A BRIEF OVERVIEW

TARGET POPULATION

The curriculum has been designed to enhance the development of ToM and subsequently enhance social understanding in children who demonstrate challenges with social relationships and situations. The literature suggests ToM training to be beneficial for children who have been diagnosed with the following:

- Asperger's Syndrome (AS)

- High Functioning Autism (HFA)

- Pervasive Developmental Disorder–Not Otherwise Specified (PDD-NOS)

- Non-Verbal Learning Disorder (NVLD)

- Attention Deficit Disorder (ADD)

- Attention Deficit Hyperactivity Disorder (ADHD)

- Receptive Expressive Language Disorder (RELD)

- social anxiety

- Sensory Integration Dysfunction (SID).

IDENTIFYING APPROPRIATE PARTICIPANTS

In order to obtain maximum outcomes from this ToM curriculum, participants should be of a developmental age, which is equivalent to the chronological age wherein children typically develop participatory school skills and are able to demonstrate communication, compliance, imitation, and attention to instruction. The activities in this curriculum are best suited for participants who have a minimum chronological age of seven. They should be able to read and demonstrate a cognitive capacity equivalent of first grade curriculum. It is to be anticipated that children who have challenges with ToM will also have delays in the area of reading comprehension, due to their lack of understanding of the very vocabulary which describes mental states in story characters (Antonietti, Liverta-Sempio and Machetti 2006). The assessment of each participant should be conducted prior to acceptance into the 12-week program. Ensuring participant compatibility within the groups will

prevent any need for changes after training has begun. Significant behavior disruptions will inhibit the instructor's ability to teach and will impede the outcomes of the program for the entire group.

Since there is a pressure on the instructor to cover the objectives of each lesson thoroughly, children who present with maladaptive behaviors or significant attention deficits may benefit from experiencing these teachings in a more intimate and individualized format. A joint session, pairing the child with a sensitivity-trained, typical peer model may produce the best outcomes. However, instructors should carefully assess each participant's readiness for this particular curriculum and take into consideration the compatibility of the child participants when forming a group based on various criteria including age, maturity, gender, and availability. I have found that gender-specific grouping is very successful for teenagers.

Michelle Garcia-Winner, developer of the social thinking curriculum, provides a helpful guide to assessing children's readiness for ToM training in an article entitled *The Perspective Taking Spectrum* (2004). Her explanation of the various categories of social functioning will aid instructors in identifying the social functioning levels of children who present with social communication delays. It provides a nice profile of each category and is an excellent tool for helping parents to understand their child's needs, appropriate treatment approaches, and in preparing for the lifespan.

My experience leads me to recommend against grouping based solely on diagnosis. The uniqueness of each child's needs and learning styles requires careful planning and grouping to ensure the most beneficial outcomes. Regardless of age or diagnosis, participants should demonstrate both joint attention and imitation skills prior to participating in this program for optimal results. Instructors will be able to gain insight into appropriate grouping and behavior by having each candidate participate in an informal assessment of conversational skills or via review of a video demonstration of the participant engaged in conversation with others. This assessment should be conducted prior to acceptance into the program. During the assessment visit, instructors should set aside at least one hour. This time may be used to collect baseline data for the Social Experience Checklist found in Appendix A. The instructor may briefly present the skills and determine the participant's ability to complete or identify each one.

IMITATION

Imitation skills emerge early in a typical child's development and serve the functions of learning and socialization. Reciprocal imitation provides a framework for early peer interactions and allows for young children to exchange non-verbal communication during play (Ingersoll 2008). Social imitation is one of the hallmark deficits of autism and is likely somewhat responsible for the lack of development of social communication skills, including receptive language and joint attention. Imitation continues to have a profound effect on the development of social communication and relationships throughout a child's life. The direct impact of imitation on ToM is evident. Through these powerful exchanges, an infant is able to coordinate eye contact and vocalizations, while responding to and often imitating changes in the adult partner's facial expressions. As the infant connects with various partners, he recognizes critical affective cues and begins to regulate his own behavior to please or alter his partner's emotional response. It is here, in these early stages of social development, that autism may become evident, as the child does not exhibit an ability to synchronize with a partner. It would seem necessary for practitioners to place emphasis on the early teachings of imitation skills to children with autism in an effort to lay the foundation for future social cognition and relationship development. Successful dyadic interactions lead to triadic interactions, or what is referred to as "joint attention."

JOINT ATTENTION

Joint attention encompasses the ability to follow the direction of a partner's eye gaze and to coordinate a back and forth reciprocation of attention to an object or event of interest. Consider how an infant integrates her attention during a simple game of "peek-a-boo." She recognizes the social bid from a parent and then, in turn, matches this bid with her own purposeful behaviors, which might include a smile, a giggle, and her own eye gaze. She will then engage in further skills, such as timing, sustained attention, and recognition of facial expressions. These abilities all develop within the first year of a child's typical development and exist for the sheer purpose of providing social pleasure.

Langdell (1978) suggested that "the most important perceptual stimulus in the social world is the face." Children who lack ToM development are likely deficient in the area of social cognition, and particularly in joint attention. Videotapes from first birthday parties of typical children and those who were later diagnosed with autism lent some interesting insight into this critical are of social development. The lack of attention to the faces of others was evident in the videos and may have actually been a predictor of later diagnoses in some of the children (Osterling and Dawson 1994). Due to a thwart in the early development of recognition of the face, later joint attention tasks are hindered. Children with autism will likely demonstrate delays in their ability to shift gaze to regulate turn taking in social situations such as beginning conversations and popular, reciprocal games that are typical of early child development (e.g. peek-a-boo).

Joint attention consists of the child's demonstration of the ability to both initiate and respond to joint attention. The child will use eye contact or gestures (such as pointing) to bring the partner's attention to himself, another person, or an object of interest. Even before a child can say the word "airplane," he will call a partner's attention to it by pointing and looking at it. As a result, the partner looks at the airplane, shares a facial expression, and comments, "Yes, I see the airplane too!" The child may attempt to say "airplane," to which the partner will exhibit delight and the child's behavior is reinforced. In this brief example, the young child both receives social pleasure and learns language. It is this ability to initiate joint attention that is considered one of the hallmark deficits of social development for children with autism. To describe the ability to respond to joint attention, we could simply reverse this same scenario, which would then begin with the partner calling attention to the airplane via eye gaze or a gesture. The child's ability to follow these cues is an example of responding to joint attention (Mundy and Newell 2007). Later, the child will develop an ability to shift his gaze across several partners and call attention to self or an object within a group. This skill becomes more complex over time and involves the child's careful monitoring of the non-verbal behaviors of others. It will continue to serve as a foundation for learning communication, play development, and eventually lead to conversations about a topic. For the young child with autism, these concepts will be critical prerequisites to the development of ToM.

THEORY OF MIND

"Theory of mind" (ToM) was a term coined by Premack and Woodruff (1978) to describe ways in which we understand and interpret our social world. It is defined as "the ability to make inferences about another's representational states and to predict behavior accordingly" (Lewis and Mitchell 1994). Also referred to as "mind reading" and "social referencing," it provides an examination of the intricate system of observing social cues, which seem so effortless in typical social development (Baron-Cohen 2001; Striano and Rochat 2000). Imagine trying to interact with someone without being able to know their thoughts, feelings, or beliefs. ToM gives us insight to learning about others

without exchanging a single word. Our ability to engage ToM is dependent on the quad-senses: seeing, hearing, thinking, and feeling.

- **Seeing** allows us to use our eyes to observe other people, their interactions with us and with others, too. It provides us with a detector of details, because every movement and expression leads us to interpret something social, right down to the eyebrows. Think about a neutral facial expression, which could be interpreted as a feeling of surprise if the eyebrows are lifted or a feeling of anger if the eyebrows are narrowed. Seeing also lends to our perception of our social environment. We notice movement, comings and goings, additions and subtractions to social scenarios. Our eyes allow us to notice every small, seemingly insignificant aspect that can completely change everything. Seeing is critical to early childhood learning wherein observation of others leads to imitation and the mastery of developmental stages. Seeing is the catalyst for assessing social situations, initiating problem-solving strategies, and assuming an appropriate role within a group. Seeing leads to thinking, believing, and knowing.

- **Hearing** provides us with the ability to hear not just what is being said, but how it is being said. Our ears are keen to listen for changes in voice volume, pitch, intonation, and rhythm. When a messenger changes one simple word in a sentence, it can alter the meaning altogether. For example, asking "*You* want popcorn?" or "You want *popcorn*?" conveys two different messages. By attending to the paralinguistic cues, the listener can truly hear the message and respond appropriately.

- **Thinking** is a complex and abstract concept for children who have not developed ToM. Thinking is very different than knowing and allows for the personalization of information. What you think about something may not be the same as what someone else thinks. Thinking can be changed by our beliefs, as we attempt to make predictions based on previous experiences, literature, and facts. If we *believe* that a busy road is a place to avoid, based on stories our parents have told, witness to an accident, or rules, then we will *think* that it is dangerous. Thinking is further altered by our imagination and consideration of possibilities.

- **Feeling** is another abstract notion involving a conscious state of alertness or emotion. A person must be responsive and sensitive to these intrinsic reactions to people, places, and things. Feelings are generated from experiences and are interpreted and expressed differently across people, making them even more challenging to interpret or even recognize for individuals who lack ToM.

Researchers suggest that ToM occurs in typical development around a child's fourth year. This is supported by a series of clinical trials referred to as "false belief" tests (Gopnik and Astington 1988; Perner, Leekam and Wimmer 1987; Wimmer and Perner 1983). However, studies indicate that children can recognize some of the mental states prior to age four, such as a partner's intentions, desires, some feelings, and seeing (Astington and Jenkins 1999; Baron-Cohen, Leslie and Frith 1985; Leslie and Frith 1988; Wellman 1990). Prior to this age, children presume that others think the way that they (self) think, feel the way that they feel, and believe the same things that they believe. They assume that others have the same opinions and beliefs as their own. They view the world as it relates to the self (Epley, Morewedge and Keysar 2004). Wimmer and Perner (1983) designed a series of tests to assess these mental states of simple beliefs. The first order belief test analyzes what a person believes about what another person knows. It is highly recommended that Social Experience instructors should delve into the research and procedures for testing for false belief.

WHY TEACH THEORY OF MIND?

Unlike concrete concepts, which are areas of strength for children with AS, the interpretation of others' thoughts, feelings, and ever-changing behaviors is a far more abstract and transient concept. For these children, the ability to read social cues does not come naturally and must be taught. It is important to teach ToM for many reasons:

- Increased social problem-solving skills will generalize to other situations.

- Understanding others' thoughts, feelings, and beliefs directly impacts regulation of the child's own behavior.

- ToM moves a child's state of awareness from a primarily egocentric perspective to a more socially sensitive state of being.

- Children gain increased ability to manage other socially induced problems, such as anxiety and rigidity.

- Social anxiety may result in the avoidance of social situations and lead to further development of deficits.

- ToM teaches the child a social language of what to say and how to say it.

- Children with AS rely on static systems (rules), predictable sequences, and clear outcomes. ToM training teaches fluid systems, which increase flexibility.

- Children with AS are reliant on delivering technical language, including facts, statistics, and information about highly self-selected topics.

- When spoken words are unclear, the ability to read non-verbal cues can help to clarify messages.

- The 55/38/7 rule suggests that 55 percent of communicative acts consist of non-verbal behavior, 38 percent is tone of voice, and only 7 percent is words (Mehrabian 1972).

HOW TO HELP CHILDREN WHO ARE NOT READY FOR THIS CURRICULUM

Careful observation and assessment of prospective participants will lead to more successful groupings and subsequent learning outcomes. There will be many children who do not demonstrate readiness for this and other types of ToM curricula. One or more of the following realities may delay them from being a candidate:

- chronological age

- developmental age

- attention

- behavior

- ability to learn in a group setting.

In many cases, the child may benefit from a more discrete form of instruction, fewer distractions, or modified curriculum. The following activities provide ideas for the instructor to enhance very basic concepts during individual or joint sessions and possibly help these children to prepare for the Social Experience at a later time.

NAME THAT FEELING

MATERIALS

- Feelings Photo Cards
- Feelings Photo Cards—instructor's labeled set
- Feelings Word Cards

TARGET SKILL

Participants will learn to identify feelings and label emotions by reading other people's facial expressions or cues.

INSTRUCTIONAL RELEVANCE

A person's feelings or emotions are driven by experiences. It is a combination of expressive behavior and conscious experiences, which typically arises from both observational social learning and intrinsic sensitivity. During typical development, children watch other people express emotions and learn very early to recognize, read, and represent those emotions.

The object of this activity is to enable the participants to identify feelings by reading important facial cues found in the eyes, the mouth, and the full face. It is important to place emphasis on the eyes and mouth, as these features are the keys to our expressions. Children who have challenges in reading non-verbal messages will need to develop an ability to recognize cues found in these areas. Participants in this program will present with difficulty in decoding elements of non-verbal facial information. Failure to focus on relevant social information will lead to miscommunication.

The Feelings Photo Cards sets have been designed to display eight specific feelings:

- confused
- excited
- sad
- angry
- bored
- worried

- frustrated

- knowing.

The last feeling, knowing, is important later in this curriculum as participants learn the art of "checking in" with their partners. The Feelings Photo Card deck contains 48 photos. These represent each of the eight feelings in six different people. The people represent both genders and various ages, including child, adolescent, and adult. It is important for participants to be able to recognize the same feeling across various subjects, so as to decrease the potential for the participant to develop stereotyped facial expressions for each feeling. The photos also demonstrate the eight emotions as a range of intensity. Whereas many commercial photos depicting feelings will show highly animated renditions of emotion, this Feelings Photo Card set highlights more subtle changes in facial expressions. The idea is to teach participants to read the "cues" in another's face. The participant's cards are not labeled, to prompt them to focus actively on these cues, rather than depend on a given label. An instructor's set of cards is provided to accompany each group of cards. The instructor's cards are labeled for group correction.

ACTIVITIES

1. Feelings Photos and Words Match-up (20 minutes)

Participants break into pairs of players. Each pair is given several sets of Feelings Photo Cards (one of each of the eight target feelings). The partners will work together to examine the faces, read the cues, and match the Feelings Word Cards to the Feelings Photo Cards. Instructors may choose either to offer the eight feelings words as choices prior to this activity (i.e. write them on a board or use the Feelings Word Cards provided in this curriculum set), or to let participants label them without a prompt. Once the cards are all matched, the instructor will hold up each card in the instructor set, for the pairs to check their matches. The instructor will encourage discussion for each feeling label and ask, "What were the cues?" to focus attention to the eyes and mouth and assist participants in recognizing cues that led to their decision about a feeling label.

2. Identification of Facial Cues (20 minutes)

The instructor can lead discussion about how the same feeling is expressed differently in people of different ages and gender. Point out feelings that may have the same details (mouth looks the same) and how the basic feelings (excited, angry, sad) are more obvious than other feelings (confused, knowing, bored, worried). Most participants exhibit some difficulty with the identification of these feelings, initially commenting, "The faces all look the same." The instructor will model each of the eight target emotions, demonstrating the similarities and differences. Ask, "Which feelings have eyebrows furrowed (or down)?" (*Confused, frustrated, and angry.*) "Which feelings have eyebrows raised (or up)?" (*Excited, worried, and sad.*) Show the participants each of the eyebrow options and change the mouth from turned up to turned down or flat to show six of the eight emotions. After the group is able to recognize these specific cues, demonstrate a bored expression, as a flat mouth and flat eyebrows, and knowing, as a mild affect change that send the non-verbal message, "I understand what you are saying" or "I am listening." Have each participant role-play each of the eight expressions.

Cognitive Behavioral Concentration

- **Recognition (15 minutes)**
  Ask participants this question: "If you don't look at your partner's face, how do you know how he or she is feeling?" Use discussion as a guide to identify other senses that can give cues (e.g. hearing your partner's voice) and to discuss the potential outcomes of not knowing how someone feels. Being aware of someone's feelings will usually change the way we do things. Use these starters for role-play or further problem-solving: "What if…"

  - I was making noises and I did not notice that my brother was angry because he could not do his homework? What would I do? (*Continue to make noises.*)

  - I was making noises and I looked at my brother and saw that his face looked angry? What would I do? (*Stop making noises.*)

  - I was playing my video game and did not notice that my friend was sad? What would I do? (*Continue playing my game.*)

  - I was playing my video game and looked at my friend to see that his face looked sad? What would I do? (*Invite him to join me or have a turn.*)

  - I was talking about my favorite movie and I did not notice that my neighbor was bored. What would I do? (*Keep talking about my favorite movie.*) What might happen? (*My neighbor might walk away.*)

  - I was talking about my favorite movie and I looked at my neighbor to see that his face looked bored? What would I do? (*Ask him about his favorite movie.*) What might happen? (*We both get to talk about things that we like. We learn about each other. We share talk time.*)

- **Identify outcomes (10 minutes)**
  As time allows, continue to ask the question, "What might happen if…?" as in the last examples listed above. Encourage participants to think about the possible outcomes of their actions (looking at faces vs. not looking at faces). Focus on how this simple act can affect both partners.

- **Skill application (5 minutes)**
  Ask participants whether they think looking at faces is easy or difficult to do. Ask them to try to do it more throughout the week.

- **Encouragement (5 minutes)**
  Give compliments to participants for their efforts during the group activities. Avoid generic praise, such as "Good job" and offer descriptive language to highlight skill acquisition, such as "Henry, you were very careful to look at the eyes for cues and those cues really helped you to label the feelings correctly. Nice work today!"

- **Goal setting (10 minutes)**
  The instructor asks the group to help define a "goal." Set a goal for them as a group to discuss at the upcoming session. For example, "Everyone choose one person in your family to watch this week. Pay more attention to their face than you ever have before. Read the cues of this person's face to know how they are is feeling."

- **Agenda (5 minutes)**
  The instructor tells the group that next week's session will focus on "reading signs and signals."

- **Caregiver letter**
  The instructor hands out the Activity 1 caregiver letter to provide supplemental information for caregivers to support homework follow-through and generalization of new skills.

ACTIVITY 2

SIGNS AND SIGNALS

MATERIALS

- Signs and Signals Word Cards

TARGET SKILL

Participants will learn how to "read" non-verbal signals from other people, including gestures, posture, and body language.

INSTRUCTIONAL RELEVANCE

There is a universal language which exists across people of all languages, cultures, and parts of the world. It is not spoken, but rather displayed by the use of our hands, body, and face. A simple nod can be the "answer" to a question. A hand gesture can be an "invitation." A look of disappointment can bring an "end" to things. These non-verbal messages are powerful. They are initiated by our behavior, received by a partner or partners, and alter the behavior of others. Throughout the day, people make decisions based on the information they receive from others. This type of communication requires careful observation and attention to details. If a message is missed, then the behavior of others will not likely be changed. This is one of the foremost challenges for people who have not developed ToM. They fail to recognize or attend to these messages and so do not alter their behavioral responses accordingly. As a result, so much can be overlooked.

The cards for this activity include a combination of signals, signs, and feelings. They offer words exclusively (no photos) to allow for participants to interpret and display the messages with novelty.