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Key Components of Social Skills Training

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Social skill challenges are a core feature of autism. Yet there is not widespread agreement about what social skills are, how to assess or measure them, or how best to teach them. In this chapter, I will lay out a working definition of social skills, discuss how to assess and measure them, and describe a flexible model to teach and generalize skills.

Definitional Issues: What Are Social Skills?

In the past, other authors have defined social skills as "interpersonal responses . . . that allow the child to adapt to the environment through verbal or non-verbal communication" (Mateson and Mateson, 2007) or "socially acceptable learned behaviors that enable a person to interact with others in ways that elicit positive responses and assist in avoiding negative responses" (Bellini & Peters, 2008).

What both these definitions have in common is the description of a ***social context*** (i.e., that these behaviors happen with other people around), and that the behaviors are ***desirable*** (i.e., "adaptive," "elicit positive responses"). Perhaps more simply put,

> *Social skills are desirable behaviors that occur in a social context. By desirable, we mean that the behaviors allow individuals to get more positive than negative responses from others.*

How Does This Definition Differ from Communication Skills?

It is the social context that defines social skills. Communication that occurs in the presence of others has the potential for social impact. Requests, initiations, and responses to others' initiations are all social. On the other hand, communication that primarily occurs in isolation might be considered to be self-stimulation, as when a child repeats certain noises to entertain himself. If that self-stimulation occurs around others and leads to positive responses from others, such as laughter, it may then serve a social function. Thus, it is not the exact words, noises, or gestures that differentiate communication skills from social skills, but the social function (the impact on others) that determines whether it is a social skill. Skinner's analysis of verbal behavior helps us to focus on the function of verbal communication rather than on just the structure of language, thus differentiating communication that is social from that which does not serve a social function.

How Does This Definition Differ from Replacement and Self-Regulation Skills?

Sometimes, a child's ability to manage his frustration has important social consequences, and sometimes it does not. If a child is all alone while trying to complete a puzzle, his ability to manage frustration may not have any social consequences, and we can say his frustration management skills are not social in this moment. However, most of the time, a child's ability to handle frustration has very important social consequences. A child who cannot manage his frustration in class may have fewer peers to play with, while the child who can manage himself may have more friends. What makes a replacement skill a desirable social skill? When that behavior leads to the child getting more positive than negative responses from others. For example, a child who engages in tantrums to avoid doing schoolwork would, on the one hand, get something he wants (avoiding work), but he might have to endure punishments from his teacher as well. Asking for help might be a more desirable social skill since the child could then manage the difficult work without enduring punishments.

Measuring Social Skills

Bellini and Peters (2008) review some of the various ways in which social skills are measured through observations, interviews, and rating scales. They distinguish between measures of "social competence," defined as judgments of that child's social ability by those who know the child well (e.g., par-

ents and teachers), versus "social skills," which reflect observations of specific behaviors in particular settings.

Gresham et al. (2001) classify these social measures into three categories: type I, II, and III. Type I measures refer to rating scales and interviews that measure social competence. The Social Skills Rating System (Gresham and Elliot, 1990) is one norm-referenced measure of social competence for ages 3-18 designed for a broad population of students (i.e., not just students with ASD). The Social Responsiveness Scale (Constantino, 2005) is a norm-referenced measure specifically designed for students with ASD.

These broad measures may not assess the specific identified skill goals of a particular student. To measure specific skill goals for a student, one can create an individualized rating scale in which key stakeholders rate the targeted student on each targeted skill. Although these are subjective judgments from parents and teachers, Bellini and Peters (2008) describe them as socially valid measures of competence exactly because they represent the way those closest to the child perceive the child. These measures reflect the specific community standards that are embedded in the perceptions of those judging the targeted student. Although these measures represent a summary of how that student might behave across settings, they may not be sensitive to small changes in behavior in specific settings.

Type II measures refer to observations of specific behaviors in particular settings. These more objective measures are very sensitive to changes in behavior, yet may be more challenging to collect across settings. Often these measures are criterion referenced. That is, a set of objective criteria are established to define accurate performance of a skill. The majority of single-case research designs in the behavioral literature (e.g., see Mateson and Mateson, 2007) have relied on direct observational measures.

Type III measures refer to role plays or discussions with the child to assess whether he knows how to perform a particular skill. For example, asking a child to tell or show you what he will do if he gets teased would be a type III measure. Because these assessments do not measure what the child will actually do in the natural environment, they are not as valid as, nor do they correlate with, type I and type II measures (Bellini and Peters, 2008).

Approaches to Teaching Skills

Some of the major approaches to skills training can be categorized based on their underlying assumptions of what leads to behavior change (see Table 1, pages 140-41). The behavioral approaches focus on altering observable events in the environment (antecedents and consequences) in order to

increase certain behaviors and decrease undesirable behaviors. For example, an instructor might model and prompt a student to greet his peers and then reward the student for doing so. Cognitive behavioral approaches share some of these assumptions about manipulating the environment to change behavior, but they extend the notion to consider how an individual interprets or perceives what happens in the environment. To this end, individuals' thoughts and perceptions become a primary focus in understanding how someone will behave. For example, an instructor might explain to a student how others would think and feel if he did not greet his peers. Trying to alter the child's perceptions or interpretations of events can be accomplished with verbal explanation for high functioning youngsters, or through certain visual supports that make the abstract more concrete for youngsters with more language challenges.

Relationship-based approaches (e.g., Floortime and Son-Rise) posit that developing a trusting relationship is a primary factor in influencing the development of new skills. Through following the lead of the child, respecting his or her preferences, and sharing control of activities with the child, trust and motivation develop so that learning can occur.

Some of the approaches in Table 1 combine ideas from several categories. For example, some of the contemporary ABA approaches focus on shared control and respecting the child's preferences, a core value of the relationship-based approaches.

Table 1

Applied Behavioral Analysis-ABA: Focus on manipulating observable events (antecedents and consequences) to change behavior
ABA Approaches: Teaching skills usually involves cueing, modeling, and prompting appropriate behaviors, followed by reinforcing consequences for those positive behaviors. The older, traditional ABA approaches, like Discrete Trial Training (Lovaas, 1987), often occurred in one-on-one contrived settings and emphasized external reinforcers (food, access to other privileges, toys). Contemporary ABA approaches, like (Verbal Behavior Therapy) (VBT) (Sundberg and Partington, 1998) and Pivotal Response Treatment (PRT) (Koegel and Koegel, 2006), often occur in more natural settings and make efforts to increase intrinsic motivation to socialize by making the interaction fun in and of itself, rather than using a material reward after the interaction. ***Video Modeling and Video Self-modeling:*** Bellini, Akullian, & Hopf, (2007), and Bellini & Akullian (2007) have shown that video can be used to show children how to engage with others, increase positive behaviors, and decrease disruptive behaviors. ***Augmentative Communication and Visual Supports used in the Context of ABA:*** PECS system (Frost & Bondy, 2006) is one example in which pictures are used to help learners communicate their wants, replace negative behaviors, and eventually comment on their experiences as well.

Cognitive-Behavioral: Focus on expanding perspective taking along with manipulating observable events to change behavior	**Relationship Based:** Focus on creating engaging interactions, following the child's lead, in order to increase relatedness to others
Relationship Development Intervention (RDI): focuses on "Dynamic intelligence," which means being able to think flexibly, take different perspectives, cope with change, and process several sources of information simultaneously (Gutstein, 2007). ***Social Thinking Model:*** Garcia-Winner (2007) described a model of social development in which social thinking is required before the development of social skills. Social thinking involves the ability to take another's perspective to understand their intentions, thoughts, and feelings. From this knowledge comes the ability to interact with others effectively. ***Social Stories:*** Gray (1991) first described Social Stories as a way to help students understand social information about a particular situation. The stories are designed to explain social cues and other's perspectives in a particular situation to prepare a child to deal with that situation. ***Structured Learning:*** as described by Goldstein and his colleagues (McGuiness and Goldstein, 1997), involves four steps: modeling, role playing, social reinforcement, and transfer training (practice in natural settings). The modeling portion usually involves explanation of others' perceptions and social consequences of one's actions. Structured learning is a key component of the approach taken in several social skill manuals for individuals with autism spectrum disorders (Baker, 2003; 2005). ***Visual Supports to Expand Understanding of Events and Tasks:*** The TEACCH approach pioneered the use of many visual supports to make the sequence of daily activities predictable and tasks more understandable (Mesibov et al., 2005). Other examples include picture books (Baker, 2001; 2006) and closely related "First-Then" visual displays of activities to help individuals understand rewarding consequences for completing a task.	The objectives of ***DIR®/ Floortime™*** are to build "fundamental developmental capacities" for social, emotional, and intellectual growth, rather than focus on isolated behaviors. Floortime is both a technique, in which a caregiver gets down on the floor to interact with the child for twenty or more minutes at a time, and a philosophy that characterizes all daily interactions with the child. It involves following the lead of the child to gain motivation and trust and challenging the child to interact. ***Son-Rise Program:*** In 1976, Barry Kaufman first described the Son-Rise approach that he had used to successfully treat his son, Raun, who was severely autistic. The approach entails others joining the child in his/her world by mimicking his/her activities (Kaufman, 1994). The goal is to make people more attractive to the child than objects and obsessions. There is no direct research evaluating this method at this time.

What Evidence Is There for Various Teaching Approaches?

Deciding whether social skills training works is incredibly challenging, as the definition of social skills, the social skills targeted, and the ways to teach, generalize, and measure progress differ across studies. That being said, there is evidence that many of the strategies described in Table 1 can lead to positive changes using the types of measures described previously (i.e., type I, II, and III measures).

- Many of the ABA strategies, involving modeling, prompting, and reinforcement, have been shown to be effective in teaching a variety of social skills, including attention/eye contact, appropriate content and initiation of conversation, play skills, and frequency and duration of interactions (see Mateson and Mateson, 2007, for a review of 79 studies).
- Strategies that involve showing children what to do through video modeling and social stories have also shown positive results.
- Garcia-Winner's social thinking strategies are beginning to be investigated with the ASD population with some positive feedback.
- Structured learning enjoys a large evidence base with varied populations not specific to autism. Trimarchi (2004) investigated the use of the structured learning approach for those with Asperger syndrome using my social skills training manual (Baker, 2003) and found parents reported at least minimal improvement on 90 percent of targeted skills compared to a control group.
- RDI and DIR have also been shown to lead to positive changes in behavior, yet there is a lack of controlled studies evaluating these models—so we know many children improve, but we cannot always attribute that to the intervention.

A recent controlled study evaluated the effects of The Early Start Denver Model (ESDM), an early intervention program for children as young as 12 months old (see Dawson et al., 2009). Although the purpose of this study was not simply to evaluate social skills, such skills were certainly part of the outcome measures. This was a particularly interesting study because of the powerful results and the authors' emphasis on integrating aspects of applied behavioral analysis (ABA), particularly PRT strategies, with developmental and relationship-based approaches. In many ways, their emphasis on clearly defined skills training within a play-based approach truly represents the direction of contemporary ABA approaches as they blend

with the values of relationship-based approaches that stress shared control between adult and child, and utilizing the preferences of the child to insure a positive experience. The study compared ESDM to a comparison group in which parents received recommendations on ASD interventions, as well as referrals to local community providers of the interventions. In the first year, children in the ESDM group gained 15.4 IQ points on average, while children in the comparison group gained an average of 4.4 points. Over the two-year study period, children in the ESDM group consistently improved on measures of communication skills, motor skills, and daily living skills compared to the control group.

Despite all these promising outcomes, there is still a gap between the science and practice of skills training in school settings. Back in 2007, Bellini, Peters, Benner, and Hopf challenged the social skills world after concluding that most school-based social skills training efforts were minimally effective according to their review of 55 outcome studies. These researchers pointed out the ***problems with many school-based social skill interventions,*** including:

- failure to match targeted goals to the child's needs,
- lack of generalization of skills into natural settings,
- short duration of treatment, and
- failure to motivate skill performance.

Each of these issues is discussed below.

Matching Strategy and Goals to Skill Needs

Bellini et al. (2007) and Mateson and Mateson (2007) point out that very few studies provide a rationale for selecting certain skill goals. Often schools provide a one-size-fits-all curriculum of skills to students without identifying whether the skill goals are relevant to the participating students. We must target skills that are relevant to the needs of the students, considering what skills are necessary for them to function successfully in particular settings. Bellini et al. (2007) also argue that we must distinguish between assessing the knowledge of a skill versus the ability to perform that skill in natural settings. This last issue relates to the next challenge, generalization.

Generalization

If interventions take place primarily in contrived, restricted settings, such as pullout therapy sessions, there is less likely to be generalization into the natural environment. Bellini et al. (2007) pointed to slightly better results for skills training that occurred in the classroom rather than in pullout sessions. Although it can be useful to begin skills training in structured, con-

trived settings, eventually skills will need to be prompted in the settings in which we want the skills to be enacted.

Duration or Dosage of Treatment

Gresham et al. (2001) concluded that skills training that lasts about 30 hours spread over 10 to 12 weeks is often not enough to see positive results. Bellini et al. (2007) used this conclusion to suggest that 30 hours spread over 10 to 12 weeks ought to be the minimum when providing social skills training.

Motivation

Bellini et al. (2007) discussed the issue of motivation as it relates to the performance of previously learned skills. Although a child may *know* what to do, lack of reinforcement may make it difficult to *perform* skills when needed, which may in part account for the mediocre effects seen in school-based skills training studies.

Putting It All Together: Key Components of Effective Social Skills Training

Based on the outcome research described above, there are certain critical components of skills training that must be considered in order to ensure skills are taught effectively. I have outlined a flexible model to address many of these components (Baker, 2003; 2005). The goal of the model is to improve the quality of life for children and their families by increasing students' ability to negotiate social situations effectively, cope with frustrations, reduce negative behaviors, and develop friendships. The model involves the following five key components:

1. **Assessment:** Prioritize relevant skill goals based on input from key stakeholders (e.g., the student, parents, and teachers).
2. **Motivation:** Establish motivation to learn and use skills across settings.
3. **Skill acquisition:** Teach skills using strategies that match the student's language, cognitive, and attention abilities.
4. **Generalization:** Coach students to use the skills in natural settings and involve those who surround the targeted student.
5. **Peer sensitivity:** Train typical peers as necessary to increase generalization of skills with peers, reduce isolation, increase opportunities for friendship, and decrease bullying.

Each component is explained briefly below.

Assessment of Social Skills

Assessment involves three related issues: 1) How do we determine relevant skill goals to target? 2) In what order should we teach skills—is there a particular sequence? 3) How can we measure initial status and progress toward skill goals?

It would simplify the assessment process if there were one core set of skills from which to evaluate the functioning of any particular individual. However, given our definition of social skills (i.e., behaviors that are desirable in a social context), it is likely that desirable behaviors vary across social settings. As a result, the local social context must be taken into account when considering what skills to target.

As described earlier, recent reviews of social skills training in school-based programs suggest that trying to teach a universal set of skills in a short amount of time (e.g., 10-12 weeks) has not been effective. Instead, it has been suggested that we focus on specific, relevant skill deficits of a student and work on them for a longer period of time. I ask that students, caring professionals, and family members surrounding the student help prioritize three to four skills to work on for months at a time across settings. There is nothing magical about the number three or four, yet this is a manageable number of skill goals if we are going to require parents and teachers to consistently prompt these skills to ensure generalization across settings.

Identifying Socially Relevant Goals

In order to assess the needs within a particular social context, I take a client-centered approach that involves assessing the specific wishes and concerns of the client and key caretakers surrounding that individual. Key players typically include the individual with autism, parents, teachers, and employers. We ask them to identify the settings in which they hope that child will function successfully. We then ask two simple questions about those settings in order to target skills:

1. What does this individual do too much of in that setting that may interfere with the ability to function? Excess behaviors might include becoming aggressive when confronted with difficult work, becoming aggressive when denied a desired item or activity, touching others, interrupting, talking endlessly about one's own interests, or insulting others. This information leads to the identification of "replacement skills" (i.e., more adaptive behaviors that allow the individual to get what he or she needs without bothering others).

2. What does that individual not do enough of in order to function in that setting? These behavioral deficits often include attending skills, initiation skills, responding to others, asking for help, asserting one's wishes or needs.

We ask the key players to agree on three or four skills we should prioritize as targets to begin treatment. As children master skills, we can target new skills, but to begin, it is best to keep the initial targets at a manageable number.

As key players try to identify skills relevant for the desired settings, we offer them a "menu" of skills from which to choose (see Baker, 2003; 2005). This menu is by no means exhaustive and is not meant to be a universal core set of skills. It does, however, provide these key players with the words to articulate some of the skills they might feel are relevant. They may choose, however, to articulate their own skill goal that is not identified on the menu but nonetheless relevant for functioning in an identified setting. Within this menu, there are certain categories of skills, including:

- Initiating and responding skills for play
- Initiating and responding skills for conversation
- Frustration management skills
- Conflict management skills

In some ways, these are clusters of skills and targeting one in a cluster may simplify learning others in that cluster.

Are There Sequences of Skills?

In deciding what skills to target, I do not subscribe to a model in which skills must be taught in a certain sequence. Instead, I take a functional approach in which I ask what skills are necessary for the student to function in a desired setting. That being said, there are two categories of skills that are prerequisites for many other skills: ***joint attention*** and ***symbolic communication skills.***

Joint attention refers to the child's ability to attend to what the instructor (parent or teacher) is attending to. In other words, a child must attend in order to learn. Symbolic communication refers to the ability to communicate about events, objects, or people when those events, objects, or people are not concretely present to the child. An "intraverbal" (a Skinnerian term) refers to this ability to respond to a verbal question with verbal information independent of visual prompts. For example, if a child can respond to the question, "What did you have for breakfast?" describing what he ate without referring to pictures of the breakfast foods, then it suggests the child can "talk about" events or objects in the absence of those events. This kind of ability is a pre-

requisite for conversation about the past, future, or hypothetical situations. If a child is not able to do this, he will not easily be able to discuss situations or learn only from verbal explanation, which is a primary way many children are introduced to new topics in school. Without good symbolic language skills, children will need to see pictures or videos of events or actually be in the event in order to learn about it.

How Do We Measure Initial Status and Progress towards Goals?

In clinical practice, I rarely use norm-referenced measures, as they tend to provide too gross a picture of the student's social skills and not specific enough to measure the skills we may have targeted. To ensure we measure the specific skill goals for a student, I often create an individualized rating scale in which we have the key stakeholders rate the targeted student on a five-point Likert Scale for each targeted skill (see Figure 1). Although these are subjective judgments from parents and teachers, Bellini and Peters (2008) describe them as socially valid measures of competence because they represent the way those closest to the child perceive the child. Others' opinions of the child's behavior reflect local community standards for behavior and are thus socially valid measures.

When possible, I try to get type II measures (i.e., direct observations of behavior) as well. These measures are criterion referenced—that is, a set of objective criteria is established to define accurate performance of a skill so that it is possible to define when a skill has been mastered. To determine whether skills are generalizing over time and across settings, it is useful to keep track of when the behaviors occur prompted versus unprompted. Spontaneous performance of skills suggest the student can more independently use those skills even when key staff members are not available to prompt skill use.

In practice, it is certainly possible to get these observational measures of students when there are support staff members to take data. When a child does not have a dedicated aide to keep track of behaviors each day, a special education support staff member may come in periodically to take data at certain times during the week to sample behavior. However, it is often difficult to get these observational measures in mainstream classrooms with high functioning students who have little access to support staff to take data in a regular way. In contrast, I have found it exceedingly simple to get the individualized ratings (Figure 1) in typical school settings for all students. This is an important consideration in bridging the gap between science and practice. We must be able to measure social skill changes, yet we need to be aware of what is feasible in any given setting.

Figure 1

Skill Rating Form

Name_____

Parent/Teacher_____

Directions: Based on your observations, rate each student's use of the following skills according to the scale below:

1 = Student **never** uses the skill
2 = Student **rarely** uses the skill
3 = Student **sometimes** uses the skill
4 = Student **often** uses the skill
5 = Student **almost always** uses the skill

Skills	**Dates**			

Motivation

Just because we identify social skill goals does not mean a student is motivated to learn those skills. One of the key issues in working with students with autism is how to motivate a desire to socialize with others. Can a child who tends to avoid social contact learn to desire social interaction? Can social interaction itself be a reinforcer?

What Is a Social Reinforcer?

Any response that leads to an increase in behavior is considered a reinforcer. Social reinforcers would be social responses by others that lead to increases in behavior in the targeted student. In other words, social interaction itself becomes the reward. It is difficult to distinguish what is and is not a social reinforcer, given that any reaction by an adult (including providing food) could *theoretically* be defined as social since it occurs in a social context. The question becomes, "Does the child behave in order to interact with the adult (a socially motivated action) or in order to get a material reward (not necessarily social)?"

For many of us, getting material presents from loved ones has both material and social meaning. Without being able to get inside the individual's head, it is hard to know what the true function of the behavior is. In practice, the true function of the behavior is not always known and social reinforcers are typically defined by how they look, with praise, laughter, a smile, physical contact, and verbal and nonverbal communication being described as "social." Food, toys, and other material rewards are typically not considered social reinforcers, even though they may have a social function.

How Can Individuals Learn to Be Motivated by Social Reinforcement?

The debate over what leads to social motivation underscores two broad views of motivation: ***extrinsic*** and ***intrinsic.***

One way social motivation is theorized to develop is by pairing ***extrinsic rewards*** with social interaction. For example, if we want a child to play a game with others, we might provide a desired food or toy after he plays the game with others. Such a reward is considered extrinsic to the activity because it is given after the game rather than built into the game. Over time, we might expect the social interaction to become motivating because it was historically associated with extrinsic rewards.

Another way to motivate social interaction is to attempt to make the interaction ***intrinsically motivating.*** Here we would attempt to make the social interaction itself more interesting by incorporating favored activities

into the social interaction rather than afterwards. For example, if a child likes to wrap himself in a blanket, we could make a game of wrapping him in the blanket and pulling the blanket off, prompting the child to request being wrapped. Here the reward is built in, or intrinsic to, the social interaction.

Table 2 summarizes several ways to motivate students to learn and enact skills. The table is divided into those strategies that emphasize extrinsic motivation (i.e., rewards after skill use) and those that emphasize intrinsic motivation (i.e., making skill use itself rewarding). The table is also divided into those strategies useful for those students with fewer symbolic communication abilities who cannot talk about situations or events in the abstract, versus those with good symbolic communication skills who can discuss past and future events and other abstract concepts such as how people think and feel. For those with excellent symbolic communication, it is possible to "talk them into" wanting to learn skills by highlighting the positive consequences of skill use, such as the promise of extrinsic rewards and achievement of future goals. Those with fewer symbolic skills, and therefore less ability to maintain a future orientation, need more immediate extrinsic rewards or to experience intrinsic pleasure from the activities themselves.

In practice, I have found it crucial to maintain a flexible approach, utilizing both extrinsic and intrinsic strategies. I would prefer a child to be motivated to socialize because he or she "intrinsically" enjoys it. In order to establish this, I need to discover which activities will be enjoyable to the child, using his or her strengths and preferences as a guide. Yet sometimes a child's repertoire of preferred activities is extremely limited, and in order to "try out" a new activity, I need to initially use extrinsic rewards to motivate the child to try the new activity. After some experience with the new activity, the child may begin to enjoy it and thus develop intrinsic interest in the activity, no longer requiring a reward after the activity. In the last section of this chapter, I will describe the approach to build motivation taken with two very different students, one with limited symbolic language, and one with excellent symbolic language and intellectual skills.

Initial Skill Acquisition: Variants of Modeling and Prompting

For all students with autism spectrum disorders, I believe it is crucial to model and prompt skill use in natural settings. There is certainly a great deal of research to support these general strategies (Mateson and Mateson, 2007). This cannot be done as effectively without addressing the motivational issues described earlier. In other words, it makes no sense to continually prompt a child to initiate a game if he or she never enjoys the game. The child would

Table 2

	Extrinsic Rewards	Intrinsic Rewards
Pre-Symbolic Language	Use of material rewards such as food, toys, privileges, or social praise provided after skill enactment. The reward may have no natural connection to the skill in that the reward may not be available in naturally occurring settings. This characterized the earlier ***Lovaas discrete trial*** approach, yet the more contemporary Lovaas approach utilizes intrinsic approaches as well.	***Pivotal Response Training*** often embeds the child's interests into the skill lesson, and intersperses challenging tasks with easier ones to maintain intrinsic motivation. ***Verbal Behavior Training*** starts with "mand" training in which the child learns to request favored items or activities, so that the skill lesson and the reward are naturally connected; the reward is intrinsic to the learning situation. ***DIR®/Floortime***™ and the ***Son-Rise Program*** follow the child's lead to gain motivation. ***RDI*** attempts to make social referencing fun and engaging in and of itself
Good Symbolic Language	Extrinsic rewards are provided as above, yet often through the accumulation of symbolic rewards such as tokens or points on a behavior chart.	***Explain rationale*** for working on challenging skills; that it will help the student reach his or her own future goals ***For students who seem not to care*** about their future, increase self-awareness of strengths and talents to establish future goals prior to focusing on their challenges ***Have students teach*** necessary skills to others to help them feel competent themselves ***Make socializing fun*** through high interest activities

only learn to repeat the words to ask to play and then drift away from actually playing the game. Only with proper motivation (intrinsic or extrinsic) can we model and prompt skill use.

There are two considerations in deciding how we will model and prompt skill use. First is the type of ***strategy*** used. This depends on the symbolic language and cognitive skills of the students. Those with good symbolic language can benefit from strategies in which skill steps are explained prior to being modeled and prompted. Many of the cognitive-behavioral strategies in Table 1 can be used with such students who are capable of understanding others' perspectives and subtle social cues when they are explained or highlighted

for them. My preferred approach is to explain, model, and role-play skills (the structured learning approach) prior to prompting skill use in natural settings.

For students who have great deficits in symbolic language, we cannot "talk about" how to perform a skill. Rather, the instructor must show how to do the skill by modeling and prompting the student in the actual situation and perhaps supplement the student's understanding of what to do by showing pictures or video of the skill steps in the actual situation. Many of the ABA strategies in Table 1 do not require a high level of symbolic language. In addition, picture books (Baker, 2001, 2006) and video modeling (Bellini and Akullian, 2007) may also require less symbolic language, as they are visually based techniques.

The second issue to consider in skill acquisition is ***where to teach*** the skills: in groups, classrooms, or individually. There is evidence that teaching in a classroom can increase generalization, given that skills are learned in the place where they most need to be performed. There are, however, benefits to smaller group instruction in which students have a chance to befriend each other. Positive results were found for this type of group instruction provided in my social skills training manual. (See Trimarchi, 2004, for a controlled outcome study on group training described by Baker, 2003.) If students have significant behavioral challenges and difficulties attending in group settings, it may be best to begin with individual treatment prior to considering a group. This does not mean that we cannot try to generalize skills into a group setting, but the initial acquisition of skills may need to be conducted in a one-on-one setting where there are fewer distractions.

Generalization

In addition to establishing extrinsic or intrinsic motivation to perform skills as described above, students need reminders and coaching to perform skills in natural settings. In Bellini et al.'s (2007) review of skills training studies, coaching in natural situations was often a missing ingredient in social skills training efforts and one of the reasons for mediocre results. I have found it crucial to create written reminders (cue cards, behavior charts, or skill lesson sheets) for parents and teachers working with students. These written reminders are sent home to parents, and distributed to the child's teachers. Ideally, parents and teachers should have the opportunity to not only hear what they should prompt their students to do, but to actually observe how the student can be prompted. This kind of instruction to teachers and parents is typically lacking, yet perhaps a large contributor to the positive effects seen in programs such as The Early Start Denver Model.

I typically instruct parents and teachers to do three things to help students remember to perform skills: ***Prime*** students before situations in which they will need to use the skills, ***coach*** students during skill enactment, and

review with students afterwards how they did (see Baker, 2003; 2005). Often students are also asked to self-monitor whether or not they enacted the skill steps, as self-monitoring may lead to better generalization. In addition to training parents and teachers to prompt students, peer training has also been used as a method to help generalize skills to natural settings.

Peer Sensitivity Training

When students with ASD have little opportunity to interact with peers, or worse yet, they are being teased, it is critical that training of "typical" peers become part of the social skills intervention. Peers can be taught to be "helpers" or coaches to students with autism during play or work times (see Dunn, 2005). They can also be taught to be good "bystanders," taking a protective role when their disabled peers are teased or bullied (see Baker, 2003; 2005). In addition, they can participate in social skills groups with their peers with autism to provide opportunities to interact in conversation and play.

For students with little symbolic language, I almost always involve typical peers. It can be quite challenging to get two children with limited attention and language to attend and interact with each other, but much easier to teach typical peers ways to engage those students. In addition, typical peers may be more flexible in their willingness to engage in our targeted student's preferred activities. One of the challenges for many children with autism is that their schools may not have access to typically developing peers. In these cases, it may be important to try to create relationships with nearby schools or community centers such as places of worship for access to typical peers.

Peer sensitivity training often begins with instructing peers on the strengths and challenges of students with social needs, and may include teaching about the symptoms of autism, or sometimes just about the needs of students who might be shy or need help socializing. After this training workshop, peers are solicited to become volunteer participants in socialization groups, lunchtime groups, or helpers at recess or during class and homework times. Descriptions of such programs can be found in my social skill manuals (Baker, 2003; Baker, 2005), as well as in other resources (Wagner, 1998; Dunn, 2005; Hughs & Carter, 2008).

Case Examples

Youngster with Symbolic Language Difficulties

Doug was a 6-year-old boy with classic autism. He attended a self-contained first grade class in a public school. He had limited functional language,

including the ability to request certain foods and favored items, but could not yet converse about the past or future. His parents and teachers prioritized several skill goals based on their observations of what he did too much of and too little of. What he did too much of was demonstrating noncompliance and self-injurious behaviors (biting and hitting himself) when confronted with academic tasks. What he did too little of was initiating, responding to others' initiations, or sustaining playful interactions with peers.

Target Goals: 1) To ask for help rather than refuse academic tasks or hurt himself. 2) To initiate and respond to peers' initiations to play. 3) To sustain play for 10- to 20-minute periods of time with peers.

Motivational Issues: To increase Doug's motivation to do schoolwork, tasks were modified to ensure easier tasks were presented prior to challenging ones. In addition, the child's interest in animals was incorporated into academic materials in order to increase his interest in the tasks (e.g., math concepts were taught by counting toy animals).

To address motivation to initiate, respond to other's initiations, and sustain play, a variety of activities were introduced to explore what Doug would be intrinsically motivated to play. Because he likes animals, we began with an imitation game in which we modeled being an animal and then prompted him to imitate being that animal. For example, we walked on all fours and meowed or barked. Then we turned that into a "guess the animal" game in which we took turns guessing the animal someone was acting out. Doug smiled and seemed to enjoy playing these games. We also introduced other interactive games, such as hide and seek, red light/green light, and musical chairs. As Doug initially was not motivated to try these activities, we used the animal guessing game as an extrinsic reward, writing on a dry erase board, "first hide and seek, then play animals." As we tried these new games, he showed interest in hide and seek and red light/green light, but not musical chairs. Now we had established motivation for three games: guess the animal, hide and seek, and red light/green light.

Skill Acquisition: To teach Doug how to initiate and respond to play, we showed him the list of games he liked using pictures and words, and then asked him, "Do you want to play _____?" We prompted him to say, "I want to play _____" using whatever game he pointed to. We then continued to play until he became distracted, at which time we reintroduced the list of games and prompted, "Do you want to play _____ or take a break?" listing all the games and a picture of his break area.

To teach Doug how to ask for help instead of refusing to do work, we showed him a picture icon of what to do when work is hard. The picture showed a sample of work, and then two choices: 1) a happy face was depicted next to "ask for help" (a picture of a boy asking for help) or 2) a sad face next

to a boy hitting himself. Then Doug was given work and whenever he became frustrated, he was directed to the visual icon and prompted to ask for help. Immediately, the teacher would either simplify the work or model how to do it. Video was also taken of Doug in which he was depicted asking for help with work. This video was then used as a primer before difficult work.

Generalization: To generalize play skills, we had typical peers come join Doug in play (two at a time, so they always had a friend with them for support). We instructed the peers to show Doug the visual list of games and ask him, "What do you want to play?" We also prompted Doug to say, "I want to play _____." His interaction with peers also provided opportunities for him to practice greetings and goodbyes. We provided these phrases and lists of games to his parents and his aide so that he could practice the skills and games at recess and at home with siblings or invited guests. His parents and aide were asked to come observe our sessions with peers so that they could replicate the prompting of skills on their own.

To generalize asking for help, parents and teachers were trained to redirect Doug to ask for help using the visual card created. They also played the video of Doug asking for help prior to beginning each school day or doing difficult tasks at home.

Peer Sensitivity: With Doug's parents' permission, we conducted a peer sensitivity lesson in the regular first grade class with the students with whom Doug interacted at lunch and recess. They learned about Doug's strengths (e.g., interests in animals) as well as the strengths of a variety of famous people with autism. They also learned about the challenges of having autism, such as difficulty communicating and playing with others. They were asked to be peer buddies, coming into Doug's class twice per week with a friend to help him learn to play, and to engage him at recess. They were taught how to gain Doug's attention by asking him to look at them, and then they learned what kind of games Doug likes to play.

Outcome: Behavioral observations of play times indicated that Doug increased unprompted responses to peers and initiations to peers, and was able to sustain play for 15-minute periods. In terms of academic frustrations, overall Doug increased his requests for help and the frequency of hitting himself decreased. However, his responses varied depending on the level of difficulty or work presented to him.

Youngster with Excellent Symbolic Language

Peter was a 6th grader with Asperger syndrome. His academic skills were excellent, yet he had difficulty making friends and was often isolated from his peers, particularly at lunch and recess. He often did not edit himself

and would say insulting things to others without realizing the impact it might have on them. In addition, he tended to talk obsessively about his interest in certain video games regardless of whether his listeners were interested.

Target Goals: Peter's parents and teachers prioritized several skill goals based on their observations of what he did too much of and too little of. What they agreed he did too much of was saying everything that was on his mind, including insulting remarks, and perseverating on his own interests. What they felt he did not do enough of was listening to others or asking about others. We articulated the following goals: 1) Avoid sensitive topics (i.e., insults, information not meant for public expression—such as violent talk from video games); 2) Initiate conversation based on common interests or interests relevant to peers; 3) Maintain conversation by asking or telling about what others just said; and 4) Check to see if others want to hear more if talking about favored interests (video games).

Motivational Issues: Peter was aware that he had few friends and expressed interest in having friends with whom to hang out. Looking at the motivational strategies in Table 2, we chose to focus on some of the intrinsic strategies for students with excellent symbolic language. We explained to Peter the rationale for learning to edit sensitive remarks and converse about common interests rather than perseverate on his own interests—i.e., that it would lead to greater opportunities for friendship. However, as for many students, we knew that a discussion of his skill challenges might feel like a criticism. Thus, we decided to first focus on his talents and strengths in academics and the strong future he will have, given these abilities. Then we explained that there were certain minor social issues to work on so that these talents could shine.

For the most part, Peter expressed motivation to focus on common interests with others and check to see if listeners wanted to talk about his favored video games. However, he was not always keen on editing sensitive remarks, as he often thought these comments were funny despite efforts to explain the negative impact his insults had on others. Thus, we added some extrinsic motivation strategies, making access to video games at home contingent on refraining from insulting others in school, as reported on a behavior chart that was sent home each night.

Skill Acquisition: The primary strategy to teach all skills was structured learning, in which we: 1) explained the rationale for learning the skill (the positive impact on making friends, or negative impact of not using the skills), 2) modeled the skill steps, 3) role-played the steps, and then 4) planned for transfer training (see the next section on generalization). Loose scripts for starting and maintaining conversation were pulled from my social skills manual (Baker, 2003). We taught these skills individually and then in

a "lunch bunch" group with typical peers so that Peter had opportunities to practice these skills with peers.

Generalization: A weekly lunch bunch group with typical peers allowed Peter to be coached on good conversation skill while conversing with typical peers. In addition, cue cards containing these loose scripts were provided to his teachers and parents with instructions as to how to prime these skills prior to social opportunities. Peter did not want his parents or teachers observing lunch bunch, so we had individual conferences with parents and teachers so they could learn how to prime and coach these skills.

According to the research, 30 hours of this kind of group training over 12 weeks may not be enough to create change, yet the reality of the school's staff availability left us with a once-a-week group that lasted 40 minutes. However, lunch bunch members were encouraged to eat with each other on non-lunch bunch days as well. Each day Peter's teacher primed the conversation skills prior to lunch and Peter filled out a brief self-monitoring sheet after lunch to indicate whether he had initiated conversation based on common interests and refrained from any insulting remarks. In addition, in every class, Peter was rated on his ability to refrain from uttering insensitive remarks to others, and the information was recorded on a behavior chart. That chart went home each day and determined how much video game time he could have each night.

Peer Sensitivity: Peter did not want his peers to know he had an autism spectrum disorder. So in soliciting volunteers for a lunch bunch group, we did not talk about Peter specifically to his peers. Instead we spoke to the entire 6th grade class about all students feeling lonely at times if they are new to the school, are shy, or need some help socializing. We offered the opportunity for all the 6th graders to attend a weekly lunch bunch group on a rotating basis so that anyone who wanted to could attend the group. Peter attended each time. If anyone questioned why he was there each time, we indicated that his parents wanted him to have the opportunity to eat in a quieter area once a week rather than in the loud cafeteria.

Outcome: Based on baseline ratings from parents and teachers, Peter "rarely" avoided sensitive topics, initiated conversation on common interests, or maintained conversation with follow-up questions. At the end of 16 weeks, average ratings of these skills were rated as "often" to "almost always," indicating improvement from his parents' and teachers' perspectives. These changes did not automatically result in more friendships for Peter. Yet by contacting some of the peers' parents, we were able to set up some after school play dates, which resulted in more regular get-togethers with students who then considered Peter to be a friend.

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