{X}$ (S <sub>x</sub> )	Taking "No" for an answer $\overline{X}$ (S <sub>x</sub> )	Assertiveness $\overline{X}$ ( $S_x$ )
Session 1 BRC	4.6 (5.0)	1.9 (1.1)	1.1 (1.0)	-	-	-
Session 2 BRC	2.3 (2.4)	2.0 (1.7)	1.0 (1.2)	2.1 (2.2)	-	-
Session 3	1.8	0.8	0.8	0.8	0.3	-
BRC	(1.4)	(1.0)	(0.7)	(0.7)	(0.5)	
Session 4	1.0	0.6	0.5	0.6	0.9	0.6
BRC	(1.2)	(0.5)	(0.9)	(0.7)	(0.8)	(1.1)
Session 5	1.6	0.9	1.0	1.4	0.6	0.7
BRC	(1.6)	(1.1)	(1.3)	(1.3)	(1.1)	(0.8)

*Note.* Data presented on available BRCs returned. For Sessions 1, 2, 3, & 4 BRC n = 8; For session 5 n = 7. Data presented as mean occurrence per week.

Table 11
Descriptive Data for the Older Siblings Social Skills Behavior Record Card (Total/Card)

•		Turn-	Tie-		Taking "No"	
	Sharing	Taking	Breaking		for an	Assertiveness
	$\overline{X}$ (S <sub>x</sub> )	$\overline{X}(S_x)$	$\overline{X}$ (S <sub>x</sub> )	$\overline{X}$ (S <sub>x</sub> )	answer $\overline{X}(S_x)$	$\overline{X}$ (S <sub>x</sub> )
Session 1 BRC	4.4 (4.2)	2.6 (3.0)	1.4 (1.3)	-	-	-
Session 2 BRC	2.5 (2.5)	2.1 (2.0)	1.3 (2.4)	2.4 (2.4)	-	-
Session 3 BRC	1.8 (1.4)	0.9 (1.0)	0.6 (0.5)	1.0 (1.1)	0.8 (0.9)	-
Session 4 BRC	1.3 (1.3)	0.8 (0.7)	0.3 (0.7)	0.8 (0.9)	0.6 (0.7)	1.1 (1.4)
Session 5 BRC	1.4 (1.4)	1.1 (0.8)	0.6 (0.8)	1.1 (1.2)	0.3 (0.5)	1.0 (1.3)

*Note.* Data presented on available BRCs returned. For Sessions 1, 2, 3, & 4 BRC n = 8; For session 5 n = 7. Data presented as mean occurrence per week.

In addition to positively reinforcing targeted sibling skills, parents were trained via the SCRST-PV to provide prompts for skill use when a sibling dyad was observed to be using coercion, rather than a skill, to solve a problem in the home setting. Table 12 summarizes parental involvement (i.e., Help) in the home as reported on BRC cards for both older and younger siblings during the 5-week SCRS-PV protocol. Further, data

reported by skill category above (Tables 10 & 11), were collapsed into a weekly total for each sibling to create the group data provided in Table 12.

Table 12
Behavior Record Card Total Help and Reinforce Counts per week

Week	Sibling	H	elp	Rein	force	
		$\overline{X}$	$(S_x)$	$\overline{X}$	$(S_x)$	
Week 1	Younger	8.6	(4.8)	7.6	(5.0)	
	Older	8.0	(5.0)	8.4	(5.6)	
Week 2	Younger	6.2	(4.5)	7.4	(4.5)	
	Older	5.9	(4.6)	8.3	(5.1)	
Week 3	Younger	5.8	(4.4)	4.3	(3.2)	
	Older	5.6	(4.5)	5.0	(3.7)	
Week 4	Younger	5.6	(4.2)	4.3	(2.5)	
	Older	4.9	(3.3)	4.9	(4.2)	
Week 5	Younger	5.7	(4.6)	6.1	(4.7)	
	Older	5.7	(4.6)	5.6	(3.6)	

*Note.* Weeks 1-4 n = 8 per group; Week 5 n = 7.

Hypothesis 4 predicted that total number of prompts (i.e., Help counts) recorded on the BRC cards during the 5-week SCRST-PV training period would correlate positively with hypothesized change scores on the SCRS-III, HCSBS, and Cooperative Play and Justification percentages on the SPA. For the two dyadic measurements (SPA Cooperative Play and Justification), total Help for the dyad was calculated by summing the Help provided for both children. Pearson correlations revealed no significant associations between any of the variables (see Table 13), failing to support Hypothesis 4.

Table 13

Correlation Coefficients Matrix for BRC Total Help and Change Scores on Outcome Measures

Measure	BRC Help Total Younger siblings	BRC Help Total Older Siblings
HCSBS Peer Relations	.34	.50
SCRS-III	.28	.54
SPA Justification	.51	.51
SPA Cooperative Play	.65	.65

Hypothesis 5 predicted that total number of token reinforcements (i.e., parent praise) recorded on the BRC cards during the 5-week SCRST-PV training period would correlate positively with change scores on the SCRS-III, HCSBS, and Cooperative Play and Justification percentages on the SPA. This hypothesis was not supported, as none of the correlations were significant (all p- values > .05; see Table 14).

Table 14

Correlation Coefficients Matrix for BRC Total Reinforce and Change Scores Outcome Measures

Measure	BRC Total Younger siblings	BRC Total Older Siblings
HCSBS Peer Relations	03	45
SCRS-III	.05	.09
SPA Justification	.17	.17
SPA Cooperative Play	.41	.41

#### Discussion

## Adequacy of the Sample of Participants

Eleven families, eight of which completed the project, were recruited. The sample was predominantly comprised of married, European-American families of the Latter Day Saints religion. These demographics are representative of rural Southeastern Idaho and consistent with samples participating in prior sibling research at Idaho State University. The sample of participating children was balanced with regard to gender. Of families with multiple children, the selection criteria for participants resulted in choosing younger and older siblings at the lower end of each age limit. The selection procedures were judged to be effective in obtaining the desired family characteristics and age range of participating children. See Table 1 for a quantitative review of the sample.

## **Observer Accuracy**

Observer accuracy estimates were calculated for all observational measures of social skills: SCRS-III and SPA. The SCRS-III was accurately coded (see Table 3). At the very conservative item level of comparison, all agreement ratios exceeded 80%. At the total score level, comparisons of independently derived average item scores were not significantly different between two independent coders. More importantly, average item scores yielded highly significant inter-observer reliability coefficients (.88 < r < .92). Overall, the SCRS yielded good observer accuracy consistent with estimates from previous research (e.g., Grimes, 2012; 2014).

The SPA codes were also coded with sufficient accuracy to be analyzed. At the very conservative item level of analysis, the Occurrence Ratios revealed a wide variation

in agreement. Occurrence ratios reported in Table 4 ranged from 0% to 100% across the eight behavior codes across the pre/post sampling contexts. Occurrence ratios averaged > 75% (median = 89%). Clearly, the lower frequency behavior classes (i.e., Angry-Yell, Physical-Antagonism, Verbal-Harassment, and Parent-Help) were more difficult to code accurately, possibly as a function of the low frequency of occurrence and/or subjectivity of the operational definitions. Despite low frequency, the parent behavior class of Reinforce was accurately coded, possibly as a result of the specificity of its definition or its saliency. At the session level, which is the metric used in all analyses, the inter-observer reliability coefficients were adequate (Table 5), ranging from .65 < r < 1.0 (median r-value = 94.5). Most importantly, independent coders were kept blind to the pre-post status of videotapes reviewed. Therefore, coding accuracy for both SCRS-III and SPA appeared to be quite good. Accuracy estimates are consistent with previous research using the SPA.

## Hypothesis #1

The first hypothesis was that significant improvement would be demonstrated from pre- to post-test measurements for each sibling on the HCSBS when variability associated with CBCL Aggressive Behavior was statistically removed. This hypothesis was partially supported. Significant mean differences between HCSBS Pre-Test and Post-Test were detected for younger siblings on both Peer Relations and Social Competence subscales when variability for aggression (i.e., CBCL Aggressive Behavior Subscale) was statistically removed. However, while the scores for older siblings were in the predicted direction from pre- to post-assessment, no significant mean differences were demonstrated for older siblings on the HCSBS. It is quite possible that the study

lacked the necessary power for detecting these effects due to the small sample size (n = 8). It is also possible that the demographic characteristics of the recruited sample impacted the results. An examination of the means on the HCSBS (Table 9) indicates that younger siblings were rated, on average, as more skillful in terms of Peer Relations and Social Competence than their older siblings at pre-intervention. Notably, 88% of younger siblings involved in this study were female, while 75% of older siblings were male. Therefore, it is plausible that the sex of the siblings influenced the outcome on this measure, as the younger (primarily female) siblings were rated as more skillful by their parent before the treatment began, and subsequently increased their ratings, while the older (primarily male) siblings were rated as less skillful at pre-intervention, and failed to significantly improve.

## Hypothesis #2

The second hypothesis predicted that both siblings would significantly improve on the SCRS-III from pre- to post-intervention when variability associated with initial levels of social aggression (i.e., CBCL Aggression Subscale) were statistically removed. This hypothesis was partially supported. A repeated measures ANCOVA using CBCL Aggressive Behavior as a covariate failed to detect significant differences for either sibling group on the SCRS-III; however, the ANCOVA may have been insensitive to small effects, given low sample size (n = 8), a two-tailed test of significance, and decreased degrees of freedom (df = 6). Notably, when one-tailed matched samples t statistics were analyzed, both younger and older siblings significantly improved from pre-to post-assessment on the SCRS-III (Table 6). It is important to highlight that a one-tailed test is more appropriate, as the hypothesis was directional and correlations between

parent beliefs on the CBCL and pre-test SCRS-III were not significant (Results Section, p. 42), precluding the justification for performing the ANCOVA. The improvement in SCRS-III mean item score was clearly small. Performing a t-test increased power by raising the degrees of freedom (df = 7), thus increasing the probability of detecting the effect. Despite small changes in absolute level (Table 6), improvements in younger siblings can be conceptualized as clinically significant. Given that an average item score of 4.0 reflects the consistent use of a context-relevant verbal solution to a sibling-conflict, younger siblings improved to within one error of measurement (SEM = 0.2) of 4.0. This occurred despite the fact that younger sibling never participated in clinic training.

## Hypotheses #3 through #5

In general, none of these hypotheses were supported. Specifically, siblings failed to demonstrate significant increases in Justification and Cooperative play on the SPA, and did not significantly differ on their levels of Verbal Harassment from pre- to post-assessment (Hypothesis 3a; see Table 7). Essentially, changes on SCRS-III failed to generalize to the SPA. Moreover, parents did not significantly differ in their demonstrations of Reinforce or Help on the SPA (Hypothesis 3b), although these means were in the predicted direction (see Table 8). Finally, neither the total number of prompts (i.e., Help counts) nor the total number of Token Reinforcements recorded on the BRC during the 5-week SCRST-PV protocol were significantly correlated with any of the change scores on the outcome measures (i.e., SCRS-III, HCSBS, or SPA). See Tables 13 and 14.

## **Summary of Results**

Both younger and older siblings significantly increased their repertoire of social skills from pre- to post-assessment as measured by the SCRS-III, although changes on the SCRS-III failed to generalize to the SPA. Additionally, parents did not significantly differ from pre- to post- assessment in their attempts to Help or Reinforce the siblings in the SPA. However, parent collected data on the BRCs indicate that: (1) children independently demonstrated siblings skills in the home, and (2) parents provided prompts for skill use in the home on a daily basis (See Tables 10, 11, & 12). Finally, parents reported that younger siblings significantly improved from pre- to post-assessment in their Peer Relations and Social Competence as measured by the HCSBS, when pre-existing aggression was statistically removed. Taken together, this suggests that parent training is a viable intervention for improving sibling conflict resolution skills in the home.

#### Limitations

A major limitation of the study design was the lack of a control group. Although some significant differences between pre- and post-measurements were found on the SCRS-III and HCSBS measures, it is important to note these changes cannot be attributed to the SCRST-PV. One controlled study (Thomas & Roberts, 2009) has previously demonstrated that significant changes in SCRS-III average item scores are attributable to a similar version of the SCRST. In that project he wait list control group did not change. The current project, therefore, was only a partial replication of Thomas and Roberts. Second, the current project's sample size was small, which surely reduced the statistical power to detect small effects. Had a larger sample been recruited, it is possible that

changes demonstrated by the current project in the expected direction may have been statistically significant, even when parent beliefs about pre-existing social aggression were statistically removed. Third, the current project, like Grimes (2014), failed to yield generalization of training improvements to the SPA. Fourth, the sample was demographically limited to the population representative of rural, Southeastern Idaho.

## Strengths

This study demonstrated that parent training is a viable intervention for increasing sibling social skill repertoires. In fact, the siblings recruited in this sample improved their conflict resolution skills into the range consistent with siblings who completed face-to-face social skills training with a therapist. Specifically, Grimes' (2014) sample of 5.0 - 6.9 year olds improved their mean SCRS-III item score from 3.4 to 3.9 (comparable to 3.4 to 3.8 in Table 6, younger siblings). While the generalization of these skills to the SPA was not manifest, children clearly improved their range of different, contextually appropriate strategies to manage routine sibling conflicts as measured by the SCRS-III. We assume that this finding demonstrates that complex sibling skills can be improved by training parents to prompt and reinforce these skills when used in the home. A controlled trial with a wait-list control, however, will be needed to confirm this assumption.

In addition, this project adds to an existing literature on parent-collected data using the BRC system. The BRC used in the current project was adapted from the system created by Nadler and Roberts (2013) and used by Grimes (2014). Clearly, the psychometric properties of BRC counts of sibling skill use (i.e., Reinforce) and prompts to use sibling skills (i.e., Help) are unknown, but much was gained in the current project. Specifically, parents were willing and able to track sibling skill use in the home

(accompanied by token and social reinforcement), as well as their own attempts to help siblings implement conflict resolution strategies.

## **Future Directions**

This project extended previous research (i.e., Grimes, 2014) by demonstrating that parent training alone might increase sibling social skill repertoires. While treatment acceptability was not assessed, parents appeared satisfied with the SCRST-PV. For example, parents often reported that they felt as if their children were getting along better in the home and using the skills without parental prompts. This was verified by parent reports on the HCSBS and BRCs. It is important to note that three families dropped out of the study (one family after the pre-test but before SCRST-PV sessions began, and two families after the first SCRST-PV session). Families who discontinued cited scheduling conflicts as their reason for ending the project.

The results of this project indicate several potential directions for future research. First, replicating the current project with the inclusion of a control group would be a logical next step. Second, integrating direct training with siblings (Thomas & Roberts, 2009; Grimes 2014) with direct training of parents to reinforce and help is indicated. Third, some method to measure sibling skills at home needs to be developed. Clearly, the SPA is not sensitive to changes in skills, quite possibly because the analog is not eliciting much conflict. See Table 7. In particular, the sum of the three aversive codes (Angry-Yell, Physical-Antagonism, and Verbal Harassment) was 2.3% (at Pre) and 1.5% (at Post). The only direct measurement of conflict in the home is the Help frequency (Table 12), which yielded about one conflict per day (or less) across the five week period it was used. If parents were accurate in their detection of Help (which is currently unknown),

then a decline in Help would indicate a decline in unresolved conflicts. Lengthier follow-up periods punctuated by periodic booster sessions with parents and siblings could be useful. During extended follow-up, therapists could review skills with parents, resensitize parents to track unresolved conflicts, and help children to resolve conflicts. Such an extended follow-up might prove to be essential. Certainly, an extended follow-up would be needed to determine if the frequency of Help (i.e., a conflict not resolved by the siblings) would indeed approach zero episodes per week.

It is evident that there are several immutable problems in measuring sibling conflict in the home. Indeed, the absence of Help counts on behavior record cards does not necessarily mean that siblings are successfully managing conflict. First, the parent could be too far removed, or too distal from the conflict to detect it. Second, low frequency conflicts might diminish parental attention. Third, siblings might develop clandestine and surreptitious coercive strategies to resolve conflicts, precluding parental detection. There are no easy solutions to these problems. Placing an observer in the home would provoke reactivity to his/her presence and be prohibitively expensive. Miniature video systems might reduce intrusiveness, but not the cost. Staging conflicts, with a sibling confederate would regress to a poor approximation to the current SCRS-III now performed successfully in the lab. No single solution to the problem of home measurements of sibling conflict is currently offered.

### References

- Abramovitch, R., Corter, C. & Lando, B. (1979). Sibling interaction in the home. *Child Development*, *50*, 997-1003.
- Achenbach, T.M. & Rescorla, L.A. (2000). *Manual for the ASEBA Preschool Forms* & *Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth and Families.
- Achenbach, T.M. & Rescorla, L.A. (2001). *Manual for the ASEBA School-Age Forms & Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth and Families.
- Adams, C. D., & Kelley, M. L. (1992). Managing sibling aggression: Overcorrection as an alternative to time-out. *Behavior Therapy*, 23(4), 707-717. doi:10.1016/S0005-7894(05)80230-8
- Arnold, J. E., Levine, A. G. & Patterson, G. R. (1975). Changes in sibling behavior following family intervention. *Journal of Consulting and Clinical Psychology*, 43(5), 683-688.
- Bennett, J. C. (1990) Nonintervention into siblings' fighting as a catalyst for learned helplessness. *Psychological Reports*, *66*, 139-145.
- Buhrmester, D. & Furman, W. (1987). Development of companionship and intimacy.

  Child Development, 58, 1101-1113.
- Buhrmester, D., & Furman, W. (1990). Perceptions of sibling relationships during middle childhood and adolescence. *Child Development*, *61*(5), 1387-1398. doi:10.2307/1130750

- Campione-Barr, N., & Smetana, J. G. (2010). 'Who said you could wear my sweater?'

  Adolescent siblings conflicts and associations with relationship quality. *Child Development*, 81(2), 464-471. doi:10.1111/j.1467-8624.2009.01407.x
- Chambless, D., & Ollendick, T. (2001). Empirically supported psychological interventions: Controversies and evidence. *Annual Review of Psychology*, *52*, 685-716
- Dunn, J. (1988). Sibling influences on childhood development. *Journal of Child Psychology and Psychiatry*, 29(2), 119-127.
- Dunn, J., & Herrera, C. (1997). Conflict resolution with friends, siblings, and mothers: A developmental perspective. *Aggressive Behavior*, 23, 343-357.
- Dunn, J., & Munn, P. (1985). Becoming a family member: Family conflict and the development of social understanding in the second year. Child *Development*, *Special Issue: Family Development*, *56*(2), 480-492.
- Ensor, R., Marks, A., Jacobs, L., & Hughes, C. (2010). Trajectories of antisocial behaviour towards siblings predict antisocial behaviour towards peers. *Journal of Child Psychology And Psychiatry*, *51*(11), 1208-1216. doi:10.1111/j.1469-7610.2010.02276.x
- Eyberg, S., Nelson, M., & Boggs, S. (2008). Evidence-based psychosocial treatments for children and adolescents with disruptive behavior. *Journal of Clinical Child and Adolescent Psychology*, *37*(1), 215-237. doi:10.1080/15374410701820117
- Furman, W., & Buhrmester, D. (1985). Children's perceptions of the qualities of sibling relationships. *Child Development*, *56*(2), 448-461. doi:10.2307/1129733

- Graham-Bermann, S. A., & Cutler, S. E. (1994). The Brother-Sister Questionnaire:

  Psychometric assessment and discrimination of well-functioning from

  dysfunctional relationships. *Journal of Family Psychology*, 8(2), 224-238.

  doi:10.1037/0893-3200.8.2.224
- Grimes (2012). Alternate form reliability of the Sibling Conflict Resolution Scale (SCRS-III). Unpublished Master's Thesis, Idaho State University
- Grimes (2013). Sibling Conflict Resolution Skills Training in a Trageted Developmental Period. Unpublished Dissertation, Idaho State University
- Hetherington, E., Henderson, S. H., Reiss, D., Anderson, E. R., Bridges, M., Chan, R.
  W., & ... Taylor, L. C. (1999). Adolescent siblings in stepfamilies: Family
  functioning and adolescent adjustment. Monographs of The Society for Research
  in Child Development, 64(4).
- Howe, N., Karos, L., & Aquan-Assee, J. (2011). Sibling relationship quality in early adolescence: Child and maternal perceptions and daily interactions. *Infant and Child Development*, 20(2), 227-245. doi:10.1002/icd.694
- Howe, N., & Recchia, H. (2005). Playmates and teachers: reciprocal and complementary interactions between siblings. *Journal of Family Psychology*, *19*(4), 497-502. doi:10.1037/0893-3200.19.4.497
- Jones, R., Sloane, H. N. & Roberts, M. W. (1992). Limitations of "don't" instructional control. *Behavior Therapy*, 23(1), 131-140.
- Kazdin, A. (2005). Child, Parent, and Family-Based Treatment of Aggressive and Antisocial Child Behavior. *Psychosocial treatments for child and adolescent*

- PARENT TRAINING FOR SIBLING CONFLICT
  - disorders: Empirically based strategies for clinical practice (2nd ed.) (pp. 445-476). Washington, DC: American Psychological Association.
- Kelly, F. D. & Main, F. O. (1979). Sibling conflict in a single-parent family: An empirical case study. *The American Journal of Family Therapy*, 7(1), 39-47.
- Kendrick, C. & Dunn, J. (1980). Caring for a second baby: Effects on interaction between mother and firstborn. *Developmental Psychology*, *16*(4), 303-311.
- Kennedy, D. E., & Kramer, L. (2008). Improving emotion regulation and sibling relationship quality: The More Fun with Sisters and Brothers Program. Family Relations: An Interdisciplinary Journal of Applied Family Studies, 57(5), 567-578. doi:10.1111/j.1741-3729.2008.00523.x
- Kim, J., McHale, S. M., Crouter, A. C., & Osgood, D. (2007). Longitudinal linkages between sibling relationships and adjustment from middle childhood through adolescence. *Developmental Psychology*, *43*(4), 960-973. doi:10.1037/0012-1649.43.4.960
- Kolak, A. M., & Volling, B. L. (2011). Sibling jealousy in early childhood: Longitudinal links to sibling relationship quality. *Infant and Child Development*, 20(2), 213-226. doi:10.1002/icd.690
- Kramer, L., & Baron, L. A. (1995). Parental perceptions of children's sibling relationships. *Family Relations: An Interdisciplinary Journal of Applied Family Studies*, 44(1), 95-103. doi:10.2307/584746
- Kramer, L., Perozynski, L. A., & Chung, T. (1999). Parental responses to sibling conflict:

  The effects of development and parent gender. *Child Development*, 70(6), 14011414. doi:10.1111/1467-8624.00102

- Kramer, L. & Radey, C. (1997). Improving sibling relationships among young children:

  A social skills training model. *Family Relations*, 46, 237-246.
- Lawson, A., & Ingleby, J. (1974). Daily routines of pre-school children: Effects of age, birth order, sex and social class, and developmental correlates. *Psychological Medicine: A Journal of Research in Psychiatry and the Allied Sciences*, 4(4), 399-415.
- Lecce, S., Pagnin, A., & Pinto, G. (2009). Agreement in children's evaluations of their relationships with siblings and friends. *European Journal of Developmental Psychology*, 6(2), 153-169. doi:10.1080/17405620701795536
- Leitenberg, H. (1977). Using positive reinforcement to suppress behavior: Some experimental comparisons with sibling conflict. *Behavior Therapy*, 8(2), 168-182. doi:10.1016/S0005-7894(77)80266-9
- Lochman & Wells, 1996). A social-cognitive intervention with aggressive children:

  Prevention effects and contextual implementation issues. In R. Dev. Peters & R. J.

  McMahon (Eds.), *Prevention and early intervention: Childhood disorders,*substance use, and delinquency (111-143). Newbury Park, CA: Sage).
- Lösel, F., & Beelmann, A. (2003). Effects of child skills training in preventing antisocial behavior: A systematic review of randomized evaluations. *Annals of the American Academy of Political and Social Science*, 587, 84-109.

  doi:10.1177/0002716202250793
- Low, S., Shortt, J., & Snyder, J. (2012). Sibling influences on adolescent substance use:

  The role of modeling, collusion, and conflict. *Development and Psychopathology*, 24(1), 287-300. doi:10.1017/S0954579411000836

- Lund, J., & Merrell, K. (2001). Social and antisocial behavior of children with learning and behavioral disorders: Construct validity of the Home and Community Social Behavior Scales. *Journal of Psychoeducational Assessment*, 19(2), 112-122.
- McGuire, S., Manke, B., Eftekhari, A., & Dunn, J. (2000). Children's perceptions of sibling conflict during middle childhood: Issues and sibling (dis)similarity. *Social Development*, 9(2), 173-190. doi:10.1111/1467-9507.00118.
- McHale, S. M., & Gamble, W. C. (1989). Sibling relationships of children with disabled and non-disabled brothers and sisters. *Developmental Psychology*, 25, 36-44.
- McMahon, R., & Forehand, R. (2003). Helping the noncompliant child: Family-based treatment for oppositional behavior (2nd ed.). New York, NY: Guilford Press.
- McMahon, R. J., Wells, K. C., & Kotler, J. S. (2006). Conduct problems. In E. J. Mash & R. A. Barkley (Eds.), *Treatment of Childhood Disorders, Third Edition* (pp.137-268). New York, NY: Guilford Press.
- Mendelson, M. J., Aboud, F. E., & Lanthier, R. P. (1994). Personality predictors of friendship and popularity in kindergarten. *Journal of Applied Developmental Psychology*, 15(3), 413-435. doi:10.1016/0193-3973(94)90040-X
- Menesini, E., Camodeca, M., & Nocentini, A. (2010). Bullying among siblings: The role of personality and relational variables. *British Journal of Developmental Psychology*, 28(4), 921-939. doi:10.1348/026151009X479402
- Merrell, K.W. (1998). Assessing social skills and peer relations. *Psychological assessment of children: Best practices for school and clinical settings (2nd ed.)*(pp. 246-276). Hoboken, NJ: John Wiley & Sons Inc.

- Merrell, K. W., & Boelter, E. (2001). An investigation of relationships between social behavior and ADHD in children and youth: Construct validity of the Home and Community Behavior Scales. *Journal Of Emotional And Behavioral Disorders*, 9(4), 260-269. doi:10.1177/106342660100900406
- Merrell, K., & Caldarella, P. (1999). Social-behavioral assessment of at-risk early adolescent students: Psychometric characteristics and validity of a parent report form of the School Social Behavior Scales. *Journal of Psychoeducational Assessment*, 17(1), 36-49.
- Meunier, J., Roskam, I., Stievenart, M., van de Moortele, G., Browne, D. T., & Kumar, A. (2011). Externalizing behavior trajectories: The role of parenting, sibling relationships and child personality. *Journal of Applied Developmental*\*Psychology, 32(1), 20-33. doi:10.1016/j.appdev.2010.09.006
- Miller, L. E., Grabell, A., Thomas, A., Bermann, E., & Graham-Bermann, S. A. (2012). The associations between community violence, television violence, intimate partner violence, parent—child aggression, and aggression in sibling relationships of a sample of preschoolers. *Psychology of Violence*, 2(2), 165-178. doi:10.1037/a0027254
- Nakaha, J. R. (2010). Sibling Play Analog: Replication, revision, and extension.

  Unpublished Doctoral Dissertation, Idaho State University
- Nakaha, J.R. & Roberts, M.W. (2010). Clinic Measurements of Sibling Conflict. Poster

  Presented at ABCT, San Francisco, California, November
- O'Leary, K., O'Leary, S., & Becker, W. (1967). Modification of a deviant sibling interaction pattern in the home. *Behaviour Research and Therapy*, 5(2), 113-120.

- Olson, R. L. & Roberts, M. W., (1987). Alternative Treatments for Sibling Aggression.

  Behavior Therapy, 18(3), 243-250.
- Patterson, G. R. (1984). Siblings: Fellow travelers in coercive family processes. In R. J. Blanchard (Ed.), Advances in the study of aggression (pp. 174-213). New York: Academic Press.
- Patterson, G., Reid, J., & Eddy, J. (2002). A brief history of the Oregon model. *Antisocial behavior in children and adolescents: A developmental analysis and model for intervention (pp. 3-20)*. Washington, DC: American Psychological Association.
- Ram, A., & Ross, H. (2001). Problem-solving, contention, and struggle: How siblings resolve a conflict of interests. *Child Development*, 72(6), 1710-1722.
- Ram, A., & Ross, H. (2008). 'We got to figure it out': Information-sharing and siblings' negotiations of conflicts of interests. *Social Development*, 17(3), 512-527.
- Reed, M. (1992). Validation of the Sibling Conflict Questionnaire. Unpublished Master's Thesis, Idaho State University, Pocatello, Idaho.
- Roberts, M. W., Arnold, S. B., & Mangum, P. F. (1992). The Sibling Conflict Resolution Scale. *the Behavior Therapist*, *15*, 254-255.
- Rose, A., & Asher, S. (1999). Children's goals and strategies in response to conflicts within a friendship. *Developmental Psychology*, 35(1), 69-79.
- Ross, H., Ross, M., Stein, N., & Trabasso, T. (2006). How Siblings Resolve Their Conflicts: The Importance of First Offers, Planning, and Limited Opposition. *Child Development*, 77(6), 1730-1745. doi:10.1111/j.1467-8624.2006.00970.x

- Ross, H. S., Siddiqui, A., Ram, A., & Ward, L. (2004). Perspectives on self and other in children's representations of sibling conflict. *International Journal of Behavioral Development*, 28(1), 37-47. doi:10.1080/01650250344000253
- Shantz, C. U. & Hobart, C. J. (1989). Social conflict and development: Peers and siblings. In T. J. Bernt & G. W. Ladd (Eds.) *Peer relationships in child development.* (71-94), England: John Wiley & Sons.
- Smith, J., & Ross, H. (2007). Training Parents to Mediate Sibling Disputes Affects

  Children's Negotiation and Conflict Understanding. *Child Development*, 78(3),

  790-805. doi:10.1111/j.1467-8624.2007.01033.x
- Stocker, C. M., Burwell, R. A., & Briggs, M. L. (2002). Sibling conflict in middle childhood predicts children's adjustment in early adolescence. *Journal of Family Psychology*, *16*(1), 50-57. doi:10.1037/0893-3200.16.1.50
- Where is this cited? Thomas 2004 is cited p.9 &11 Thomas 2009 cited on p.1,6,11,15,16
- Thomas, B. (2004). Validation of the sibling conflict resolution scale. Unpublished Master's Thesis, Idaho State University, Pocatello, Idaho.
- Thomas, B., & Roberts, M. (2009). Sibling conflict resolution skills: Assessment and training. *Journal of Child and Family Studies*, 18, 447-453.
- Tiedemann, G. L., & Johnston, C. (1992). Evaluation of a parent training program to promote sharing between young siblings. *Behavior Therapy*, 23(2), 299-318. doi:10.1016/S0005-7894(05)80387-9
- Troop-Gordon, W., & Asher, S. R. (2005). Modifications in children's goals when encountering obstacles to conflict resolution. *Child Development*, 76(3), 568-582. doi:10.1111/j.1467-8624.2005.00864.x

- Vandell, D. (1987). Baby sister/baby brother: Reactions to the birth of a sibling and patterns of early sibling relations. *Journal of Children in Contemporary Society*, 19(3-4), 13-37.
- Vandell, D. L. & Bailey, M D. (1992). Conflicts between siblings. In C. U. Shantz & W.W. Hartup (Eds.), Conflict in child and adolescent development (pp. 242-269).Cambridge, UK: Cambridge University Press.
- Vickerman, R. C., Reed, M. D, & Roberts, M. W. (1997). Maternal intervention in subclinical sibling coercion. *Journal of Applied Developmental Psychology*, 18, 23-35.
- Webster-Stratton, C., Reid, J., & Hammond, M. (2001). Social-skills and problem solving training for children with early-onset conduct problems: Who benefits? *Journal of Child Psychology & Psychiatry and Allied Disciplines*, 42(7), 943-952
- Webster-Stratton, C., & Reid, M. (2007). Incredible Years Parents and Teachers Training Series: A Head Start Partnership to Promote Social Competence and Prevent Conduct Problems. *Preventing youth substance abuse: Science-based programs for children and adolescents* (pp. 67-88). Washington, DC: American Psychological Association
- Wilson, A. E., Smith, M. D., Ross, H. S., & Ross, M. (2004). Young Children's Personal Accounts of Their Sibling Disputes. *Merrill-Palmer Quarterly*, 50(1), 39-60. doi:10.1353/mpq.2004.0008

# Appendix A- Sample Behavior Record Card

	Child 1			
Date	Sharing	Turn-Taking	Tie-Breaking	Help
	Token Exchange Night	Carryover Points	Total Points	Banked Points

# Appendix B- SPA Coding

Family Code	Circle:	PRE	POST	Coder

Date		0	Onset Cue																			
	Time			1	ntei	rval			Time			<u>lı</u>	nter	<u>val</u>			Time		<u>lr</u>	nter	<u>val</u>	
	:00:20	Υ	٧	Р	J	С	HRA		6:40-:00	Υ	V	Р	J	С	HRA		<b>13:20-:40</b> Y	V	Р	J	С	HRA
	:20:40	Υ	V	Р	J	С	HRA		7:00-:20	Υ	V	Р	J	С	HRA		13:40-:00 Y	٧	Р	J	С	HRA
	:40:00	Υ	V	Р	J	С	HRA		7:20-:40	Υ	V	Р	J	С	HRA		14:00-:20 Y	V	Р	J	С	HRA
	1:00-:20	Υ	V	Р	J	С	HRA		7:40-:00	Υ	V	Р	J	С	HRA		14:20-:40 Y	V	Р	J	С	HRA
5	1:20-:40	Υ	٧	Р	J	С	HRA	25	8:00-:20	Υ	٧	Р	J	С	HRA	45	<b>14:40-:00</b> Y	V	Р	J	С	HRA
	1:40-:00	Υ	V	Р	J	С	HRA		8:20-:40	Υ	V	Р	J	С	HRA		<b>15:00-:20</b> Y	V	Р	J	С	HRA
	2:00-:20	Υ	V	Р	J	С	HRA		8:40-:00	Υ	V	Р	J	С	HRA		<b>15:20-:40</b> Y	V	Р	J	С	HRA
	2:20-:40	Υ	V	Р	J	С	HRA		9:00-:20	Υ	٧	Р	J	С	HRA		<b>15:40-:00</b> Y	V	Р	J	С	HRA
	2:40-:00	Υ	V	Р	J	С	HRA		9:20-:40	Υ	V	Р	J	С	HRA		<b>16:00-:20</b> Y	V	Р	J	С	HRA
10	3:00-:20	Υ	V	Р	J	С	HRA	30	9:40-:00	Υ	٧	Р	J	С	HRA	50	<b>16:20-:40</b> Y	V	Р	J	С	HRA
	3:20-:40	Υ	V	Р	J	С	HRA		10:00-:20	Υ	V	Р	J	С	HRA		<b>16:40-:00</b> Y	V	Р	J	С	HRA
	3:40-:00	Υ	V	Р	J	С	HRA		10:20-:40	Υ	٧	Р	J	С	HRA		<b>17:00-:20</b> Y	V	Р	J	С	HRA
	4:00-:20	Υ	V	Р	J	С	HRA		10:40-:00	Υ	V	Р	J	С	HRA		17:20-:40 Y	V	Р	J	С	HRA
	4:20-:40	Υ	V	Р	J	С	HRA		11:00-:20	Υ	V	Р	J	С	HRA		17:40-:00 Y	V	Р	J	С	HRA
15	4:40-:00	Υ	V	Р	J	С	HRA	35	11:20-:40	Υ	٧	Р	J	С	HRA	55	<b>18:00-:20</b> Y	V	Р	J	С	HRA
	5:00-:20	Υ	V	Р	J	С	HRA		11:40-:00	Υ	V	Р	J	С	HRA		<b>18:20-:40</b> Y	V	Р	J	С	HRA
	5:20-:40	Υ	V	Р	J	С	HRA		12:00-:20	Υ	V	Р	J	С	HRA		<b>18:40-:00</b> Y	V	Р	J	С	HRA
	5:40-:00	Υ	V	Р	J	С	HRA		12:20-:40	Υ	V	Р	J	С	HRA		19:00-:20 Y	V	Р	J	С	HRA
	6:00-:20	Υ	V	Р	j	С	HRA		12:40-:00	Υ	V	Р	J	С	HRA		19:20-:40 Y	V	Р	J	С	HRA
20	6:20-:40	Υ	٧	Р	J	С	HRA	40	13:00-:20	Υ	٧	Р	J	С	HRA	60	19:40-:00 Y	٧	Р	J	С	HRA

20:00 Ends Scoring

# Appendix C- SCRS-III

"Now remember, show me your best behavior, the way your (mom/dad/teacher) want you to act toward your (brother/sister)"				
	9. Assertion to sib request			
Material	ls: Rescue Vehicle (power)			
Spatial:	A approaches just before prompt			
time brotl It be and	w you stand right here. (Wait until child is standing at the start position.) This you get to play with the Rescue Truck. Now remember, is your pretend her/sister. Let's pretend the Rescue Truck belongs to everyobody in your family. longs to you and it belongs to This time you get the Rescue Truck first, you just start to play with it, just this minute. Now you go ahead and play. (Wait I child begins playing.) wants to play, too. Show me what you should say do."			
A Prom	pt: "Can I play with the Rescue Truck?"			
	SCALE ANCHORS			
	Gives good reason PLUS conditional yes at future time, e.g., "No, I had it first. You can play when I'm done." (A says "Okay" and retreats)			
	Give good reason OR conditional yes at future time, e.g., "No, you can have a turn later."			
S	Says "No" OR ignores $\underline{A}$ , i.e., no orientation to $\underline{A}$ plus no talking OR attempts to share OR gives up toy, verbally or with a head nod or gesture. (CI) ( $\underline{A}$ says 'Thanks' and plays briefly)			
	Any verbal coercion (negative evaluation, bossy talk, threat, cry, yell, tease, argue, involves adult)			
1 A	Aggression			
	CLUD			

6. Sib breaking family rule

Materials: "cookie jar"

Spatial: cookie jar on A's half of the table, away from child

N: "Now come up and stand right here. (Allow child to stand at start position.) Now remember, \_\_\_\_\_ is your pretend brother/sister. No one can take cookies from the cookie jar without permission from mom or dad. You have to wait. Let's pretend \_\_\_\_ is trying to sneak some cookies when mom and dad aren't around. Show me what you should say and do."

A Prompt: "I'm going to get some cookies, even though I'm not supposed to. Mom and Dad aren't here." (manipulates cookie jar/pretends to eat – continues this throughout the scene.)

#### SCALE ANCHORS

- Verbal assertion, e.g., tells <u>A</u> not to sneak cookies PLUS give good reason or reminds <u>A</u> of rule, e.g., "You're not supposed to have cookies, you'll get in trouble." (<u>A</u> says "Okay" and stops/withdraws.)
- Incomplete verbal assertion, e.g., "Leave those alone." OR reminds  $\underline{A}$  of rule/reason without the request to inhibit.
- 3 Ignores A OR runs away (CI) OR other verbalizations.
- Repeats incomplete verbal assertion 3 or more times OR involves adult OR verbal coercion (negative evaluation, threat, cry, yell, tease, argue) OR grabs/takes cookies away. Note: bossy talk, if verbally assertive, is okay when only stated twice, and scored a "4."
- Aggression OR joins in cookie sneaking. <u>Note</u>: if the child is judged aggressive when taking the cookies away, code 1.

4. Asking to play with sib's toy

Materials: TV, battery-operated robot					
Spatial: A watches TV from a chair away from robot					
Y: "This time is playing with his/her robot. (A moves from start position to play with toy on floor.) Now remember, is your pretend brother/sister. Okay, you come up and stand right here. (Allow child to stand at start position.) got the robot for Christmas. It belongs to It's not a family toy. (Wait until A sets toy aside and reaches for TV.) Oh look! is tired of it. Now he's/she's watching TV. Let's pretend you really want to play with's robot. Show me what you should say and do."					
N Prompt: "Now remember, you really want to play with the robot. Show me what you should say and do."					
A Response: 5: "Okay" plus allows to play 2, 3, 4: "No" to request for robot "Yes" to request to watch TV "I don't want you to" to all "why" questions					
SCALE ANCHORS					
Indirect request for permission to play PLUS asks to trade, offers compensation, or gives good reason, e.g., "Can I play with your robot? You can use my for a while," or "I'll be careful," or "I let you play with my toys"					
Indirect request for permission to play OR reason/trade/compensation without indirect request OR when <u>A</u> says "No," repeats once and then gives up					
3 Ignores <u>A</u> OR other verbalizations					
Takes robot after $\underline{A}$ has told him/her "No" (CI) OR verbal coercion (negative evaluation, bossy talk, threat, cry, yell, tease, argue, involves adult) OR repeats request/reason 3 or more times. Note: repeating "please" equals and additional request if temporally isolated from the preceding request					
1 Aggression OR takes robot without asking					
CHIP					

3. Inhibiting Tease/Repetitious correcting

Materials: 10 blocks						
Spatial: $\underline{A}$ builds with all blocks on $\underline{A}$ 's half of table						
N: "This time let's pretend is building with his/her blocks. (Wait until A is sitting at the table and has begun building.) Now remember, is your pretend brother/sister. Now you come up and sit right here. (Wait until child is sitting at the table.) thinks his/her building has 100 blocks in it. But you know he's/she's wrong keeps building and he/she keeps saying that he/she has 100 blocks in his/her castle. Show me what you should say and do."						
A Prompt: "There are 100 blocks in my castle. It's so big!"  Prompt #2: (cries) "Yes, there are! There are 100 blocks in my castle. It's so big!" (use if child corrects once.)  Prompt #3: (cries) "There are too 100 blocks. You're teasing me. There are 100 blocks in my castle. It's so big!" (use if child corrects twice.)						
Note: If child does not verbally correct A, continue with initial prompt.						
SCALE ANCHORS						
Makes only 1 correction, e.g., "That's wrong. There are only 10 blocks." (30)						
Ignores A OR plays with available blocks OR other verbalizations						
Makes only 2 corrections						
Any verbal coercion (negative evaluation, bossy talk, threat, cry, yell, tease, argue, involves adult) OR 3 or more corrections						
Aggression OR knocks down $\underline{A}$ 's construction OR grabs blocks from $\underline{A}$						

11. Sib disobeys request to play

Materials: Other doll, Doctor's kit
Spatial: A in his/her "room" isolated from child in corner, defined by chairs, at least 10 feet from start position
N: "You come up and stand right here. (Wait for child to stand at the start position.)  Now remember, is your pretend brother/sister. This time is playing with his/her friend in his/her room. Here's 's room, and this is the door. You are not allowed to go into 's room without permission. Let's pretend you really want to play with and his/her friend. Show me what you should say and do."
N Prompt: "Now remember, you really want to play with and his/her friend. Show me what you should say and do."
A Response: 5: "Okay" plus brief play 2, 3, 4: "No" to requests to play "I don't want you to" to "why" questions

## SCALE ANCHORS

Note: If child "knocks," respond "Who's there?"

- Indirect request for permission to play PLUS offers compensation or compromise (i.e., does something to entice sibling to accept entrance to room), e.g., "Can I play? I'll bring my new car." (A says "Okay" and allows brief toy play.) Compensation/compromise means the child must offer something tangible or promise access to a privilege.
- Indirect request PLUS a good reason, e.g., "Let me in. I'll just sit and watch," "Can I come in? I'll be nice," OR compromise/compensation/reason without the indirect request.
- 3 Ignores A OR accepts "No" and plays by himself, i.e., 2 or fewer requests OR other verbalizations
- Repeats request/reason 3 or more times OR verbal coercion (negative evaluation, bossy talk, threat, cry, yell, tease, argue, involves adult). Note: repeating "please" equals and additional request if temporally isolated from the preceding request
- 1 Aggression OR takes Doctor's kit OR enters room without permission

	remember, show me your best behavior, the way your (mom/dad/teacher) want you toward your (brother/sister)"
	10. Request turn-taking
Mater	rials: 4 chairs, steering wheel
Spatia	al: Position A and child in front of car, side by side
sta N sh fre	Let's pretend this is a car. This is the front seat where the driver sits, and this is the ack seat. You come up and stand right over here. Now, you come up and and right beside (Wait until child and A have both arrived at start position.) ow remember, is your pretend brother/sister. You and are going apping with your mom/dad. I'm going to be the mom/dad and sit right here in the cont seat. This is the steering wheel. (N sits down.) wants to sit in the front at, and you want to sit in the front seat. Now you both can't sit in the front seat at e same time, can you? Show me what you should say and do.
Prom	mpt: "I want to sit in the front seat, okay?"  pt #2: "C'mon, I want to sit in the front seat."  pt #3: "You always get to sit in the front seat."
	SCALE ANCHORS
5	Requests turn-taking and allows $\underline{A}$ to go first, e.g., "Let's take turns. You can go first." ( $\underline{A}$ says "Thanks" and sits in the front seat.) OR gives good reason why neither child can sit in front seat, e.g., "We both have to sit in back because of the air bags." Note: Use of the word "first" implies turn-taking
4	Requests turn-taking, but wants to go first, e.g., "Let's take turns. I get to go first." OR requests turn-taking, but does not specify who goes first OR attempts to share
3	Does nothing OR ignores $\underline{A}$ OR other verbalizations OR gets in back seat (CI) ( $\underline{A}$ sits in front seat) OR repetitious assertion, e.g., "No" or headshake or "I want to sit in the front seat" OR verbally offers front seat or head nod consent (CI) ( $\underline{A}$ says "Thanks" and sits in the front seat) OR runs away (CI)
2	Any verbal coercion (negative evaluation, bossy talk, threat, cry, yell, tease, argue, involves adult). Note: saying "No" or "uh-uh" to Prompt #3 is coded as Argue.
1	Aggression OR gets in front seat (A sits in back seat)

5. Asking to play with sib's toy

Mater	ials: TV, battery-operated truck						
Spatia	l: A watches TV from a chair away from the truck						
wi co rol se	N: "This time is playing with his/her truck. (A moves from start position to play with toy on floor.) Now remember, is your pretend brother/sister. Okay, you come up and stand right here. (Allow child to stand at start position.) got the robot for his/her birthday. It belongs to It's not a family toy. (Wait until A sets toy aside and reaches for TV.) Oh look! is tired of it. Now he's/she's watching TV. Let's pretend you really want to play with's truck. Show me what you should say and do."						
N Pro	mpt: "Now remember, you really want to play with the truck. Show me what you should say and do."						
A Res	ponse: 5: "Okay" plus allows play 2, 3, 4: "No" to request for truck "Yes" to request to watch TV "I don't want you to" to all "why" questions						
	SCALE ANCHORS						
5	Indirect request for permission to play PLUS asks to trade, offers compensation, or gives good reason, e.g., "Can I play with your truck? You can use my for a while," "I'll let you play with my things," or "I'll be careful and give it back when you say"						
4	Indirect request for permission to play OR reason/trade/compensation without indirect request OR when <u>A</u> says "No," repeats once and then gives up						
3	Ignores A OR other verbalizations						
2	Takes robot after $\underline{A}$ has told him/her "No" (CI) OR verbal coercion (negative evaluation, bossy talk, threat, cry, yell, tease, argue, involves adult) OR repeats request/reason 3 or more times. Note: repeating "please" equals and additional request if temporally isolated from the preceding request						
1	Aggression OR takes truck without asking						

8. Assertion to sib request

Materials: Big wheel

Spatial: A approaches just before prompt

N: "Now come up and stand right here. (Allow child to stand at start position. A stands beside child.) This time you get to play with the Big Wheel. Now remember, \_\_\_\_\_ is your pretend brother/sister. Let's pretend the Big Wheel belongs to everybody in your family. It belongs to you, and it belongs to \_\_\_\_\_. This time you get the Big Wheel first, and you just start to play with it, just this minute. Now you go ahead and ride. (Wait until child has begun playing.) \_\_\_\_\_ wants to ride, too. Show me what you should say and do."

A Prompt: "Can I ride the Big Wheel?"

#### SCALE ANCHORS

- Gives good reason PLUS conditional yes at future time, e.g., "No, I had it first. You can play when I'm done." (A says "Okay" and retreats)
- Gives good reason OR conditional yes at future time, e.g., "No, you can have a turn later"
- Says "No" OR ignores  $\underline{A}$ , i.e., no orientation to  $\underline{A}$  plus no talking OR attempts to share OR gives up toy, verbally or with a head nod or gesture (CI) ( $\underline{A}$  says "Thanks" and plays briefly)
- Any verbal coercion (negative evaluation, bossy talk, threat, cry, yell, tease, argue, involves adult)
- 1 Aggression

13. Own space – violated by sib

Materials: blanket, pillow, 2 stuffed animals
Spatial: $\underline{A}$ on "bed" away from the start position
N: "This time let's pretend that this is your bed. Now you come up and stand right here. (Allow child to stand at start position.) Now remember, is your pretend brother/sister is going to get on your bed and play with your stuff. (A moves from start position to play with toys on blanket.) You don't want him/her on your bed playing with your things. Show me what you should say and do."
A Prompt: (pause, if no immediate child verbalizations, then ) "Playing on's bed" plus continuous play with toys on bed
N Prompt: "Now remember, you don't want him/her on your bed. Show me what you should say and do."
Note: This is a double prompt with $\underline{N}$ preceding $\underline{A}$
SCALE ANCHORS
Verbal assertion, e.g., requests removal or permission PLUS gives good reason for request, e.g., "That's my bed. Please get off it," or "That's my bed. Ask me next time" (A says "Okay" and retreats)
Incomplete verbal assertion, i.e., requests permission OR requests removal OR gives reason without the request
Ignores A OR gets on bed and plays OR other verbalizations
Verbal coercion (negative evaluation, bossy talk, threat, cry, yell, tease, argue, involves adult)
Aggression OR grabs toys/bedding materials from $\underline{A}$
CHIP

7. Sib breaking family rule

Materials: pillow, blanket

Spatial: A on bed away from start position

Now remember, \_\_\_\_\_ is your pretend brother/sister. No one is supposed to jump on the bed. It might break the bed or you might fall and get hurt. Let's pretend \_\_\_\_\_ is bouncing on the bed when your mom and dad aren't around. Show me what you should say and do."

<u>A Prompt</u>: "Bouncing on the bed is fun. Mom and Dad aren't looking." (doll bounces continuously between verbal prompts)

#### SCALE ANCHORS

- Verbal assertion, e.g., tells <u>A</u> to stop jumping PLUS gives a good reason or reminds <u>A</u> of rule, e.g., "Don't jump on the bed. You'll get in trouble." (<u>A</u> says "Okay" and stops)
- Incomplete verbal assertion, e.g., "Don't bounce." OR reminds <u>A</u> of rule/reason without the request to inhibit
- 3 Ignores A OR runs away (CI) OR other verbalizations
- Repeats incomplete verbal assertion 3 or more times OR involves adult OR verbal coercion (negative evaluation, threat, cry, yell, tease, argue) OR removes bedding.

  Note: bossy talk, if verbally assertive, is okay when only stated twice, and scored a "4"
- 1 Aggression OR joins in jumping on bed

	remember, show me your best behavior, the way your (mom/dad/teacher) want you toward your (brother/sister)"
	2. Permitting sib to play
Materi	als: Lincoln Logs
Spatia	l: Put lots of Lincoln Logs on child's half of table; put canister on floor on child's side
( <u>N</u> bro you beg	his time you get to play with the Lincoln Logs. Come up and sit down right here. waits until child is sitting at the table.) Now remember, is your pretend other/sister. The Lincoln Logs belong to everybody in your family. They belong to u, and they belong to Now you go ahead and play. (N waits for child to gin playing.) wants to play, too. (A moves from start position and stands by ild.) Show me what you should say and do."
A Pror	mpt: "Can I play?"
	SCALE ANCHORS
5	Gives some verbal consent, e.g., "You can play," "Yes." ( $\underline{A}$ says "Thanks" and plays briefly)
4	Shares toy, but makes no verbalization, e.g., pushes or hands toy to $\underline{\mathbf{A}}$ or nods head in agreement
3	Does nothing OR gives reason for not sharing OR gives a conditional yes at future time OR says "No" OR other verbalizations
2	Any verbal coercion (negative evaluation, bossy talk, threat, cry, yell, tease, argue, involves adult)
1	Aggression

15. Tease – Mimic

Materials: "School Papers" - completed writing/math, vary with child's age Spatial: A stands beside child N: "Let's pretend you did this paper at school, and you want to show it to your mom/dad. Come up and stand right here. (Wait until child is standing at the start position and is holding the paper.) Now remember, \_\_\_\_\_ is your pretend brother/sister. I'll be the mom/dad and you can show your paper to me. \_\_\_\_\_ is going to tease you. Now go ahead and tell me about your paper, and show me what you should say and do when teases you." (A waits for some form of "Look, Mommy" verbalizations and mimics every verbalization in a sassy tone of voice for 30 seconds.) A Prompt: (If no immediate child verbalization) "I can do better than that." **SCALE ANCHORS** 5 Ignores A plus keeps talking (30) OR verbal assertion, i.e., request inhibition PLUS reason, e.g., "Stop it. That's not nice." (A says okay and retreats) OR runs away 4 Orients to A, but does not speak to A Incomplete verbal assertion, e.g., "Stop it." OR other verbalizations OR 3 deferential affirmations 2 Any verbal coercion (negative evaluation, bossy talk, threat, cry, yell, tease, argue, involves adult) 1 Aggression

1. Request to play

Materia	ls: Legos
Spatial:	Put lots of Legos on $\underline{A}$ 's half of table; put canister on floor on $\underline{A}$ 's side.
at the brote and pret	is time let's pretend that is playing with the Legos. (Wait until $\underline{A}$ is sitting he table and has begun playing.) Now remember, is your pretend her/sister. The Legos belong to everybody in your family. They belong to you, they belong to Come up and sit right here. (Allow child to sit.) Let's end that you really want to play with the Legos, too. Show me what you should and do."
N Prom	<u>pt</u> : "Now remember, you really want to play with the Legos, too. Show me what you should say and do."
	SCALE ANCHORS
5	Indirect request PLUS good reason, e.g., "Can I play? There's enough pieces for both of us." (A says "Okay" and allows brief play)
4	Indirect request OR good reason without the indirect request
3	Plays using available Legos OR plays with available Legos plus any other verbalizations
2	Does not play OR bossy talk, e.g., "Give me those Legos!" OR involves adult OR other verbal coercion (threat, cry, yell, tease, argue, negative evaluation)
1	Grabs toys out of $\underline{A}$ 's hands OR takes Legos $\underline{A}$ has constructed OR aggression

14. Sib disobeys request to work

Materials: big wheel, 2 soccer balls, Frisbee disk, 3 Transformers

Spatial: toys scattered on opposite side of a pretend wall/door from child; arrange row of chairs with space, representing "door" to yard

Now come up and stand right here. (Wait for child to go to start position. A stands beside child.) Now remember, \_\_\_\_\_ is your pretend brother/sister. Your mom or dad just told you and \_\_\_\_\_ to pick up the toys you left in the yard. Both you and \_\_\_\_\_ have played there all morning. But now, \_\_\_\_\_ won't help clean up. Show me what you should say and do."

A Prompt: (pause, if no child verbalization immediately, then . . . ) "I'm not going to pick up anything. I don't care if I played outside. You do all of it."

A Responses: 5: "Okay" plus helps

2, 3, 4: "No" to requests to help

"I don't want to" to all "why" questions

## SCALE ANCHORS

- Verbal assertion including a request PLUS a reason, e.g., "Please help. You made the mess too." (A says "Okay" and helps)
- 4 Incomplete verbal assertion, e.g., the request without the reason or vice versa
- Ignores  $\underline{A}$  OR accepts "No" and cleans up by him/herself, i.e., 2 or fewer requests OR other verbalizations
- 2 Repeats request/reason 3 or more times OR verbal coercion (negative evaluation, bossy talk, threat, cry, yell, tease, argue, involves adult) Note: "Please" is coded as an additional request when temporally isolated
- 1 Aggression

Aggression

1

16. Aggressive threat from sib

Materia	lls: Etch-A-Sketch
Spatial:	$\underline{A}$ sits beside child; Etch-A-Sketch in front of child on child's side of table
	is time you get to play with the Etch-A-Sketch. Come up and sit down right here on the seat. (Wait until child is sitting.) The Etch-A-Sketch belongs to everybody in your family. It belongs to you, and it belongs to Now remember, is your pretend brother/sister. Let's pretend you just started playing with the Etch-A-Sketch just this minute. Now, wants to play with it. When you won't let him/her, pretends to fight with you. Show me what you should say and do."
A Pron	npt: "Give me that Etch-A-Sketch or I'll get you." (shakes fist)
	SCALE ANCHORS
5	Verbal assertion, i.e., request/denial PLUS gives good reason for request/denial, e.g., "No, I just got it." ( $\underline{A}$ says "Okay" and stops)
4	Incomplete verbal assertion, e.g., "Stop it." OR runs away (CI) OR ignores $\underline{A}$
3	Involves adult OR other verbalizations OR attempts to share Etch-A-Sketch
2	Gives Etch-A-Sketch (CI) ( <u>A</u> says "Thanks" and plays briefly) OR verbal coercion (negative evaluation, bossy talk, threat, cry, yell, tease, argue)

12. Sib rule-breaking (game)

Materia	als: Winnie-the-Pooh game board, 2 game pieces, spinner
Spatial	: sitting at the table together
pre nex wan you firs on help to r	nis time you and are going to play a game. Now remember, is your tend brother/sister. You come up and sit right here, and will sit over there at to you. (N waits until child and A are both sitting at table.) Which piece do you nt? (Allow child to answer.) Okay, then this will be 's piece. In this game a spin the spinner and put your player on the right color spot 's going to go to
Prompt	npt: (spins) "I got a (color)." (puts wrong color piece on wrong color space) t #2: "Now I'm going to move here." (moves piece halfway up board) t #3: "Even though I only spun once, I won the game." (moves piece to finish position and pauses 5 seconds to allow coding opportunity)
	SCALE ANCHORS
5	Verbal assertion, i.e., indicates error PLUS correct action (motorically OR verbally), e.g., "That's wrong. You should move back." ( $\underline{A}$ says "Okay" and moves back)
4	Incomplete verbal assertion, e.g., "That's wrong" or "Put it there"
3	Accepts A's mistake and keeps playing OR stays in position to play OR ignores A
2	Any verbal coercion (negative evaluation, bossy talk, threat, cry, yell, tease, argue, involves adult) OR runs away
1	Aggression
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# Appendix D- Parent Handouts Family Council: Session 1

In today's session you learned about how to resolve arguments over family property. Parent's commonly report that their children get into disagreements over toys or belongings that do not have a designated owner; items that are used by everyone. Examples of these items are board games, movies, art supplies, etc. The skills you will be teaching your children will vary depending on if the item is shareable or not, and if it is currently in use. Help your children role-play using these examples and come up with more examples for each scenario as a family.

<u>Shareable Family Property.</u> The toy is family property and is something that *can be shared* (e.g., art supplies). In situations like this we instruct children to ask politely to join the activity, provide a reason, and then say "thank you" when their brother or sister complies. Here is an example exchange between two siblings.

**Sister**: "Brother, can I please play with the art supplies with you? (asking politely) There is enough to share." (providing a reason)

Brother: "Sure"

Sister: "Thank you" (praises when brother complies).

If this strategy did not work, then we would teach Sister to continue to give reasons (such as "the art supplies belong to everyone") and finally, to seek adult assistance to help resolve the conflict.

Non-shareable Family Property. The toy or item belongs to everyone but can *only be used by one person* at a time (e.g., computer). In situations like this we instruct children to ask politely with a reason, suggest turn-taking, patiently wait for their turn, and then say "thank you" when their brother or sister provides access to the item. Here is an example exchange between two siblings.

**Brother**: "Sister, can I use the phone?" (asking politely) "I really want to call my friend and see what he is doing this weekend." (providing a reason)

Sister: "I am using the phone right now, I'm just about to call my friend about our homework"

Brother: "O.k., well when you are done can I have a turn?" (suggesting turn-taking)

Sister: "O.k."

Brother: "O.k. well I'll be in the kitchen, come get me when you're done" (waits patiently)

Sister: "I'm off the phone now, you can use it"

Brother: "Thanks, Sarah" (praises when sister complies)

If this strategy did not work, then we would teach Brother to continue the process of requesting turn-taking and giving reasons but to seek adult assistance to help resolve the conflict.

<u>Tie-Braking.</u> One alternative to suggesting turn-taking is to initiate a tie-breaking strategy. These are games of chance such as flipping a coin, or "Rock, Paper, Scissors" that can determine who gets to go first. This is an appropriate problem-solving step, especially when an *item cannot be shared, no one is currently using it, but both children want it.* A common scenario when this happens is when both children want to watch a movie, but cannot agree on which movie to watch.

BRC Card Instructions: This week, please record each time you witness either of your children engaging in sharing, turn-taking, or using a tie-breaking strategy and any time you help either child with these skills.

#### Family Council: Session 2

In today's session you learned about how to resolve arguments over ownership. Previously, the skills we covered dealt with property and toys that belonged to everyone. However, children often have disputes over possessions or toys that have an identified owner or privileges controlled by one child (e.g., access to their room). Examples of these items are a birthday present or a prize that was earned (e.g., an award for winning a spelling contest). The skills you will be teaching your children focus on appropriately deciding if their property can be used by their brother or sister, and how to set reasonable limits on property use. Please role play these skills with your children & brainstorm other scenarios where this can apply in your home.

Allowing Access to a sibling is a Choice. **Children have a choice in deciding if toys or objects they own can be used by their brothers and sisters.** They also control sibling access to personal space (i.e., their room, etc.) In situations like this we instruct children to demonstrate polite assertion and provide reasons when communicating with their brothers and sisters.

When Access is Denied. Polite assertion with a reason is to be used when a child decides that access to the object will be denied. Here is an example exchange between Sarah and her brother, Rob.

Sarah: "Rob, can I please play with the toy Grandma gave you for your birthday?

Rob: "No, it's a special toy and I don't want anyone to play with it right now" (polite assertion and providing a reason)

Sarah: "O.k."

When Access is Granted. In this instance, the child wants to allow access to a toy, but sets a reasonable limit for its use. In this instance we instruct children to be polite and set a reasonable limit for access. Here is an example exchange between Rob and his sister, Sarah.

Rob: "Sarah, can I play with your music game?"

**Sarah**: "Yes, but please give it back after dinner because I want to play with it then" (Politely granting access and setting a limit)

Rob: "O.k."

If the sibling does not respect the limit that was set (e.g., doesn't return the toy at the agreed-upon time), then we instruct children to use polite assertion and reasons. For example "Please give my toy back, we agreed you would give it back after dinner". However, if this strategy did not work, then we instruct children to seek an adult to intervene. Adults can help by giving instructions to children who are not respecting the limit set by the child who owns the toy. For example "Rob, it is time for you to give the toy back to Sarah, it belongs to her." Adults can also help coach the siblings on how to solve the problem. For example "Sarah, why don't you ask Rob nicely and give him a reason why it is time for his to give your toy back. If that doesn't work, I will help".

<u>BRC Card Instructions:</u> This week, please record each time you witness either of your children resolving ownership disputes. This could include politely denying access to a toy by providing assertion and a reason or granting access to a toy or object and/or setting a limit. Please continue to track when your children engage in sharing, turn-taking, or using a tie-breaking strategy. Also, please record any time you "help" your children with any of these skills.

#### Family Council: Session 3

In today's session you learned about how to resolve conflicts that occur when one child is not complying with another child's request. You will teach your children several skills that can help resolve these conflicts. Children will be taught to make a polite request, provide reasons, offer compensation (making a deal), or to take "no" for an answer. Please role-play these examples with your children and brainstorm examples that apply in your own home. You can also help these difficult problems by responding to sibling co-plaints (e.g., "she won't play with me") by reminding the child that their sibling has a choice.

<u>Ask Nicely and Give a Reason.</u> If a child wants his sister to do something, such as play a game with him, the first step is to ask nicely and give a reason. Here is an example exchange between Rob and his sister Sarah.

Rob: "Sarah will you play UNO with me? It is a fun game" (Request plus a reason)

Sarah: "I don't know if I want to play UNO"

Rob: "Please play UNO with me? I can't play the game by myself" (Request plus a new reason)

Sarah: "O.k., that sounds like fun"

Rob: "Thanks, Sarah!"

<u>Make a Deal.</u> Sometimes asking nicely and providing reasons will not work. In this instance, the next skill a child can try is to offer compensation, such as access to a toy or assistance with a chore. Here is an example exchange between Sarah and her brother, Rob.

Sarah: "Rob, can I please play with your trophy?

Rob: "No, It's mine and I don't want anyone to play with it right now" (Request plus a reason)

Sarah: "If you let me play with your trophy, I will let you play with my toy car" (Making a deal)

Rob: "O.k., that sounds good"

<u>Take "No" for an Answer.</u> If a child asks nicely, provides reasons, attempts to make a deal and none of these strategies work, then the only remaining smart thing to do is take "no" for an answer. Here is an example exchange between Rob and his sister, Sarah.

**Rob**: "Sarah, can I play with your music game? It is a really cool toy" (Request plus a reason)

Sarah: "No, I don't want you to play with it"

Rob: "Please can I play with it? I'll be very careful with it" (Request plus a reason)

Sarah: "No, it is a very special toy"

Rob: "If you let me play with your music toy, I'll help you with your chore." (Making a deal)

Sarah: "No thanks, I just don't want anyone else playing with my toy"
Rob: "O.k., I'll just go play in my room" (Taking "No" for an answer)

BRC Card Instructions: This week, along with the skills learned in previous classes, please record each

time you witness one of your children making a deal or taking "No" for an answer in an attempt to negotiate with their sibling. As usual, please record any "help" you have offered to prompt skill use at home.

#### Family Council: Session 4

In today's session you learned about how to teach your children to be appropriately assertive when someone is teasing or bothering them. There are several skills that can help resolve these conflicts. Children will be taught to make a polite request, provide reasons, ignore, or seek adult assistance. Please role-play these examples with your children and come up with new examples as a family.

<u>Ask Nicely and Give a Reason.</u> If a child is being teased, the first step is to politely ask the person to stop and give a reason. Here is an example exchange between Rob and his sister Sarah.

Rob: "Sarah I'm eating the last cookie even though mom said it belongs to you."

Sarah: "Please don't, that's not nice and mom said to save it for me." (ask nicely, plus reason)

Rob: "O.k. fine, I was just joking around."

Sarah: "Thanks."

<u>Ignore</u>. Sometimes asking nicely and providing reasons will not work. When appropriate, the next skill a child can try is to ignore the bothersome behavior. Here is an example exchange between Rob and his sister, Sarah.

Rob: "Sarah your art project looks TERRIBLE! It looks like a baby did it."

Sarah: "Please stop teasing me, I don't like it when you do that." (ask nicely, plus reason)

Rob: "Whatever, you are such a Baby! Plus, your art project looks awful."

Sarah: (Ignores)

Rob: "Hey, are you listening to me? I said your art project looks awful."

Sarah: (Ignores)

Rob: "Alright, this is boring. I'm going to go play with something else."

<u>Leave the Context.</u> When asking nicely and providing reasons and ignoring behavior does not work, another skill a child can implement is leaving the situation. Here is an example exchange between Sarah and her brother, Rob.

Rob: "This is a fun game of UNO, it's my turn." (plays correctly)

Sarah: "My turn, I'm putting down all my cards." (incorrect turn)

Rob: "Sarah, you are breaking the rules. You are supposed to put one card down at a time."

Sarah: "I don't care, I'll play how I want."

Rob: "Sarah if you don't play by the rules, then I'm not going to play." (provides warning)

Sarah: "I will play however I want."

Rob: "Then I am going to play with something else." (calmly leaves the area)

<u>Seek Adult Assistance.</u> If a child asks nicely, provides reasons, attempts to ignore the misbehavior (when appropriate), but is still being teased, harassed, or violence is occurring, the next step is to seek adult assistance. Here is an example exchange between Rob and his sister, Sarah.

Rob: (Enters Sarah's room and takes her possessions)

Sarah: "Hey, please give that back, it doesn't belong to you."

Rob: "So, you take my stuff all the time without asking!"

Sarah: "I asked you to give that back, it's mine. You don't have my permission."

(Rob ignores and Sarah goes to get an adult)

Sarah: "Mom, I asked Rob give back my toy but he won't listen. Will you please help?" (Parent orders Rob to return Sarah's possession.)

BRC Card Instructions: This week, along with the skills learned in previous classes, please record each time you witness one of your children handling conflicts using appropriate assertion, ignoring, or seeking adult assistance when necessary. Also, please record "help" attempts in the appropriate column.

Appendix E-Family Council and Exchange Night Decisions

# Sibling Cooperation Game-Helpful Guidelines for Family Council #1

- 1. Explain your involvement in class about brothers/sisters at ISU
- 2. Many siblings experiences conflict (arguments)
- 3. Class teaches basic solutions to these arguments
- 4. You will be child's teacher during weekly meetings
- 5. To make it fun, children get to earn stickers to cash in for a reward on Token

  Exchange Night
  - Show children the card to be placed on the refrigerator
  - Explain exchange program and possible rewards available on the Exchange Night (i.e., play game of choice with parent, staying up 15 minutes late, special snack or bedtime treat, 5 cents per token, etc.) Make a "menu" of rewards and cost (i.e., choice of game with Mom = 15 points).
- 6. Teach children what skills they can earn stickers for this week and when to use each skill (see following page)
- 7. Behavior Record Card
  - Place on refrigerator
  - Award 1 sticker immediately upon noticing skill
  - Check "Help" if you provide reminders
  - Sum total points on Exchange Night
  - Each sticker is worth 5 points
  - Return card at next visit to ISU

Scheduled Evening: \_\_\_\_\_

# **Exchange Night Decisions**

Rule: Each Sticker = 5 points					
MENU OF POSITIVE REINFORCERS	COST				

<sup>\*\*\*</sup>Please return this along with BRC to next session! -Thanks\*\*\*

# Appendix F-Session Data Sheets

## Session 1: Sib Disputes Over Family Property

- I. Scenario: Family Property: Sharable
- 1. Polite Request + Reason
- 2. Repeat &/or Add Other Reasons
- 3. Socially Reinforce Sib compliance

Procedure	Model: Skill	Role Play: Skill	Model: Token	Role Play: Token	Model: Help	Role Play: Help
Legos/Blocks						
Art Supplies						

- II. Scenario: Family property; 1 at a time; 1 in possession
- 1. Polite Request + reason
- 2. Suggest Taking Turns
- 3. Wait/Signal Availability
- 3. Socially Reinforce Sib/Peer compliance

Procedure	Model: Skill	Role Play: Skill	Model: Token	Role Play: Token	Model: Help	Role Play: Help
Computer						
Phone						

## III. Scenario: Family Property; neither in possession

- 1. Polite Request
- 2a. Allow other to "go first", OR
- 2b. Tie-breaking Strategy (Rock-Paper- Scissors, Coin Toss, Guess number fingers...)

Procedure	Model: Skill	Role Play: Skill	Model: Token	Role-Play: Token	Model: Help	Role Play: Help
Movie						•
Video						
Game						

#### Session 2: Sib/Peer Disputes Over Ownership Issues

Review Session 1: Sharing, Turn-taking, Tie-breaking

SKILL Steps Given Non-reinforcement

- 1. Polite Request + Reason
- 2. Repeat &/or Add Other Reasons
- 3. Socially Reinforce Sib/Peer compliance

Scenario	Model	Q TC	QOS	Role-Play TC	Role-Play OS
Legos – Sharing					
Computer- Turn-taking					
DVD -Tie-breaking					

## Object Class I = Property belongs to sibling, access is a choice

## SKILL Steps Given access is a choice

- 1. Sibling1 asks for access
- 2. Sibling 2 offers polite Assertion + Reason (says no and gives reason why)

2. Sibling complies because owner has a choice

- storing complices continues at the	TIME OF THE				
Scenario	Model	Q TC	QOS	Role-Play TC	Role-Play OS
Trophy -Mistake/Hit					
Trophy -Correct: model with doll					
Trophy -Correct role-play w/sib					

#### SKILL Steps to negotiate access

1. Sibling 1 asks for access

2. Sibling 2 gives Polite Assertion + Grant access with contingency (says yes but sets a limit)

Scenario	Model	Q TC	QOS	Role-Play TC	Role-Play OS
Castle -Correct: model w/ doll, grant access					
Castle -Correct role-play w/sib					

## SKILL Steps to negotiate access with subsequent noncompliance

- 1. Polite Assertion + Grant access with contingency
- 2. Polite Assertion + Repeat contingency request
- 3. Socially Reinforce Sib/Peer compliance
- 4. Seek adult assistance if continued noncompliance

Scenario	Model	Q TC	Q OS	Role-Play TC	Role-Play OS
Castle -Mistake/Hit when sib disobeys limit					
Castle –Correct: model with doll, obeys request to respect limit					
Castle –Role-play with sib, obey request to respect limit					
Castle -Correct: model with doll, sib seeks adult					
Castle -Role-play with sib, sib seeks adult					

Target Child:

## Session 3: Sibling Noncompliance

Older Sibling:

AND AN PART OF TAXABLE AND			
Review Session 1-2: Sharing	Turn-taking	Tie-breaking	ownership

Review Session 1-2: Sharing, Turn-taking, Tie-breaking, ownershi

SKILL Review: Role-Play

Family\_\_\_

Scenario	Model	Q TC	QOS	Role-Play TC	Role-Play OS
Blocks – Sharing				•	
Computer- Turn-taking					
Game - Tie-breaking					
Castle -Ownership					

## SKILL Steps Given Sibling Noncompliance Access to Personal Possession

- 1. Polite Request + Reasons
- 2. Repeat &/or Add Other Reasons

4. Socially Reinforce Sibling compliance

Scenario	Model	Q TC	QOS	Role-Play TC	Role-Play OS
Play –Mistake/TANTRUM					
Play-Correct: model with doll					
Play-Correct role-play w/sib					
Other					

## SKILL Steps to negotiate access

- 1. Polite Request + Reasons
- 2. Repeat &/or Add Other Reasons
- 3. Make a deal

4. Socially Reinforce Sibling Compliance

Scenario	Model	Q TC	Q OS	Role- Play TC	Role-Play OS
Toy -Mistake/Hit after giving reasons					
Toy-Correct model w/doll					
Toy-Correct role-play w/sib					
Other					

## SKILL Steps to negotiate access

- 1. Polite Request + Reasons
- 2. Repeat &/or Add Other Reasons
- 3. Make a deal

4. Accept noncompliance and take "no" for an answer

Scenario	Model	Q TC	Q OS	Role- Play TC	Role-Play OS
Room -Mistake/Hit after making a deal					
Room-Correct model w/doll					
Room-Correct role-play w/sib					
Other					

Target Child:

# Session 4: Assertiveness Skills

Review Session 1-3: Sharing, Turn-taking	, Tie-brea	king, ow	nership		
SKILL Review: Role-Play			•		
Scenario	Model	Q TC	QOS	Role-Play TC	Role-Play OS
Blocks – Sharing				•	
Computer- Turn-taking					

Older Sibling:

Scenario	Model	Q TC	QOS	Role-Play TC	Role-Play OS
Blocks – Sharing					
Computer- Turn-taking					
Game –Tie-breaking					
Castle -Ownership					
Request to play -take "no" for an answer					

# SKILL Steps Given Non-reinforcement

- 1. Verbal Assertion + Reason
- 2. Repeat &/or Add Other Reasons
- 3. Socially Reinforce Sib/Peer compliance
- 4. Tolerate

Family\_\_\_

Scenario	Model	Role-Play Help	Role-Play Praise
Teasing –Model Mistake/Hit			
Teasing-Model request+reason			
Teasing-Model request+reason and ignore			
Teasing-Role-play with sibling			

## SKILL Steps Given Non-reinforcement

- 1. Verbal Assertion + Reason
- 2. Repeat &/or Add Other Reasons (discuss leaving game)
- 3. Socially Reinforce Sib/Peer compliance
- 4. Leave Context

Scenario	Model	Q TC	QOS	Role-Play TC	Role-Play OS
Sib cheats at game-Model Mistake/Hit					
Sib cheats at game –Model Request+reason, indicate leaving if cheating persists					
Sib cheats at game –Model Request+reason, then leave context					
Sib cheats at game -Role-play with sib					

## SKILL Steps Given Non-reinforcement

- 1. Verbal Assertion + Reason
- 2. Repeat &/or Add Other Reasons
- 3. Socially Reinforce Sib/Peer compliance
- 4. Seek Adult

Scenario	Model	Q TC	QOS	Role-Play TC	Role-Play OS
Takes toy out of sib's room w/o permission:					
mistake/hit					
Toy-Correct: Model request+reason					
Toy-Correct: Model request+reason, seek adult					
Toy –Role-play with sib					

Target Child:

## Session 5: Review of Skills

Older Sibling:

Review Session 1: Sharing, Turn-taking, Tie-breaking, ownership

Session 1: SKILL Review

Family

- 1. Polite Request + Reason
- 2. Repeat &/or Add Other Reasons, Turn-taking, Tie-breaking
- 3. Socially Reinforce Sib/Peer compliance

4. Seek Adult to enforce right to access if noncompliance (choice?)

Scenario	Model	Q TC	QOS	Role-Play TC	Role-Play OS
Blocks - Sharing					
Computer- Turn-taking					
DVD -Tie-breaking					

#### Session 2: Skill Review Ownership

- 1. Sibling1 asks for access
- 2. Sibling 2 declines and offers polite Assertion + Reason (says no and gives reason why)
  OR Sibling 2 gives Polite assertion + Grants access w/ contingency (says yes, sets a limit)

Scenario	Model	Q TC	QOS	Role-Play TC	Role-Play OS
Castle -Ownership					

#### Session 3: Take "no" for an answer

- 1. Polite Request + Reasons
- 2. Repeat &/or Add Other Reasons
- 3. Make a deal
- 4. Accept noncompliance and take "no" for an answer

Scenario	Model	Q TC	QOS	Role-Play TC	Role-Play OS
Game-Correct role-play w/sib					

#### Session 4: Assertiveness

- 1. Verbal Assertion + Reason
- 2. Repeat &/or Add Other Reasons
- 3. Socially Reinforce Sib/Peer compliance
- 4. Tolerate, Leave Context, OR Seek Adult

Scenario	Model	Q TC	Q OS	Role-Play TC	Role-Play OS
Teasing –Ignore					
Breaking Game Rules-Leave					
Violating property –Seek adult					