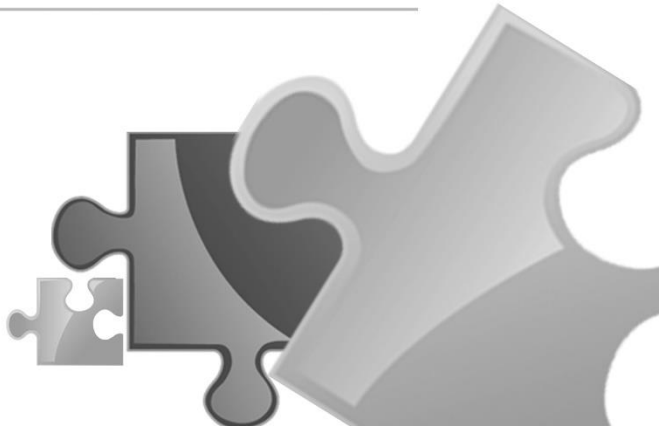
CAPs

Clinical Assessment of Pragmatics

MANUAL

Dr. Adriana Lavi
PhD, CCC-SLP



PATENT PENDING

Printed in the United States of America

2 3 4 5 6 7 8 9 10 24 23 22 21 20 19

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About the Author

Adriana Lavi, PhD, CCC-SLP is a practicing licensed school-based speech-language pathologist with more than 15 years of experience working with children and young adults who present with a variety of communication disorders. She currently supervises twenty-four speech-language pathologists and Clinical Fellows in three school districts in Southern California. Dr. Lavi has also served as an Assistant Professor at the Department of Communicative Disorders at Loma Linda University, and recently, she founded the Lavi Institute for Research and Professional Development. Her primary research interests focus in the areas of pragmatics, as well as the assessment and treatment of culturally and linguistically-diverse students with communication disorders. She earned a master's degree in speech-language pathology from California State University at Sacramento and a PhD degree in Rehabilitation Sciences with an emphasis in speech-language pathology from Loma Linda University. Dr. Lavi was one of three students selected by the Bureau of Educational and Cultural Affairs of the US Department of State from the country of Moldova to study in the US in 2000. She has lived through and understands the culture of poverty. Her professional career has always focused on service delivery for students from low-income backgrounds. She is also a mother of three young, highly energetic little boys, ages 4, 3, and 2 years.

Acknowledgements

Sincere appreciation is extended to the families and children who generously offered their time and effort. Additional thanks to the expert panel and speech and language pathologists who field tested the children

Chapter

1

Overview of the Test

CAPs Description

The CAPs is a norm-referenced video-based pragmatic language battery of tests for children and young adults ages 7 through 18 years. It is composed of six subtests, and each of the CAPs subtests is based on a well-defined pragmatic language construct. It is a reliable test that yields valid results on pragmatic judgement and use of social language and nonverbal cues, such as facial expressions, prosody, and gestures. Normative data of this test is based on a nationally representative sample of 914 children and young adults in the United States.

CAPs Subtests

The test is composed of six subtests that measure pragmatic language skills (Table1.1)

Testing Format

The CAPs uses a series of video-based social scenarios. Examinees are presented with a social situation in a video-based format and are asked two types of questions. On the pragmatic judgment (receptive pragmatic) subtests, the examinees are asked to judge the appropriateness of a variety of social situations by answering the following: “Did anything go wrong in this video?” and “What went wrong?” On the pragmatic performance (expressive pragmatic) subtests, the examinees are presented with a social situation and are asked: “What would you say and how?”

Testing Time

Testing time for the entire battery takes approximately 45-50 minutes.

CAPs Uses

The results of the CAPs test provide comprehensive information on pragmatic language skills and social language development of children and young adults. It presents with four essential purposes:

a) To help identify pragmatic language deficits and determine the degree of such deficits (e.g., initial IEP based evaluations);
b) To help determine strengths and weakness within a variety of pragmatic language domains (e.g., pragmatic judgement versus performance, instrumental communication versus affective communication, comprehension and use of paralinguistic cues);
c) To help document progress in pragmatic language skills, measure treatment efficacy or re-evaluate overall pragmatic language profiles as part of triennial IEP based reviews;
d) To help analyze social pragmatic language skills in children and young adults for research purposes

Features

Unique Design of Using Video Based Social Situations

One of the most notable benefit of the CAPs is its unique test design consisting of videos which are true to life interactions. The videos are presented in relevant, life-like content, and the actors in the videos are from a wide variety of ethnic and cultural backgrounds. Verbal dialogue in the videos is easy to attend to and understand. It is presented at a rate that is controlled for speed without being unnaturally slow. Vocabulary used in the videos is appropriate to the testing age range (7-0 through 18-0), and the real-life situations are those which might be expected to occur in environments with which the participants could be expected to be familiar.

Comprehensive Profile and In-Depth Analysis of Pragmatic Language Skills

CAPs evaluates both examinees' level of pragmatic judgment (meaning their ability to comprehend social situations), and their ability to *express* themselves in an appropriate manner within various social situations. The pragmatic performance aspect of this test is a crucial feature, which is unique because it allows the examiner an opportunity to elicit the participants' both verbal and non-verbal responses. Beginning with 'superficial' layers of instrumental social situations, this test delves into every level of pragmatics, and assesses 'intricate' high-level skills, such as the examinees' ability to express sadness, gratitude, frustration, support, and surprise, as well as their ability to use nonverbal language such as facial expressions and prosody.

Assessment of Paralinguistic Skills (Reading and Using Nonverbal Language)

A key area which may have been overlooked by traditional testing is the examinees' use of higher level pragmatic language, specifically the ability to use affective communication and paralinguistic cues. For example, the Paralinguistic Decoding subtest is the most unique standardized measure that assesses the ability to use various non-verbal cues, such as facial expressions, tone of voice, inflections in prosody, gestures, and overall body language to express a variety of communicative intents. The CAPs is an

effective means by which speech-language pathologists, as well as other related practitioners, can obtain a greater and comprehensive understanding of their examinees' pragmatic language needs, such as awareness of basic social routines, the ability to read a variety of dynamic contextual cues and non-verbal language, the ability to use social routine language, and the ability to express higher level language, such as emotions and use nonverbal cues.

Efficient Administration and Scoring

The CAPs test can be administered with relative ease. Scoring has been simplified by the listing of the scoring criteria and rubrics in the Examiner Record forms. A listing of most common correct and incorrect responses is provided in Appendix A.

Rationale

THE BASIS FOR DEVELOPING THIS TEST, and the impetus for its use in practice, lies in the frustrations experienced by the test author and expressed by her speech language pathologist co-workers with regard to the scarce availability of comprehensive standardized measures of social-pragmatic communication skills. Also, a notable number of students score high on current standardized measures of pragmatic language and find no difficulties; however, an intangible disability often remains noticeable to parents or teachers. Researchers and practitioners have long argued for the need to develop pragmatic language assessments that target the unique social language characteristics of students with autism and pragmatic language impairment, such as higher level language expression, inferential thinking, and understanding the mind of others (Volden et al., 2010; Ryder et al., 2008; Young et al., 2005). Current means of assessing students who fall into this complex 'grey area' of higher level pragmatic language ability have long relied on careful dynamic and informal observations and documentation. This comes with a major cost in time and labor to identify evidence to indicate that these students qualify for special services through the public schools. However, even with careful dynamic observations and assessment, it is difficult to elicit skills within the suspected areas of weakness or those that the students' caregivers and educators express concerns about. School-based observations that target social interaction and socialization are most often impossible or insufficient. For example, it may be impossible to observe a student's ability to express sorrow, affection, consolation, support, gratitude, etc. from school- based observations during students' recess or lunch time. The CAPs presents a viable testing method: a comprehensive test of pragmatic language ability that elicits responses through a set of video-based role plays of real-life situations. This method is not only able to evaluate students' instrumental and "surface" pragmatic language skills, but it can be sensitive to the higher level pragmatic skills, such as understanding of and expression of facial expressions, body language or ability to appropriately express affective language. This test replaces the use of one dimensional and static pictured stimuli of social situations with real-life scenarios presented in a video format. The nature of social interactions is dynamic, continuous, and fast. Pictures of social interactions are static and may not effectively elicit authentic responses, such as understanding of sarcasm, arrogance, etc. The use of real-life social situations is the closest method to elicit students' ability to read dynamic contextual cues and nonverbal language.

TABLE 1.1

Description of CAPs Subtests

	Pragmatic Judgement vs.	**Pragmatic Performance**
Instrumental Intent	**Instrumental Performance Appraisal** (Awareness of Basic Social Routines) This subtest measures awareness of basic social routines and the ability to judge their appropriateness. This includes the ability to judge appropriateness of introductions, politeness, making requests, requesting help, answering phone calls, asking for permission, identifying rude tone used for requests, identifying polite language, understanding when interruptions are appropriate, and understanding rules of conversational turn-taking.	**Instrumental Performance** (Using Social Routine Language) This construct measures language skills that are necessary to satisfy an individual's basic needs and express communicative intent that is instrumental in nature. This includes the ability to use social routine language, such as expressing greetings, introductions, politeness, making requests, responding to gratitude, requesting help, requesting information (e.g., directions), and asking for permission.
Affective Intent	**Social Context Appraisal** (Reading Context Cues) This subtest measures awareness of social context cues, the ability to understand the intent of others, and the ability to infer what others are thinking (perspective taking). This also includes detecting non-verbal cues, understanding of indirectly implied requests and/or statements (e.g., idioms, expressions), making appropriate inferences (e.g., sarcasm) and making judgements about social context when situational cues change.	**Affective Expression** (Expressing Emotions) This subtest measures the ability to appropriately express higher order pragmatic language that is emotive in nature, such as regret, sorrow, peer support, praise, empathy, gratitude, encouragement, etc.
Paralinguistic Cohesion	**Paralinguistic Decoding** (Reading Nonverbal Cues) This construct measures the ability to detect a speaker's intent by recognizing meanings of various non-verbal cues, such as facial expressions, tone of voice, inflections in prosody, gestures, and overall body language.	**Paralinguistic Signals** (Using Nonverbal Cues) This subtest measures the ability to use various non-verbal cues, such as facial expressions, tone of voice, inflections in prosody, gestures, and overall body language to express a variety of communicative intents.

Chapter

2

Theoretical Framework

Pragmatics Defined

Pragmatic language binds together semantics, morphology, syntax, and overall language comprehension and oral expression for the purpose of effective communication. It is the final element necessary for appropriate and effective communication to occur. Any deficit in pragmatics results in significant disruption in the communication process (Norbury, 2014). Hymes (1971) simply defines pragmatics as a student knowing when to say what to whom and how much. This may seem somewhat simplistic, but others offer more elaborate descriptions. Prutting and Kurchner (1987) define pragmatic language as the ability to use language in specific contexts and for precise purposes. Grice (1975); Mundy & Mascus (1997) make a useful contribution in pointing out that it is impossible to declare what pragmatic language is without using culture as context. It is a student's very subjective experience with social language that informs him or her of when a speaker is being sarcastic, making an attempt at humor, or is unnecessarily formal, polite, or even hostile.

A broad array of linguistic skills work cohesively to produce pragmatic language. These include appropriate turn-taking, politeness, proper introduction to a topic, stylistic variations adjusted for different listeners, and topic maintenance and changes in direction or intention. In addition, adequate eye-contact and gaze, body language, micro expressions of the face, gestures, and other forms of non-verbal language are all integral components of pragmatic language (Prutting et al., 1987). Nicolosi, Harryman & Kresheck (1996) agree as well, that without context, any attempt at effective pragmatic language is virtually useless. The environment that generates language provides context for what is communicated and what is invaluable. The intention of the speaker and the sensory-motor actions used to deliver what is said are pivotal. Knowledge shared in a communication dyad is to be considered by the speaker and listener alike, but the context changes and shifts even further if we move from a dyad to a speaker in a group setting. The authors see meaning to be as important as the context since they are the result of well-intentioned and creative combinations of utterances and social settings. Therefore, meanings and contexts are considered inseparable. Loukusa et al. (2006) suggests that context can be interpreted as knowing the identity of the speaker and listener, in addition to determining the speaker's intention in his or her selection of sentences used to convey meaning. Pragmatic language deficits translate into difficulty with correctly understanding

and responding verbally to situations in a social context. Individuals with deficits in pragmatics primarily struggle during conversation with others, both receptively and expressively.

Importance of Pragmatics

A major difficulty with undiagnosed pragmatic communication disorders is that due to communication difficulties, individuals may be reluctant to communicate at all. This leads to a "negative spiral," as such reluctance halts further attempts at communication. This occurs because these individuals receive limited positive feedback in reciprocal communication, meaning that this problem is likely to continue (Bishop & Leonard, 2014). There is a clear need to identify students unable to comprehend or use social language adequately because without appropriate pragmatic language skills, quality communication cannot occur. When one presents with pragmatic impairment, the interlocutor is reluctant to attend to the message, whether syntactically sound or not. This concept is highly relevant in an educational context. Pragmatic language deficits adversely affect the social and academic performance of school-aged children, especially those who present with high functioning autism and social (pragmatic) communication disorder. The relevance of considering pragmatic language impairment and the importance of identifying students who present with such difficulties cannot be understated, as it requires specialized education and support.

Pragmatic Judgement versus Pragmatic Performance

To this date, pragmatic judgment has been broadly grouped under the general umbrella term: pragmatic language skills. This test aims to redefine pragmatic judgment and thereby create two broad constructs under the realm of pragmatic language skills: Pragmatic Judgment (PJ) and Pragmatic Performance (PP). The definition, as well as the importance of both PJ and PP, will be discussed. Furthermore, new constructs are developed in an effort to measure both PJ and PP skills in a comprehensive assessment. According to Carrow-Woodfolk (1999), "differences between comprehension and expression occur at the sensory and sensory-perceptual levels, at the memory and retrieval level, and at the levels of inference and problem solving." Pragmatic Judgment is a broad construct used to measure pragmatic language skills. Pragmatic judgment is measured by the ability of an individual to appropriately understand and use adequate language (Ryder et al., 2014). This requires the individual to form appropriate social language responses, such as producing the acceptable response at the right time in a given social context. According to Elizabeth Carrow-Woolfolk (1999), for expression, "the speaker must access the system in which knowledge is stored from comprehension and find the exact word or words appropriate to express an idea accurately." Developing skills in this area is critical, as it involves being able to engage in reciprocal communication during conversation, providing relevant information when asked questions, properly taking turns in conversation, responding appropriately to other individuals in regard to gender, status, age, and using the appropriate language that corresponds to specific feelings, such as gratitude, excitement, and sorrow (Ryder et al., 2008). Receptively, this can mean identifying correct and incorrect responses in a social context. Expressively, this involves verbally providing appropriate responses in a given situation.

In this test, PJ will be related to receptive pragmatic skills. Defining PJ as equivalent to receptive pragmatic skills, and distinguishing it from a broad definition of pragmatic language skills, will allow a more detailed grasp of an individual's ability to understand social situations. This is measured by how the individual perceives what are correct and incorrect responses in various social contexts. For example, the individual will be presented with a social situation with a response that is made; the individual will then identify whether the response made was a "right" or "wrong" response given the context. PJ can also be measured by having individuals identify an appropriate response when given several choices. This is

similar to how Pragmatic Judgement is assessed in the Comprehensive Assessment of Spoken Language, which Carrow-Woolfolk (2009) explained as, "a test to measure the knowledge and use of pragmatic rules of language by having a respondent 1) judge the appropriateness of language used in specific environmental situations, or 2) actually use language appropriate to given environmental conditions."

Pragmatic Performance: Assessing appropriate responses is necessary as it pertains to daily life skills. Additionally, assessment can aid in the identification of strengths and weaknesses in students with pragmatic disabilities, which often include those with autism spectrum disorder (ASD), or specific language impairment (SLI). Pragmatic Performance (PP) is defined as congruent to an individual's expressive pragmatic skills. This is measured through the response given in social situations. Responses vary to include appropriate answers to questions or statements and appropriate responses to expressed emotions. Assessment of both skills is important as each individual with ASD and SLI has different language profiles; one may have more developed judgment skills than performance skills or vice versa. Measuring both skills can be a more detailed approach to understanding the pragmatic profiles of these individuals, which in turn results in a more individualized and effective intervention plan.

Instrumental versus Affective Communication

In addition to assessing PJ and PP skills, this test will differentiate pragmatic language skills as either instrumental or affective, non-instrumental communication. In instrumental communication (IC), the primary goal is to relay information effectively to the interlocutor and where communication is used as a means to an end (i.e. communication is focused on benefitting the self). Focus is heavily emphasized on what is being said as opposed to affective or emotional functions (Chandler et al., 2011). Because difficulty understanding others' emotions and perspective is a highlighted characteristic in individuals with ASD and SLI, instrumental communication is often used. This is critical in the assessment of such individuals, as Carrow-Woolfolk (2009) cites Bates' (1976) argument that, "the ability to explain pragmatic analysis seems to develop apart from passive pragmatic comprehension and pragmatic expression."

Non-Instrumental Communication (NIC) or affective communication involves higher level communication skills, such as expressing emotions (i.e. joy or sorrow) to another person. NIC is a key component of non-verbal communication and also requires higher-level thought processing. 'This metacognitive ability requires more than simply engaging in comprehension and production of pragmatically acceptable communication" (Carrow-Woolfolk, 2009). It differs from IC in that it is not used merely as a means to an end (Chandler et al., 2011). NIC can be viewed as a pertinent construct in assessing pragmatic language skills, as its use demonstrates aptitude in both PJ and PP skills.

Paralinguistic Cohesion

Tesink, C. et al. (2009) defines pragmatics as, "the ability to use and comprehend language in context." Current standardized assessments in the field frequently define pragmatics; however, the definition of paralinguistics, and specifically, how paralinguistics is affected among those with pragmatic impairment, is scarce to non-existent. Liscombe (2007) defines paralinguistics/paralanguage in the general sense as, "non-verbal communication in human interaction." This definition is embedded in our definition of paralinguistic cohesion, which we argue is the integrative interaction between an individual's ability to detect a speaker's intent by recognizing meanings of various non-verbal cues and their ability to express various types of intent with help of non-verbal signals, such as facial expressions, tone of voice, inflections in prosody, gestures, and overall body language. It is the final element of communication, and it can be argued to be the most critical for communicating emotions, such as anger, stress, and happiness.

Six New Constructs

Instrumental Performance Appraisal

Instrumental Performance Appraisal examines the ability to judge appropriateness of introductions, farewells, politeness, making requests, responding to gratitude, requesting help, answering phone calls, requesting information (e.g., directions), and asking for permission, when provided a specific scenario. In other words, it assesses whether an individual can discern the difference between appropriate and inappropriate language when used in means-end or basic communication processes. This includes, but is not limited to introductions, farewells, politeness, making requests, responding to gratitude, and requesting for information. These skills are necessary in order to satisfy an individual's basic needs and behave appropriately in social situations. It can be measured through the subject's ability to choose correct responses to basic or functional communication processes. For example, a student is shown several video clips and is asked to identify the one that correctly demonstrates what should be said when asking for a drink.

Learning to distinguish correct from incorrect behaviors will consequently result in acting out the correct behaviors. Research using Picture Exchange Communication Systems (PECS) (Frost et al., 1998) as a means to teach functional communication has produced effective results in the acquisition and improvement of function skills (Tien, 2008). Acar and Diken (2012) reviewed studies where video modeling was used as a teaching method for students with ASD. Results conclusively found that videos were also effective in teaching social skills, play skills, language and communication skills, functional skills, self-care skills, and daily life skills to children with autism.

Social Context Appraisal

Social Context Appraisal (SCA) represents the ability to understand the dynamic nature of a social context and adequately process the interactions between various contextual variables (such as physical setting & environment, communication partners, communicative intent, conflict/solution, etc). This skill requires an ability to demonstrate perspective taking, one component of theory of mind. Perspective taking is defined as understanding that another person's beliefs about events may be different from reality and that those beliefs will guide future behavior (Daneshvar, et. al., (2003). According to Baron-Cohen (2000), the term, "theory of mind" refers to the ability, "to infer the full range of mental states (beliefs, desires, intentions, imagination, emotions, etc.) that cause action." Successful SCA requires one's understanding of personal intent, as well as the ability to infer what others are thinking. This also includes interpreting components of language that are not interpreted for face value, which those with ASD struggle with: irony, sarcasm, idioms, and at times, humor. Understanding the intent of others or the receptive aspect of social context will in turn result in the appropriate behavior or expressive response. SCA also involves interpreting social situations, settings, changes in settings, disruptions of routines, and flexibility in disruption of routines.

Paralinguistic Decoding

Paralinguistic Decoding is a form of non-instrumental communication, which measures the subject's ability to read micro-expressions and nonverbal language. Non-verbal communication can be as meaningful as spoken words. It can suggest what a person is feeling and thinking without the use of words. Often, it can reveal how a person feels, although their verbal communication may be contradictory. An appropriate understanding of non-verbal language is critical in understanding another person, and in turn, it leads to an appropriate verbal response.

Previous research has shown that individuals with ASD show impairment in pragmatic language that requires attention to social cues, such as facial expressions in a social context. Colich, Wang, Rudie, Hernandez, Bookheimer, and Dapretto (2012) found that individuals with ASD struggled to use facial cues when inferring the intent of others (Colich et al., 2012). Philofsky, Fidler, and Hepburn (2007) noted that failure to understand gestures and body language can result in the use of uninhibited, socially inappropriate comments, an overuse of stereotyped utterances and tangential language, and increased use of made up words.

Instrumental Performance

Instrumental Performance assesses the ability to adequately and appropriately use introductions, farewells, politeness, make requests, respond to gratitude, request help, answer phone calls, request information (e.g., directions), ask for permission, etc. Instrumental performance is defined in the same manner as instrumental performance appraisal; however, instead of understanding, it assesses one's ability to adequately and appropriately express or use verbal means-end processes. Means-end or essential communication skills are necessary, as they are the building blocks to more complex language processes, such as taking turns in conversation, expressing appropriate emotion, and more generally speaking—social communication. Luczynski and Hanley (2013) conducted a study in which preschool students were taught to request teacher attention, teacher assistance, and preferred materials (Luczynski et al., 2013). These strategies were delivered through teacher instruction, modeling, role play, and differential reinforcement. The taught strategies produced effective results; students were able to improve their pragmatic language skills, as well as maintain and continue to apply them in the classroom. In addition, these skills aided in the prevention of problematic behavior. In a previous study which had similar aims to the present study, Luczynski and Hanley (2013) used role playing and modeling as opposed to pictures to achieve their desired use of communication and ultimately behavior.

Affective Expression

Affective Expression is a non-instrumental form of communication which examines the ability to appropriate express polite refusal, regret, support peers, give compliments, use humor, express empathy, gratitude, and encouragement. This requires higher level thinking because its purpose is not designed to fulfill basic needs. Children who more often make reference to emotional states do so because they possess a deeper understanding of mind and emotion. This skill crucially affects the flow of conversation, the ability to understand others point of view, and is essential in relationship building. Individuals with ASD not only struggle with understanding emotional cues, but also with affective expression. Studies have

found that children with autism are less likely to show positive emotion and more likely to demonstrate a flat affect (Bieberick et al, 1998).

Affective expression also encompasses or can mutually affect conversational techniques, such as topic selection, maintenance, introduction, transition, and closure. Generally, a speaker is responsive to their conversational partner. This can be expressed through verbal feedback or affective expression. Selection of either or both of these expressions is often changed or determined pending on what the conversational partner may say. The use of affective expression or non-verbal language is a significant factor that may impact a speaker's language use. These expressions are often noted in facial expressions, body posture, tone of voice, and eye contact.

These expressions, in turn, portray positive and negative reactions that may result in change of topic, conversation contingency, and repair. Buekeboom (2009) studied the effects of a conversational partner's affective expression on a speaker's language use. They reported that listeners' affective expressions change a given speaker's language use. Void of language, affective expression can impact the flow of a conversation because it is can be viewed as a sign of understanding, or on the contrary, disapproval. Affective expression can be attributed to conversational adaptations because it requires the speaker to be flexible and responsive to the flow of the conversation.

Paralinguistic Signals

Paralinguistic Signals is also a non-instrumental form of communication, which assesses one's ability to appropriately use micro-expressions, gestures, and prosody. As opposed to paralinguistic decoding, paralinguistic signals can be referred to as the acting out of the micro-expressions and gestures. Similar to affective expression, paralinguistic signals impact the speaker's choice of language, and consequently, the flow of the conversation. Assessing for such a construct is critical, as it helps target specific pragmatic deficits in an individual who we may already know has general difficulty in pragmatic language.

Multiple studies have examined the topic of prosody (Carter, 2014; Nguyen et al., 2011; Fox, 2000). Prosody is defined as the rhythm, stress, or intonation of speech (Nguyen et al., 2011). In regards to pragmatics, a speaker's tone can reveal information regarding a speaker's intent. However, studies have revealed that individuals with ASD have deficits in their speech prosody, prosodic comprehension, and therefore, difficulty with the ability to draw inferences from a speaker's rate or tone of voice (Dilley et al.,2014; McKann et al., 2003). This makes understanding of idioms, metaphors, and irony, and sarcasm even more difficult to understand, as the inferred meaning differs from its literal meaning (Colich, 2012).

A New Testing Format

The definition of video-based assessment is a new, evolving concept. Promising evidence has been found in support of the use of video-based treatment for individuals with pragmatic language impairment. Rayner et al. (2009) argue for use of video-based interventions as a means by which persons with disabilities such as autism or pragmatic communication disorders can be taught a "range of socially significant behaviors." The use of video-based social situations in assessment of pragmatics is new and unique. We define it as the use of narratives in video format–as a way to elicit pragmatic language responses from individuals (ages 3:0 years to adulthood) with the purpose of analyzing and measuring these individuals' ability to understand and respond to various real-life social situations presented in a video-based format. This includes understanding and responding to sarcasm, anger, and other social cues. It is a digital medium that

combines the storytelling power of television and the authenticity of real-life social situations to obtain the most naturalistic responses. It is a powerful and prolific testing tool that is both effective and time efficient.

Contextualized Analysis and the Conversational Adaptation Checklist

SYSTEMATIC OBSERVATION AND CONTEXTUALIZED ANALYSIS is a form of informal assessment that "involve observation across a variety of contexts to obtain descriptions of language functioning" (Westby et al., 2003). According to IDEA (2004), such types of informal assessment must be used in conjunction with standardized assessments. Section. 300.532(b), 300.533 (a) (1) (I, ii, iii); 300.535(a)(1) of IDEA states that, "assessors must use a variety of different tools and strategies to gather relevant functional and developmental information about a child, including information provided by the parent, teacher, and information obtained from classroom-based assessments and observation." Owing to the importance of using informal assessment in creating a hologram of a child's pragmatic language abilities, the CAPs offers a conversational adaptation checklist to be used. In describing one's pragmatic language skills, informal assessment looks greatly at language samples; specifically, conversations. Conversations, when in someone's natural environment, provide the assessor with a clear understanding of an individual's abilities across all domains of communication: form, content, and use. When a setting differs greatly from the child's natural environment, such as while engaging with a clinician, language samples are likely not to be authentic due to the strains an authoritative figure or unfamiliar environment places on the individual. The individual is unlikely to initiate conversation and may likely feel reluctant to engage in reciprocal communication. To acquire the clearest depiction of a child's language abilities, their most natural communication needs to be evaluated in a familiar environment. To create a naturalistic environment in which the individual feels comfortable engaging in conversation, the CAPs uses the work of Wetherley and Pizant (1989), which focuses heavily on communication temptations as a means for elicitation. Communication temptations are said to be situations/scenarios that elicit communication from a child by tempting them (Wetherley et al., 1989). A situation is created so that the child must attempt to initiate conversation, either verbal, non-verbal, or gesture to receive their desire, to reject, to express desire for another option, etc. According to Snell & Loncke (2002) such structured contexts encourage a child to initiate communication and setting up the environment intentionally provides a greater opportunity to fully understand the child's communication system and depict a clear hologram. For suggested techniques on eliciting a conversational sample and suggested prompts, please use the last page of the CAPs Examiner Record Form.

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Chapter

3

Administration and Scoring Procedures

The testing guidelines to follow represent specific administration and scoring procedures for the CAPs test. These procedures are considered best professional practices required in any type of standardized assessment as described in the Standards for Educational and Psychological Testing (AERA et al., 2014). Strict standardized administration procedures must be followed to obtain reliable and accurate results. Chapter 6 of the Standards for Educational and Psychological Testing specifically emphasizes the importance of adhering to specific standardization procedures (Standard 6.1) and documenting deviations from the standardization procedures (Standard 6.3).

Examiner Qualifications

Professionals who are formally trained in the ethical administration, scoring, and interpretation of standardized assessment tools, who hold appropriate educational and professional credentials, may administer the CAPs test. Qualified examiners include speech-language pathologists, school psychologists, special education diagnosticians and other professionals representing closely related fields. It is a requirement to read and become familiar with the administration, recording and scoring procedures before using this test.

Confidentiality of Test Results

As described in Standard 6.7 of the of the Standards for Educational and Psychological Testing, it is the examiner's responsibility to protect the security of all testing material and ensure confidentiality of all testing results.

Eligibility for Testing

The CAPs test is appropriate for use with individuals between the ages of 7-0 and 19-0, who can clearly see and hear the content of the video, who speak Standard-American English, and who can demonstrate

the ability to follow the directions of the subtests, and who are able to formulate the necessary responses. This test is particularly helpful when administered to individuals who are suspected of or who exhibit pragmatic language deficits.

Testing Time

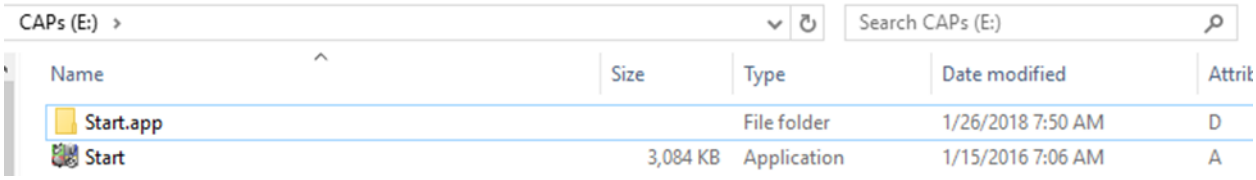
Administration of all six subtests of the CAPs test takes approximately 45-55 minutes. Testing time tends to be longer for younger examinees, but it generally depends on the examinee's language ability, personality, mood, ability to stay focused, and attention span.

Test Materials

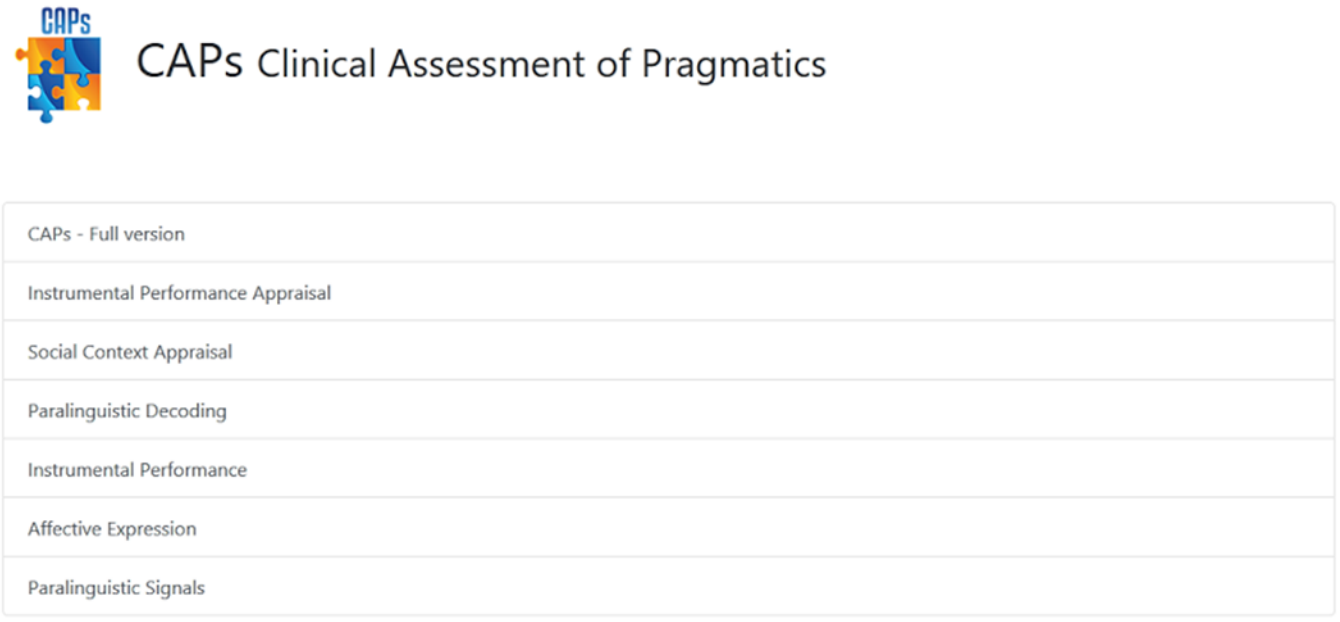
The CAPs test kit consists of the following materials: a memory stick conveniently attached to a lanyard, test manual, and examiner record forms.

Accessing Video Content

Once the memory stick is inserted into the computer, a window will pop up showing the following:



Once clicking on "Start.exe", the following window will appear:



The examiner will now have the option of viewing the full version of the test (CAPs – full version) or administering selected subtests by clicking on one of the individual subtests listed in the main menu. When administering selected subtests, it is required to use the examples first to ensure that the examinee understands test instructions fully. These examples can be located at the very beginning of the "CAPs – Full version" option. Please refer to the Administration Instructions section for detailed instructions on test administration.

New Testing Format

THE CAPS IS THE FIRST VIDEO-BASED STANDARDIZED TEST used in the field of speech-language pathology and educational diagnostics. The video-based format replaces the use of pictorial stimuli. Examinees are asked to watch a video containing a series of social situations or vignettes. All administration instructions are embedded in the video, as well as the Examiner Record Form. The full version CAPs video test is composed of a series of short role-plays acted out by professional actors and is divided into the following sections:

a. Introduction
b. Examples
c. Instrumental Performance Appraisal subtest
d. Social Context Appraisal subtest
e. Paralinguistic Decoding subtest
f. Instrumental Performance subtest
g. Affective Language subtest
h. Paralinguistic Signals subtest

Additionally, examiners have the option of administering selected subtests. Please refer to the Administration Instructions section and the Administering Examples section for detailed administration guidelines.

Additional Testing Considerations and Procedures

A. Seating arrangement is important when administering the CAPs test because both the examiner and the student need to be able to see the videos. The examiner must be able to face the student during testing in order to closely observe his/her use of paralinguistic cues, such as facial expressions, gestures and body language. A recommended seating arrangement is illustrated in Figure 1.

B. Administer the test in a quiet, comfortable environment with no distractions. Stop testing if the student appears to be tired or is unwilling to participate.

C. It is important to elicit the examinees' best effort on each test and on each item presented. This can be achieved by establishing rapport with the examinee before the testing begins and by providing praising prompts when needed.

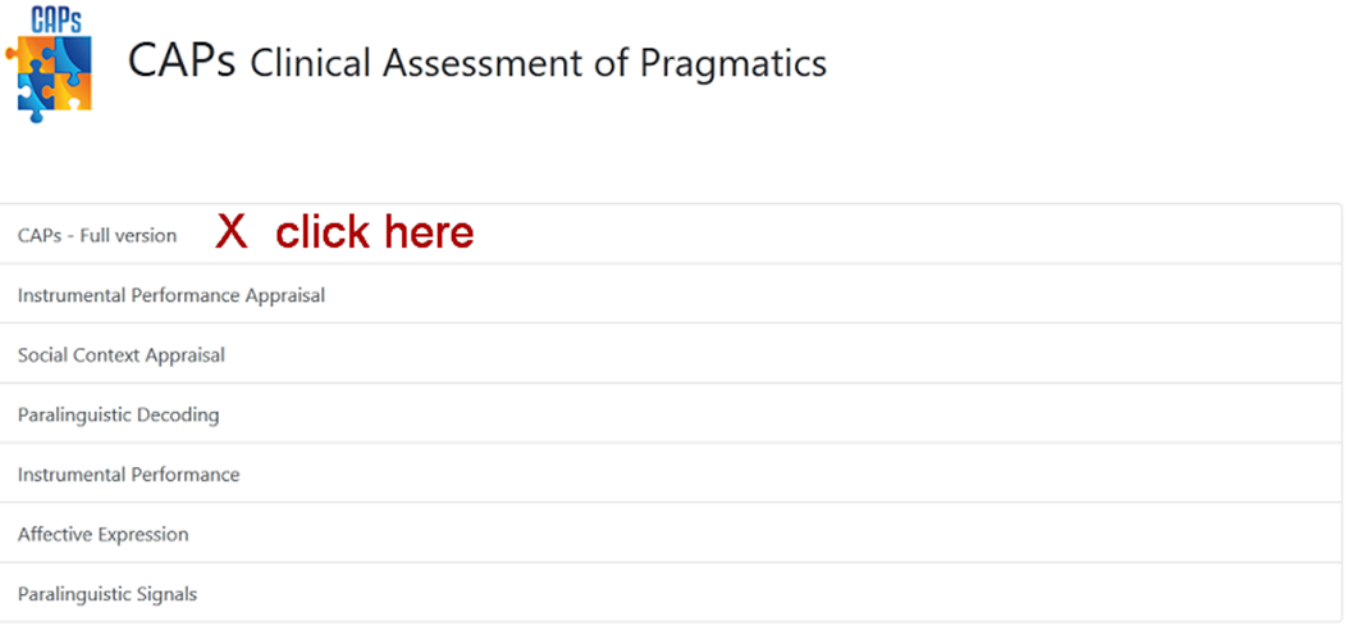
D. Because the CAPs is not a timed test, examinees should be allowed time to respond. However, if no response is provided within 10 seconds of presentation of an item, and additional prompting

does not appear to encourage a response, the examiner should score the item as incorrect and should proceed to the next item.

E. If the examiner has reasons to believe that the testing results are invalid, such as poor attention span that is noticeably different from those expected, or student showing sign of being ill, retest at a later time.

Administration Instructions

All administration instructions are provided sequentially in the video and in the Examiner Record Form. For demonstration and practice purposes, four examples requiring students to respond are provided at the beginning of the CAPs -full version option. This part of the test is required to ensure that the examinees understand testing instructions fully. When administering individual subtests, it is critical to administer practice items first. To do so, the examiner will need to play the beginning of the full version of the video first (CAPs – full version).



Once the introduction and the four examples have been reviewed, stop the video and go back to the main menu. Now, the examiner may proceed to administering selected subtests of the test.

Repetition of Video Scenes

Repetition of video scenes is not permitted. None of the video scenes may be paraphrased, explained, or reworded by the examiner even if the student requests a repetition of the video scene. As instructed on the record form, the examiner must inform the student that he/she will only be able to see each video scene once.

Repetition of Item Questions

Repetition of each item questions on all subtests (i.e., questions read after each video scene) is allowed only once when the examinee appears not to understand the question or requests a repetition. If the examinee does not provide a response after the second reading, score the item as incorrect and proceed to the next item.

Prompting Rules

When responses are ambiguous or incomplete, they must be prompted for clarity and completeness. On all the subtests, the prompt, "Tell me more?" is allowed and may not be expanded or changed. Selected questions on the Instrumental Performance, Affective Expression and Paralinguistic Signals require the examinee to use 1st person personal pronoun "I" in his/her responses. If the examinee responds using the 2nd person or 3rd person personal pronoun, such as " you, he or she", the following prompt must follow with the emphasis on "you": "What would you tell….and how?". If the examinee does not demonstrate use of the 1st person personal pronoun "I" in his/her response, score the item as incorrect and proceed to the next item. Detailed guidelines for scoring each of the CAPs items and using prompts are provided in Appendix A.

Grammar and Articulation Errors

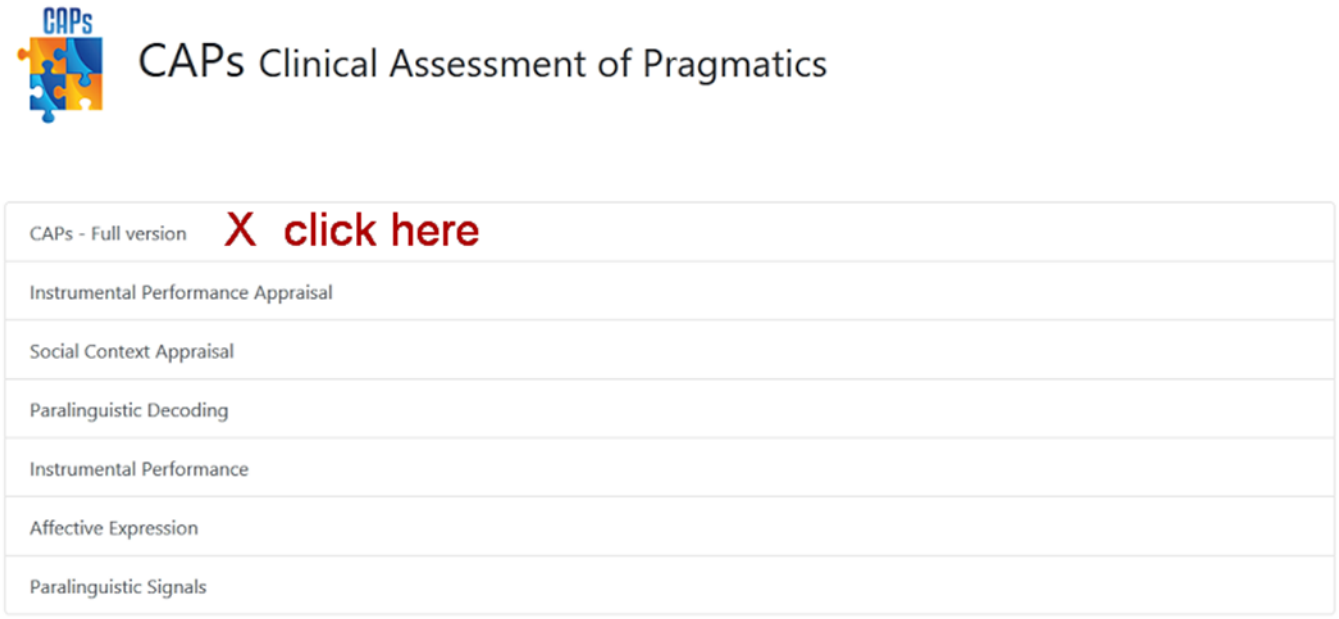
Examinees should never be penalized for grammatical or articulation errors. Test item responses must be judged based on their pragmatic language content and paralinguistic form.

Administering Examples

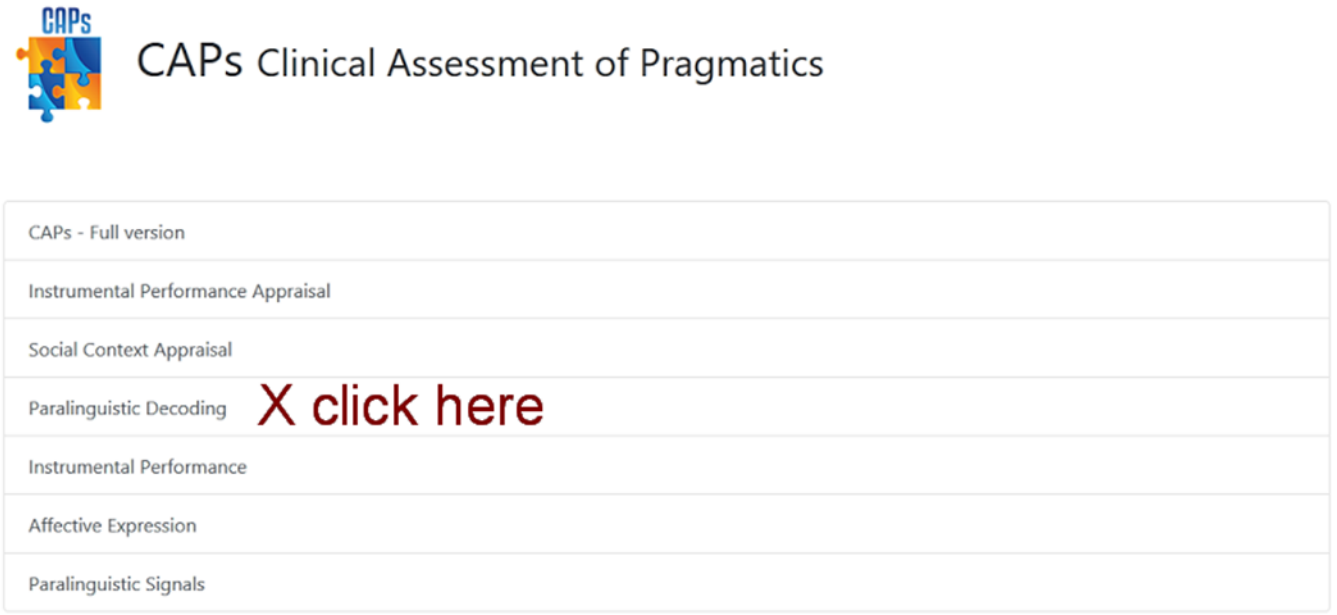
TO ENSURE UNDERSTANDING OF TESTING DIRECTIONS, it is imperative to administer four examples requiring a response from the examinee. These examples are embedded in the CAPs-full version video. When administering all six subtests, play the CAPs- full version video. All directions for administering the examples are presented in the video and on the Examiner Record Form. Examples may be repeated by re-playing the example video scenes and repeating follow-up questions if the examinee appears not to understand the task.

When administering selected subtests, it is required to administer the examples first. To do so, the examiner will need to play the beginning of the full version of the video first (CAPs – full version). Once the introduction and the four examples have been successfully reviewed, stop the video and go back to the main menu. Now, the examiner may proceed to administering selected subtests of the test.
For example, if administering the Paralinguistic Decoding subtest alone, use the following steps:

1. Select the CAPs – full version video in the main menu as illustrated below:



2. Once the introduction and the four examples have been successfully reviewed, stop the video and go back to the main menu. Click on "Paralinguistic Decoding" as illustrated below:



3. Proceed with the administration protocol of the Paralinguistic Decoding subtest.

Scoring Instructions

All scoring instructions are provided in the Examiner Record Forms. Additionally, Appendix A contains detailed guidelines for scoring each of the CAPs subtest items accompanied with examples of responses. The total raw score for each subtest is the sum of all the item scores.

Chapter

4

Recording the CAPs Results

This chapter discusses how to record, analyze, and use the CAPs normative scores. An example of a fictional examinee, Adam L, will be used throughout this chapter to illustrate how to calculate, derive, and interpret scores.

Examinee's responses during the test must be recorded in the Examiner Record Form. This form is also used for displaying examinee's performance on all six subtests and is represented in normative scores (i.e., raw scores, scaled scores, percentile ranks, composite, and three types of composite indices).

Identifying Information and Chronological Age

Before testing begins, complete the biographical information of the examinee on the front page of the Examiner Record Form. Record the date of testing, birth date, school, and grade (if applicable), examiner's name and title. Chronological age is determined by subtracting the examinee's birth date from the test date. The chronological age by year and month is used when converting raw scores to scaled scores and percentile ranks. The examinee's chronological age is calculated in the box on the front cover of the Examiner Record Form. To do so, fill in the test date and the examinee's birth date in the appropriate spaces in the box. Next, subtract the birth date from the test date. If the test session was conducted on more than one day, use the first date to calculate the examinee's chronological age. Table 4.1 illustrates chronological age calculation for Adam L, who had a chronological age of 10 years 6 months and 22 days on the test date.

Table 4.1
Illustration of Adam L.'s Chronological Age Calculation

Name	Adam L	Female ◯		Male ●	
Grade	2nd		Year	Month	Day
School	Cotton Candy Elementary	Date Tested	2018	02	02

Examiner 's Name Adriana Lavi, PhD, CCC-SLP		Date of Birth	07	07	10
Examiner's Title SLP		Age	10	06	22

Recording Item Performance and Determining Normative Scores

Calculate examinee's raw scores obtained on each of the six subtests. Transfer each of the subtest raw score in the appropriate spaces in the Subtest Performance table on the front page of the Examiner Record Form.

DERIVING SCALED SCORES: Subtest scaled scores provide information about the pragmatic constructs that each of the six subtests represent. Convert each of the raw scores into their corresponding normative scores (scaled scores, percentile ranks and age equivalents) using Tables B.1 through B.8 in Appendix B. For example, Adam L (Table 4.2) obtained a raw score of 16 on the Paralinguistic Decoding subtest which was converted to a scaled score of 10 and a corresponding percentile rank of 50.

DERIVING THE CORE PRAGMATIC LANGUAGE COMPOSITE: The Core Pragmatic Language Composite measures an examinee's overall pragmatic language performance and competence. Sum the scaled scores that are recorded for each of the six subtests and record this number in the "Total of Scaled Scores" section. Convert this total number into its corresponding Core Pragmatic Language Composite using Table C.1 in Appendix C. For example, when summing the total of scaled scores for all six subtests, Adam L (Table 4.2) obtained a total of 58 which was converted to a Core Pragmatic Language Composite of 98.

Optional: Descriptive ratings to the obtained scaled scores are presented in Table 4.3.

Table 4.3
Descriptive Ratings for CAPs Normative Scores

Scaled Score	Descriptive Ratings	Composite Score
17-20	Very Superior	>125
15-16	Superior	120-125
13-14	Above Average	110-119
8-12	Average	90-109
6-7	Below Average	80-89
4-5	Poor	70-79
1-3	Deficient	<70

Table 4.2
Illustration of Adam L.'s Normative Scores

Subtest and Index Performance	Raw Score	%ile Rank	Scaled Score	SEM	PRAGMATIC JUDGEMENT INDEX	PRAGMATIC PERFORMANCE INDEX	PARALINGUISTIC INDEX
Instrumental Performance Appraisal (Awareness of Basic Social Routines)	13	63	11	1	11		
Social Context Appraisal (Reading Context Cues)	15	37	9	1	9		
Paralinguistic Decoding (Reading Nonverbal Cues)	16	50	10	1	10		10
Instrumental Performance (Using Social Routine Language)	8	37	9	1		9	
Affective Expression (Expressing Emotions)	8	50	10	1		10	10
Paralinguistic Signals (Using Nonverbal Cues)	9	37	9	1		9	9
Total of Scaled Scores			58	3	30	28	29
			98		99	96	99

CORE PRAGMATIC LANGUAGE COMPOSITE					

Deriving Index Scores (optional):

The CAPs index scores provide information about an examinee's performance across three pragmatic language domains: pragmatic judgement, pragmatic performance and paralinguistics. The index scores are composite scores that are formed by summing the scaled scores of various subtests. To obtain a specific index score, sum the scaled scores of subtests that measure target domain and convert this sum to a standard score, using Table C.1 in Appendix C. For example, the Pragmatic Judgement Index Score is derived by summing the scaled scores of three subtests, Instrumental Performance Appraisal (IPA), Social Context Appraisal (SCA) and Paralinguistic Decoding (PD). The obtained composite score of all three subtests is then converted to a standard score (using Table C.1 in Appendix C) which represents the Pragmatic Judgement Index Score. For example, when summing the total of scaled scores for three Pragmatic Judgement Index subtests, Adam L (Table 4.2) obtained a total of 30 which was converted to a standard score of 99.

Interpreting Normative Scores

The CAPs test yields four types of scores: raw scores, scaled scores, percentile ranks, composite and index scores. Each type of normative score is described below.

Raw Scores

Raw scores are the number of items scored correctly on each subtest. These scores have limited clinical value. Raw scores of various subtests are not comparable because the number of items and their difficulty levels on each subtest differ. For example, a raw score of 16 earned on each of two subtests might suggest superior ability on one subtest and average ability on another. However, raw scores are utilized because they can be converted into normative scores.

Percentile Ranks

Percentile ranks represent a type of normative score ranging on a scale from 0 to 100. These scores indicate the percentage of the distribution of the standardization sample that is equal to or below a particular score. For example, a percentile of 82 means that 82% of the standardization sample scored at or below the examinee's score. These scores are a popular choice for practitioners to use when interpreting and sharing test results. However, before using percentile ranks, their limitations should be considered. Percentiles cannot be arithmetically manipulated because they lack the property of equal distances between units of measure. A percentile is an ordinal unlike a standard score (Salvia et al., 2013; McLoughlin et al., 2008). To interpret percentiles correctly, it is important to remember that the differences between the successive percentile rans from 1 to 99 do not represent equal amounts of the skill measured. The distance between

two percentile ranks becomes much greater as those ranks are most distant from the average. Percentile ranks for the subtest and the index scores are found in Appendix B.

Scaled Scores and What They Measure

Scaled scores represent a type of standard score that derive from raw scores and establish a common subtest mean score and standard deviation. For each of the six subtests at each age level, this common mean score is fixed at 10 with a standard deviation set at 3. Scaled scores are comparable because they provide equivalent indexes for each subtest. Therefore, scaled scores provide a better indication of an examinee's specific strengths and weaknesses across all domains of the CAPs test. For example, a scaled score of 12 on two subtests suggest that an examinee is performing equally well (i.e., in the average range) on both subtests. The scaled scores are available in Tables B.1 through B.8 in Appendix B. Table 4.1 demonstrates descriptive ratings that reflect these scaled scores.

Each of the CAPs subtest result reflects the specific content measured. The following represents what each of the CAPs subtests measure:

Instrumental Performance Appraisal

This subtest measures awareness of basic social routines and ability to judge their appropriateness. This includes ability to judge appropriateness of introductions, politeness, making requests, requesting help, answering phone calls, asking for permission, identifying rude tone of requests, identifying polite language, understanding when interruptions are appropriate, and understanding rules of conversational turn-taking.

Social Context Appraisal

This subtest measures awareness of social context cues and the ability to understand the intent of others and infer what others are thinking (perspective taking). This also includes detecting nonverbal cues, understanding of indirectly implied requests and/or statements (e.g., idioms, expressions), making appropriate inferences (e.g., sarcasm) and making judgements about social context when situational cues change.

Paralinguistic Decoding

This subtest measures the ability to detect a speaker's intent by recognizing meanings of various non-verbal cues, such as facial expressions, tone of voice, inflections in prosody, gestures, and overall body language.

Instrumental Performance

This construct measures language skills that are necessary to satisfy an individual's basic needs and express communicative intent that is instrumental in nature. This includes the ability to use social routine language, such as expressing greetings, introductions, politeness, making requests, responding to gratitude, requesting help, requesting information (e.g., directions), and asking for permission.

Affective Expression

This subtest measures the ability to appropriately express higher order pragmatic language that is emotive in nature, such as regret, sorrow, peer support, praise, empathy, gratitude, encouragement, etc.

Paralinguistic Signals

This subtest measures the ability to use various non-verbal cues, such as facial expressions, tone of voice, inflections in prosody, gestures, and overall body language to express various communicative intents.

Index Scores and What They Measure

Index scores are another type of a normative score that was calculated by applying a direct linear transformation to the sum of scaled scores for specific subtests to obtain a distribution with a mean of 100 and a standard deviation of 15. They are computed on various combinations of subtests that represent the specific domains incorporated into the CAPs test. The scores are derived by adding the appropriate subtest scaled scores and converting their sums to specific index scores using Table C.1 Appendix C.

Index scores produce the most useful information about the examinee's pragmatic proficiency because they comprise representative subtests rather than only one, and they reflect the examinee's ability relative to the selected constructs built into the test. The four index scores generated by the test relate to the theoretical model underlying the CAPs test (discussed in Chapter 2). The theory that the CAPs test was founded on explains that pragmatics could be conceptualized as an integrative interaction between pragmatic judgement, pragmatic performance and paralinguistic cohesion. The CAPs subtests were combined in such a way as to form composites to represent these domains. Three indices can be generated that reflect the constructs incorporated into the CAPs test: pragmatic judgement, pragmatic performance and paralinguistic index.

Core Pragmatic Language Composite

The Core Pragmatic Language Composite is the most accurate measure of an examinees' pragmatic competence because it contains information obtained from all six subtests. It is the best single indicator of pragmatic language proficiency because this index score comprises information that is derived from two testing formats, pragmatic judgement (receptive), and pragmatic performance (expressive). This score may be used to refer to an examinee's current pragmatic language skills. When making clinical decisions and determinations, the Core Pragmatic Language Composite score should be used as an estimate of the examinee's current pragmatic language ability. Examinees who obtain a Core Pragmatic Language Composite score that is in the average or higher range (i.e., a score of 90 or higher) exhibit mastery of pragmatic language skills in social interactions. They comprehend the meanings of various types of communicative intent, social context cues and paralinguistic signals, and demonstrate appropriate and meaningful use of social language. Poor composite scores (i.e., below 79) are made by examinees who exhibit deficits in social communication and may be characterized as lacking in sufficient comprehension of social context, ability in detecting paralinguistic signals, or use of appropriate and meaningful social interchanges. The lower the Core Pragmatic Language Composite score, the more deficient an examinee's pragmatic skills are likely to be. Poor performance on the test may be the results of a number of variables, such as cognitive ability, environmental, linguistic, and cultural factors. It may also be indicative of disorders such as autism spectrum disorder or social (pragmatic) communication disorder in which case examinees show persistent deficits in social communication across multiple contexts. In such cases, examiners must rely on their clinical judgement, a careful review of the examinee's medical and educational history, informal observations, interview with family members and individuals most familiar with the examinee's educational performance, consultation with other related professionals, and/or additional testing in order to determine the cause of poor pragmatic language performance.

Pragmatic Judgement Index

The Pragmatic Judgement Index denotes the examinee's ability to correctly detect, comprehend, and interpret contextualized social cues (i.e. interpret others' intent and infer what others are thinking (perspective taking). This also includes the comprehension of indirectly implied requests and/or statements and drawing appropriate inferences and judgements about social context when situational cues vary, such as conversational adaptation. Additionally, the Pragmatic Judgement Index measures awareness of basic social routines and the ability to judge their appropriateness. Examinees who do well on the Pragmatic Judgement Index are aware of the dynamic nature of social situations and adapt easily to an interlocutor's change in topics, transitions, and use of ambiguous language. Examinees who score poorly in this area exhibit rigidity in their understanding of the fluidity of social situations and display difficulty when uncertainty/variability is likely, making engagement in successful reciprocal communication at school challenging.

Pragmatic Performance Index

The Pragmatic Performance Index highlights the examinee's ability to adequately express natural instrumental communication intent (social routine language, such as expressing farewells, introductions, politeness, making requests, and responding to gratitude), as well as emotions or higher order language, such as regret, sorrow, peer support, compliments, humor, empathy, and, encouragement. Examinees who do well on the Pragmatic Performance Index exhibit an ability to adequately express cognitive empathy verbally. Examinees who score poorly in this area struggle with using socially acceptable greetings and expressing elaborate sentiments, reducing their ability to follow expected social routines in school and communicate their feelings throughout the day.

Paralinguistic Index

The Paralinguistic Index evaluates the examinee's ability to detect and correctly interpret various types of communicative intent by recognizing meanings of non-verbal cues, such as facial expressions, variations in tone of voice, inflections in prosody, gestures, and overall body language. Additionally, the Paralinguistic Index represents the examinees' use of non-verbal communication, such as prosody, gestures, and facial expressions. Examinees who do well on the Paralinguistic Index domain demonstrate an excellent ability to decode facial expressions (such as boredom, anger, rudeness, etc.), detect when the listener is not understanding, read inflections in prosody (such as questions, sadness, sorrow, empathy, etc.) and interpret tone of voice (such as sarcasm, deceit, anger, etc.). Expressively, examinees who do well in this area demonstrate appropriate and genuine use of facial expressions (e.g., raised eyebrows when surprised, pleased; frowned eyebrows when expressing empathy, frustration, sorrow, anger), use of inflections in prosody to express a variety of types of communication intent, such as empathy, excitement, pleasure, and sorrow. Included are appropriate use of tone of voice to express humor, sarcasm, empathy, and as use of adequate eye contact. Examinees who score poorly exhibit reduced use of facial expressions (e.g. flat affect, and little or no movement of the eyebrows when surprised or expressing empathy, frustration, sorrow, or anger), inappropriate use of inflection in prosody across various types of communicative intent, and reduced eye contact; all of these difficulties result in breakdowns during reciprocal communication at school.

Cautions in Interpreting Test Results

Caution should be taken when considering one's performance on any standardized assessment. Examiners must use a variety of different assessment and strategies to obtain relevant functional and developmental information about an individual, including information provided by caregivers, teachers, and information obtained from observations across a variety of contexts. It is important to collect additional data, including systematic observations and contextualized assessments in order to obtain a complete picture of a student's communication skills. Assessors must not rely on a single measure or assessment used as the sole criterion for making clinical decisions. Even though the CAPs test was designed carefully with extensive research and statistical analysis, results should be interpreted with caution. Information obtained on the CAPs test should be supplemented with a variety of other assessment standardized and informal measures such as systematic observations, contextual analyses, etc.

Chapter

5

Standardization and Normative Information

The normative data for the CAPs test are based on the test performance of 914 examinees across 9 age groups (shown in Table 5.1) in 15 states (Arizona, California, Colorado, Nevada, Idaho, Illinois, Iowa, Kansas, Ohio, New York, Pennsylvania, Florida, South Carolina, Texas).

Table 5.1			
Representation of the Sample, by Age Group			
Age Group	Age	*N*	%
1	7-0 to 7-11	111	12%
2	8-0 to 8-11	115	13%
3	9-0 to 9-11	102	11%
4	10-0 to 10-11	105	11%
5	11-0 to 11-11	121	13%
6	12-0 to 13-11	119	13%
7	14-0 to 15-11	122	13%
8	16-0 to 18-11	119	13%
Total Sample		914	100%

The data were collected during the winter of 2018 by 23 state licensed speech-language pathologists recruited through Go2Consult Speech and Language Services, a certified special education staffing company. All standardization project procedures were reviewed and approved by IntegReview IRB, an accredited and certified independent institutional review board. To ensure representation of the national population, the CAPs test standardization sample was selected to match the US Census data reported in the ProQuest Statistical Abstract of the United States, 2017 (ProQuest, 2016). The sample was stratified within each age group by the following criteria: gender, race or ethnic group and geographic region. The demographic tables below (Table 5.2 through Table 5.6) specify the distributions of these characteristics and show that on the whole, the sample is nationally representative.

Table 5.3			
Demographics of the Normative Sample vs. US Population			
Normative Sample Size = 914			
Demographic	*N* Normative Sample	% Normative Sample	% US Population
Gender			
Male	460	50%	49%
Female	454	50%	51%
Total	914	100%	100%
Race			
White	705	77%	77%
Black	104	11%	13%
Asian	41	4%	4%
Other	64	7%	6%
Total	914	100%	100%
Hispanic	125	14%	12%
Clinical Groups			
ASD	18	2%	3%

SLI	27	3%	1%
Other	92	10%	9%
US Regions			
Northeast	174	19%	16%
Midwest	223	24%	22%
South	274	30%	38%
West	243	27%	24%
Total	914	100%	100%

Table 5.2

Stratification, by Age Group and Geographic Region

	Northeast		Midwest		South		West		
Age Group	*N*	%	*N*	%	*N*	%	*N*	%	Total *N*
7-0 to 7-11	19	17%	28	25%	34	31%	30	27%	111
8-0 to 8-11	21	18%	28	24%	35	30%	31	27%	115
9-0 to 9-11	20	20%	25	25%	30	29%	27	26%	102
10-0 to 10-11	21	20%	25	24%	31	30%	28	27%	105
11-0 to 11-11	23	19%	29	24%	37	31%	32	26%	121
12-0 to 13-11	23	19%	29	24%	36	30%	31	26%	119
14-0 to 15-11	24	20%	30	25%	36	30%	32	26%	122
16-0 to 18-11	23	19%	29	24%	35	29%	32	27%	119
Total *N*	174	19%	223	24%	274	30%	243	27%	914
% US Population		16%		22%		38%		24%	

Table 5.4

Representation of the Normative Sample by, Age and Gender

Normative Sample Size = 914

	Male		Female			
Age Group	*N* Normative Sample	% Normative Sample	*N* Normative Sample	% Normative Sample	Total *N* Normative Sample	Total % Normative Sample
7-0 to 7-11	55	50%	56	50%	111	100%
8-0 to 8-11	60	52%	55	48%	115	100%
9-0 to 9-11	52	51%	50	49%	102	100%
10-0 to 10-11	51	49%	54	51%	105	100%
11-0 to 11-11	60	50%	61	50%	121	100%
12-0 to 13-11	59	50%	60	50%	119	100%
14-0 to 15-11	62	51%	60	49%	122	100%
16-0 to 18-11	61	51%	58	49%	119	100%
Total	460	50%	454	50%	914	100%
US Population		49%		51%		

Table 5.5

Representation of the Normative Sample by, Age and Race

Normative Sample Size = 914

	White		Black		Asian		Other			
Age Group	N	%	N	%	N	%	N	%	Total *N*	Total %
7-0 to 7-11	85	77%	13	12%	6	5%	7	6%	111	100%
8-0 to 8-11	90	78%	14	12%	5	4%	6	5%	115	100%
9-0 to 9-11	82	80%	11	11%	4	4%	5	5%	102	100%
10-0 to 10-11	81	77%	14	13%	5	5%	5	5%	105	100%
11-0 to 11-11	92	76%	13	11%	6	5%	10	8%	121	100%
12-0 to 13-11	91	76%	14	12%	5	4%	9	8%	119	100%
14-0 to 15-11	93	76%	15	12%	5	4%	9	7%	122	100%
16-0 to 18-11	91	76%	10	8%	5	4%	13	11%	119	100%
Total	705	77%	104	11%	41	4%	64	7%	914	100%
US Population		77%		13%		4%		6%		100%

Table 5.6

Representation of the Normative Sample by, Age and Hispanic Status

Normative Sample Size = 914

	Hispanic		Non-Hispanic			
Age Group	Number Normative Sample	% Normative Sample	Number Normative Sample	% Normative Sample	Total Number Normative Sample	Total % Normative Sample
7-0 to 7-11	15	14%	96	86%	111	100%
8-0 to 8-11	17	15%	98	85%	115	100%
9-0 to 9-11	15	15%	87	85%	102	100%
10-0 to 10-11	14	13%	91	87%	105	100%
11-0 to 11-11	15	12%	106	88%	121	100%
12-0 to 13-11	16	13%	103	87%	119	100%
14-0 to 15-11	17	14%	105	86%	122	100%
16-0 to 18-11	16	13%	103	87%	119	100%
Total	125	14%	789	86%	914	100%
US Population	125	12%		88%		100%

Chapter

6

Reliability and Validity

This section of the manual provides information about the psychometric characteristics of the CAPs test establishing the reliability and validity of the individual subtests, core composite and index scores. Reliability represents the consistency with which an assessment tool measures certain ability or skill. Evidence of consistency and stability of CAPs scores as well as test retest and interrater reliability is discussed. The second part of this section, provides information on the content, construct, criterion and clinical validity of the CAPs battery.

Internal Consistency

To analyze the degree of item uniformity within the CAPs test, internal reliability was measured. This type of internal consistency reliability shows the extent to which the items correlate with one another, and is computed by using the Cronbach's coefficient alphas method (1951). Coefficient alphas were calculated at eight age intervals using data from the entire normative sample. The coefficients for the 6 subtests and core composite are reported in Table R1. Coefficient alphas for the core composite were computed using the Guilford's formula (1954). The coefficients were averaged using the z-transformation method. Coefficient alphas for selected subgroups within the normative sample are reported in Table 6.1. The test reliabilities are generally high, ranging from .79 to .94, with a high majority of them being in the 80's and 90's which is indicative of high reliability.

Standard Errors of Measurement

The standard errors of measurement (SEM) reported in Table 6.3 can be used to estimate a confidence interval that surrounds a specific test score. It is used in the interpretation of an examinee's test score. The SEM represents a band of error around the "true" score. Since the true scores are not exactly known, these bands of error are used to determine confidence intervals for the obtained normative test score. The SEM estimates the amount of error that may be present in an examinee's test score because of the less than perfect reliability of a test. The SEM is calculated using the formula SEM=SD $\sqrt{1-r}$ where SD is the standard deviation of the distribution and r is the reliability coefficient, in this case Chronbach's alpha. The more reliable the test, the smaller the SEM. Using the SEM, a confidence interval within which the true score is likely to be found can be determined. Table 6.3 lists the standard errors of measurement for the eight age groups for the subtests and composite.

Table 6.1

Internal Consistency by Age Groups (Decimals Omitted)

	Subtests						Core
Age Group	IPA	SCA	PD	IP	AE	PS	CPLC
7-0 to 7-11	91	90	92	89	91	90	95
8-0 to 8-11	89	88	92	88	90	88	94
9-0 to 9-11	91	92	91	90	91	87	95
10-0 to 10-11	88	93	93	88	90	91	96
11-0 to 11-11	91	90	90	87	88	90	95
12-0 to 13-11	89	92	92	90	89	92	94
14-0 to 15-11	89	92	90	90	92	89	94
16-0 to 18-11	90	89	89	89	91	92	95
Average	90	91	91	89	90	90	95

Abbreviations: IPA, Instrumental Performance Appraisal; SCA, Social Context Appraisal; PD, Paralinguistic Decoding; IP, Instrumental Performance; AE, Affective Expression; PS, Paralinguistic Signals; CPLC, Core Pragmatic Language Composite

Table 6.2

Internal Consistency CAPs Values by Demographics (Decimals Omitted)							
		Subtests					
		1	2	3	4	5	6
Subgroups	Number Tested	IPA	SCA	PD	IP	AE	PS
Gender							
Male	460	89	90	91	88	90	89
Female	454	91	92	91	90	91	91
Race							
White	705	89	91	91	89	90	91
Black	104	89	92	90	90	91	89
Asian	41	91	89	89	89	90	90
Other	64	90	90	90	89	90	89
Hispanic Status	125	90	90	91	89	90	91
Abbreviations: IPA, Instrumental Performance Appraisal; SCA, Social Context Appraisal; PD, Paralinguistic Decoding; IP, Instrumental Performance; AE, Affective Expression; PS, Paralinguistic Signals							

Interrater Reliability

Interrater reliability measures the extent to which consistency is demonstrated between different raters with regard to their scoring of examinees on the same instrument (Osborne, 2008). For the CAPs, inter-rater reliability was evaluated by examining the consistency with which the examiners are able to follow the test scoring procedures. Data was examined by five California licensed speech-language pathologists who independently evaluated 24 test administrations that were selected in a random manner from the normative sample. The raters had one training session during which the item-by-item scoring rules, and the procedures of the study were presented before being asked to score the same verbatim responses of the 24 randomly selected examinees. The results of the scorings were correlated. The coefficients were averaged using the z-transformation method. The resulting correlations for the subtests are listed in Table 6.4.

Table 6.3							
Standard Errors of Measurement by Age Groups							
	Subtests						
	1	2	3	4	5	6	
Age Group	IPA	SCA	PD	IP	AE	PS	CPLC
7-0 to 7-11	1	2	1	2	1	1	3
8-0 to 8-11	1	1	2	1	1	2	3
9-0 to 9-11	1	1	1	2	1	1	3
10-0 to 10-11	1	1	1	1	1	1	3
11-0 to 11-11	1	1	1	1	1	1	3

12-0 to 13-11	1	1	1	1	1	1	3
14-0 to 15-11	1	1	1	1	1	1	3
16-0 to 18-11	1	1	1	1	1	1	3
Average	1	1	1	1	1	1	3

Abbreviations: IPA, Instrumental Performance Appraisal; SCA, Social Context Appraisal; PD, Paralinguistic Decoding; IP, Instrumental Performance; AE, Affective Expression; PS, Paralinguistic Signals; CPLC, Core Pragmatic Language Composite

Table 6.3
Interrater Reliability Coefficients, CAPs subtests

Subtest	*Reliability*
IPA (N=24)	*.94*
SCA (N=24)	*.95*
PD (N=24)	*.92*
IP (N=24)	*.97*
AE (N=24)	*.91*
PS (N=24)	*.90*
Mean	*.93*

Test-Retest Reliability

This is a factor determined by the variation between scores or different evaluative measurements of the same subject taking the same test during a given period of time. If the test is a strong instrument, this variation would be expected to be low (Osborne, 2008). The CAPs was administered to 48 randomly selected examinees, ages 7-0 through 18-0 over two testing periods. The interval between the two periods ranged from 16 to 20 days. To reduce recall bias, the examiners did not inform the examinees at the time of the first administration that they would be tested again. All retesting was done by the very same examiners who administrated the test the first time. The results are listed in Table 6.5. The test-retest coefficients for the subtests were all greater than .80 and those for the composite exceeded .90. The size of these coefficients support test-retest reliability of the CAPs.

Table 6.5

Test - Retest Reliability

		1st Test		2nd Test		Correlation Coefficient
Age Groups	Number	Mean	SD	Mean	SD	
1 , 2, & 3	31					
IPA		11	2	10	1	0.92
SCA		10	3	10	1	0.86
PD		10	2	11	2	0.82

IP		11	2	11	1	0.91
AE		10	2	10	1	0.92
PS		10	2	11	1	0.85
CPLC		102	10	101	10	0.94
4, 5, & 6	30					
IPA		11	2	11	1	0.91
SCA		10	3	10	1	0.85
PD		10	3	11	2	0.8
IP		11	2	10	1	0.91
AE		10	2	10	1	0.92
PS		10	2	11	2	0.84
CPLC		102	11	101	11	0.94
7 & 8	31					
IPA		11	2	10	1	0.92
SCA		10	3	10	1	0.86
PD		10	2	11	2	0.82
IP		11	2	11	1	0.91
AE		10	2	10	1	0.92
PS		10	2	11	1	0.86
CPLC		105	8	106	7	0.95

Abbreviations: IPA, Instrumental Performance Appraisal; SCA, Social Context Appraisal; PD, Paralinguistic Decoding; IP, Instrumental Performance; AE, Affective Expression; PS, Paralinguistic Signals; CPLC, Core Pragmatic Language Composite

Validity

The validity of a test determines how well the test measures what it purports to measure. Validity can take various forms, both theoretical and empirical. This can often compare the instrument with other measures or criteria which are known to be valid (Zumbo, 2014).

Content Validity

For the content validity of the test, evidence is provided by the detailed construct definitions in Chapter 2 and the descriptions of each of the 6 CAPs subtests in Chapter 4. Each of the 6 CAPs subtests was constructed on the basis of a well-defined theoretical design. The CAPs test battery was constructed to allow the nature and degree of pragmatic language deficits to be identified. Strict scoring criteria were developed based on pilot and standardization studies. Open-ended questions such as "What would you say and how?" were incorporated to allow responses that provide important information on examinees' use of affective language and nonverbal cues. Test items were developed in a manner that did not require any reading. Further, expert opinion was solicited. Twenty seven speech language pathologists, all of whom were licensed in the state of California and held the Clinical Certificate of Competence from the American Speech-Language-Hearing Association and had at least 5 years of experience in assessment of children with autism and pragmatic language impairment reviewed the test. Each of these experts was presented with a comprehensive overview of each of the 6 subtest descriptions, as well as rules for standardized administration and scoring. They all watched 2 videos of a full-length administration process

of all 6 subtests. Following this briefing, they were asked 5 questions on how each of the subtests (total of 30 questions) related to the content of the test and whether they believed the test to be an adequate measure of pragmatic language skills. For instance, their opinion was solicited regarding whether the questions and examinees' responses properly evaluated their ability to understand and use nonverbal cues such as facial expressions or prosody. The reviewers rated each CAPs subtest on a decimal scale, having to rate 5 questions per subtest with a total possible score of 30. All reviewers agreed that CAPs is a valid measure for assessing pragmatics in students who are ages 7 to 18 years. The mean rating for the Instrumental Performance Appraisal, Social Context Appraisal, Paralinguistic Decoding, Instrumental Performance, Affective Expression and Paralinguistic Codes subtests were 27.7±0.9, 27.1±0.8, 27.0±1.0, 28.4±0.7, 27.2±0.6, 27.9±1.3 respectively. The following were some of the comments provided by the reviewers: "This is quite an innovative way of testing pragmatic language"," It appears to be an accurate measure of students' pragmatic skills and I am glad to see a separate focus on comprehension versus performance", "The new terminology that you're attempting to introduce is excellent, however the subtest names might be difficult to remember", "The presentation of the videos was clear and age-appropriate", "I appreciate the ethnic diversity of the student actors. Also, the idea of using videos of everyday social situations should definitely become a new standard in testing pragmatics".

Construct Validity

Developmental Progression of Scores

Pragmatic language is a developmental in nature skill that changes with age. Mean raw scores for examinees should increase with chronological age demonstrating age differentiation. Raw score means and standard deviations for the CAPs composite at eight age intervals are provided in Table 6.6

Table 6.6
Means and Standard Deviations of CAPs Test Raw Scores for Normative Sample, by Age

	Subtests					
Age Group	IPA	SCA	PD	IP	AE	PS
7-0 to 7-11	9 (2.1)	14 (3.1)	15 (4.1)	8 (3.3)	7 (3.2)	9 (2.3)
8-0 to 8-11	11 (3.2)	16 (4.1)	16 (4.4)	9 (3.2)	8 (3.8)	9 (3.1)
9-0 to 9-11	12 (3.3)	16 (3.3)	16 (3.8)	9 (2.9)	8 (3.1)	10 (3.3)
10-0 to 10-11	12 (2.5)	17 (3.6)	17 (4.1)	10 (2.2)	9 (2.2)	11 (4.2)
11-0 to 11-11	12 (1.1)	17 (2.1)	17 (2.1)	10 (1.6)	9 (1.4)	12 (4.5)
12-0 to 13-11	13 (3.8)	18 (3.4)	18 (3.5)	11 (3.3)	10 (3.5)	13 (3.6)
14-0 to 15-11	13 (2.1)	18 (2.3)	19 (3.4)	12 (3.2)	11 (3.3)	14 (3.4)
16-0 to 18-11	14 (2.1)	19 (2.1)	20 (2.2)	14 (2.3)	13 (2.1)	15 (2.3)

Abbreviations: IPA, Instrumental Performance Appraisal; SCA, Social Context Appraisal; PD, Paralinguistic Decoding; IP, Instrumental Performance; AE, Affective Expression; PS, Paralinguistic Signals

Intercorrelations of the CAPs subtests

Intercorrelations among the CAPs subtests for the standardization sample by 8 age groups is presented in Table 6.7. The Coefficients range from .54 to .70 which show moderate intercorrelations among the subtests which are low enough to allow the interpretation that each subtest evaluates a unique feature of social language and the subtests do not measure the same aspect of pragmatic language. However, the coefficients appear to be high enough to support their combination to produce the core composite scores.

Table 6.7

Intercorrelation of Subtests for Age Groups 1 - 8

CAPs Test	IPA	SCA	PD	IP	AE	PS
IPA	-	0.65	0.61	0.58	0.7	0.65
SCA		-	0.59	0.69	0.55	0.62
PD			-	0.62	0.58	0.54
IP				-	0.62	0.63
AE					-	0.69
PS						-

Abbreviations: IPA, Instrumental Performance Appraisal; SCA, Social Context Appraisal; PD, Paralinguistic Decoding; IP, Instrumental Performance; AE, Affective Expression; PS, Paralinguistic Signals

Criterion Validity

In assessing criterion validity, a correlation analysis was not possible for all CAPs subtests when compared to the current body of pragmatic language tests. This was not viable because two of the CAPs six subtests, specifically, Paralinguistic Decoding and Paralinguistic Signals, are unique in their content and design. (Figure 2) These subtests cannot be compared to the existing body of pragmatic language tests because of their unique focus. For the concurrent validity of the remaining CAPs tests, three of the CAPs subtests were correlated to other measures of pragmatic language (Figure 2).

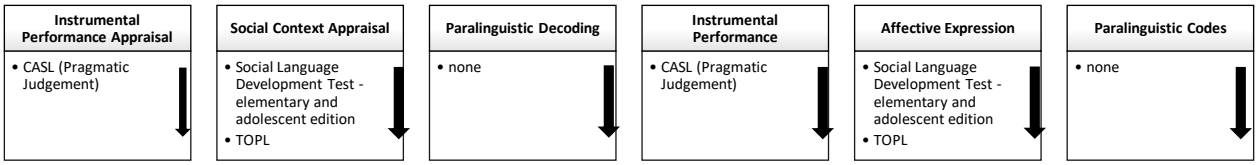


Figure 2. Correlations of CAPs subtests with other measures of pragmatic language

To examine criterion validity, correlations of four of CAPs subtests with three other measures of pragmatic language tests were conducted. The *CASL* is an individually-administered oral language assessment for students with ages 3 to 21 years which. The test measures lexical, semantic, syntactic, and pragmatic language categories. The Pragmatic Judgment subtest of CASL measures pragmatic competence and use of rules of social language. The Instrumental Performance Appraisal and Instrumental Performance subtests of the CAPs and the Pragmatic Judgement subtest of the CASL were administered to all 30 participants in counterbalanced order. Time between test administrations ranged from the same day to 5 days. The *TOPL* is an evaluation of contextual social communication which is based on the determination of students' ability to choose appropriate content as well as make requests and express themselves with

language. The Social Context Appraisal and Affective Expression subtests of the CAPs and the TOPL were administered to all 30 participants in a counterbalanced order. Time between test administrations ranged from the same day to 5 days. The Social Context Appraisal and Affective Expression subtests of the CAPS was compared to the Social Development Test – elementary and adolescent editions. *The Social Language Development Test* is a standardized examination of different language skills which has a strong focus on social interpretation and the ability of the adolescent subject to interact with their peers using skills such as idioms and sarcasm. The Social Context Appraisal subtest, the Affective Expression subtest and the Social Development Test (elementary and adolescent editions) were administered to all 30 participants in a counterbalanced order. Time between test administrations ranged from the same day to 5 days.

The concurrent validity was assessed using Pearson's correlation among CAPS, CASL, TOPL and the Social Language Development tests. Correlation coefficients of ≥0.7 are recommended for same-construct instruments while moderate correlations of ≥ 0.4 to ≤0.70 are acceptable. The level of significance was set at p≤0.05. When assessing validity, the CAPs was substantially correlated with the CASL Pragmatic Judgement subtest and the Social Language Development tests. The correlation between the Instrumental Performance Appraisal and Instrumental Performance subtests of the CAPs and the CASL test were 0.96 and 0.87 respectively, p<0.001. Similarly, the correlation between the Social Context Appraisal and Affective Expression subtests of the CAPs and the Social Language Development were 0.86, and 0.74 respectively, p<0.001). The correlations are the lowest with the TOPL (Table 6.9). While there is an apparent relationship between performance on all four measures, CAPs evaluates social language from a conceptually different framework (please refer to Chapter 2).

Table 6.9: Pearson's Correlations between CAPs Subtests (n=30)

	CASL (PJ)	TOPL	SLDT
IPA†	.96		
IP†	.87		
SCA†	.	.62	.86
AE†		.54	.74

Abbreviations: IPA, Instrumental Performance Appraisal; IP, Instrumental Performance; CASL (PJ), the Clinical Assessment of Spoken Language (Pragmatic Judgement); TOPL, the Test of Pragmatic Language; SLDT, the Social Language Development Test.
† significant at an alpha of 0.001 level of significance.

Clinical Validity

Sensitivity and S*pecificity* are two diagnostic validity statistics that provide information on how well a test can differentiate and classify. Specificity explains the probability that an examine who does not have a specific condition will test negative for it and sensitivity provides the probability that an examinee who has a specific condition will test positive for it. Table 6.8 provides the classification table for autism spectrum disorder based on cut scores of 1, 1.5, and 2 *SD*s below the mean. Additionally, the table lists clinical validity statistics and PPPs based on different base levels. The sensitivity ranges from .90 to 1.0 and the specificity from .85 to .97.

Table 6.8

Classification of Autism Spectrum Disorder by SD 1, 1.5, & 2 Below the Mean

				Base Levels				
Core Composite SD	Sensitivity	Specificity	Power	10%	50%	60%	70%	80%
-1 SD	1.00	0.85	Positive PP	0.44	0.85	0.89	0.93	0.97
			Negative PP	1.00	1.00	1.00	1.00	1.00
-1.5 SD	1.00	0.9	Positive PP	0.55	0.89	0.92	0.95	0.98
			Negative PP	1.00	1.00	1.00	1.00	1.00
-2 SD	0.90	0.97	Positive PP	0.71	0.95	0.96	0.98	0.99
			Negative PP	0.98	0.89	0.85	0.8	0.74

Group Differences

Since a pragmatic language test is designed to identify those examinees with social language deficits, it would be expected that individuals identified as likely to exhibit pragmatic language deficits would score lower than those who are typically developing. Mean subtest and composite standard scores for two clinical groups of examinees (autism spectrum disorder and pragmatic language impairment) who were administered the CAPs test are listed in Table 6.9. The mean for the outcome variables (Instrumental Performance Appraisal, Social Context Appraisal, Paralinguistic Decoding, Instrumental Performance, Affective Expression, Paralinguistic Signals subtests) were compared among the three clinical groups and typically developing groups of examinees using Kruskal Wallis analysis of variance (ANOVA). Further comparisons in mean scores between the groups were examined using Mann- Whitney U test. The level of significance was set at $p \leq 0.05$. Further comparisons using Mann- Whitney U test showed that there was a significant difference among all the study groups ($p<0.001$, refer to Table 6.9).

Inclusion/Exclusion Criteria for the Group Differences Study

Typically developing participants were selected based on the following criteria: 1) exhibited hearing sensitivity within normal limits; 2) presented with age-appropriate speech and language skills; 3)

successfully completed each school year with no academic failures; and 4) attended public school and placed in general education classrooms. Typically developing participants were excluded if they presented with conditions as defined by a DSM- V diagnosis of mental health problems such as clinical disorders, personality disorders and general medical conditions.

Inclusion criteria for the autism spectrum disorder (ASD) group was: 1) having a current diagnosis within the autism spectrum disorder as defined by a DSM- V (based on medical records and school-based special education eligibility criteria); and 2) currently attending a local public school, and enrolled in the general education classroom for at least 3 hours per day. Participants were excluded if they presented with comorbid conditions as defined by a DSM- V diagnosis of mental health problems such as clinical disorders, personality disorders and general medical conditions.

Finally, the inclusion criteria for the pragmatic language impairment (PLI) group were: 1) having a current medical diagnosis or special education eligibility under pragmatic language impairment (scores at least 1.5 standard deviations below the mean, or below the 7th percentile, for his or her chronological age on two standardized pragmatic language tests and displaying inappropriate or inadequate usage of pragmatic language as documented by medical or special educational records); 2) being enrolled in the general education classroom for at least 4 hours per day. Students from the PLI group were excluded from the study if the following were identified: 1) intellectual disability, learning disability, emotional disturbance; 2) comorbid conditions where the student has a DSM- V diagnosis of mental health problems including clinical disorders, personality disorders and general medical conditions.

Table 6.9. Scaled Score Means (and Standard Deviations) of Subtests for Two Clinical Groups and a Demographically Matched Typically Developing Group, (N= 232)

	ASD (n=88)	PLI (n=64)	TD group (n=80)	p –value*
IPA [a,b]	5(3.6)	7(4.1)	12(3.8)	<.001
SCA [a,b,c]	8(3.8)	10(4.1)	17(4.1)	<.001
PD [a,b,c]	5(4.1)	9(4.8)	17(4.8)	<.001
IP [a,b,c]	5(2.1)	7(2.1)	10(3.8)	<.001
AE [a,b,c]	4(2.4)	6(3.2)	9(3.4)	<.001
PC [a,b,c]	5(3.2)	8(3.1)	11(4.1)	<.001

Abbreviation: SD, Standard deviation; PLI, pragmatic language impairment; ASD, autism spectrum disorder; TD, typically developing; IPA, Instrumental Performance Appraisal; SCA, Social Context Appraisal; PD, Paralinguistic Decoding; IP, Instrumental Performance; AE, Affective Expression; PC, Paralinguistic Codes

* Kruskal-Wallis Analysis of Variance test

[a] significant difference between ASD and TD groups

[b] significant difference between PLI and TD groups

[c] significant difference between PLI and ASD groups

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APPENDIX A

SCORING GUIDELINES AND EXAMPLES

Instrumental Performance Appraisal

Purpose

This subtest measures awareness of basic social routines and the ability to judge their appropriateness. This includes the ability to judge appropriateness of introductions, politeness, making requests, requesting help, answering phone calls, asking for permission, identifying rude tone used for requests, identifying polite language, understanding when interruptions are appropriate, and understanding rules of conversational turn-taking.

General scoring guidelines:

Test item responses must be judged based on their pragmatic language content and intent. Grammatical, syntactic, or articulation errors do not affect scoring.

Permissible Prompts:

When responses are ambiguous or incomplete, they must be prompted for clarity and completeness. If a response is unclear or appears incomplete, prompt by saying, "Tell me more."

Scoring Guidelines:

-A score of "2" is assigned if the examinee a) correctly identifies appropriateness of target situation; b) identifies the problem.

-A score of "1" is assigned if the examinee correctly identifies appropriateness of target situation BUT does not provides a correct or complete rationale.

-A score of "0" is assigned if the examinee does not correctly recognize whether a problem occurred in the social situation.

Item 1

Scenario:

Narration: Jane is at a restaurant with her family. She finished her drink and is still very thirsty. The waitress finally comes by.
Waitress: Would you like some more water?
Jane: I'm very thirsty! Hurry!

Question: "Did anything go wrong in this video?" If the response is "yes," say: "What went wrong?"

2	1	0
Says "yes" + refers to actress' impolite tone of voice and/or language OR refers to another actress' being hurt/upset because of the impolite request	Says "yes" + does not provide a correct rationale	Says "no"

EXAMPLES		
"Yes…Jane was rude" "Yes…Jane did not use polite words" "Yes…Jane hurt the waitress' feelings" "Yes…The waitress' feelings were hurt"	"Yes…Jane was thirsty" "Yes…The waitress was confused" Imitates or retells actions from the video scene	

Item 2

Scenario:

Narration: It is Tom's first day at summer school. All the new students are meeting in front of the classroom. A girl comes up to Tom:

Jane: Hi, my name is Jane.

Tom: Do you know what time lunch is? What are we having for lunch today?

Question: "Did anything go wrong in this video?" If the response is "yes", say: "What went wrong?"

2	1	0
Says "yes" + refers to actor's off-topic response OR refers to actress' confused look because of the off-topic response	Says "yes" + does not provide a correct rationale	Says "no"

EXAMPLES		
"Yes…Tom did not introduce himself to Jane" "Yes…the boy did not tell the girl hi and what his name was" "Yes…Jane was confused because Tom did not introduce himself to her"	"Yes…Tom did not say the right thing" "Yes…Tom was rude" "Yes…The girl was sad" Imitates or retells actions from the video scene	

Item 3

Scenario:

Narration: Cindy was invited to a birthday party. She does not know what to wear. Her sister, Jane, bought a beautiful red dress earlier. Cindy wants to wear Jane's new dress tonight to the party. She goes into Jane's room:

Jane: Hey Cindy, what are you looking for? Do you need something?

Cindy: Yes, I am wearing your new dress tonight. Where is it?! (annoyed)

Question: "Did anything go wrong in this video?" If the response is "yes", say: "What went wrong?"

2	1	0

Says “yes” + refers to the actress’ impolite tone of voice and/or language OR refers to another actress’ being hurt/upset because of the impolite request	Says “yes” + does not provide a correct or complete rationale	Says “no”
EXAMPLES		
“Yes…Cindy was rude to her sister and did not ask nicely to borrow her sister’s dress” “Yes…Cindy’s sister was not happy because Cindy did not ask politely if she could wear her dress” “Yes…Cindy never said, “please can I borrow your dress?”	“Yes…Cindy’s sister was not happy because Cindy was mean” “Yes…Cindy was rude” Imitates or retells actions from the video scene	

Item 4

Scenario:

Narration: Tom is talking on the phone with his friend:
Tom: I had a great time at the park. How was your week?
Tom’ sisters interrupt him: “Do you wanna go to the mall with us?
Tom: I’m sorry; can you hold on for a moment?
Tom tells his sisters to wait because he is on the phone. The sisters apologize.
Tom: Ok. Sorry about that!

Question: “Did anything go wrong in this video?” If the response is “no”, say: “Why do you think it went well?”

2	1	0
Says “no” + refers to actress’ appropriate apology when interrupting OR refers to actor’s appropriate apology on the phone	Says “no” + does not provide a correct or complete rationale	Says “yes” + identifies the situation as incorrect or inadequate, provides an incorrect rationale
EXAMPLES		
“No…the girl interrupted Tom, but then she apologized” “No…Tom was interrupted when he was on the phone, but the sister says she was sorry. It all went well.”	“No…Tom was interrupted” “No…the sisters interrupted Tom but he didn’t get upset” Imitates or retells actions from the video scene	“Yes…the girl bothered the boy when he was on the phone”

Item 5

Scenario:

Narration: Cindy promised her mom that she would cook the pasta and cut the tomatoes.
Jane (Cindy’s sister): Hey Cindy, would you like me to wash the tomatoes so you can start cutting them?
Cindy: Yes, thank you so much Jane! You are the best.

Jane: You’re welcome.

Question: “Did anything go wrong in this video?” If the response is “no”, say: “Why do you think it went well?”

2	1	0
Says “no” + refers to actress’ appropriate request to help refers to actress’ appropriate expression of gratitude	Says “no” + does not provide a correct or complete rationale	Says “yes” + identifies the situation as incorrect or inadequate, provides an incorrect rationale
EXAMPLES		
“No…Cindy said thank you to her sister and she was polite” “No…Jane asked if her sister needed any help and her sister said thank you.”	“No…Jane helped her sister” “No…Cindy was nice” Imitates or retells actions from the video scene	“Yes…Jane said she would help but she didn’t do it”

Item 6

Scenario:

Narration: Phone rings. Tom looks at the phone. The phone keeps ringing.

Dad shouts “Tom, can you get the phone please!” Tom picks up the phone.
Tom: What do you want? Dad, someone is calling for you!

Question: “Did anything go wrong in this video?” If the response is “yes”, say: “What went wrong?”

2	1	0
Says “yes” + refers to the actor’s impolite tone of voice and/or language	Says “yes” + does not provide a correct or complete rationale	Says “no”
EXAMPLES		
“Yes…Tom was rude on the phone; he didn’t say hello” “Yes…Tom said, “what do you want? And didn’t say, can I help you?” “Yes…Tom used rude voice”	“Yes…Tom was mean” “Yes…the boy was not nice” Imitates or retells actions from the video scene	

Item 7

Scenario:

Narration: Tom was invited to a birthday party on Thursday evening. The party is at the same time as his piano lesson.

Tom: Dad, it is my friend’s birthday party on Thursday. Could I please reschedule the piano class and go to the party?

Dad: Ok Tom, but this cannot happen again. You know practice is very important

Question: “Did anything go wrong in this video?” If the response is “no”, say: “Why do you think it went well?”

2	1	0
Says “no” + refers to actors’ appropriate request for permission	Says “no” + does not provide a correct or complete rationale	Says, “yes” + identifies the situation as incorrect or inadequate, provides an incorrect rationale
EXAMPLES		
“No…Tom was polite and asked his dad nicely” “No…Tom was nice when asking his dad if he could go to the party.”	“No…Tom wanted to go to the party” “No…Tom asked his dad and his dad said ok” Imitates or retells actions from the video scene	“Yes…his dad said it can not happen again”

Item 8

Scenario:

Narration: Cindy and Jane are doing their math homework. Jane does not understand how to do a math problem. She is trying to look at Cindy’s paper.

Jane: Cindy, I am not sure how to solve problem 6. Could you show me how you did it?

Cindy: Sure, let’s start with the first line.

Question: “Did anything go wrong in this video?” If the response is “no”, say: “Why do you think it went well?”

2	1	0
Says, “no” + refers to actress’ appropriate request to help or refers to another actress’ appropriate response	Says, “no” + does not provide a correct or complete rationale	Says, “yes” + identifies the situation as incorrect or inadequate, provides an incorrect rationale
EXAMPLES		
“No…the girl asked for help politely” “No…the girl said, “can you help me please?” and she was nice” “No…the girl helped her friend because she asked her politely”	“No…the girl helped her friend” “No…the girls were nice” Imitates or retells actions from the video scene	“Yes…the girl didn’t know how to do her homework”

Social Context Appraisal

Purpose

This subtest measures awareness of social context cues, the ability to understand the intent of others, and the ability to infer what others are thinking (perspective taking). This also includes detecting non-verbal cues, understanding of indirectly implied requests and/or statements (e.g., idioms, expressions), making appropriate inferences (e.g., sarcasm) and making judgements about social context when situational cues change.

General scoring guidelines:

Test item responses must be judged based on their pragmatic language content and intent. Grammatical, syntactic, or articulation errors do not affect scoring.

Permissible Prompts:

When responses are ambiguous or incomplete, they must be prompted for clarity and completeness. If a response is unclear or appears incomplete, prompt by saying, "Tell me more".

Scoring Guidelines:

-A score of "3" is assigned if the examinee correctly a) identifies appropriateness of the target situation; b) correctly identifies the problem of the situation OR correctly describes what makes the target situation appropriate; c) refers to both characters' actions in the scene.

-A score of "2" is assigned if the examinee correctly a) identifies appropriateness of the target situation; b) correctly identifies the problem of the situation OR correctly describes what makes the target situation appropriate; c) refers to one character's actions in the scene

-A score of "1" is assigned if the examinee correctly identifies appropriateness of the target situation BUT does not detect the direct problem of the situation or only describes the situation, or imitates scene actions.

-A score of "0" is assigned if the examinee does not correctly recognize whether a problem occurred in the social situation.

Item 1

Scenario:

Narration: Tom is coming back from taking a math exam.
Cindy: Hey, so how was your math exam?
Tom: It was a piece of cake!
Cindy: What? Not your lunch. The exam!
Tom: Yes, I said it was easy. It was a piece of cake.
Cindy: Confused look on Cindy' face. "But I didn't ask you about your lunch."

Question: “Did anything go wrong in this video?” If the response is “yes”, say: “What went wrong and how do you know it?”

3	2	1	0
Says, “yes” + Identifies idiom + Refers to both actors’ actions	Says, “yes” + Identifies idiom + Refers to one actor's actions	Says, “yes” + does not detect the direct problem of the situation or describes situation or imitates scene actions	Says, “no”
EXAMPLES			
“Yes…Cindy did not understand the meaning of the idiom, and Tom kept repeating it” “Yes…Cindy did not know the expression, “piece of cake and she did not understand what Tom was saying.” “Yes…Cindy did not understand what Tom said because he used an idiom.”	“Yes…Cindy did not know the expression, “piece of cake” “Yes…Cindy did not understand the meaning of the idiom”	“Yes…Cindy was confused.” “Yes…Cindy did not like the boy’s answers.” “Yes…Cindy was confused because they were talking about different things.”	

Item 2

Scenario:

Narration: It is the first day of school. Tom and Cindy are standing next to each other:
Cindy: Do you know that the teacher likes to be called Mr. Know-it-all? I heard he always gives students A’s who call him that. You should call him that
Tom: Really? Okay.
Tom raises his hand: Mr. Know-it-all, I know the answer!
Teacher: What did you just call me?

Question: “Did anything go wrong in this video?” If the response is, “yes”, say: “What went wrong and how do you know it?”

3	2	1	0
Says, “yes” + Identifies sarcasm + Refers to both actors’ actions	Says, “yes” + Identifies sarcasm + refers to one actor's actions	Says, “yes” + does not detect the direct problem of the situation or describes situation or imitates scene actions	Says, “no”
EXAMPLES			
“Yes…Cindy was sarcastic. She played a trick on Tom, and he got into trouble.” “Yes…Cindy’s sarcasm got Tom into trouble.” “Yes…Tom listened to what Cindy said and got into trouble because the teacher was upset. She was very sarcastic.”	“Yes…Cindy was sarcastic with Tom.” “Yes…this is called sarcasm, and Tom got into trouble.”	“Yes…the girl was mean to the boy.” “Yes…the girl had a mean look on her face, and the boy believed her.” “Yes…the teacher said, “What did you just call me?” “Yes…Tom called the teacher a bad name.”	

Item 3

Scenario:

Narration: Jane and her sister are planning a surprise party for a friend:

Cindy: Jane, I have a great idea! Why don’t we have everyone dress in pink since it’s Alyssa’s favorite color?

Jane (sarcastically): Oh yeah, totally!
Cindy: You like the idea? Great!
Jane: Yeah, let's all look like pink fairies and Minnie Me's (sarcastically).
Cindy: Yeah! I will let everyone know.

Question: "Did anything go wrong in this video?" If the response is "yes," say: "What went wrong, and how do you know it?"

3	2	1	0
Says, "yes" + Identifies sarcasm + Refers to both actors' actions	Says, "yes" + Identifies sarcasm + refers to one actor's actions	Says, "yes" + does not detect the direct problem of the situation or describes situation or imitates scene actions	Says, "no"
EXAMPLES			
"Yes…Jane was sarcastic in the video, but her friend did not see it." "Yes…Jane had a sarcastic look on her face, and her friend kept talking about the party."	"Yes…Jane did not mean what she was saying because her face was mean." "Yes…Jane was sarcastic with her friend."	"Yes…Jane rolled her eyes and was mean to her friend" "Yes…Jane did this (rolls eyes), and the friend did not see it."	

Item 4

Scenario:
Narration: Cindy and Jane are sitting outside. Another person is walking by:
Jane says sarcastically: That is such a cool shirt! (laughing quietly)
The person responds: Really? You like it?

Both girls laugh

Question: “Did anything go wrong in this video?” If the response is “yes,” say: “What went wrong, and how do you know it?”

3	2	1	0
Says, “yes” + Identifies sarcasm + Refers to both female and male actors’ actions	Says, “yes” + Identifies sarcasm + refers to one actor's actions	Says, “yes” + does not detect the direct problem of the situation or describes the situation or imitates the scene’s actions	Says, “no”
EXAMPLES			
“yes…Cindy and Jane were sarcastic with the boy, but he thought they meant the compliment” “yes…the boy did not understand that the girls were sarcastic”	“Yes…the girls were sarcastic in the video.” “Yes…the boy didn’t understand sarcasm.”	“Yes…the girls laughed at the boy’s shirt.” “Yes…the girls said the shirt was cool, but they laughed.”	

Item 5

Scenario:

Narration: Tom is late to school. He stopped by his cousin’s house to pick up his homework that he had forgotten there last night.

Tom: Hey Cindy, can you get my notebook?

Cindy: Yeah…I think it's in the living room. I'll go get it (walks slowly)
Tom: Take all your time! My class starts in just 15 minutes (saying sarcastically).
Cindy: Ok…are you hungry? My mom just made pancakes.
Tom: I'm joking…I'm really in a rush.
Cindy: Well, you told me to take my time (keeps walking slowly).

Question: "Did anything go wrong in this video?" If the response is "yes," say: "What went wrong, and how do you know it?"

3	2	1	0
Says "yes" + Identifies sarcasm + Refers to both actors' actions	Says "yes" + Identifies sarcasm + refers to one actor's actions	Says "yes" + does not detect the direct problem of the situation or describes situation or imitates scene actions	Says, "no"
EXAMPLES			
"Yes…Cindy did not understand that Tom did not want her to take her time. He meant to hurry up." "Yes…Tom was sarcastic when he said "take your time," but Cindy thought she did not need to hurry." "Yes…Cindy misunderstood Tom. Tom was sarcastic"	"Yes…Cindy did not understand the sarcasm." "Yes…Cindy did not understand the meaning of what Tom was saying."	"Yes…Cindy was confused." "Yes…Cindy did not want to do what Tom asked." "Yes…Tom was mean to Cindy."	

Item 6

Scenario:
Narration: Cindy and Jane meet at Jane's house.
Cindy: Hey, Jane. How was your weekend?
Jane (sad face, looking down): *sigh.* It was ok…
Cindy: Did something happen? You seem sad.

Jane: I am grounded. I didn't pass the physics exam.
Cindy: Oh no! I'm sorry!

Question: "Did anything go wrong in this video?" If the response is "No", say: "Why do you think it went well?"

3	2	1	0
Says "No" + Identifies situation as appropriate + Refers to actress' sad look, and friend's appropriate expression of empathy.	Says "No" + Identifies situation as appropriate. + Refers to friend's appropriate expression of empathy.	Says "No" + Does not detect the direct problem of the situation or describes situation or imitates scene actions.	Says "Yes"
EXAMPLES			
"No…Jane was sad because she was grounded, so Cindy comforted her." "Yes…Cindy said sorry to Jane because her friend was sad, she was grounded."	"No…Cindy tried to make her friend feel better." "No…Cindy was supportive of her friend."	"No…the girl was nice." "No…the girl said sorry nicely."	

Item 7

Scenario:
Narration: Jane and Cindy are talking about their summer breaks:
Jane: How was your summer break?
Cindy: It was…(Jane interrupting Cindy)

Jane: My summer break was amazing! We got to go to the beach almost every day! Was it hot at your place?
Cindy: Well… (Jane interrupting Cindy)
Jane: Wow, it was so hot in LA. Oh, I got to meet that girl from our biology class…do you remember her?
Cindy: Um…which…. (Jane interrupting)
Jane: Yeah! Sarah! Remember? We did that project together. So, she was there too….

Question: "Did anything go wrong in this video?" If the response is "yes", say: "What went wrong, and how do you know it?"

3	2	1	0
Says, "yes" + Identifies inappropriate conversational interruptions + Refers to both actors' actions	Says, "yes" + Identifies inappropriate conversational interruptions + Refers to one actor's actions	Says, "yes" + does not detect the direct problem of the situation or describes situation or imitates the scene's actions	Says, "no"
EXAMPLES			
" Yes…Jane kept interrupting her friend, and that made her friend frustrated" "Yes…Cindy was annoyed because her friend interrupted her may times and never let her talk"	"Yes…Jane was interrupting too much" "Yes…Jane was not paying attention that she was interrupting so much."	"Yes…Cindy was frustrated". "Yes…Jane met a girl from their class, and Cindy couldn't remember."	

Item 8

Scenario: *Ann meets Jane in the hallway and makes a comment about her hair:*
Ann:" Wow, your hair looks great! What is it? Halloween?" (Ann laughs)

Question: “Did anything go wrong in this video?” If the response is “yes,” say: “What went wrong and how do you know it?”

3	2	1	0
Says, “yes” + Identifies sarcasm + Refers to both actors’ actions	Says, “yes” + Identifies sarcasm + Refers to one actor's actions	Says, “yes” + Does not detect the direct problem of the situation or describes situation or imitates scene actions	Says, “no”
EXAMPLES			
“Yes…Ann was sarcastic towards Jane. She laughed at her hair, and Jane was sad.” “Yes…Ann told Jane that her hair looked great but didn’t mean it. She was sarcastic, and that made Jane sad.”	“Yes…Ann didn’t mean what said. She was sarcastic.” “Yes…Ann made hurtful comments to Jane about her hair”.	“Yes…Jane was sad.” “Yes…Ann was mean to the other girl and laughed at her.”	

Paralinguistic Decoding

Purpose:

This construct measures the ability to detect a speaker’s intent by recognizing meanings of various non-verbal cues, such as facial expressions, tone of voice, inflections in prosody, gestures, and overall body language.

General scoring guidelines:

Test item responses must be judged based on their pragmatic language content and intent. Errors in morphology, syntax, or articulation do not affect scoring.

Permissible Prompts:

When responses are ambiguous or incomplete, they must be prompted for clarity and completeness. If a response is unclear or appears incomplete, prompt by saying, "Tell me more."

Scoring Guidelines:

-A score of "3" is assigned if the examinee correctly a) identifies appropriateness of the target situation; b) correctly identifies the problem of the situation OR correctly describes what makes the target situation appropriate; c) refers to both characters' non-verbal language, such as facial expressions and/or tone of voice in the scene.

-A score of "2" is assigned if the examinee correctly a) identifies appropriateness of the target situation; b) correctly identifies the problem of the situation OR correctly describes what makes the target situation appropriate; c) refers to one character's non-verbal language, such as facial expressions and/or tone of voice in the scene.

-A score of "1" is assigned if the examinee correctly identifies appropriateness of the target situation BUT does not detect the direct problem of the situation, only describes the situation, or imitates scene actions.

-A score of "0" is assigned if the examinee does not correctly recognize whether a problem occurred in the social situation.

Item 1

Scenario:

Narration: Jacob is sharing his good news with his friend.
Jacob: Hey, I made the swim team!
Tom (raised eyebrows – stunned face)
Jacob: Awsome, right?
Tom: (nodding head) Yeah! Wow!

Question: "Did anything go wrong in this video?" If the response is "No," say: "Why do you think it went well? How do you know it?"

3	2	1	0
Says, "No" + Identifies situation as appropriate + Refers to both actors' facial expressions and/or tone of voice	Says, "No" + Identifies situation as appropriate + Refers to one actor's facial expressions and/or tone of voice	Says, "No" + Does not specify actions or nonverbal language	Says, "Yes"
EXAMPLES			
"No…it went well because when Jacob was happy and told Tom about his good news, Tom had a happy face and he said, wow!" "No…Jacob was happy about his news, and he shared his news with Tom. Tom's face changed, and he was happy too."	"No…Tom's face was happy when Jacob told him the news." "No…Tom said wow! and had a happy face."	"No…Jacob made the swim team." "No…Jacob told his friend about his news." "No…Jacob had good news."	

Item 2

Scenario:

Narration: Tom just got an F on his exam:
Tom: *Nervous—looking around- pumping fists*
Tom's sister: Hey! What's wrong?
Tom: Nothing! *Biting lip-rocking back and forth-pumping fists*
Tom's sister: Okay.

Question: "Did anything go wrong in this video?" If the response is "yes," say: "What went wrong, and how do you know it?"

3	2	1	0
Says, "Yes" + Identifies rudeness/deceit + Refers to both actors' facial expressions/tone of voice	Says, "Yes" + Identifies rudeness/deceit + Refers to one actor's facial expressions/tone of voice	Says, "Yes" + Does not detect the direct problem of the situation or describes situation or imitates scene actions	Says, "no"
EXAMPLES			
"Yes…when the girl asked Tom what was wrong because his face was sad and angry, he didn't tell her and hurt her feelings. She was upset." "Yes…the girl was nice and wanted to help Tom. But he had a sad face and didn't tell her what was wrong. The girl got upset. She had a sad face too.	"Yes…Tom did not tell the girl the truth and his face was still sad." "Yes…Tom hurt the girl's feeling because she had an upset face."	"Yes…Tom got a bad grade." "Yes…Tom was sad because of his bad grade." "Yes…the girl was upset with Tom."	

Item 3

Scenario:

Narration: Jane and Cindy are at the mall. They are hungry and decide to share lunch. They are talking about different food options:

Cindy: Ouuh… do you want to share chilli-cheese fries?

Jane: Ummm (pause, looking away) …….(rolling eyes)

Cindy: Nice! I'm gonna get in line!

Question: "Did anything go wrong in this video?" If the response is "yes," say: "What went wrong, and how do you know it?"

3	2	1	0
Says "Yes" + Identifies problem + Refers to both actors' facial expressions/tone of voice	Says "Yes" + Identifies problem + Refers to one actor's facial expressions/tone of voice	Says "Yes" + Does not detect the direct problem of the situation or describes situation or imitates scene actions	Says "no"
EXAMPLES			
" Yes…Cindy did not see that Jane did not really want that food because she had a sad face. But Cindy got excited to get what she wanted, and didn't pay attention to her friend." "Yes…Jane's face was not happy about eating the fries. But Cindy ignored her friend's look and smiled and went to get the food."	"Yes…Jane had a sad face and that means she didn't want that food. But her friend thought she wanted it." "Yes…Jane did not sound excited about the fries but her friend misunderstood."	'Yes…Jane had this face (imitates)" "Yes…the girl wasn't hungry."	

Item 4

Scenario:

Narration: Tom came over to Jacob's house:
Tom: Hey, Jacob. How are you?
Jacob (sad face, looking down): *sigh.*.I'm ok…
Tom: Ok cool, wanna watch a movie?
Jacob: (nods looking sad) mhmhh…
Tom: Awsome! I'll go get started.

Question: "Did anything go wrong in this video?" If the response is "yes," say: "What went wrong, and how do you know it?"

3	2	1	0
Says, "Yes" + Identifies problem + Refers to both actors' facial expressions/tone of voice	Says, "Yes" + Identifies problem + Refers to one actor's facial expressions/tone of voice	Says, "Yes" + Does not detect the direct problem of the situation or describes situation or imitates scene actions	Says, "No"
EXAMPLES			
"Yes…Tom was happy and excited to see a movie, but he didn't see that Jacob was not in the mood. He was sad." "Yes…Tom misread Jacob's face. Jacob was sad. But Tom still smiled and went to watch the movie."	"Yes…Tom was oblivious to Jacob's sad face." "Yes…Tom didn't see that Jacob was sad and had a sad look."	"Yes…Jacob was sad." "Yes…Jacob could not watch the movie." "Yes…Jacob cannot watch TV now. He is sad".	

Item 5

Scenario:

Narration: Jane walks up to popular girls in school and says:
Hey, you are so cool. Can we hang out sometime?
Popular girls: *arrogant look – start laughing*

Question: "Did anything go wrong in this video?" If the response is "yes," say: "What went wrong, and how do you know it?"

3	2	1	0
Says, "Yes" + Identifies arrogance + Refers to both parties' actions	Says, "Yes" + Identifies arrogance + Refers to one actor's actions	Says, "Yes" + Does not detect the direct problem of the situation or describes situation or imitates scene actions	Says, "no"
	EXAMPLES		
"Yes…Jane was nice and smiled. She wanted to talk to the other girls, but they all gave her a bad look and laughed. That's not nice." "Yes…The girls were mean to Jane and rolled their eyes and laughed at Jane. But she was nice. She smiled and talked nicely to them."	" yes…the girls were arrogant to Jane, and had a mean sneaky look on their face. They think they are better and Jane doesn't belong in their group." "yes…The girls had a mean look on their faces and they laughed at Jane. That's inappropriate."	" Yes…the girls laughed at Jane." "yes…Jane was silly."	

Item 6

Scenario:

Narration: Cindy and her friends are having lunch. A group of girls walk by.
Cindy: Hey, girls!
Group of girls pass by. One of the girls roll her eyes.

Question: "Did anything go wrong in this video?" If the response is "yes," say: "What went wrong, and how do you know it?"

3	2	1	0
Says, "Yes" + Identifies arrogance + Refers to both parties' actions	Says, "Yes" + Identifies arrogance + Refers to one actor's actions	Says, "Yes" + Does not detect the direct problem of the situation or describes situation or imitates the scene's actions	Says, "No"
EXAMPLES			
"Yes…one girl said hi to the group of girls. But the girls gave her a mean and arrogant look. One of them rolled her eyes at Lisa. That's mean." "Yes…the girls were mean to Lisa. They rolled their eyes, and one didn't even look at her when Lisa walked up to them to say hi."	"Yes…The girls were mean to Lisa because they laughed at her, and one girl rolled her eyes at her." "Yes…the girls were not nice to Lisa. They didn't say hi back to her, they didn't stop and one girl rolled her eyes at Lisa."	"Yes…the girls didn't say hi back." "Yes…the girls were mean to Lisa." "Yes…the girls walked by and didn't stop to talk."	

Item 7

Scenario:

Narration: Cindy and Jacob are studying for their next midterm:
Jacob: Hey, what results did you get on #3?
Cindy: Hold on! *Wrote something down. Turned page.*
Jacob: (Raised eyebrows)
Cindy: Oh, sorry I got distracted. I got 10.5.

Question: "Did anything go wrong in this video?" If the response is "No", say: "Why do you think it went well? How do you know it?"

3	2	1	0
Says, "No" + Identifies apology + Refers to both actors' facial expressions and/or tone of voice	Says, "No" + Identifies apology + Refers to one actor's facial expressions and/or tone of voice	Says, "No" + Does not specify actions or nonverbal language	Says, "Yes"
EXAMPLES			
"No…Cindy was too busy to answer Jacob's question, but when she remembered that she forgot to answer, she apologized. Jacob smiled and said, "it's ok." He was not upset." "No…The girl did not help Jacob right away. Then she looked at Jacob and she said she was sorry. Jacob was happy and he smiled."	"No…Cindy apologized to Jacob because she did not answer him when he asked and she was nice." "No…Cindy was nice and helped the boy when he asked for help. She said she was sorry because she got carried away with her work."	"No…the girl helped the boy do his homework." "No…the girl was busy with her work but she helped the boy."	

Item 8

Scenario:

Narration: Julia is talking to her friends about her summer break.

Julia: So, we flew to New York and had a helicopter tour of the entire city! It was so cool!
Julia's friends: *eye roll – looking at each other- puckering lips to the side*
Julia's friends: Whatever. *shaking head, eye roll*

Question: "Did anything go wrong in this video?" If the response is "yes," say: "What went wrong, and how do you know it?"

3	2	1	0
Says, "Yes" + Identifies jealousy + Refers to both actors' actions	Says, "Yes" + Identifies jealousy + Refers to one actor's actions	Says, "Yes" + Does not detect the direct problem of the situation or describes situation or imitates scene actions	Says, "No"
EXAMPLES			
"Yes…Julia was talking to the girls nicely and sharing about her summer. But the girls got jealous, one of them rolled her eyes and the other one said, "whatever" in a mean way." "Yes…The girls were mean to Julia because she was excited and happy about her cool trip to New York. They were not happy for her. One girl said "whatever" and that was mean".	"Yes.., the girls were jealous of Julia's trip. One of them rolled her eyes and the other one said a mean thing." "Yes…the girls were not friendly with Julia and one girl rolled her eyes. They were jealous. "	"Yes…the girls did not like Julia." "Yes…Julia lied to the girls about her trip." "Yes…the girls were mean."	

Instrumental Performance

Purpose:

This construct measures language skills that are necessary to satisfy an individual's basic needs and express communicative intent that is instrumental in nature. This includes the ability to use social routine language, such as expressing greetings, introductions, politeness, making requests, responding to gratitude, requesting help, requesting information (e.g., directions), and asking for permission.

General scoring guidelines:

Test item responses must be judged based on their pragmatic language content, intent, and paralinguistic form. Grammatical, syntactic, or articulation errors do not affect scoring.

Permissible Prompts:

When responses are ambiguous or incomplete, they must be prompted for clarity and completeness. If a response is unclear or appears incomplete, prompt by saying, "Tell me more."

This subtest requires the examinee to use the 1st person personal pronoun "I" in his/her responses. If the examinee responds using the 2nd person or 3rd person personal pronoun, such as " you, he or she", the following prompt must follow with the emphasis on "you": "What would you tell….and how?". If the examinee does not demonstrate use of the1st person personal pronoun, "I" in his/her response, score the item as incorrect and proceed to the next item.

Scoring Guidelines:

-A score of "2" is assigned if the examinee provides a correct verbal response using appropriate facial affect and prosody AND offers follow up supporting statements. **The response must reflect a genuine expression of intent and facial /prosodic affect that is appropriate to target situation.**

-A score of "1" is assigned if the examinee demonstrates a correct verbal response using an appropriate facial affect and prosody WITHOUT any supporting statements or extensions. **The response must reflect a genuine expression of intent and facial /prosodic affect that is appropriate to target situation.**

-A score of "0" is assigned if the examinee provides a correct verbal response; however, it lacks appropriate intonation in their tone of voice or is marked by a flat inflection in his/her prosody. If some degree of facial expression is noted, such as a raised eye brow movement, but accompanied by a flat prosody tone or if facial expression is not consistent with message, no credit can be granted. The rationale is that a flat prosody, accompanied by some type of facial expression, generally provides misleading information, and the response does not appear to be genuine.

-A score of "0" is assigned if the participant provides an overall inappropriate response.

Item 1

Scenario: *Narration: Molly and Amber are at the park and run into Amber's cousin. Molly has never met Amber's cousin before.*

Question: "What should Amber say, and how should she say it? "

2	1	0
Expresses introduction appropriately using supportive statements	Expresses introduction appropriately	Inappropriate intent of the message Or Impolite language
EXAMPLES		
"Molly, meet my cousin! (to the cousin)… this is my friend Molly. We are going to the park, do you mind if I invite my cousin to come with us?" " Hello! This is my cousin, and this is my friend Molly. This is so nice to meet you here. How are you?	"Hi! This is my cousin, and this is my friend, Molly."	"Hi! Can we hang out together?" "Do you want to come with us?"

Item 2

Scenario: *The doorbell rings. Tom opens the door. It's the neighbor.*

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Question: What should Tom say, and how should he say it?

2	1	0
Expresses greeting appropriately and uses supporting statements	Expresses greeting appropriately	Inappropriate intent of the message Or Impolite language
EXAMPLES		
"Hi! How are you? How can I help you? Is everything ok?" "Hello! How are you? Are you here to see my parents?"	"Hi, neighbor!" "Hello!"	" I like your house." "I like your shirt." "Are you here to talk to my dad?" "What do you want?"

Item 3

Scenario: *It's the first meeting of the swim club. A girl comes up to Mark and says*, "Hi, I'm Ellie."

Question: What should Mark say, and how should he say it?

2	1	0
Expresses introduction appropriately with supporting statements	Expresses introduction appropriately	Inappropriate intent of the message Or Impolite language
EXAMPLES		
"Hi! I'm ___. How are you? Nice to meet you!" "Hi! I'm xx. It's my first day here. Are you on the swim team too?"	"Hi, I'm xx"	"I like your shirt" "How old are you?" "What do you want?"

Item 4

Scenario: *Cindy got lost in the museum. She cannot find the exit. She sees an attendant*.

Question: What should Cindy say, and how should she say it?

2	1	0
Makes a request for directions appropriately with supporting statements.	Makes a request for directions appropriately	Inappropriate intent of the message Or Impolite language
EXAMPLES		
"Hello! I got lost here, can you help find the exit please?" "Excuse me, where is the exit, I am lost"	"Excuse me, where is the exit?" "Can you tell me where the exit is please?"	"How do I get out of here" "Where's the exit?"

Item 5

Scenario: *Jacob's friend just invited him on a camping trip. His father came home from work.*

Question: What should Jacob say, and how should he say it?

2	1	0
Makes a request appropriately with supportive comments	Makes a request appropriately	Inappropriate intent of the message Or Impolite language
"Dad, can I please go on this camping trip? I really wanna go, and my best friend will be there." "Can I please go? I promise I will do all my homework." "Can I please go? It means a lot to me to go."	"Can I please go?"	"Can I go?" "I want to go on a camping trip."

Item 6

Scenario: *Lea helped her friend, Cindy, with the history homework.* Cindy: Thank you so much for your help.

Question: What should Lea say and how?

2	1	0
Responds to gratitude appropriately with supportive statements	Responds to gratitude appropriately	Inappropriate intent of the message Or Impolite language
EXAMPLES		
"You're welcome. I like helping you." "No problem. It wasn't a big deal." "You're welcome. Let me know if you need any more help."	"No problem." "You're welcome."	"Yeah, I know" "Aha" "It was a lot of work."

Item 7

Scenario: *The first school dance is coming up. You would like your friend to go with you.*

Question: What would you say to your friend, and how would you say it?

2	1	0
Makes a request appropriately with supportive comments	Makes a request appropriately	Inappropriate intent of the message Or Impolite language
EXAMPLES		
"The school dance is coming up! Would you like to go with me? It would be so great if you could go with me" "Hi! Would you like to join me to the school dance? I would love it if you could go with me." "Hi! Can you go with me to the school dance? It would mean a lot to me."	"Will you go to the school dance with me please?" "Hi! So, you want to go to the school dance with me?"	"Are you going to the school dance?" "Can you go with me?" "Wanna come with me?" "You wanna go?" "I am a good dancer."

Item 8

Scenario: *Jim is in the cafeteria and just bought a hotdog. He wants ketchup, but the girl next to him is holding the ketchup.*

Question: What should Jim say, and how should he say it?

2	1	0
Makes a request appropriately with supportive comments	Makes a request appropriately	Inappropriate intent of the message Or Impolite language
EXAMPLES		
"Do you still need the ketchup? Can I please have it?" "Can I please have the ketchup please when you are finished with it, please?"	"Can I please have the ketchup?"	"Are you done using this?" "Can I have it?" "I need this."

Affective Expression

Purpose:

This subtest measures the ability to appropriately express higher order pragmatic language that is emotive in nature, such as regret, sorrow, peer support, praise, empathy, gratitude, encouragement, etc.

General scoring guidelines:

Test item responses must be judged based on their pragmatic language content, intent, and paralinguistic form. Errors of morphology, syntax, or articulation do not affect scoring.

Permissible Prompts:

When responses are ambiguous or incomplete, the individual must be prompted for clarity and thoroughness. If a response is unclear or appears vague, prompt the individual by saying, "Tell me more."

Items 1, 3, 4, 5, 6, 7, and 8 in this subtest require the examinee to use the 1st person personal pronoun, "I" in his/her responses. If the examinee responds using a 2nd person or 3rd person personal pronoun, such as "you, he, or she," the following prompt must follow with the emphasis on "**you**": "What would **you** say….and how would you say it?". If the examinee does not demonstrate use of the 1st person personal pronoun, "I" in his/her response, score the item as incorrect and proceed to the next item.

Scoring Guidelines:

-A score of "2" is assigned if the examinee provides a correct verbal response using adequate facial affect and prosody, AND offers follow-up supporting statements. **The response must reflect a genuine expression of intent and facial /prosodic affect that is adequate for the target situation.**

-A score of "1" is assigned if the examinee exhibits a correct verbal response using adequate facial affect and prosody WITHOUT any supporting statements or extensions. **The response must reflect a genuine expression of intent and facial /prosodic affect that is adequate for the target situation.**

-A score of "0" is assigned if the examinee provides a correct verbal response; however, the response lacks appropriate intonation in tone of voice or is marked by flat inflection in prosody. If some degree of facial expression is noted, such as eye brow movement, but accompanied by a flat prosodic tone, or if facial expression is not consistent with the message, no credit can be granted. The rationale is that flat prosody accompanied by some degree of facial expression generally provides misleading information, and the response does not appear to be genuine.

-A score of "0" is assigned if the participant provides an overall inappropriate response.

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2	**Appropriate response with supporting emotive statements**
1	Appropriate content + appropriate affect + incorrect rationale
0	Correct verbal response, but flat affect and prosody
0	Inappropriate verbal response and/or intent

Item 1

Scenario*:* *It is Sara's driving test today. She is really nervous.*

Question: "Show me, what would you tell your friend and how?"

2	1	0
a) Expresses empathy with supportive statements b) Appropriate facial and prosodic affect	a) Expresses empathy b) Appropriate facial and prosodic affect	Appropriate response, but lacks affect/monotone prosody or Inappropriate intent of the message
EXAMPLES		
"It's ok. Don't be nervous. You will do just fine! Everyone gets nervous before their driving test." + Appropriate tone of comfort "I was nervous on my test day too. You will pass this test. Don't worry." + Appropriate tone of comfort	"It's ok to be nervous. It's going to be okay." + Appropriate tone of comfort "That's okay. I'm sorry you are feeling nervous." + Appropriate tone of comfort	"That's ok. It's ok to be nervous." Monotone voice or flat facial affect "You are smart." or "I can help you." or "Did you practice? You need to practice." Lack of empathy

Item 2

Scenario: *Maria's new puppy is lost. She printed out missing flyers. She is sad.*

Question: Show me, what would you tell your friend and how?

2	1	0
a) Expresses empathy with supportive statements b) Appropriate facial and prosodic affect	a) Expresses empathy b) Appropriate facial and prosodic affect	Appropriate response, but lacks affect/exhibits monotone prosody or Inappropriate intent of the message
EXAMPLES		
"I'm so sorry. How can I help you?" + Appropriate tone of comfort	"I'm sorry to hear about your cat." + Appropriate tone of comfort	"I can look for it." + Monotone voice Flat facial affect Offers solution, but no apology or empathy

Item 3

Scenario: *Jeff received his final grades for the year.* His father says: "Wow, Jeff, good job! I am really proud of you."

Question: Show me, what should Jeff say and how?

2	1	0
a) Appropriately expresses gratitude with supportive statements (acknowledges compliment) b) Appropriate tone of gratitude/content	a) Appropriately expresses gratitude b) Appropriate tone of gratitude/content	Inappropriate intent of the message or monotone prosody
EXAMPLES		
"Thanks dad. That means a lot!" + Appropriate tone of gratitude "Thanks! I worked hard on this!" + Appropriate tone of content	"Thank you, Dad." + Appropriate tone of content	"I know" "Yes" + Monotone voice Flat facial affect

Item 4

Scenario: *Your friend won the race for school President.*

Question: Show me, what would you tell your friend and how?

2	1	0
a) Appropriately expresses praise/support with supportive statements b) Appropriate tone of comfort	a) Appropriately expresses praise/support b) Appropriate tone of comfort	Inappropriate intent of the message or Monotone Prosody
EXAMPLES		
"I'm so happy for you. I knew you would do great!" + Appropriate tone of praise "I am so proud of you. Wow! You worked very hard for this." + Appropriate tone of praise	"Congratulations! You did it." + Praised expressed using appropriate tone "Congratulations. That's awesome!" + Appropriate tone of praise	"Congratulations." + Monotone voice Flat facial affect "I could've won too if I tried." "I won once too." Inappropriate intent

Item 5

Scenario: *Tom failed his chemistry quiz and is really sad.*

Question: Show me, what would you tell your friend and how?

2	1	0
Appropriately expresses empathy with supportive comments + Appropriate tone of support and empathy	Appropriately expresses empathy + Appropriate tone of support and empathy	Inappropriate intent of the message or Monotone Prosody
EXAMPLES		
"Sorry to hear that. That test was very hard. You are not the only one who didn't do well on it." + Appropriate tone of support and empathy "So sorry to hear that. Can I help you study for the next one?" + Appropriate tone of support and empathy. "Sorry man. That class is so hard, and the tests are the worst." + Appropriate tone of support and empathy	"Oh no. I'm so sorry." + Appropriate tone of support and empathy	"That's very sad." "Sorry." + Monotone voice Flat facial affect "If you don't study, you can't pass." "I can talk to the teacher." "I did well on my chemistry test." Inappropriate intent

Item 6

Scenario: *Your friend won the school Spelling Bee.*

Question: Show me, what would you tell your friend and how?

2	1	0
a) Appropriately expresses praise with supportive statements b) Appropriate tone of comfort	a) Appropriately expresses praise b) Appropriate tone of comfort	Inappropriate intent of the message or Monotone Prosody
EXAMPLES		
"Wow! That's so awesome! You practiced so hard! I'm happy for you." + Appropriate tone of praise	"Congratulations! You did it!" + Praise expressed with appropriate tone "Congratulations! That's awesome!" + Praise expressed with appropriate tone	"Congratulations" + Monotone voice Flat affect "I know." Inappropriate intent

Item 7

Scenario: *Your friend is sad because he failed his math exam.*

Question: Show me, what would you tell your friend and how?

2	1	0
a) Appropriately expresses empathy with supportive comments b) Appropriate tone of support and empathy	a) Appropriately expresses empathy b) Appropriate tone of support and empathy	Inappropriate intent of the message or Monotone Prosody
EXAMPLES		
"So sorry to hear that. Can I help you study for the next one?" + Appropriate tone of support and empathy "Sorry, man. That class is so hard, and the tests are the worst." + Appropriate tone of support and empathy	"I'm sorry to hear that." + Appropriate tone of support and empathy	"That's very sad." "Sorry." + Monotone voice Flat facial affect "If you don't study, you can't pass." "I can talk to your mom." "I did well on my chemistry test." Inappropriate intent

Item 8

Scenario: *You took your sister's sweater without asking and left it at a friend's house.*

Question: Show me, what would you tell your sister and how?

2	1	0
a) Appropriately expresses apology with supportive statements b) Appropriate tone of apology	a) Appropriately expresses apology b) Appropriate tone of apology	Inappropriate intent of the message or Monotone Prosody
EXAMPLES		
"I'm so sorry I didn't ask you. I was in a hurry to go to the party." + Appropriate tone of apology "I'm sorry. I will not do it again next time. + Appropriate tone of apology "I'm sorry. I know it's your favorite sweater. I should've asked first." + Appropriate tone of apology	"I'm sorry I did that." + Appropriate tone of apology "I'm sorry I didn't ask you, and I'm sorry I left it at my friend's house." + Appropriate tone of apology	"I'm sorry." + Monotone voice or urging tone of voice "I didn't know you needed it." "I can buy you a new one." Inappropriate intent

Paralinguistic Signals

Purpose:

This subtest measures the ability to use various non-verbal cues, such as facial expressions, tone of voice, inflections in prosody, gestures, and overall body language to express a variety of communicative intents.

General scoring guidelines:

Responses to test items must be judged based on the individual's paralinguistic form and intent. Errors of morphology, syntax, or articulation do not affect scoring. This subtest only measures non-verbal language ability, such as facial expressions, gestures, body language, and inflections in prosody to express intent that is appropriate for target situations. Credit is not given for adequate use of language alone. Examinee MUST exhibit use of appropriate paralinguistic signals to receive full credit.

Permissible Prompts:

When responses are ambiguous or incomplete, the individual must be prompted for clarity and completeness. If a response is unclear or appears, vague, prompt individual by saying, "Tell me more."

All items in this subtest require the examinee to use the 1st person personal pronoun "I" in his/her responses. If the examinee responds using 2nd person or 3rd person personal pronouns, such as " you, he or she," the following prompt must follow with the emphasis on "**you**": "What would **you** tell….and how?". If the examinee does not demonstrate the use of 1st person personal pronoun "I" in his/her response, score the item as incorrect and proceed to the next item.

Scoring Guidelines:

-A score of "2" is assigned if the examinee demonstrates appropriate intent by showing correctly marked inflections in their prosody in their response AND a marked facial expression, such as a "raised eye brow" frowned eye brows, or widened eyes. If the examinee uses some type of exclamations or vocalizations accompanied by appropriate tone of voice and facial expression, full credit can be granted. **The response must reflect an overall genuine expression of intent appropriate for target situation.**

-A score of "1" is assigned if the examinee exhibits adequate intent accompanied by correctly marked inflections in prosody in their response. **The response must reflect an overall genuine expression of intent appropriate to target situation.**

-A score of "0" is assigned if the examinee provides a correct verbal response; however, their response lacks appropriate intonation in tone of voice or is marked by a flat inflection in prosody. If some degree of facial expression is noted, such as a raised eye brow movement, but accompanied by a flat prosody tone, or if facial expression is not consistent with message, no credit can be granted. The rationale is that a flat prosody accompanied by some type of facial expression generally provides misleading information, and the response does not appear to be genuine.

-A score of “0” is assigned if the participant provides an overall inappropriate response.

-

2	**Appropriate intent + Inflections in prosody + Facial expression**
1	Appropriate intent + Inflections in prosody
0	Correct verbal response but flat prosody
0	Inappropriate verbal response and/or intent

Item 1

Scenario: *You and your friends are running late for a biology test. You are very nervous about this test. Your friends are all behind you walking slowly and chatting with each other*.

Question: Show me, what would you tell your friends and how?

2	1	0
a) Appropriately expresses frustration or a sense of urgency b) Exhibits inflections in prosody c) Exhibits relevant facial expressions	a) Appropriately expresses frustration or sense of urgency b) Exhibits inflections in prosody	Inappropriate intent of the message or Exhibits monotone prosody
EXAMPLES		
"Come on everyone! Hurry!" + Exhibits Raising inflection or appropriate tone of urgency + Exhibits frowned eyebrows or widened eyes	"Can you hurry! We are in trouble!" with Exhibits raising inflection or appropriate tone of urgency	"Walk faster" with Exhibits monotone tone of voice or Exhibits flat affect
"We are so late! We need to hurry!" + Raising inflection or appropriate tone of frustration + Frowned eyebrows or frustrated/concerned facial expression	"Can you please walk faster? We are late for our test!" + Raising inflection or appropriate tone of urgency	"Can you help me?" Inappropriate intent "I like biology tests." Off-topic

Item 2

Scenario: *You accidentally spilled soda on your friend's favorite shirt. Your friend is very upset.*

Question: Show me, what would you tell your friend and how?

2	1	0
a) Appropriately expresses an apology b) Exhibits inflections in prosody c) Exhibits relevant facial expressions	a) Appropriately expresses apology b) Exhibits inflections in prosody	Inappropriate intent of the message or Exhibits monotone prosody
EXAMPLES		
"Oh my gosh. I'm so sorry!" + Exhibits raising inflection or appropriate tone of apology + Frowned eyebrow or facial expression of apology	"I'm sorry. I didn't mean it!" + Rising inflection with appropriate tone of frustration	"I can clean it." + Exhibits monotone tone of voice Exhibits flat affect Offers solution, but no apology or empathy

Item 3

Scenario: *Your friend tells you that her father is in the hospital. She explains what happened.*

Question: Show me, what would you tell your friend and how?

2	1	0
a) Appropriately expresses empathy b) Exhibits inflections in prosody c) Exhibits relevant facial expressions	a) Appropriately expresses empathy b) Exhibits inflections in prosody	Inappropriate intent of the message or Exhibits monotone prosody
EXAMPLES		
"I'm so sorry to hear that. Is there anything I can do?" + Exhibits falling inflection or adequate tone of empathy or sorrow + Exhibits frowned eyebrow or facial expression of empathy/apology	"I'm sorry." + Exhibits falling inflection or adequate tone of empathy or sorrow	"I will take care of him." + Exhibits monotone voice Exhibits flat affect Offers solution, but no empathy

Item 4

Scenario: *Jane's laptop broke down, and she needs to finish her class paper today. She is very upset.*
.

Question: Show me, what would you tell your friend and how?

2	1	0
a) Appropriately expresses empathy b) Exhibits inflections in prosody c) Exhibits relevant facial expressions	a) Appropriately expresses empathy b) Exhibits inflections in prosody	Inappropriate intent of the message or Exhibits monotone prosody
EXAMPLES		
"I'm so sorry to hear that. Is there anything I can do?" + Exhibits falling inflection or appropriate tone of empathy or sorrow + Frowned eyebrow or facial expression of empathy/apology	"I'm sorry." "This is so bad." + Exhibits falling inflection or appropriate tone of empathy or sorrow	"I can fix it." "You need to charge it." + Exhibits monotone tone of voice Exhibits flat affect Offers solution, but no empathy

Item 5

Scenario: *You and your friend are walking. Your friend is talking and looking at you. You see a set of stairs coming up.*

Question: Show me, what would you tell your friend and how?

2	1	0
Appropriately alarms friend of danger, expresses caution + Exhibits inflections in prosody + Exhibits relevant facial expressions	Appropriately alarms friend of danger, expresses caution + Exhibits inflections in prosody	Inappropriate intent of the message or Exhibits monotone prosody
EXAMPLES		
"Watch out! Stairs!" + Exhibits raising inflection, tone of voice expressing urgency + Exhibits raised eye-brow, Concerned facial expression	"Be careful, please!" + Raising rising inflection, tone of voice expressing urgency	"Careful" + Exhibits monotone tone of voice Exhibits flat affect "Sorry" "Help" Inappropriate intent

Item 6

Scenario: *You just found out that a dangerous tornado is coming to your town, and you need to evacuate with your family.*

Question: Show me, what would you tell your family and how?

2	1	0
a) Appropriately expresses intent to alarm family of an emergency, expresses concern for family's safety b) Exhibits inflections in prosody c) Exhibits relevant facial expressions	a) Appropriately expresses intent to alarm family of an emergency, expresses concern for family's safety b) Exhibits inflections in prosody	Inappropriate intent of the message or Exhibits monotone Prosody
EXAMPLES		
"Oh no! A tornado is coming! We have to take shelter!" + Exhibits rising inflection, tone of voice expressing urgency + Exhibits raised eye-brows, Concerned facial expression	"We all need to find a safe place now! Tornado!" + Exhibits rising inflection	"Help me!" + Exhibits falling inflection Exhibits monotone voice Exhibits flat facial affect Inappropriate intent

Item 7

Scenario: *Your friend just told you that she won two front row tickets to your favorite band and a VIP backstage pass after the concert. She would like you to go with her.*

Question: Show me, what would you tell your friend and how?

2	1	0
a) Appropriately expresses excitement and gratitude b) Exhibits inflections in Prosody c) Exhibits relevant facial expressions	a) Appropriately expresses excitement and gratitude b) Exhibits inflections in prosody	Inappropriate intent of the message or Exhibits monotone prosody
EXAMPLES		
"Wow! Thank you so much! You are the best friend!" + Exhibits raising inflection or appropriate tone of excitement/gratitude + Exhibits raised eye-brows, smile, or facial expression showing excitement	"Thank you! I would love to go with you!" + Exhibits rising inflection or appropriate tone of excitement/gratitude	"I'll go." "Can I go with you?" + Exhibits monotone voice Exhibits flat facial affect Does not express gratitude to a friend

Item 8

Scenario: *You just invited your best friend to your birthday party that is coming up in two weeks. Your friend is telling you that she cannot make it to your party. You are very sad.*

Question: Show me, what would you tell your friend and how?

2	1	0
a) Appropriately accepts unwanted news to protect friendship b) Exhibits inflections in prosody c) Exhibits relevant facial expressions	a) Appropriately accepts unwanted news to protect friendship b) Exhibits inflections in prosody	Inappropriate intent of the message or Exhibits monotone prosody
EXAMPLES		
"I will miss not having you at my party. + Exhibits falling inflection, conciliatory tone of voice + Exhibits frowned eye-brow Exhibits facial expression of conciliation, acceptance	"That's ok. We can hang out another time. + Exhibits falling inflection, conciliatory tone of voice	"Why? My mom can give you a ride!" "Please" + Exhibits monotone tone of voice or urging tone of voice Does not demonstrate intent of polite acceptance of unwanted news

APPENDIX B

Converting Subtest Raw Scores to Scaled Scores

Table B.1

Converting Subtest Raw Scores to Scaled Scores

Ages 7-0 to 7-11

Scaled Score	IPA	SCA	PD	IP	AE	PS	Percentile Rank
1	-	-	-	-	-	-	<1
2	-	-	-	-	-	-	<1
3	0-2	0-5	0-6	0-1	0	0-2	1
4	3	6-8	7-9	2	1	3	2
5	4	9	10	3	2	4	5
6	5	10	11	4	3	5	9
7	6	11	12	5	4	6	16
8	7	12	13	6	5	7	25
9	8	13	14	7	6	8	37
10	9	14	15	8	7	9	50
11	10	15	16	9	8	10	63
12	11	16	17	10	9	11	75
13	12	17	18	11	10	12	84
14	13	18	19	12-14	11	13	91
15	14	19	20	15	12	14	95
16	15	20	21	16	13	15	98
17	16	21	22	-	14-16	16	99
18	-	22	23	-	-	-	>99
19	-	23	24	-	-	-	>99
20	-	24	-	-	-	-	>99

Abbreviation:

IPA, Instrumental Performance Appraisal;

SCA, Social Context Appraisal;

PD, Paralinguistic Decoding;

IP, Instrumental Performance;

AE, Affective Expression;

PS, Paralinguistic Codes

Table B.1

Converting Subtest Raw Scores to Scaled Scores

Ages 8-0 to 8-11

Scaled Score	IPA	SCA	PD	IP	AE	PS	Percentile Rank
1	-	-	-	-	-	-	<1
2	-	-	-	-	-	-	<1
3	0-4	0-9	0-6	0-2	0-1	0-2	1
4	5	10	7-8	3	2	3	2
5	6	11	9-11	4	3	4	5
6	7	12	12	5	4	5	9
7	8	13	13	6	5	6	16
8	9	14	14	7	6	7	25
9	10	15	15	8	7	8	37
10	11	16	16	9	8	9	50
11	12	17	17	10	9	10	63
12	13	18	18	11-12	10	11	75
13	14	19	19	13	11	12	84
14	15	20	20	14	12	13	91
15	16	21	21	15	13	14	95
16	-	22	22	16	14-16	15	98
17	-	23	23	-	-	16	99
18	-	24	24	-	-	-	>99
19	-	-	-	-	-	-	>99
20	-	-	-	-	-	-	>99

Abbreviation:

IPA, Instrumental Performance Appraisal;

SCA, Social Context Appraisal;

PD, Paralinguistic Decoding;

IP, Instrumental Performance;

AE, Affective Expression;

PS, Paralinguistic Codes

Table B.1

Converting Subtest Raw Scores to Scaled Scores

Ages 9-0 to 9-11

Scaled Score	IPA	SCA	PD	IP	AE	PS	Percentile Rank
1	-	-	-	-	-	-	<1
2	-	-	-	-	-	-	<1
3	0-5	0-9	0-6	0-2	0-1	0-3	1
4	6	10	7	3	2	4	2
5	7	11	8-10	4	3	5	5
6	8	12	11-12	5	4	6	9
7	9	13	13	6	5	7	16
8	10	14	14	7	6	8	25
9	11	15	15	8	7	9	37
10	12	16	16	9	8	10	50
11	13	17	17	10	9	11	63
12	14	18	18	11	10	12	75
13	15	19	19	12	11	13	84
14	16	20	20	13	12	14	91
15	-	21	21	14	13	15	95
16	-	22	22	15-16	14-16	16	98
17	-	23	23	-	-	-	99
18	-	24	24	-	-	-	>99
19	-	-	-	-	-	-	>99
20	-	-	-	-	-	-	>99

Abbreviation:

IPA, Instrumental Performance Appraisal;

SCA, Social Context Appraisal;

PD, Paralinguistic Decoding;

IP, Instrumental Performance;

AE, Affective Expression;

PS, Paralinguistic Codes

Table B.1

Converting Subtest Raw Scores to Scaled Scores

Ages 10-0 to 10-11

Scaled Score	IPA	SCA	PD	IP	AE	PS	Percentile Rank
1	0-3	0-7	0-4	-	-	-	<1
2	4	8	5	-	-	-	<1
3	5	9	6	0-2	0-1	0-3	1
4	6	10	7-10	3	2	4	2
5	7	11	11	4	3	5	5
6	8	12	12	5	4	6	9
7	9	13	13	6	5	7	16
8	10	14	14	7	6	8	25
9	11	15-16	15	8	7	9	37
10	12	17	16	9	8	10	50
11	13	18	17	10	9	11	63
12	14	19	18	11	10	12	75
13	15	20	19	12	11	13	84
14	16	21	20	13	12	14	91
15	-	22	21	14	13	15	95
16	-	23	22	15-16	14-16	16	98
17	-	24	23	-	-	-	99
18	-	-	24	-	-	-	>99
19	-	-	-	-	-	-	>99
20	-	-	-	-	-	-	>99

Abbreviation:

IPA, Instrumental Performance Appraisal;

SCA, Social Context Appraisal;

PD, Paralinguistic Decoding;

IP, Instrumental Performance;

AE, Affective Expression;

PS, Paralinguistic Codes

Table B.1

Converting Subtest Raw Scores to Scaled Scores

Ages 11-0 to 11-11

Scaled Score	IPA	SCA	PD	IP	AE	PS	Percentile Rank
1	0-3	0-7	0-4	-	-	-	<1
2	4	8	5	-	-	0-3	<1
3	5	9	6	0-2	0-1	4	1
4	6	10	7-10	3	2	5	2
5	7	11	11	4	3	6	5
6	8	12	12	5	4	7	9
7	9	13-14	13	6	5	8	16
8	10	15	14	7	6	9	25
9	11	16	15	8	7	10	37
10	12	17	16	9	8	11	50
11	13	18	17	10	9	12	63
12	14	19	18	11	10	13	75
13	15	20	19	12	11	14	84
14	16	21	20	13	12	15	91
15	-	22	21	14	13	16	95
16	-	23	22	15-16	14	-	98
17	-	24	23	-	15-16	-	99
18	-	-	24	-	-	-	>99
19	-	-	-	-	-	-	>99
20	-	-	-	-	-	-	>99

Abbreviation:

IPA, Instrumental Performance Appraisal;

SCA, Social Context Appraisal;

PD, Paralinguistic Decoding;

IP, Instrumental Performance;

AE, Affective Expression;

PS, Paralinguistic Codes

Table B.1

Converting Subtest Raw Scores to Scaled Scores

Ages 12-0 to 13-11

Scaled Score	IPA	SCA	PD	IP	AE	PS	Percentile Rank
1	0-3	-	0-4	-	-	-	<1
2	4	0-7	5	-	-	0-4	<1
3	5	8	6	0-3	0-2	5	1
4	6	9	7-10	4	3	6	2
5	7	10-12	11	5	4	7	5
6	8	13	12	6	5	8	9
7	9	14	13	7	6	9	16
8	10	15	14	8	7	10	25
9	11	16	15	9	8	11	37
10	12	17	16	10	9	12	50
11	13	18	17	11	10	13	63
12	14	19	18	12	11	14	75
13	15	20	19	13	12	15	84
14	16	21	20	14	13	16	91
15	-	22	21	15	14	-	95
16	-	23	22	16	15	-	98
17	-	24	23	-	16	-	99
18	-	-	24	-	-	-	>99
19	-	-	-	-	-	-	>99
20	-	-	-	-	-	-	>99

Abbreviation:

IPA, Instrumental Performance Appraisal;

SCA, Social Context Appraisal;

PD, Paralinguistic Decoding;

IP, Instrumental Performance;

AE, Affective Expression;

PS, Paralinguistic Codes

Table B.1

Converting Subtest Raw Scores to Scaled Scores

Ages 14-0 to 15-11

Scaled Score	IPA	SCA	PD	IP	AE	PS	Percentile Rank
1	0-3	-	0-4	-	-	-	<1
2	4	0-9	5	-	-	0-4	<1
3	5	10	6	0-3	0-1	5	1
4	6	11	7-10	4	2	6	2
5	7	12	11	5	3	7	5
6	8	13	12	6	4	8	9
7	9	14	13	7	5	9	16
8	10	15	14	8	6-7	10	25
9	11	16	15	9	8	11	37
10	12	17	16	10	9	12	50
11	13	18	17	11	10	13	63
12	14	19	18	12	11	14	75
13	15	20	19	13	12	15	84
14	16	21	20	14	13	16	91
15	-	22	21	15	14	-	95
16	-	23	22	16	15	-	98
17	-	24	23	-	16	-	99
18	-	-	24	-	-	-	>99
19	-	-	-	-	-	-	>99
20	-	-	-	-	-	-	>99

Abbreviation:

IPA, Instrumental Performance Appraisal;

SCA, Social Context Appraisal;

PD, Paralinguistic Decoding;

IP, Instrumental Performance;

AE, Affective Expression;

PS, Paralinguistic Codes

Table B.1

Converting Subtest Raw Scores to Scaled Scores

Ages 16-0 to 18-0

Scaled Score	IPA	SCA	PD	IP	AE	PS	Percentile Rank
1	0-3	-	0-4	-	-	-	<1
2	4	0-9	5	-	-	0-4	<1
3	5	10	6	0-3	0-1	5	1
4	6	11	7-10	4	2	6	2
5	7	12	11	5	3	7	5
6	8	13	12	6	4	8	9
7	9	14	13-14	7	5-6	9	16
8	10	15	15	8	7	10	25
9	11	16	16	9	8	11	37
10	12	17	17	10	9	12	50
11	13	18	18	11	10	13	63
12	14	19	19	12	11	14	75
13	15	20	20	13	12	15	84
14	16	21	21	14	13	16	91
15	-	22	22	15	14	-	95
16	-	23	23	16	15	-	98
17	-	24	24	-	16	-	99
18	-	-	-	-	-	-	>99
19	-	-	-	-	-	-	>99
20	-	-	-	-	-	-	>99

Abbreviation:

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AE, Affective Expression;

PS, Paralinguistic Codes

APPENDIX C

Converting Sums of Scaled Scores to Percentiles and Standard Scores

Table B.1

Converting Sums of Scaled Scores to Percentiles and Standard Scores

Standard Score	Core Pragmatic Language Composite (6 subtests)	Pragmatic Judgement Index (3 subtests)	Pragmatic Performance Index (3 subtests)	Paralinguistic Index (3 subtests)	Percentile Rank
64	12-27	3-8	5-9	6	<1
65	28	9	10	7	1
68	29	10	11	8	2
71	30	11	12	9	3
74	31	12	13	10-14	4
76	32	13	14	15	5
77	33	14	15	16	6
78	34	15	16	17-18	7
79	35	16	17	19	8
80	36	17	18	20	9
81	37	18	19	-	10
82	38	19	20	-	12
83	39	20	-	21	13
84	40-41	21	21	-	14
85	42	22	22	22	16
86	43-44	23	23	-	18
87	45	-	-	23	19
88	46	24	24	-	21
89	47	-	-	24	23
90	48	25	25	-	25
91	49	-	-	25	27
92	50	26	26	-	30
93	51	-	-	26	32
94	52	27	27	-	35
95	53-54	-	-	27	37
96	55	28	28	-	39
97	56-57	-	-	28	42
98	58	29	29	-	45
99	59	30	-	29	47
100	60	31	30	30	50
101	61-62	-	-	31	53
102	63-64	32	31	-	55
103	65	-	-	32	58
104	66	33	32	33	61
105	67	-	-	34	63
106	68	34	33	-	65
107	69	-	-	35	68

Table B.1 *Continued*

Standard Score	Core Pragmatic Language Composite (6 subtests)	Pragmatic Judgement Index (3 subtests)	Pragmatic Performance Index (3 subtests)	Paralinguistic Index (3 subtests)	Percentile Rank
108	70	35	34	36	70
109	71	-	-	37	73
110	72	36	35	-	75
111	73	37	36	38	77
112	74	38	-	-	79
113	75	39	37	39	81
114	76	40	38	-	82
115	77	41	39	40	84
116	78	42	-	41	86
117	79	43	40	42	87
118	80	44	41	43	89
119	81	45	42	44	90
120	82	46	43	45	91
121	83	47	-	46	92
122	84	48	44	47	93
123	85	49	45	48	94
124	86	50	46	49	95
126	87	51	47	50	96
129	88	52	48	51	97
131	89	53	-	52	98
135	90	54	49	53	99
136	91-106	55-56	50	54	>99