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# Thinking Outside of the Assessment Box: Assessing Social Communicative Functioning in Students with ASD

## **Comments**

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Thinking Outside of the Assessment Box:

Assessing Social Communicative Functioning in Students with ASD

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## Abstract

The assessment of a student suspected of an autism spectrum disorder (ASD) diagnosis requires the integration of information collected by a variety of professionals across various domains of functioning. One of the core deficits of students with ASD is a deficit related to social communicative competence (SCC). SCC requires the integration of language, social cognition, and higher order executive functions (Coggins, Olswang, Olson, & Timler, 2003) This article will propose an assessment model of social communicative functioning that was developed based on the SCC framework of Coggins et al. as a component of the *Comprehensive Multidisciplinary Assessment Protocols for Autism Spectrum Disorders* (CMAPS, Dodd & Franke, 2010).

An evidence-based multidisciplinary team assessment (Ozonoff, Goodlin-Jones, & Solomon, 2005) of a student suspected of an autism spectrum disorder (ASD) diagnosis examines abilities across a multitude of domains including, but not limited to, cognitive functioning, language skills, adaptive functioning, academic achievement, visual processing, and executive functioning (Filipek et al., 1999; Ozonoff, Goodin-Jones, & Solomon, 2005). Assessment teams are required to assess a student in all areas related to his/her suspected disability (IDEA, 2004). Of particular interest to speech-language pathologists (SLPs) are the areas related to language functioning: semantics, syntax, morphology, phonology, and especially pragmatics. Coggins, Olswang, Olson, and Timler's (2003) framework of social communication competence (SCC) shows us that pragmatics is only one component contributing to effective social communication. As a result, the proposed assessment model introduced in this article asks SLPs to examine pragmatics as part of the broader area of social communicative functioning (SCF).

The SCF assessment model was developed as a component of the *Comprehensive Multidisciplinary Assessment Protocols for Autism Spectrum Disorders* (CMAPS, Dodd & Franke, 2010). The CMAPS were developed by speech-language pathologists and clinical psychologists working in public schools utilizing best practice guidelines (California Department of Developmental Services, 2002). The CMAPS are intended to assist assessment teams in pre-planning a comprehensive evaluation. Specific domains of functioning to consider in the assessment of a student suspected of an ASD and suggested responsible team members are listed in Table 1. What makes the CMAPS unique is that the assessment of pragmatics has been moved from the traditional language domain completed by the SLP to a broader domain referred to as social communicative functioning (Coggins et al., 2003). The CMAPS are a series of protocols

that provide assessment teams with an organized and systematic method of planning and completing an assessment of a child/student suspected of a diagnosis within the autism spectrum. Assessment protocols were developed based on three communication language profiles: emergent communicators, basic communicators, and atypical communicators. Emergent communicators, those who use primarily non-symbolic forms of communication, have difficulty with such skills as initiating communicative exchanges, using language for communicative functions other than behavioral regulation, and engaging in symbolic and non-symbolic forms of play. Basic communicators, those who use simple sentence patterns, respond to bids for interaction (e.g., responding to greetings, answering questions), initiate communication to fulfill immediate needs, and engage in parallel play. Atypical communicators have strong language skills with respect to semantics and syntax, but typically have difficulty with recognizing the subtleties of social interactions, inferring information that is not explicitly stated, and taking into consideration the viewpoints of others. Table 2 provides descriptive information regarding the language abilities of the three levels of communicators that will be referred to throughout this article. In the CMAPS each protocol lists specific assessment tools (e.g., standardized tests, checklists) to consider in the assessment of each domain (e.g., cognitive functioning, adaptive functioning) based a student's communication language profile. It is suggested that a minimum of one assessment tool be administered under each domain that has been identified as an area of concern.

Table 1

*Domains of Assessment to Consider in Assessing a Student Suspected of an ASD Diagnosis*

Domains of Assessment	Responsible Person
Autism Spectrum Disorders Assessment	Psychologist, SLP

Cognitive Functioning	Psychologist
Visual Processing	Psychologist, OT
Memory	Psychologist
Executive Functioning	Psychologist
Language Functioning (syntax, morphology, semantics)	SLP
Social Communicative Functioning*	SLP, Psychologist, Teacher
Auditory Processing	SLP, Psychologist
Speech (articulation)	SLP
Developmental/Pre-Academics/Academics	Psychologist, Teacher, Parent
Behavior/Self-regulation/Emotion Functioning	Psychologist, Teacher, Parent, SLP
Adaptive Functioning	Psychologist, Teacher, Parent
Sensory Processing	OT
Motor Skills	OT, PT, Adaptive PE Specialist
Other (vision, hearing, assistive technology, function behavior assessment)	

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Note: SLP = speech-language pathologist, OT = occupational therapist, PT = physical therapist.

Adapted from “Comprehensive Multidisciplinary Assessment Protocol For Autism Spectrum Disorders” (CMAP-ASD, Dodd & Franke, 2010).

Table 2

*Communication Language Profiles Across the Autism Spectrum*

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Type of Communicator	Communication and Language Skills
Emergent Communicator	<p>Communicates primarily through gestures and behaviors</p> <p>Uses primarily non-symbolic forms of communication</p> <p>Communicates primarily for the purposes of fulfilling basic, wants and needs.</p> <p>Uses non-intentional forms of communication with the emergence of intentional forms of communication</p>
Basic Communicator	<p>Uses symbolic forms of communication including pictures, symbols, single words and simple sentence patterns</p> <p>Communication is primarily intentional and directed toward a variety of communicative partners</p> <p>Uses language for an increasing number of communicative functions such as shared attention.</p>
Atypical Communicator	<p>Communicates using words and novel sentences</p> <p>Uses syntax and morphology that is consistent if not advanced in comparison to age matched peers often times described as quite verbose</p>

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Note: Adapted from “Comprehensive Multidisciplinary Assessment Protocol For Autism Spectrum Disorders” (CMAP-ASD, Dodd & Franke, 2010)

### **Assessing Social Communicative Functioning**

Coggins et al. (2007) describes SCC as the ability to use “language in interpersonally appropriate ways to successfully influence people and interpret events” (p. 118). According to Coggins, et al., SCC is dependent on the integration of language, social cognition, and high order executive skills. An individual’s social communicative behaviors are a direct reflection of this integration. Table 3 provides an overview of specific components of assessment to consider in the evaluation within the domain of SCF followed by specific areas of assessment within each component.

Table 3

*Assessing Social Communicative Functioning: Areas of Assessment (Coggins et al., 2003; 2007).*

Skill	Areas of Assessment
Language	Pragmatics
Social Cognition	Joint Attention
	Theory of Mind
	Emotion Recognition
Higher Order Executive Functions	Social Problem Solving
Social Communicative Behaviors	Social Skills
	Play & Friendship Skills

### **Language**

Language provides the avenues from which we are able to share experiences, regulate our environment, and make overall sense of the world. Language skills are predictive of SCC (Guralnick as cited in Coggins et al., 2003). The CMAPS utilize the unique language patterns observed in students with ASD as a guide to develop appropriate assessment protocols based on the relationship between SCF and linguistic competence. The focus of assessment varies across the spectrum of the disorder taking into consideration the linguistic competence of each student. The CMAPS model of assessment individualizes the assessment protocol according to whether the child is an emergent, basic, or atypical communicator, As a result, the assessment of language related to semantics, syntax, and morphology are assessed separately from pragmatics which is assessed within the context of SCF. A discussion specific to the assessment of pragmatics is beyond the scope of this article and readers are referred to Adams (2002) for an expanded discussion including specific methodologies to consider in the assessment of this area across levels of functioning.

### **Social Cognition**

Social cognition, our understanding of why people respond or act in different situations and our ability to predict their next actions (Coggins et al., 2003), relies on a number of processes such as joint attention, theory of mind and emotion recognition. Social cognition follows a developmental sequence of acquisition with more complex skills building upon earlier established pre-requisite skills (e.g., joint attention). The challenges experienced with emergent and basic communicators stem from the foundational skills associated with joint attention. Joint attention is one's ability to alert a communicative partner to an item or event of particular interest utilizing nonverbal means such as pointing or directed eye gaze; joint attention is not only correlated with the development of language skills (Carpenter & Tamasello, 2000) but has

proven predictive of a later ASD diagnosis (Dawson et al., 2004). Joint attention relies on an individual's ability to consider the perspective of their communicative partner regarding a shared event or object (Carpenter & Tamasello). Joint attention predicts the development of social cognition (Mundy & Newell, 2007).

A deficit in social cognition is a defining characteristic of atypical communicators such as those identified as having high functioning autism (HFA) or Asperger's syndrome (AS). Atypical communicators experience significant challenges related to social cognition. Theory of mind understanding, a critical element of social cognition, also referred to as perspective taking, refers to our ability "to explicitly represent the difference between one's own and somebody else's relation to the same propositional content" (Wimmer & Perner, 1983, p. 105). Absent in traditional types of assessment procedures are comprehensive tools that assess theory of mind understanding. Subsequently SLPs often rely on informal tasks that have been replicated and utilized in the research such as the *unseen displacement task* (Baron-Cohen, Leslie, & Frith, 1985; Wimmer & Perner) and the *unexpected contents task* (Perner, Leekam, & Wimmer, 1987). Our ability to recognize and interpret the perspectives of others is further influenced by our ability to recognize and interpret facial expressions. Researchers have demonstrated that children with AS and HFA routinely experience challenges perceiving the emotions of others (Hobson, Ouston & Lee, 1988). For a detailed discussion regarding TOM readers are referred to Doherty (2009) and Howlin, Baron-Cohen and Hadwin (1999).

The assessment of social cognition varies across the three communication language profiles. The assessment of social cognition for the emergent communicator focuses primarily on joint attention. Theory of mind understanding and the recognition of simple emotions emerge with the basic communicator. In addition to joint attention (refer to Prizant et al., 2006 for an

expanded discussion regarding joint attention across the spectrum of the disorder) it is important to complete a thorough assessment of both theory of mind understanding and emotion recognition in the atypical communicator.

### **Higher Order Executive Functions**

“Executive function comprises the ability to be mentally and behaviorally flexible to changing situations and to provide coherence and smoothness in one’s responses” (Moran & Gardner, 2007, p. 22). Social problem solving skills, also referred to as social reasoning (Attwood, 2007) and decision making skills (Elias & Tobias, 1996), involve not only language (e.g., semantic knowledge) but cognitive processes such as attention, inhibition, and working memory along with executive skills (Richard & Fahey, 2005). Successful problem solving requires the ability to

1. Identify a problem
2. Recognize and understand the impact of significant and insignificant situational and environmental cues on the problem.
3. Generate a number of solutions to solve the problem
4. Recognize that there may be multiple solutions to solve a problem some of which are more physically and economically feasible than others.
5. Recognize that there may be solutions that are equally effective.
6. Evaluate the effectiveness of proposed solutions in terms of solving the problem and feasibility related cost and ability.
7. Recognize impact of solutions on others (Attwood, 2007).

Deficits with executive functioning directly impair one’s problem solving abilities. Due to this relationship it is strongly encouraged that professionals (e.g., SLPs and school psychologists)

work collaboratively to determine the underlying causes or contributing factors to a student's social problem solving challenges. For a detailed discussion of social problem solving readers are referred to Elias and Tobias and Richard and Fahey for detailed discussion regarding executive functioning.

### **Social Communicative Behaviors**

Social communicative behaviors are the direct reflection of the execution and integration of language, social cognition, and higher order executive functioning (Coggins et al., 2003).

Bellini (2006) discusses social skills as a broad term that encompasses an array of learned behaviors, verbal and non verbal, that are acquired across the life span as social demands and needs change as a function of maturation. This ongoing acquisition of learned behaviors is naturally influenced by how our behaviors are perceived and received by others. Simply stated, we are more likely to repeat behaviors that result in positive responses by others and avoid repeating behaviors that result in less desirable or negative responses. Student with ASD often fail to recognize these responses with the end result being the continuation of undesirable behaviors. Play and friendships skills are two examples of social communicative behaviors

Play serves a critical role in supporting the development of cognition, socialization, language and emotional stability in young children. The play opportunities available to neurotypical children are often unavailable to children with ASD. Children with ASD are often perceived as not having the desire to experience these types of interactions and/or their skill deficits make it difficult for them access play opportunities as typically developing children thus missing many learning opportunities (Wolfberg, 2003). Similar to play, friendship skills provide children with opportunities to engage in interactions with peers providing further opportunity to expand their skills. Developing friendships is a complex skill that entails the integration of a

range of social communicative skills with many of these skills posing a challenge for children with ASD.

### **Developing an Assessment Protocol**

Tables 4-6 list specific areas to assess based on a student's communication language profile. The assessment of SCF for an emergent communicator would focus on examining communicative functions, joint attention and play skills. Comparatively, the assessment of SCF of an atypical communicator may examine such areas as conversation skills, social problem solving and social cognition. Level of linguistic competence plays a vital role in determining the direction of assessment. It is recommended a minimum of one assessment tool (i.e., standardized test, checklist, informal task) under each area be administered, based on the individual needs of the student. A heightened level of concern for a given area (e.g., pragmatics for the atypical communicator) may necessitate the administration of additional assessment tools to fully describe the student's level of functioning in that area. That decision is at the discretion of the assessment team.

#### Table 4

#### *Assessing Social Communicative Functioning in the Emergent Communicator*

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##### Pragmatics

Assessment of Communicative Acts/Functions (Wetherby & Prizant, 1992; Wetherby & Prutting, 1984)

Communication and Symbolic Behavior Scales, Second Edition (Wetherby, 2003)

##### Joint Attention

SCERTS-SAP Observation Form: Social Partner (Prizant et al., 2006)

##### Social Skills

Assessment of Social & Communication Skills (Quill, 2000)

#### Play & Friendship Skills

Developmental Playscale (Westby, 2000)

Integrated Play Groups Assessment (Wolfberg, 2003)

#### Table 5

#### *Assessing Social Communicative Functioning in the Basic Communicator*

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##### Pragmatics

Assessment of Communicative Acts/Functions (Wetherby & Prizant, 1992; Wetherby & Prutting, 1984)

Communication and Symbolic Behavior Scales, Second Edition (Wetherby, 2003)

##### Joint Attention

SCERTS-SAP Observation Form: Language Partner (Prizant et al., 2006)

##### Theory of Mind

Theory of Mind Developmental Checklist (DeCurtis, Schryver, & Ferrer, 2003)

##### Emotion Recognition

Emotion Picture Cards

##### Social Problem Solving

Observation

##### Social Skills

Assessment of Social & Communication Skills (Quill, 2000)

Social Skills Rating Systems (SSRS)

Skillstreaming in Early Childhood

## Play & Friendship Skills

Developmental Playscale (Westby, 2000)

Integrated Play Groups Assessment (Wolfberg, 2003)

## Table 6

### *Assessing Social Communicative Functioning in the Atypical Communicator*

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#### Pragmatics

Pragmatic Language Skills Inventory (PLSI)

Pragmatic Protocol (Prutting & Kirchner, 1987)

Peanut Butter Protocol (Creaghead, 1984)

Children's Communication Checklist-2 (CCC-2)

Grice's Maxims (Grice, 1975)

Double Interview (Garcia-Winner, 2007)

#### Theory of Mind

Theory of Mind Tasks (e.g., unseen displacement, unexpected contents)

NESPY® II- *Theory of Mind*

Thinking with Our Eyes (Garcia-Winner, 2007)

#### Emotion Recognition

Social Emotional Evaluation (SEE)

NESPY® II- *Affect Recognition*

Emotion Picture Cards

#### Social Problem Solving

Preschool Language Assessment Instrument, Second Edition: *Level IV*



Test of Problem Solving (TOPS-3, TOPS-2-Adolescent)

Test of Pragmatic Language (TOPL-2)

Social Language Development Test-Elementary (SLDT)

Comprehensive Assessment of Spoken Language: *Inference, Pragmatic Judgment*

#### Social Skills

Autism Social Skills Profile (ASSP, Belini, 2006)

Social Skills Rating Systems (SSRS)

Skillstreaming in Early Childhood/Elementary School Child

#### Play & Friendship Skills

Developmental Playscale (Westby, 2000)

Integrated Play Groups Assessment (Wolfberg, 2003)

Indices of Friendship Observation Schedule (Attwood, 2004)

These lists are by no means all-inclusive and the practitioner is encouraged to expand on these lists adding other test, tasks and checklists that assist them in identifying the information necessary to provide a comprehensive description of the child's skills in the area of social communicative functioning.

### **Conclusion**

The application of the assessment model of SCF discussed in this article was presented in the context of assessing a student with a suspected diagnosis of ASD, however, it is strongly encouraged that assessment teams use this same model in the re-assessment of a student to determine present levels of functioning. Social skills training is based on the explicit identification of skill deficits (Gresham, Sugai & Horner, 2001) which can only be achieved

through a thorough and comprehensive assessment of SCF which identifies underlying causes related to social deficits.

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