Strength Based Assessment & Intervention of Social Communication

Focus on Social-Emotional, Interoceptive Awareness and Self-Advocacy

Adriana Lavi, PhD, CCC-SLP

Sample report templates and goals are available at

https://videolearningsquad.com/pragmatic-language-report-template/

Access to resources

1. Report templates
2. Sample goals
3. Presentation slides
4. Impact related rating scales
5. Online teacher/parent questionnaires

https://VideoAssessmentTools.com/access

Disclosures

Adriana Lavi, PhD, CCC-SLP

Financial:

Author of *Clinical Assessment of Pragmatics (CAPs) test*

Author of *IMPACT Social Communication Rating Scale* – a video-based rating scale

Author of *VideoLearningSquad.com* and *VideoAssessmentTools.com*

Non-financial: No relevant non-financial relationship exists.

Learner objectives

1. Strengths-based assessment: differentiation between strengths-based and diagnostic evaluation
2. Assessment areas: social-emotional, interoceptive awareness, self-advocacy
3. Discuss:
    - Assessment of non-instrumental, higher order pragmatics skills
    - Nonverbal language decoding
    - Nonverbal signals
4. Pragmatic language impact on school success
5. Factors that impact pragmatic performance

Learner objectives

5. Assessment tools
    - Video Based Assessment techniques
    - Assessment of IMPACT on education and social interactions

6. Intervention Approaches
    - Neurodiversity-affirming goal- writing
    - Video based intervention techniques
    - Strategies and activities to address self-advocacy, social-emotional awareness, interoceptive awareness, self-advocacy
    - Auditory-Visual Bombardment to address nonverbal language

Traditional views on pragmatics, helpful?

“Knowing when to say what to whom and how much”

(Hymes, 1971)

“The range of communicative functions (reasons for talking), the frequency of communication, discourse skills (turn-taking, topic maintenance and change, requests for clarification), the flexibility to modify language for different listeners and social situations, and the ability to convey a coherent and informative narrative”

(Paul, Norbury, & Gosse, 2017)

Commonly assessed pragmatic skills

- Body language
- Eye contact
- Conversation initiation, maintenance, ending
- Making the sequence of statements coherent and logical
- Taking turns with other speakers
- Maintaining a topic

Is this sufficient for social communication to be successful?

Rarely assessed

- Understanding emotions and reflective self-awareness
- Recognizing communicative intent
- Expressing emotions
- Making/maintaining friendships
- Impact on Social and Academic life
- Nonverbal language
- Detecting sarcasm/ deceit
- Ability to self-advocate
- Repairing communication breakdowns

What is pragmatics?

Final ingredient needed for effective communication

which is: emotion

Social Communication

Connecting and socializing with others is emotion - driven!!!!!

We need a solid understanding of our own emotions and the emotions of others to be socially successful.

We socialize

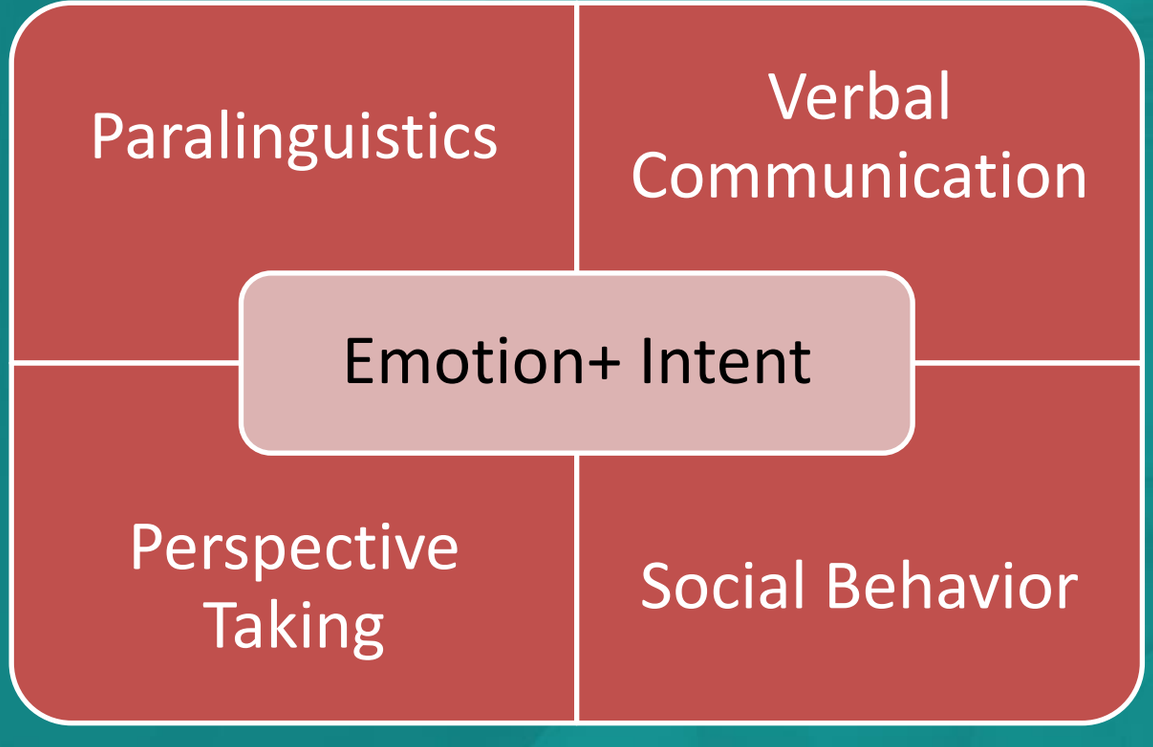
-to feel supported, validated, understood, connected, empathized, secure

-share our feelings/thoughts about news, events, decisions, to get attention

- to feel secure at workplace, at school, etc

-to feel connected to the world

Social Communication: Process



Social Communication: Process

Emotion+ Intent

-self-awareness: understanding meanings of our own emotions and needs

-self-regulation: managing our own emotions

-managing other people's emotions

A child's ability to understand their own emotions and identity is the foundational piece in understanding and connecting with others. Successful communicators are able to identify their own feelings and the feelings of those around them. Individuals can utilize their own feelings in the guidance of their thoughts and reasoning process and they can use the information supplied by their emotion to make decisions and act accordingly.

Emotion

Emotion+ Intent

Emotions are brain/body reactions to both memories and our current situation and environment. Our emotions can be based off a response to a current event or similar event in the past. The way we handle emotions is based on our ability to tolerate the emotion. Emotions vary in intensity.

Emotions and our ability to tolerate the intensity of emotions drive our behavior and communicative intent.

Emotion Drives Social Communication: Examples

Emotion+ Intent drive social communication

e.g., being alone → reaction of feeling lonely→ intent to socialize to feel better

e.g., watching an impactful news report → reaction: forming an opinion, feeling excited→ intent to share/discuss opinion with others

e.g., friend sharing sad news→ reaction: understanding what it feels like to be in friend's situation → intent to empathize to help friend feel better (to maintain friendship)

Development of Emotion & Intent

Emotion+ Intent drive social communication

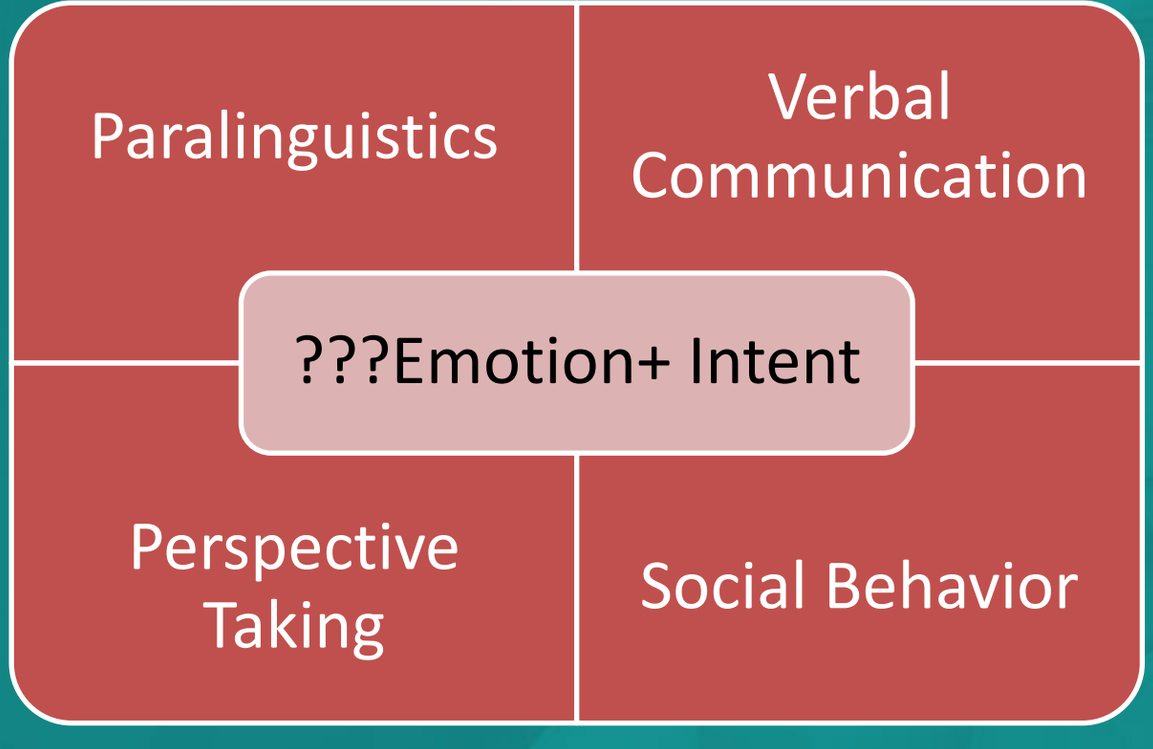
With greater maturation levels, the complexity levels of emotional responses and intent increase:

e.g., more sophisticated types of emotions: socially accepted/rejected, annoyance, disgust, loneliness, etc

e.g., more complex types of intent:

Intent to be part of social ranks (popular vs unpopular social groups on campus), social status, special interests (video games, fashion, sports), sarcasm, deceit etc.

What happens when there is a difficulty in processing or understanding meanings of emotions? What is interoception?



Interoception

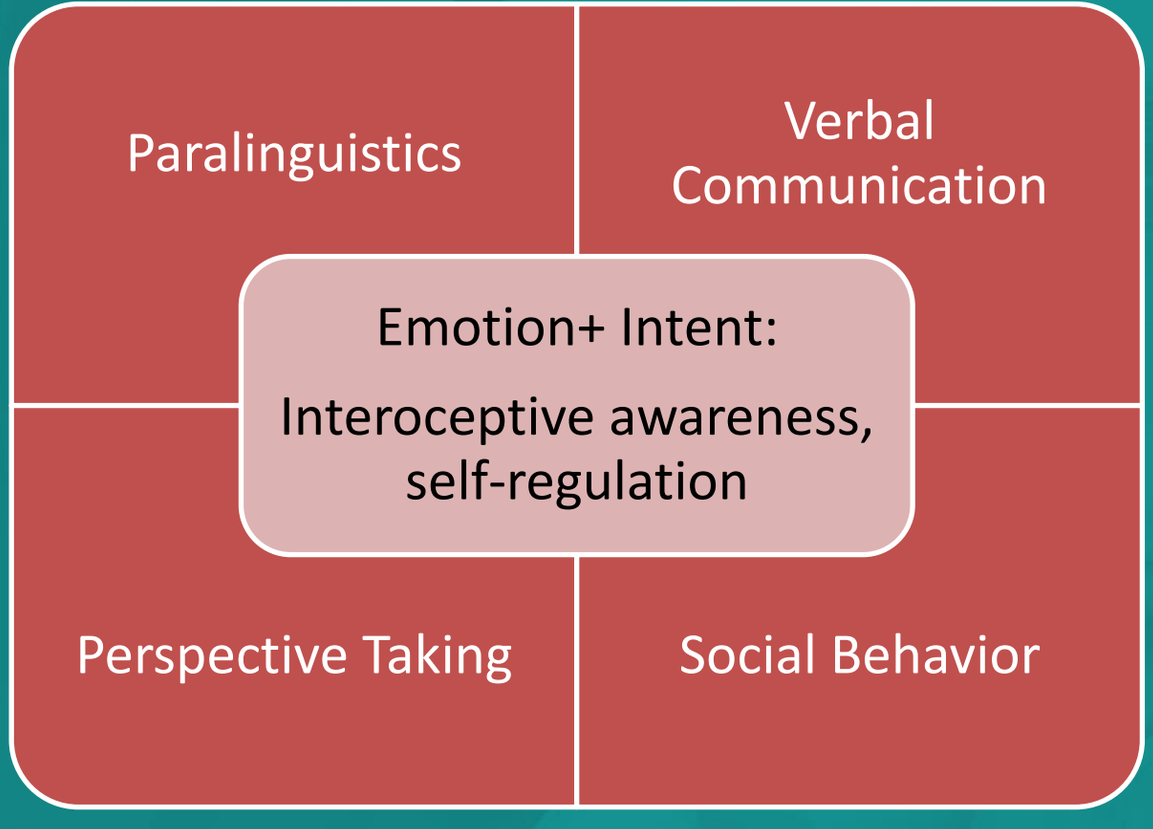
Interoception –the sense that helps understand and regulate emotions and allows us to answer the question, “How do I Feel?”

Interoception also has a large role in an individual’s ability to engage in perspective taking, the ability to understand how others are feeling.

We first need to be able to discriminate and understand our own emotions before we are able to understand how others feel.

When we have developed interoception, we can begin engaging in perspective taking and stepping into someone else’s shoes. We are not only answering the question, “How do I feel?” but also, “How do you feel?”

Social Communication Process:



Exercise

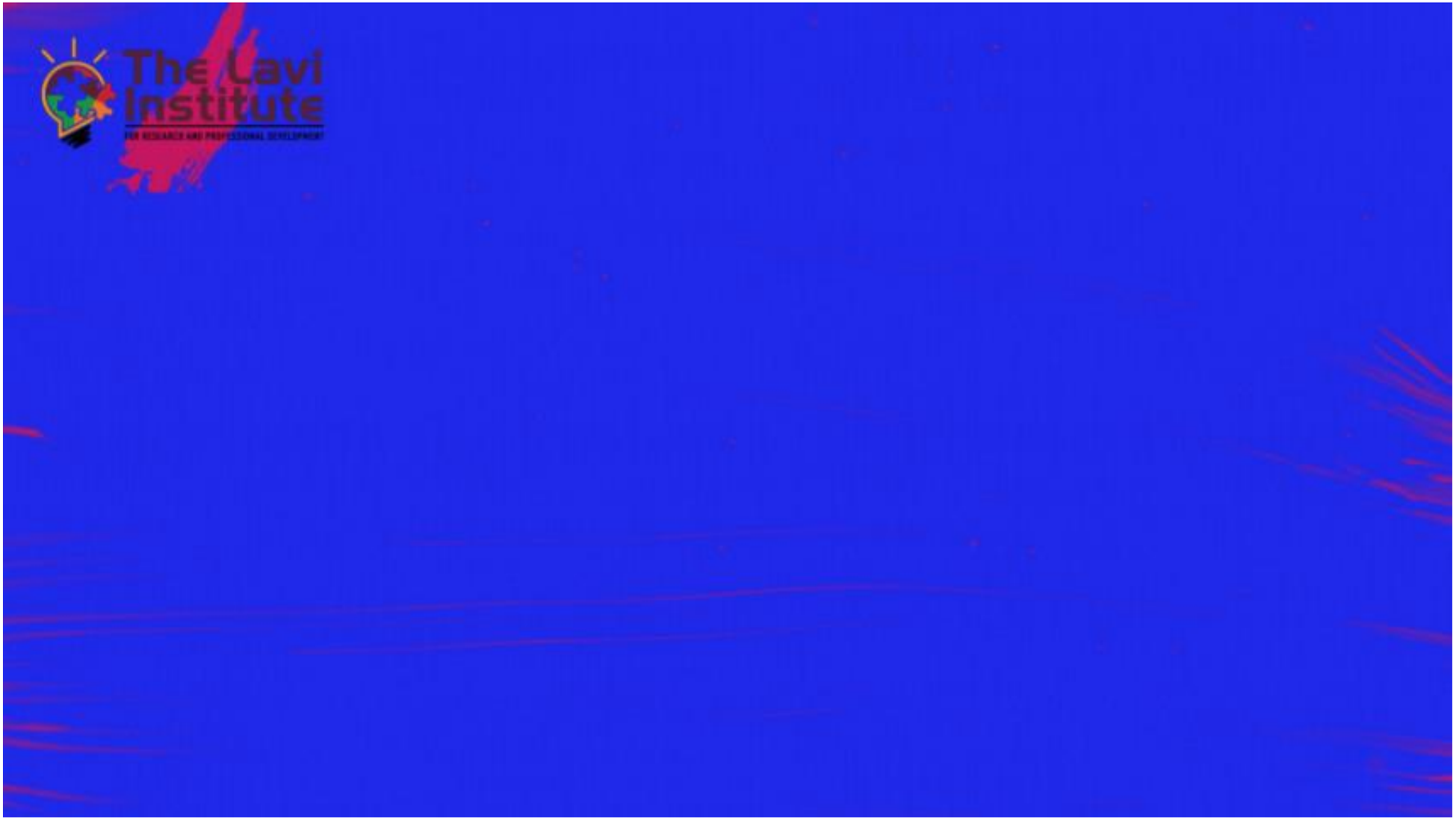
Before we begin talking about assessment of pragmatics, let's preview 3 of our study participants' conversational exchanges/interviews/test responses.

Participants

Which of the following participant study groups do the 3 participants represent:

a. Typically developing
b. Autism
c. Social communication disorder

Participant 1?
Participant 2?
Participant 3?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Tasks

The responses seen in the videos are based on tasks designed to elicit comprehension/expression of instrumental intent.

Let’s analyze participants’ responses based on tasks designed to elicit comprehension/expression of affective intent.


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Discussion

Communicative Intent

Comprehension of Social Context versus Expression of Intent

Use assessment questions efficiently

Diagnostic versus strength-based evaluation

Purpose of a diagnostic evaluation:

a. compare student performance to a group of neurotypical students in the same age-group

b. evaluate how the student functions in a neurotypical academic and social setting

c. determine eligibility

d. develop a profile of strengths and weaknesses

e. determine or rule out a diagnosis

Social communication disorder (SCD)

Social communication disorder (SCD) has been characterized as the difficulty with verbal and nonverbal communication that negatively impacts an individual's:

- Social relationships
- Academic achievements
- Occupational performance

(Brinton, Fujiki, Spencer, & Robinson, 1997; Bishop, 2000; Adams, 2013)

Social communication disorder (SCD) *(cont.)*

A child with SCD may have difficulty with:

- Taking turns during conversation
- Maintaining a conversational topic
- Introducing new/appropriate topics
- Understanding presuppositions
- Comprehending nonliteral language
- Interpreting verbal and nonverbal cues

This is what we see on the surface, but what is the underlying reason? Self-regulation? Interoceptive awareness? Limited experience learning about/engaging in conversations with peers?

(Brinton, Fujiki, Spencer, & Robinson, 1997; Bishop, 2000; Adams, 2013)

ASD social communication characteristics (Vicker, 2009)

- Traditional view: Difficulties understanding someone else's perspective. Other people have their own thoughts, ideas, and motivations.
  - Difficulty understanding your own emotions or overflow of emotions (weak interoceptive awareness) leads to difficulties understanding emotions of others (it does not mean that autistic children don't understand that people have their own thoughts, ideas and motivations.
- Limited eye contact during a social interaction.
  - Eye contact is painful or provides too much sensory information for the child.

ASD social communication characteristics (Vicker, 2009) *(cont.)*

- Topic maintenance – The child may be distracted by associations cued by his/her own words or another person's words.
- Talking aloud to oneself in public places, unaware that others can hear and make judgments about them.
- Making statements, comments, or questions that may be inappropriate or not relevant to a conversation.
- Difficulty initiating (e.g., greetings), continuing (e.g., add-on comments, questions), or ending (e.g., farewells) a conversation.

ASD social communication characteristics (Vicker, 2009)

(cont.)

- Missing or not understanding “nonverbal cues” (e.g., disinterest in a topic, confusion, etc.) or other subtle differences in social situations.
- Recognizing and identifying subtle expressions of feelings and emotions.
  - Weak or absent interoceptive awareness makes it difficult to discriminate between emotions.
- Difficulty recognizing, identifying, and understanding various emotions/feelings and not knowing what to say in response to these nonverbal forms of language.
  - Weak or absent interoceptive awareness makes it difficult to discriminate between emotions

Pediatric (non ASD) Psychiatric Diagnoses Affecting Pragmatic Language

- Mood Disorders

• Depression • Bipolar

- Anxiety Disorders

• Panics • Phobias • Obsessive Compulsive Disorder (OCD) • Psychotic Disorders • Childhood Onset Schizophrenia • Other • Reactive Attachment Disorder (RAD) • Disinhibited Social Engagement Disorder (DSED)

- Attention and Behavior Disorders

• Attention Deficit Hyperactivity Disorder (ADHD) • Oppositional Defiant Disorder (ODD) • Conduct Disorder (CD)

Challenges in Detection of Social Communication Differences/Difficulties

- May be perceived as having challenging behaviors

- Severe cases misdiagnosed as psychiatric diagnoses (Intermittent Explosive Disorder, Oppositional Defiant Disorder, etc.)

- Common teacher/parent complaints:

"Ignores" when presented with directions

Follows own agenda

Inappropriately "acts out"

Acts immaturely

Clueless regarding others around him/her

Misunderstandings related to standardized tools

- **normative group characteristics**

the makeup of "normative" groups influences how tests function. If Test A includes people with disabilities in the "normative" group based on the rationale that it better represents the full population, but Test B excludes people with the target disorder from the normative group, Test B will be more sensitive to the disorder, whereas Test A will be more likely to find the child with the disorder to be a member of the "normative group.“

- **diagnostic accuracy is conveyed by evidence of sensitivity and specificity for specific cut scores on validated tests; not arbitrary rules**

because tests standardized on different normative groups cannot be compared directly, neither should system policies dictate such things as that a child must score 1.25 SD below the mean to meet criteria for eligibility. Rather, each test should publish the cut scores and core tests that yield the best balance between sensitivity (fewest false negatives) and specificity (fewest false positives) and these are the values that should be used when interpreting that test.

Limitations of standardized tools

- Non-existent or poor sensitivity/specificity properties
- Reliance on static images that present exaggerated facial expressions
- Outdated images
- Requires an SLP to read out loud a social situation which may not properly convey the message of the presented social scene
- Assesses basic instrumental pragmatics (problem solving example: • What will happen if you break something in the supermarket ? • Why do you have to look both ways when crossing the street? – this relates to typical activities of daily living, not social interactions
- Do not address the complex dynamics of nonverbal language
- Do not accurately detect social communication difficulties

Diagnostic versus strength-based evaluation

Purpose of a strength-based evaluation

a. promote an enabling environment

b. focus on changing the environment, NOT the student

c. focus on self-esteem, autistic identity and autonomy

d. move the burden of change away from the student and foster acceptance and accommodation so that the student can integrate/participate as much as they wish

e. focus on self-advocacy, self-awareness, problem-solving

Informal methods of assessing social communication

1. Self-rating scales/ questionnaires to
    - Learn about student's social communication goals, needs and expectations (e.g., ask the child to list some of their personal strengths and qualities)
2. Teacher and parent rating scales – evaluate if the individuals in the student's environment need to/can adjust their interaction approach to support the student
3. Observations – analyze the environment with the purpose to address any barriers to successful social communication

Informal methods of assessing social communication

i. Perspective Taking tasks: • Consider perspective of another person • Provide background information • Monitor comprehension • Gage interest in topic • Recognize and repair conversational breakdowns

ii. Emotional understanding task
    - Understanding of emotions based on facial expression

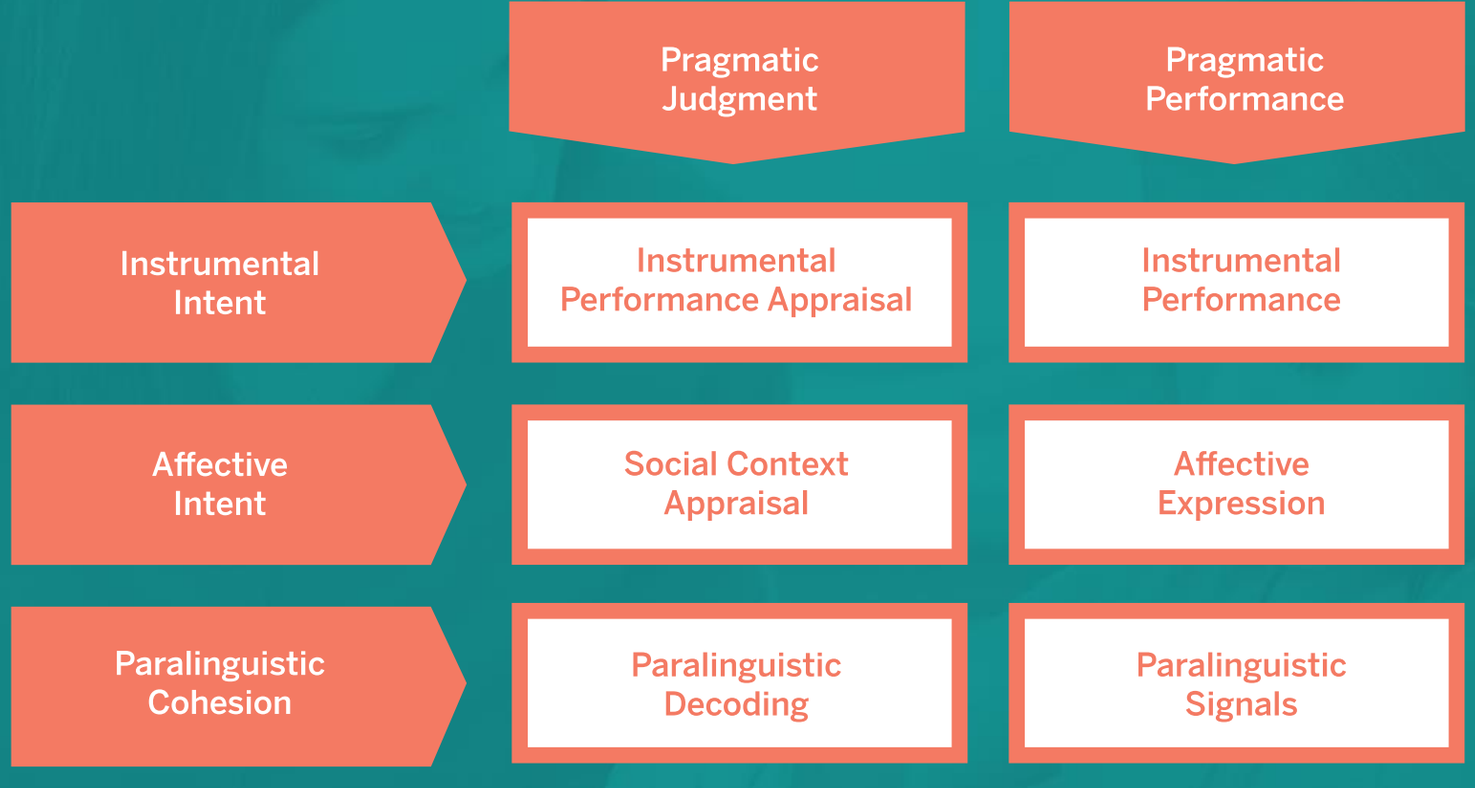
iii. Social problem-solving task
    - solutions to presented social difficulties

Informal methods of assessing social communication

(cont.)

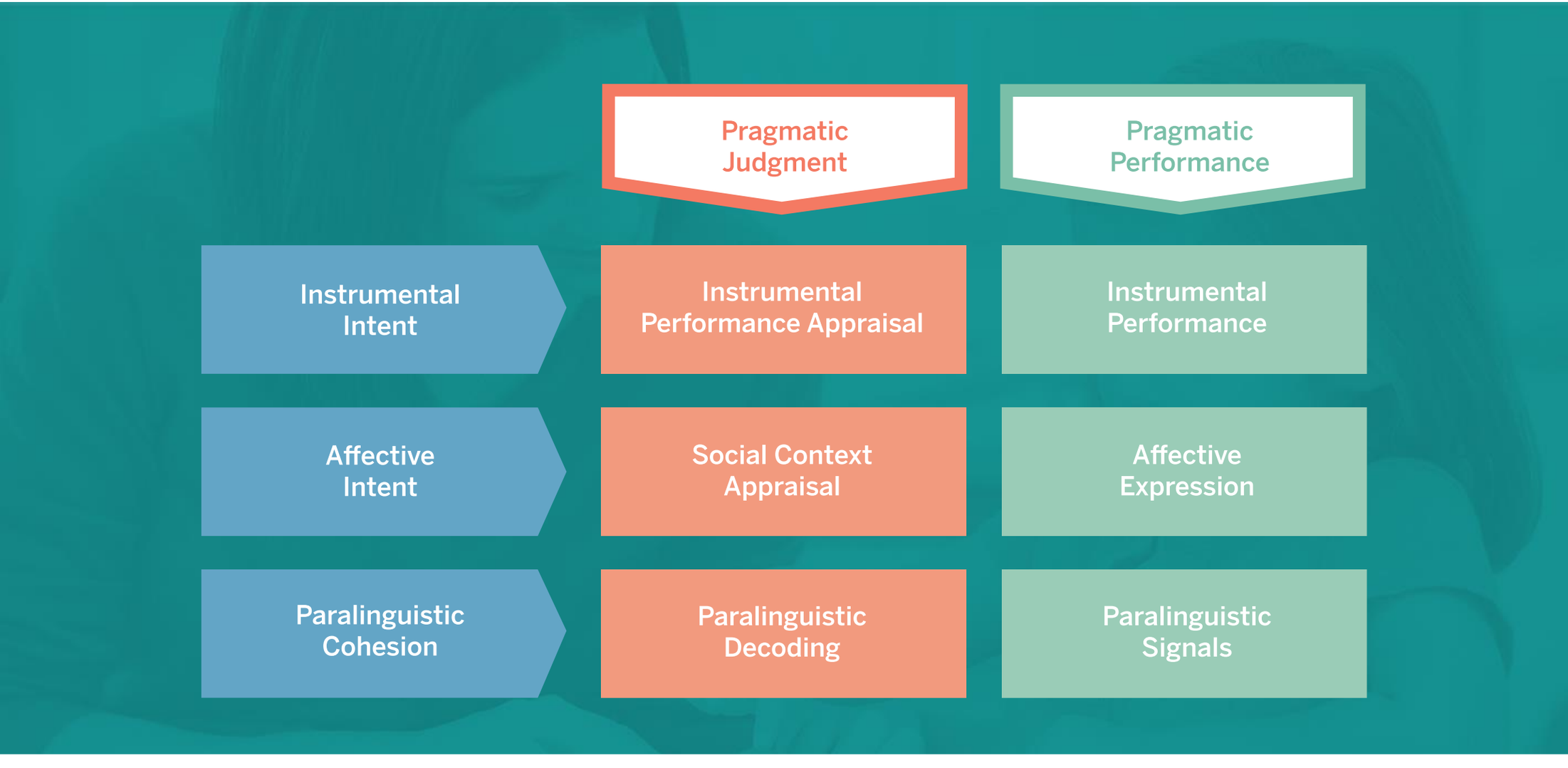
7. Conversational Adaptation
    - Ability to repair conversational break-downs or self-advocate to navigate a conversational break-down
    - Maintain topic for several turns (not introduced by self)
    - Conversational turn balance, topic stringing, balanced question/comment ratio
8. Verbal sequencing of events, directions, steps (e.g., ability to coherently verbalize event sequencing (what steps do you need to take in order to…?); directions (e.g., how to get somewhere); instructions on how to make something; rules of a sport or a videogame; explain a recipe
9. Self-advocacy
10. Narrative skills (story order, use of relevant details, use of temporal and cohesive markers to connect the story, lexical fluency, story cohesion, insight into character's feelings, beliefs, thoughts

Diagnostic assessment



(Lavi, Mainess, and Daher 2016)

Domain: Pragmatic Judgment vs. Pragmatic Performance



Receptive vs. expressive Pragmatic Judgment

Receptively:
understanding social context

Expressively:
verbally providing appropriate responses in a given situation

Pragmatic Judgment

- Pragmatic Judgment = receptive pragmatic skills
- Allows more detailed grasp of child's comprehension of social situations
- Distinguishes from broad definition of pragmatic language skills

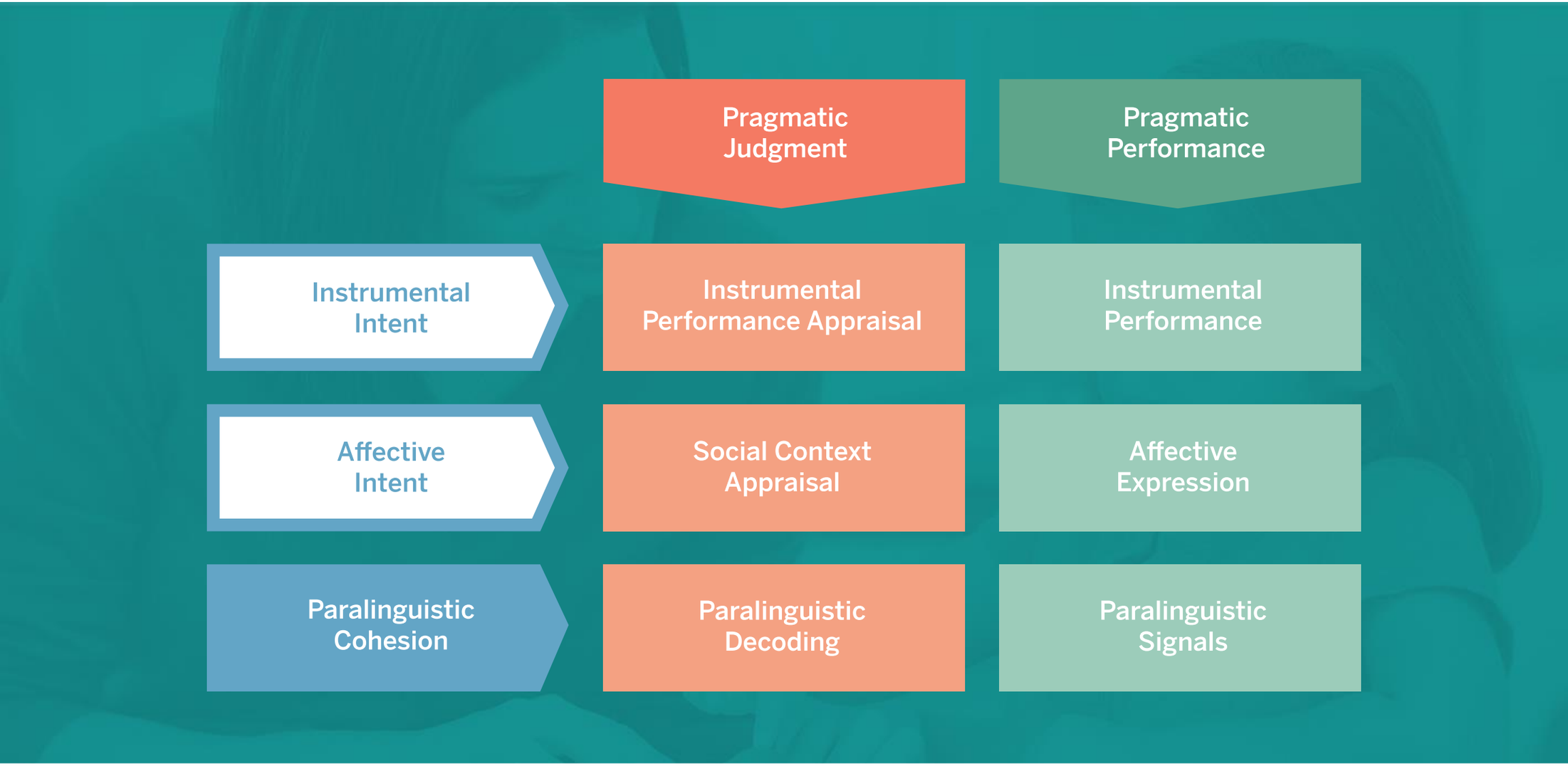
Pragmatic Performance defined

- Pragmatic Performance = expressive pragmatics
- Measured via responses given in social situations
- Responses vary, e.g.:
  - Answers to questions/statements
  - Responses to expressed emotions

Pragmatic Judgment vs. Pragmatic Performance

- Assessment of both important
- Students may have different profiles - one may have stronger judgment skills vs. performance skills (or vice versa)
- Assessing both skills can:
  - Provide more details to understanding pragmatic profiles
  - Result in a more individualized plan
  - Produce a more effective plan

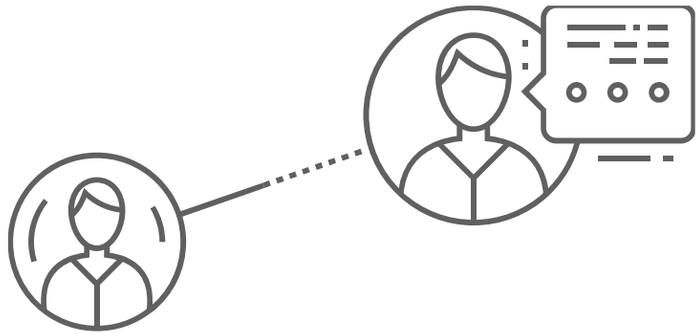
Domain: Instrumental vs. Affective Intent



Instrumental communication

Primary goal:

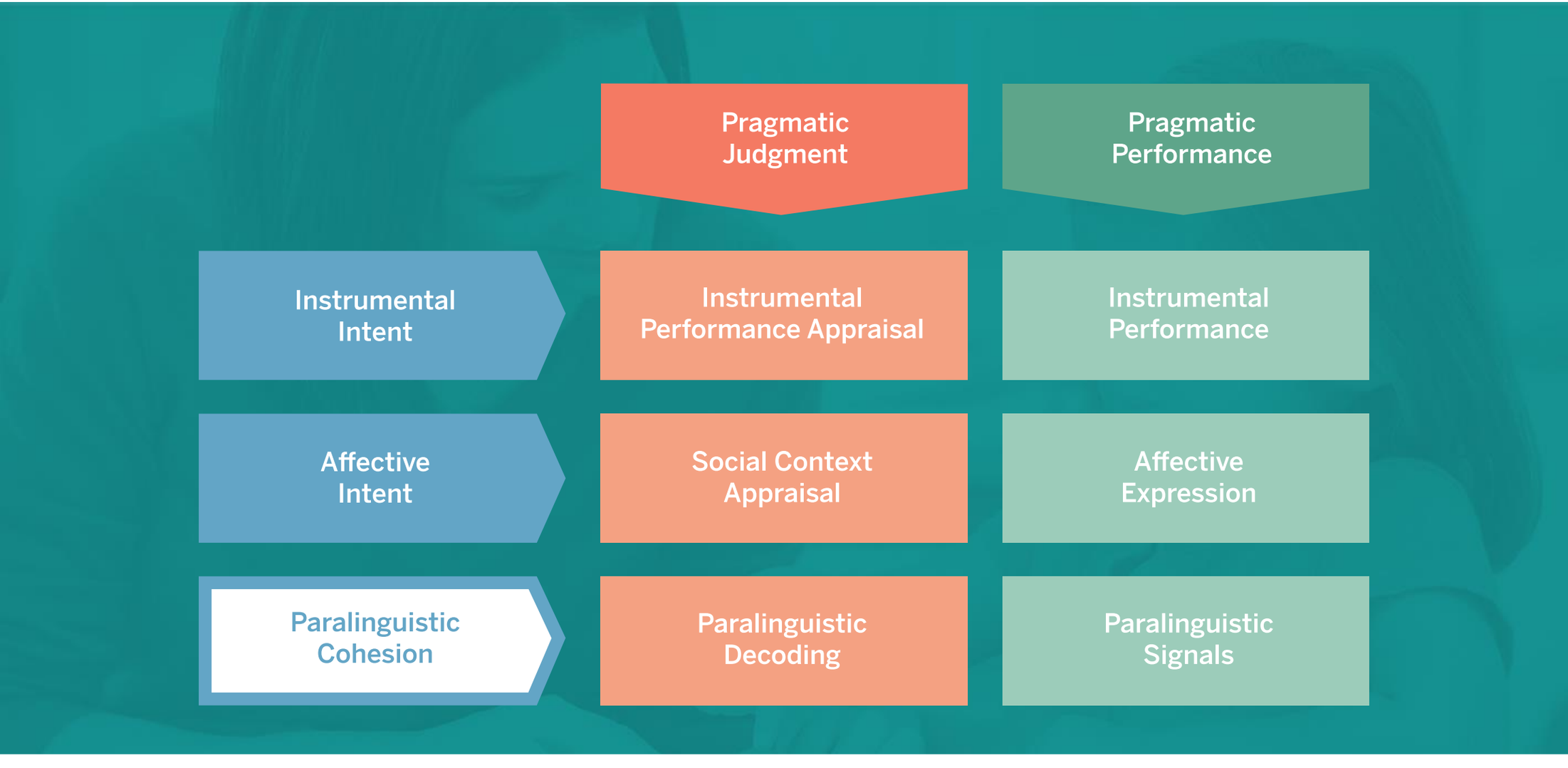
- Effective relay of information
- Communication used as means to an end
- Heavy focus on message
- Little focus on affective or emotional functions



Non-instrumental communication

- “Affective communication” → higher level communication skills
  - Expressing emotions to another person
  - Key component of nonverbal communication
  - Requires higher level thought processing
- Differs from instrumental intent
  - Not used as means to an end

Domain: Paralinguistic Cohesion



Domain: Paralinguistic Cohesion

Represents integrative interaction between ability to:

- Detect speaker's intent by
  - Recognizing meanings of nonverbal cues
- Express various types of intent with help of nonverbal signals, such as:
  - Facial expressions
  - Tone of voice
  - Inflections in prosody
  - Gestures
  - Overall body language

Interpreting a message…

We consider the words (what is actually said), tone of voice (how we say the words), and body language (facial expressions, gestures, posture, etc.)

It is difficult to pinpoint the significance of each of these elements in each individual message, the importance of nonverbal communication has been well documented (Knapp, Hall, & Horgan, 2014).

What do the universal expressions of emotions look like?

- Paul Ekman and Walter V. Friesen's (2003) "*Unmasking the face: A guide to recognizing emotions from facial clues*" examines what the universal expressions of emotions look like.
- Ekman and Friesen (2003) focused on the three areas of the face which are capable of independent movement – (a) the brow/forehead; (b) the eyes/lids and the root of the nose; and (c) the lower face, including the cheeks, mouth, most of the nose, and the chin.

Meanings of facial expressions

- **Surprise -** The eyebrows are raised, so that they are curved and high, the skin below the brow is stretched, horizontal wrinkles go across the forehead (depending on age), the eyelids are opened; the upper lid is raised and the lower lid draw down; the white of the eye (the sclera) shows above the iris, and often below as well, the jaw drops open so that the lips and teeth are parted but there is no tension or stretching of the mouth.

- **Disgust -** Disgust is shown primarily in the lower face and in the lower eyelid. The upper lip is raised, the lower lip is also raised and pushed up to the upper lip, or is lowered and slightly protruding, the nose is wrinkled, the cheeks are raised, and lines show below the lower lid, and the lid is pushed up but tense. Lastly, the brow is lowered, lowering the upper lid.

- **Anger -** Anger is manifested in each of the three facial areas. The brows are lowered and drawn together, vertical lines appear between the brows, the lower lid is tense and may or may not be raised, the upper lid is tense and may or may not be lowered by the action of the brow, the eyes have a hard stare and may have a bulging appearance, the lips are in either of two basic positions: pressed firmly together, with the corners straight or down; or open, tensed in squarish shape as if shouting, the nostrils may be dilated, but this not essential to the anger facial expression and it may also occur in sadness, there is ambiguity unless anger is registered in all three facial areas.

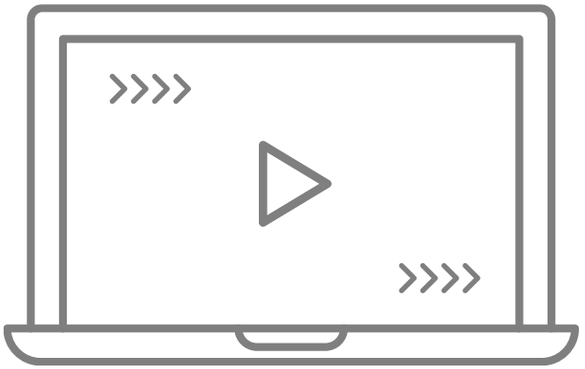
Video-based assessment

Use of produced video narrative for eliciting pragmatic language responses from individuals (ages 3:0 years to adulthood)

Purpose: To analyze and measure individual's ability to:

- Understand real-life social situations
- Respond to real-life social situations

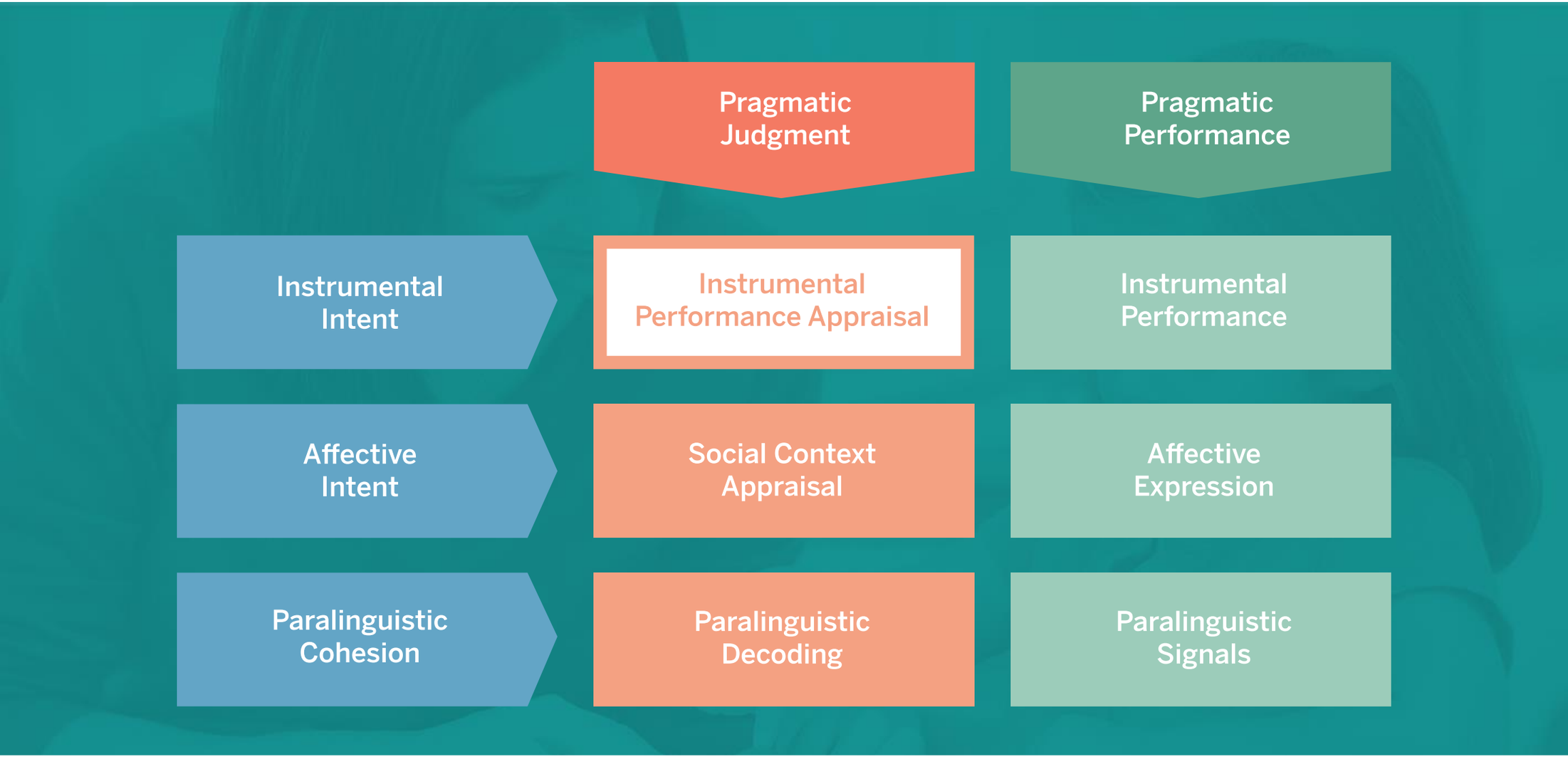
Presented in a video-based format



Video-based assessment *(cont.)*

- Combines storytelling power of television
- Authenticity of real-life social situations
  - To obtain as naturalistic responses as possible
  - Powerful and prolific testing tool
  - Both effective and time-efficient

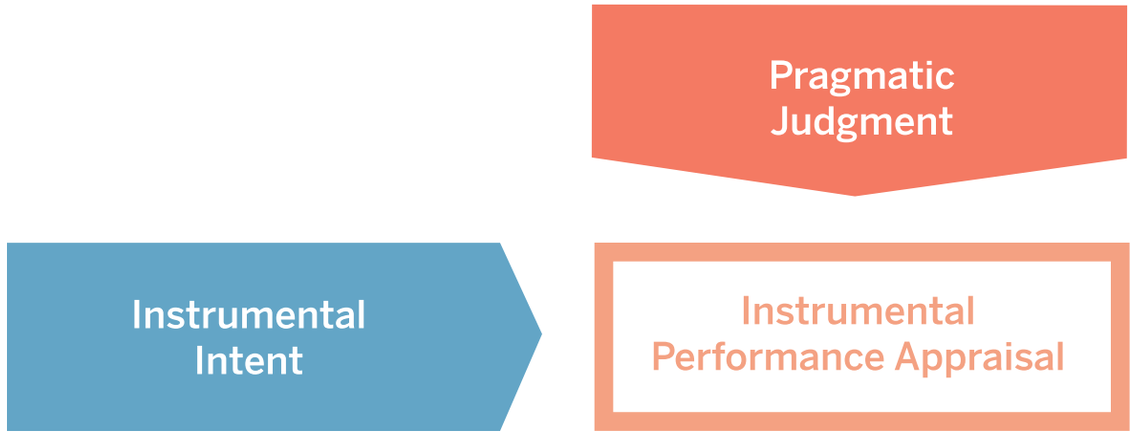
Construct: Instrumental Performance Appraisal (Knowledge of Basic Social Routines)



Construct: Knowledge of Basic Social Routines (IPA)

Social scenes include:

- Introductions
- Farewells
- Politeness
- Making requests
- Responding to gratitude
- Requesting help
- Answering phone calls
- Requesting info (e.g., directions)
- Asking permission



Ability to discern difference between:

- Expected and unexpected language
- When used in means-end or basic communication processes
- Includes (but is not limited to):
  - Introductions, farewells, politeness, making requests, responding to gratitude, and requesting information

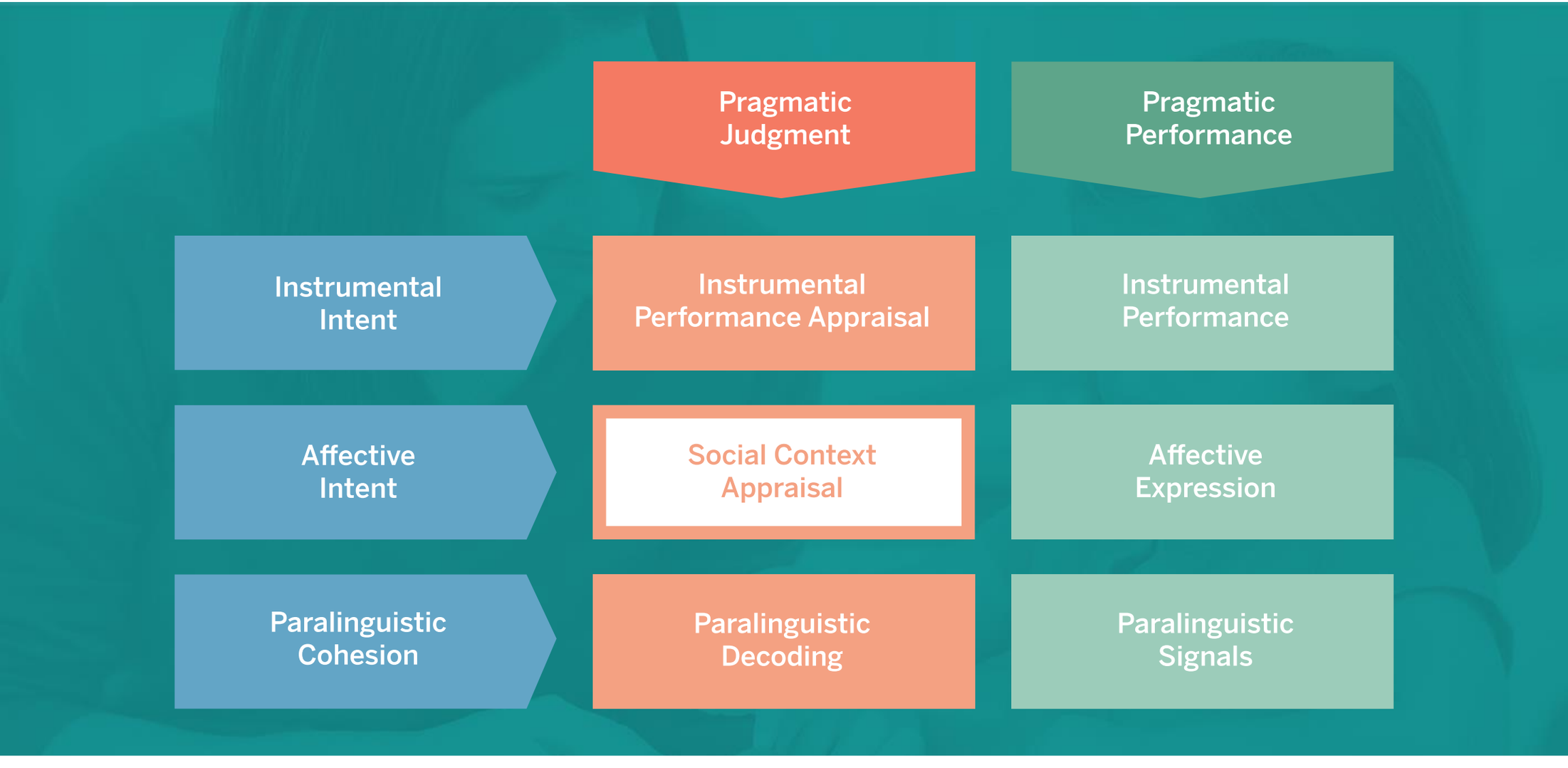
These skills necessary to:

- Satisfy individual’s basic needs
- Navigate social routines

Sample strength-based goals

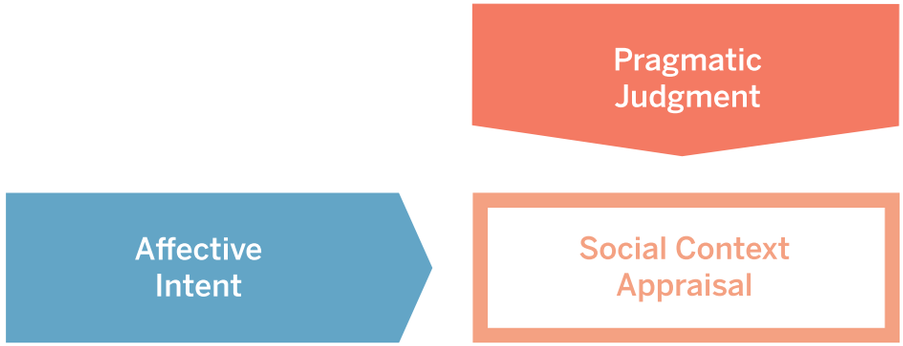
- Will describe their perception of events and social situations
- Will describe how their communication choices and actions may be perceived by those around
- Will self-determine their communication choices
- Will identify specific environmental modifications they may need
- Will identify sensory supports needed for self-regulation (e.g., What can be done to help calm their body if feeling overwhelmed or what can be done to help wake their body when feeling tired/bored)

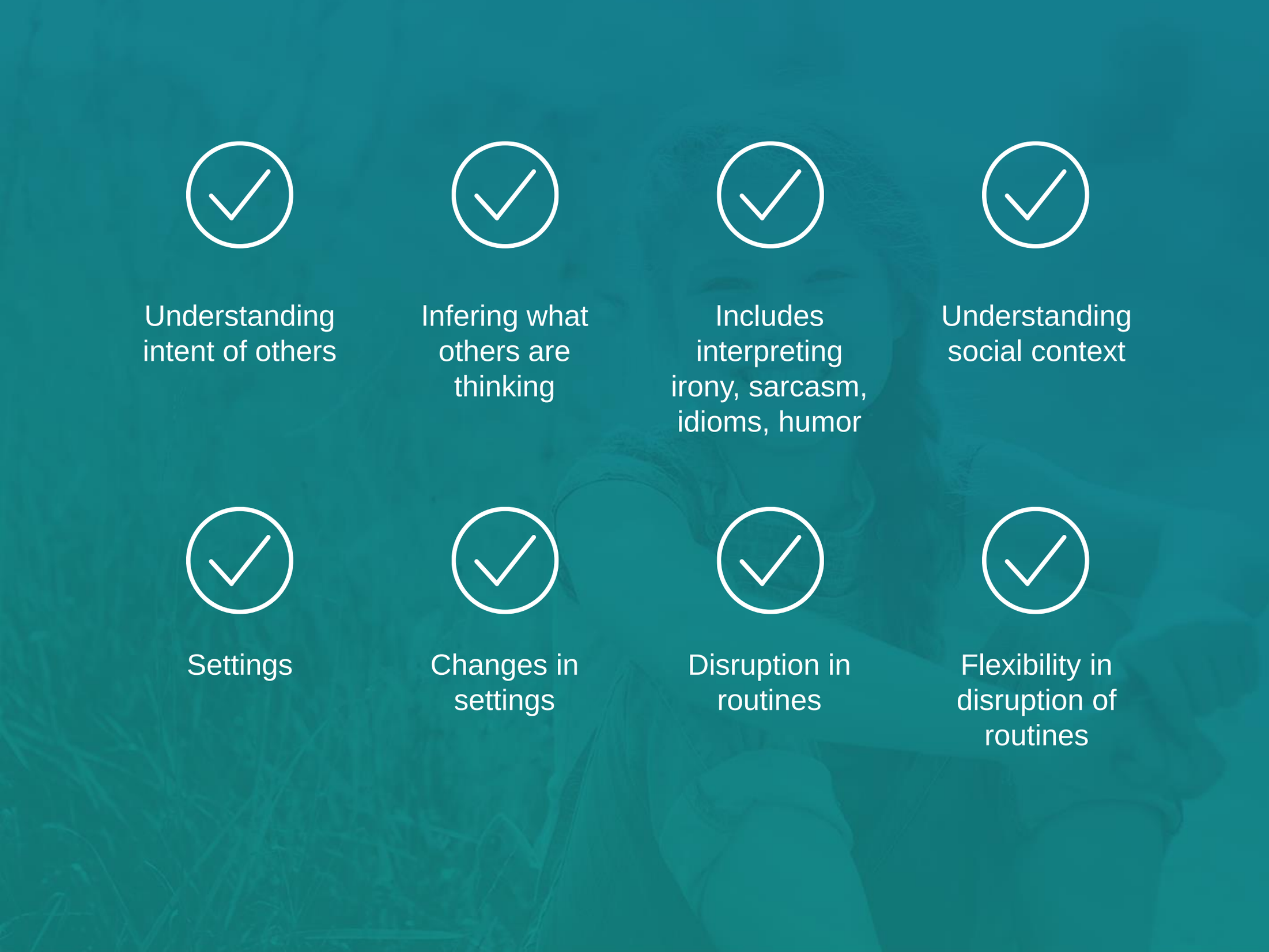
Construct: Social Context Appraisal (Reading Context Cues)



Construct: Reading Context Cues (SCA)

- Ability to understand dynamic nature of social context
- Adequately process interactions between:
  - Contextual variables
  - Physical setting and environment
  - Communication partners
  - Communicative intent
  - Conflict/solution, etc.
- Requires ability to demonstrate perspective taking



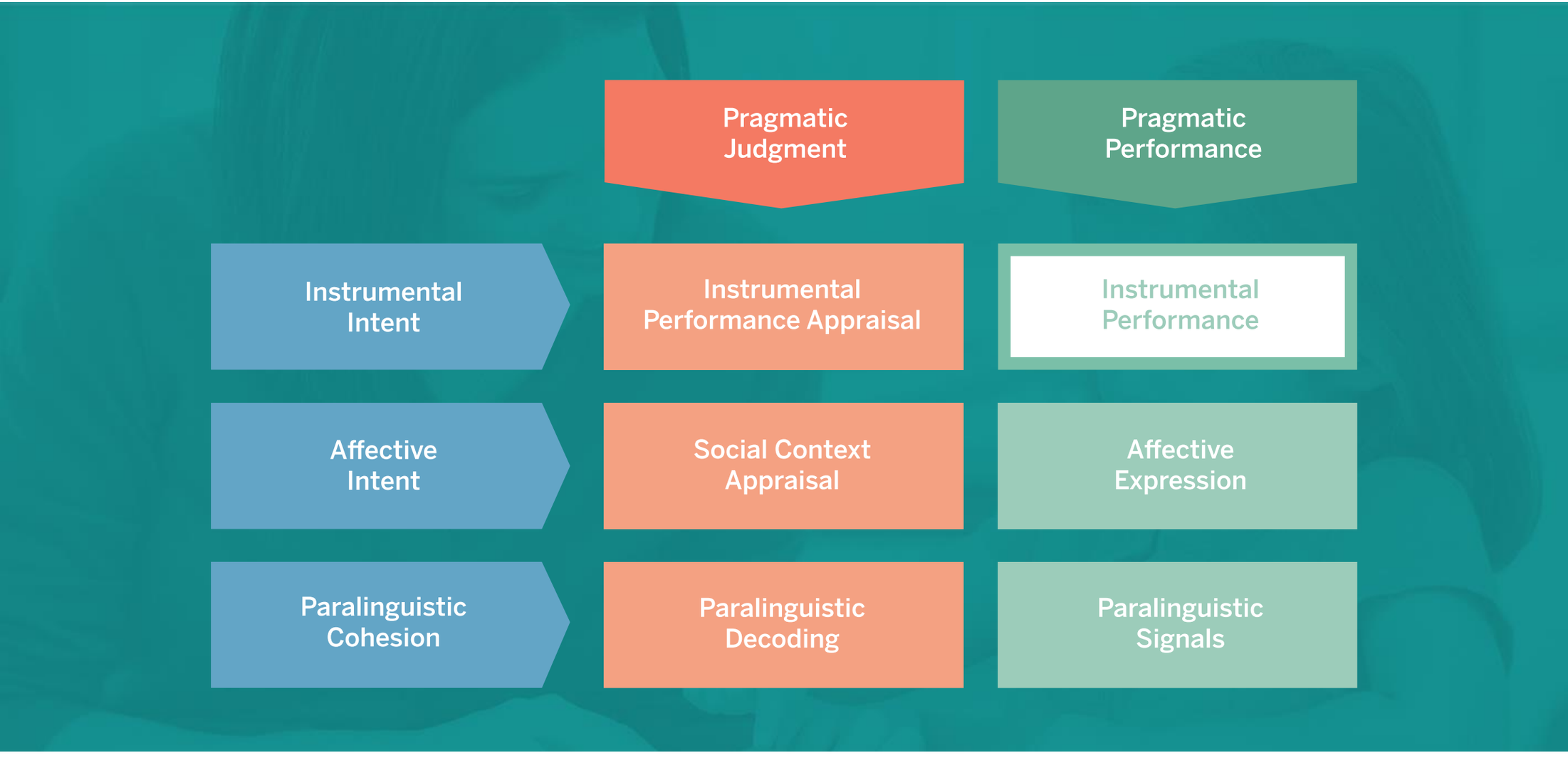


- Understanding intent of others
- Infering what others are thinking
- Includes interpreting irony, sarcasm, idioms, humor
- Understanding social context
- Settings
- Changes in settings
- Disruption in routines
- Flexibility in disruption of routines

Sample strength-based goals

- Will describe the possible motivations and perceptions of others
- Will self-advocate for clarification when they do not understand what's happening in the conversation
- Will self-advocate to navigate a conversational break-down
- Not a recommended goal:
  - Will engage in a reciprocal social play by maintaining at least 3 social exchanges…
- Better:
  - Will self-advocate for a different activity, clarification of the game rules. a break….

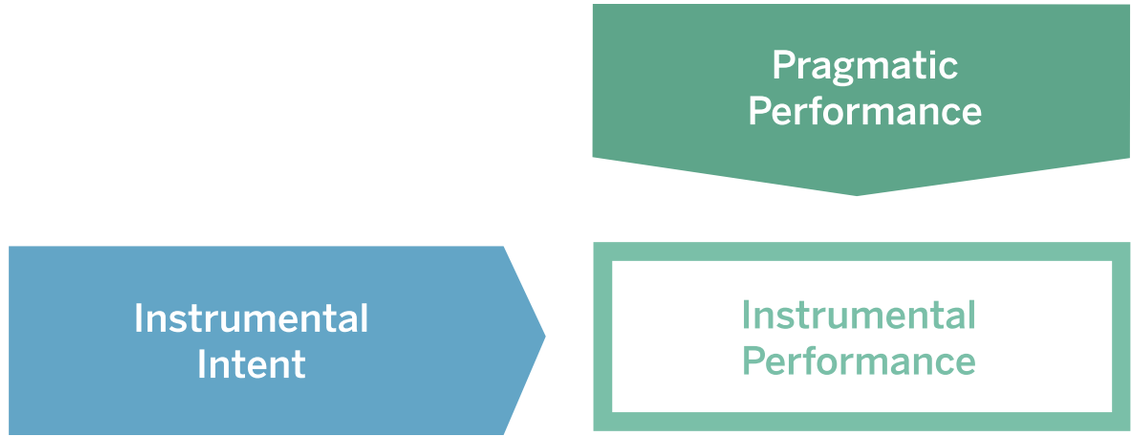
Construct: Instrumental Performance (Using Social Routine Language)



Construct: Using Social Routine Language (IP)

Ability to express:

- Introductions
- Farewells
- Politeness
- Making requests
- Responding to gratitude
- Requesting help
- Answering phone calls
- Requesting info (e.g., directions)
- Asking permission



Construct: Using Social Routine Language (IP) *(cont.)*

- Defined in the same manner as Instrumental Performance Appraisal
- But instead of comprehension, assesses ability to adequately and appropriately express or use verbal means-end processes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Sample strength-based goals

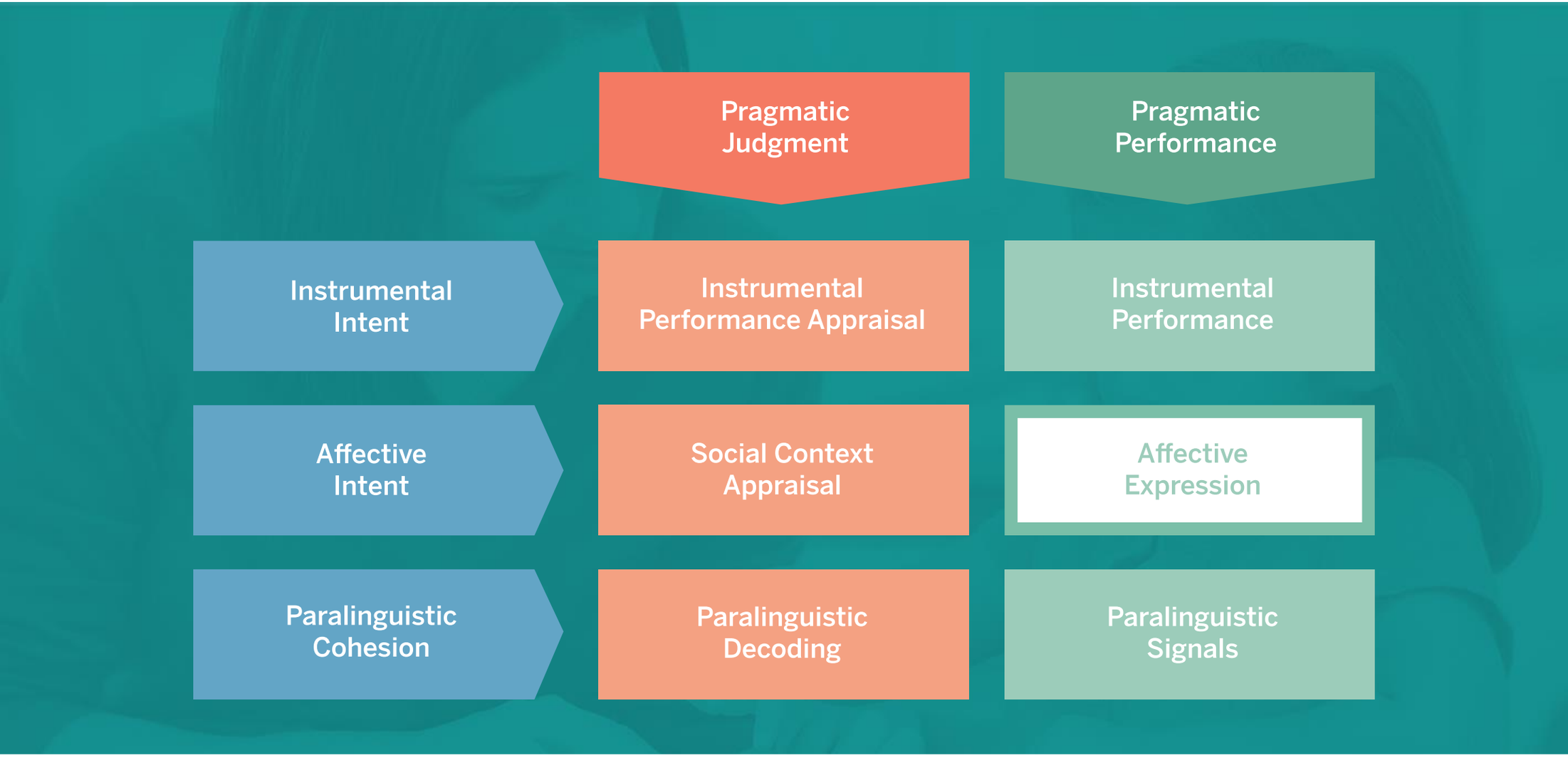
- Will describe supports and accommodations they need to self-regulate

- Will communicate environmental needs for self-regulation and successful learning to their teacher/ school staff (e.g., I need a quiet place to get my work done)

- Will self-advocate for personal needs (ask for help, ask to use the restroom, get some water, etc)

- Will self-advocate for sensory supports by seeking out one of the established IEP accommodations
- Not a recommended goal:
  - Will accept changes in schedule/ routine by demonstrating appropriate behaviors given verbal/visual cues
- Better:
  - Will identify and use coping skills and available recourses in response to a change in their routine/schedule or

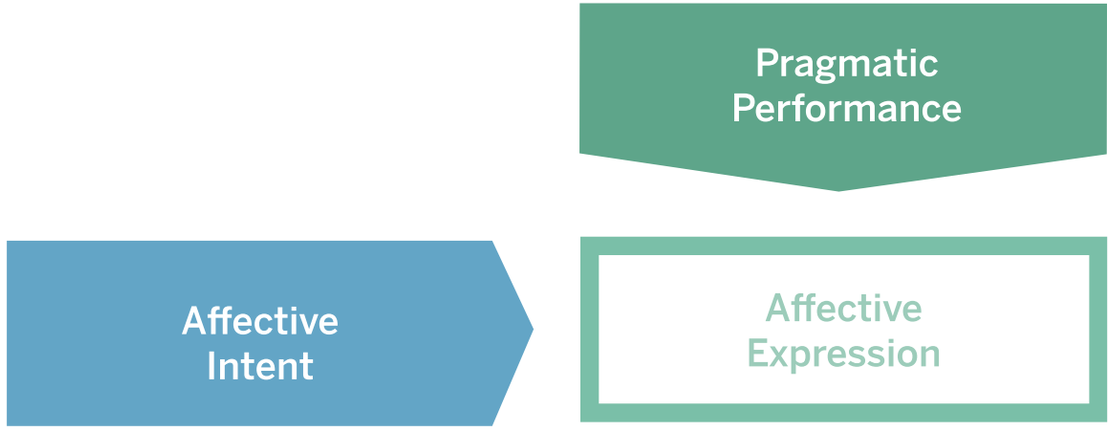
Construct: Affective Expression (Expressing Emotions)



Construct: Expressing Emotions (AE)

Ability to express:

- Refusal
- Regret
- Support peers
- Express empathy
- Gratitude
- Make a compliment
- Encourage a buddy
- Use humor



Construct: Expressing Emotions (AE) *(cont.)*

- Is a non-instrumental pragmatic performance form of communication
- Examines ability to express emotions or higher order language
  - Polite refusal
  - Regret
  - Support peers
  - Give compliments
  - Use humor
  - Express empathy
  - Gratitude
  - Encouragement

Construct: Expressing Emotions (AE) *(cont.)*

- Requires higher level thinking as the purpose is not designed to fulfill basic needs
- References to emotional states indicate deeper understanding of mind & emotion
- Crucially affects:
  - Flow of conversation
  - Ability to understand others' point of view
- Is essential in relationship building

Construct: Expressing Emotions (AE) *(cont.)*

- Can affect conversational techniques such as:
  - Topic selection
  - Maintenance
  - Introduction
  - Transition
  - Closure
  - Responsiveness to conversational partner
- Expressed through verbal feedback or affective expression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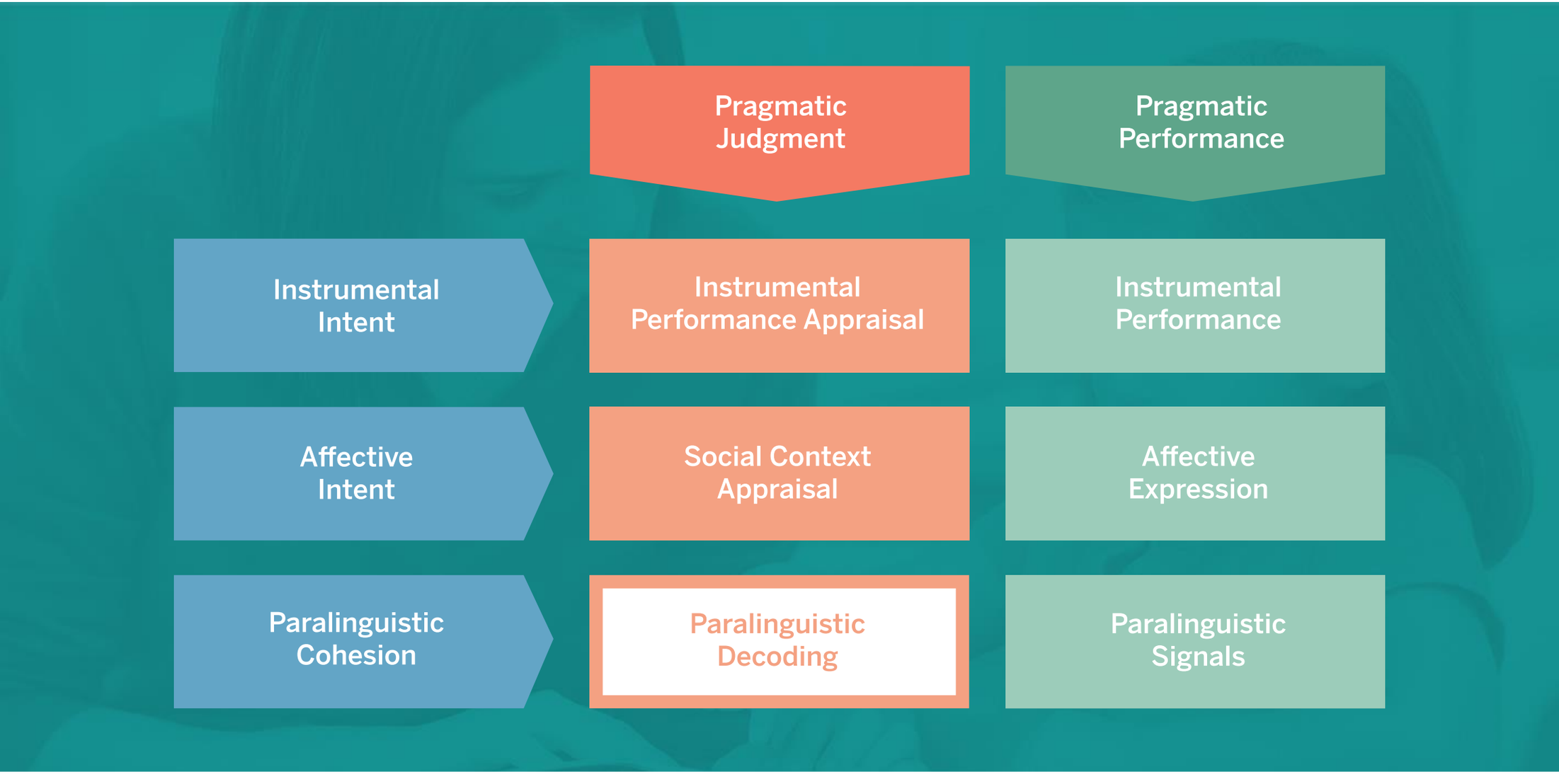
Sample strength-based goals

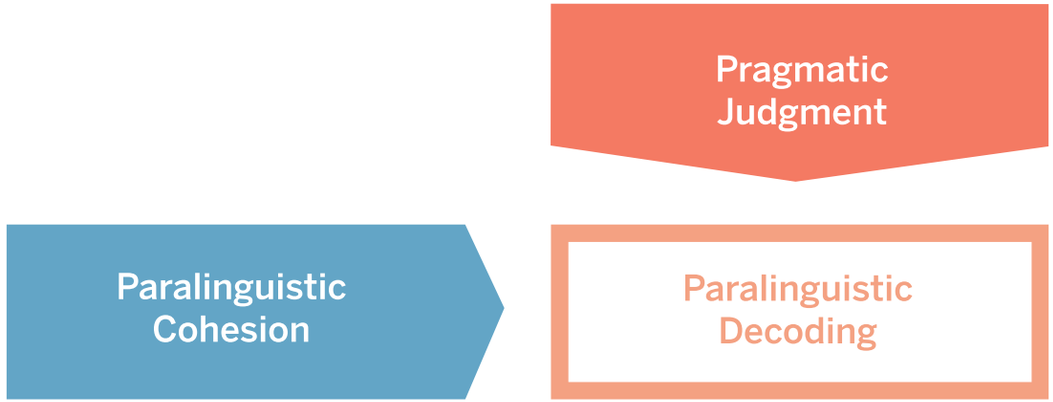
- Will describe their perception of events and social situations
- Will describe how their communication choices and actions may be perceived by those around
- Will self-determine their communication choices
- Will describe the possible motivations and perceptions of others
- Will self-advocate for clarification when they do not understand what's happening in the conversation
- Will self-advocate to navigate a conversational break-down
- Not a recommended goal:
  - Will initiate a up to 3 conversational turns on a variety of conversational topics…
- Better:
  - Will self-advocate for a change in conversational topic or
  - will identify 3 conversational topics of interest that could be discussed in conversations

Construct: Paralinguistic Decoding (Reading Nonverbal Cues)



Construct: Reading Nonverbal Cues (PD)

- Ability to read and understand facial expressions and nonverbal language



Construct: Reading Nonverbal Cues (PD) *(cont.)*

- A form of Pragmatic Judgment
- Measures ability to read facial expressions and nonverbal language
- Can suggest what a person is feeling and thinking without use of words
- Can reveal how person feels despite contradictory verbal message
- Reading of nonverbal language is critical in understanding another person

Intonation

Utterance		**Interpretation**
Cindy got a new pair of **sandals**	↓	She usually buys running shoes
Cindy got a new pair of sandals	↓	Affirmative statement
Cindy got a **new** pair of sandals	↑	Question

Stress

Oh no! My laptop broke down.

Oh no! My laptop broke down.

Oh no! My laptop broke down.

Oh no! My laptop broke down.

Nonverbal communication

Nonverbal communication *(cont.)*

- An individual's ability to decode emotion from someone else's facial expressions has been associated with higher social competence (Egan, Brown, Goonan, Goonan, & Celano, 1998).
- Children are continually developing their ability to decode facial expressions and emotions until the age of ten, at which point their decoding skills match those of adults (Custrini & Feldman, 1989).

Nonverbal communication *(cont.)*

- When trying to interpret an emotional facial expression, typically we focus our gaze on the other person's eyes and eyebrows.
- Previous studies have found that children with ASD tend to focus on the lower half of the face (i.e., mouth) in many social/ emotional situations (Joseph & Tanaka, 2003; Dawson, Webb, Carver, Panagiotide, 2004).

Nonverbal communication *(cont.)*

- Gepner et al. (2001) discovered that children with ASD were able to identify facial emotions when they were shown “strobe-like dynamic presentations” but demonstrated difficulties in the processing of “normal-paced dynamic expressions.”

Nonverbal communication *(cont.)*

- There have been limited studies that have evaluated children's use of facial expressivity.
- A study conducted by Faso, Sasson, and Pinkham (2015) investigated facial expressivity in children with ASD compared to typically developing children.
- In this study, typically developing students and students with ASD were observed by naïve observers who evaluated intensity, naturalness, and emotional category of emotions.

Nonverbal communication *(cont.)*

- ASD expressions were rated as “more intense” and “less natural” than typically developing students’ expressions.
- Faso, Sasson, and Pinkham (2015) concluded that the findings of their study highlight the differences, not reductions, in facial expressivity in students with ASD that may impact social interaction quality.

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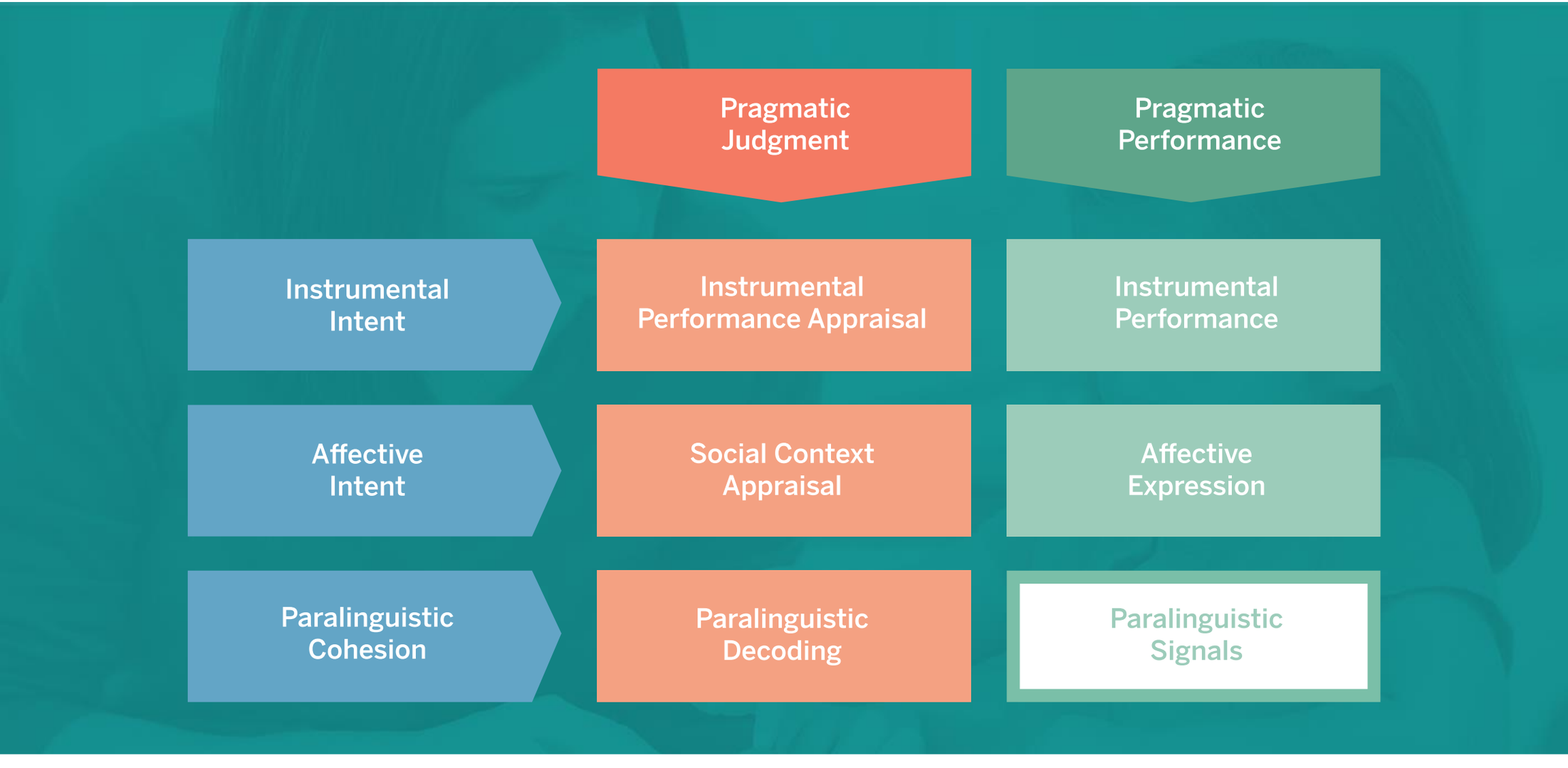
Sample strength-based goals

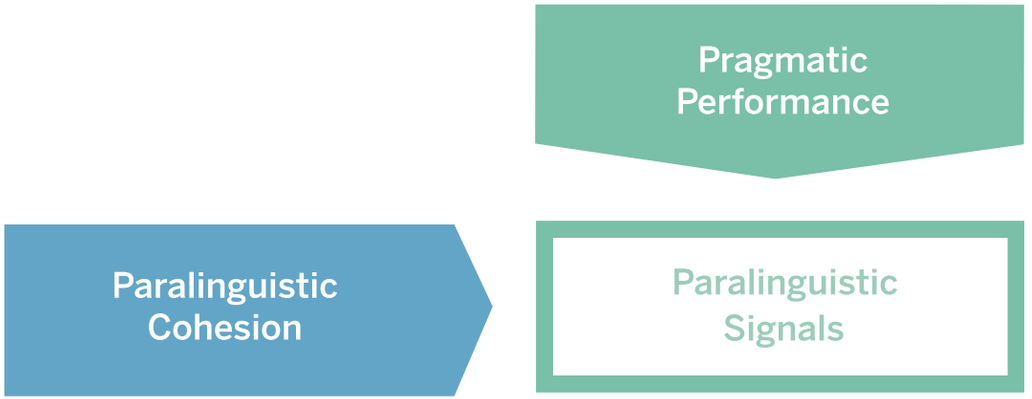
- Will describe other's perception of events and social situations
- Will describe how various communication choices and actions are perceived by others in social situations/scenes
- Will describe the possible motivations and perceptions of others
- Will self-advocate for clarification when they do not understand what's happening in the conversation
- Will self-advocate to navigate a conversational break-down
- Will decode from the listening partner's body language if their conversational topic is of interest or not

Construct: Paralinguistic Signals (Using Nonverbal Cues)



Construct: Using Nonverbal Cues (PS)

- Ability to use facial expressions, nonverbal language, prosody and intonation appropriately



Construct: Using Nonverbal Cues (PS) *(cont.)*

- A non-instrumental form of communication:
  - Assesses ability to appropriately use facial expressions
  - Gestures
  - Prosody
- In contrast to Paralinguistic Decoding, this is the *acting out* of the facial expressions and gestures.

Construct: Using Nonverbal Cues (PS) *(cont.)*

Impacts speaker's:

- Choice of language
- Flow of the conversation

Often noted in:

- Facial expressions
- Body posture
- Tone of voice
- Eye contact

Strength based goals

Work on expression of nonverbal-language if the student chooses to do so

If appropriate, discuss pros/cons of masking

Questions to ask when using video-based social scenes to assess Pragmatic Judgment

Pragmatic Judgment (PJ)

1. Use social scenes showing either correct or incorrect social behaviors

2. Present these questions at the end of each scene:

A. “Did anything go wrong in this video?”

B. “What went wrong?” Or

C. “Why did it go well?”

Questions to ask when using video-based social scenes to assess Pragmatic Performance

Pragmatic Performance (PP)

1. Present a scene/ conversation that is unfinished

2. Add this question at the end of each script:

“Show me, what would you say and how would you say it?”

Communication strategies for the communication environment

- Repeat instructions/information
- Use language that is specific, simple and avoid ambiguity
- Provide plenty of processing time
- Simplify extended or multi-part questions
- Break down instructions
- Educate about sensory accommodations/needs

Comparative analysis of pragmatic language profiles

- 3 groups of participants watched video
- Answered 2 types of questions
- Participants' responses analyzed & compared

Pragmatic Judgment question:

"Did anything go wrong in this situation? If yes, what went wrong? If no, why do you think it went well?"

Pragmatic Performance question:

"What and how would you respond in this situation? What would you say and how would you say it?"

Group profiles

1. Autism
2. Social (Pragmatic) Communication Disorder
3. Typically Developing – Control Group

Age range

7:0–8:11

9:0–10:11

11:0–12:11

13:0–16:0

Methodology

- Tests administered to 141 students
- Ages 7–16 years old

Age range	**TD group *(n)***	**HFA group *(n)***	**SCD group *(n)***
7:0–8:11	12	10	8
9:0–10:11	14	11	9
11:0–12:11	15	12	10
13:0–16:0	15	13	12

Video-based test

- 3 Pragmatic Judgment subtests
- 3 Pragmatic Performance subtests
- 8 items per subtest
- Total of 48 items

Inclusion criteria: Control group

Hearing sensitivity within normal limits	Age-appropriate speech and language skills
Successfully completed each school year with no academic failures	Attending public school: general education classroom

(AUT)

Inclusion:

- Having a current diagnosis of autism (based on special education eligibility criteria or medical records)
- Attend public school
- General education classroom (min. 4 hrs)

Exclusion:

- Comorbid conditions
  - E.g., mental health issues, personality disorders, general medical conditions

Social Communication Disorder (SCD)

Inclusion:

- Having a current diagnosis within the social communication disorder (based on special education eligibility criteria or medical records)
- Attend public school
- Full-time general education classroom

Communication Disorder (SCD) *(cont.)*

Exclusion:

- Autism, intellectual disability, learning disability, emotional disturbance
- Comorbid conditions
  - E.g., mental health issues, personality disorders, general medical conditions

Study design

Students tested:

- Individually
- Quiet room (no distractions)
- At home

Tested by:

- CA-licensed SLP
- Trained in standardized administration of protocol

Before testing:

- Each student presented with 2 practice videos

Validation study

To examine validity & reliability of tasks:

a. Interrater reliability
b. Test–retest reliability
c. Content validity

Participants

- 56 typically developing students
- 46 AUT students
- 39 SCD students

Data analysis

Statistical Package for the Social Sciences (SPSS) version 23.0

Variable normality:

- Kolmogorov-Smirnov
- Shapiro-Wilk tests

- Test-retest reliability
- Interrater reliability
- Intra-class correlation coefficients (ICCs)
- 95% confidence intervals (CIs)

Concurrent validity (Pearson’s correlation)

- CASL
- TOPL
- Social Language Development

Results

Pearson's correlations between our tasks

CASL, TOPL, & SLDT (*n* = 46)

	CASL (PJ)	TOPL	SLDT
SCA†	0.35	0.46	0.53
AE†	0.41	0.37	0.58

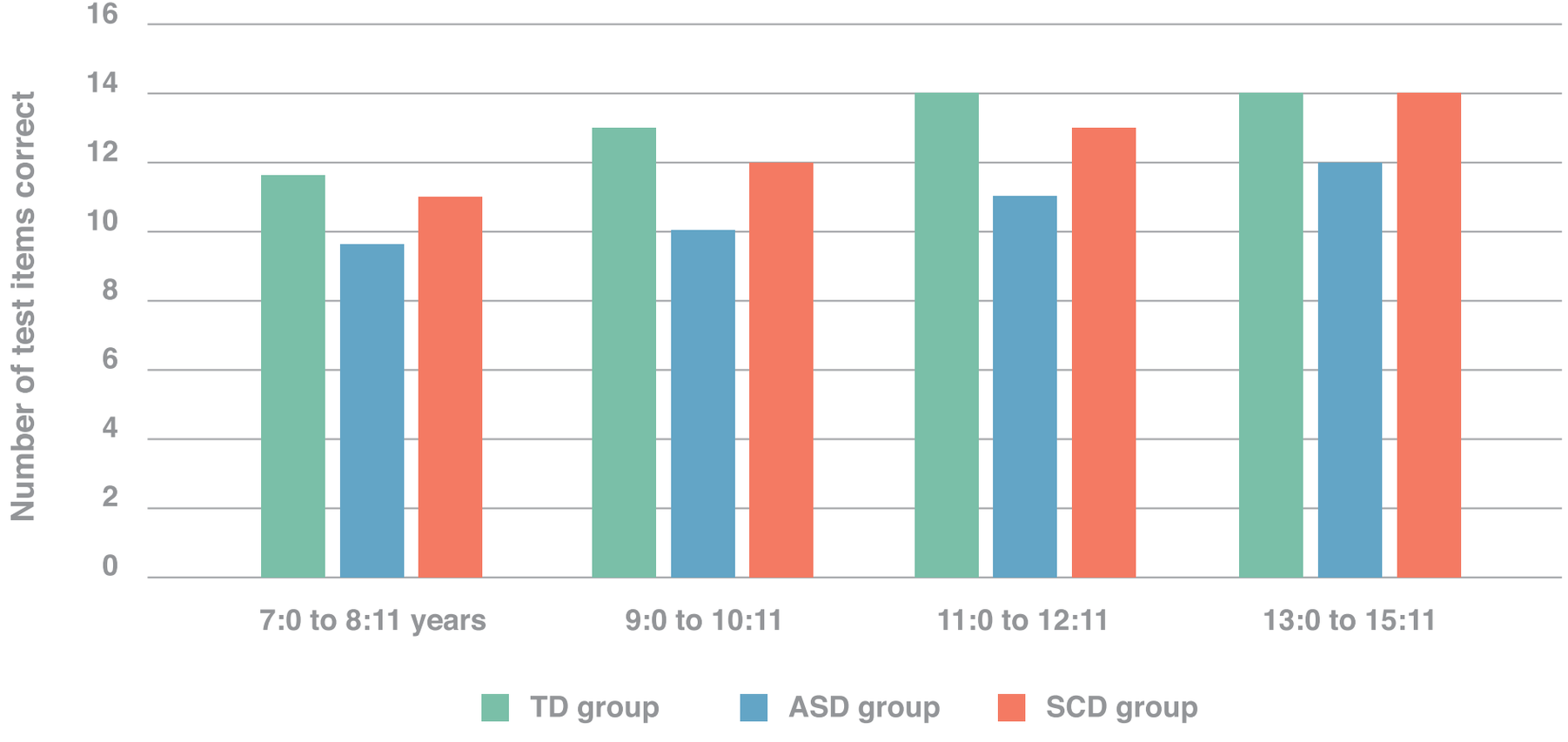
	CASL (PJ)	TOPL	SLDT
IPA†	0.72	0.68	0.73
IP†	0.68	0.75	0.79

† α = 0.001 (sig)

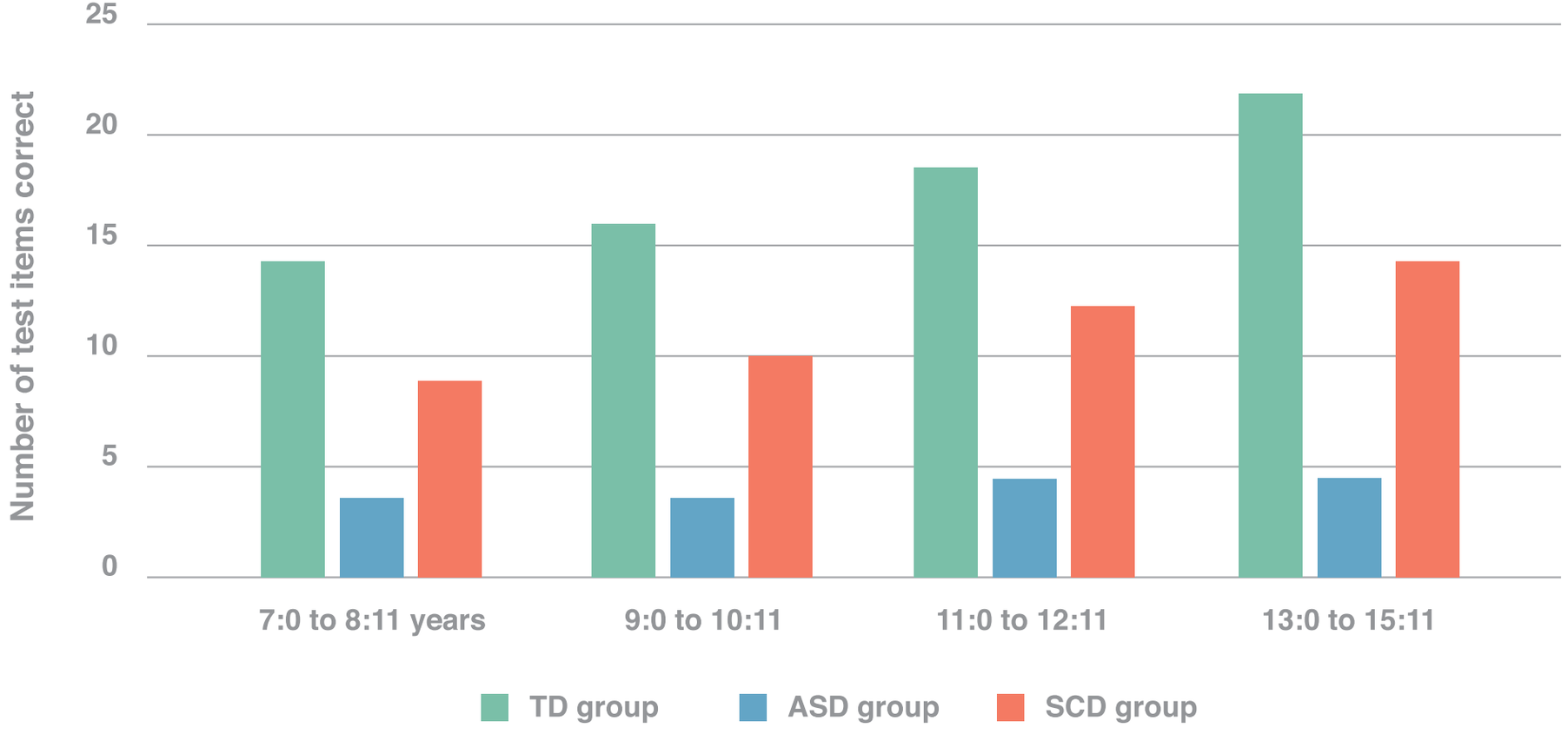
Results *(cont.)*

- Normality of quantitative variables:
  - Kolmogorov-Smirnov test
  - Shapiro-Wilk test
- Distribution of scores:
  - Box and whisker plots
- Comparison of means across groups
  - Kruskal-Wallis analysis of variance (ANOVA)
- Further comparison of means
  - Mann-Whitney U test

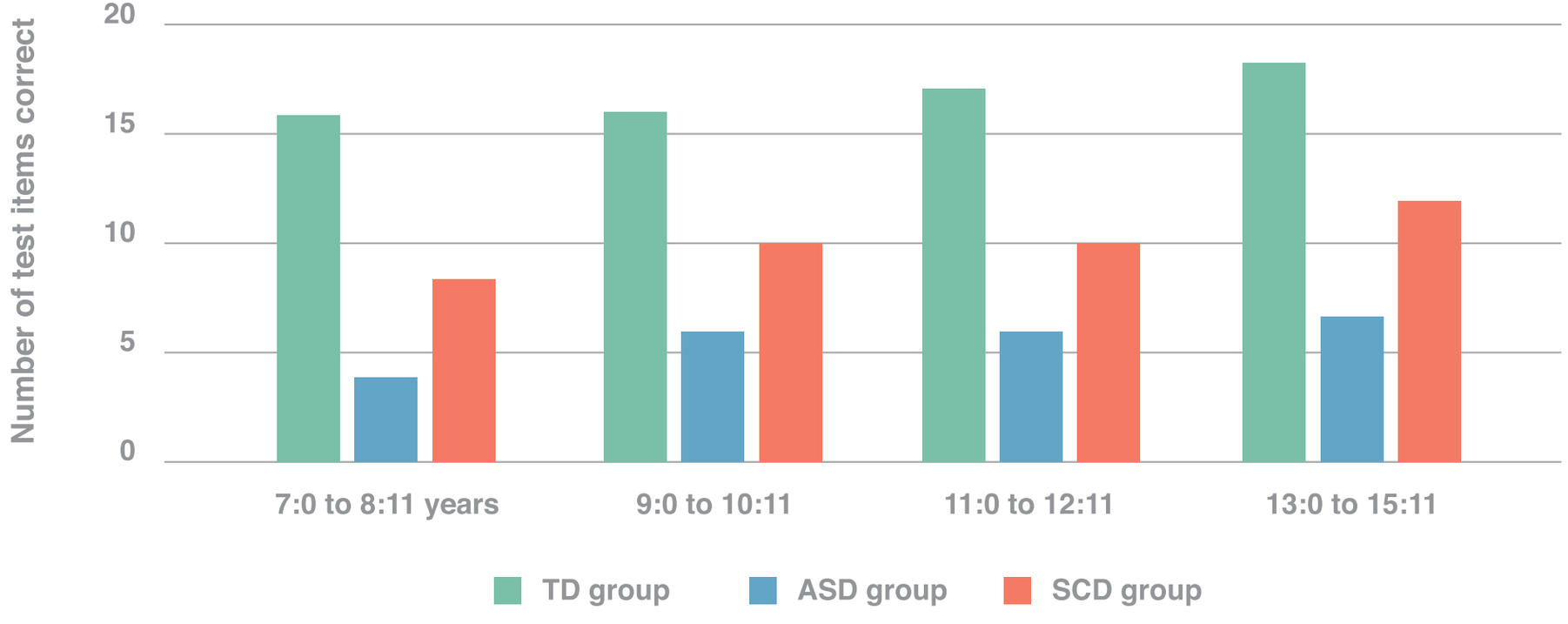
Awareness of Basic Social Routines (IPA)



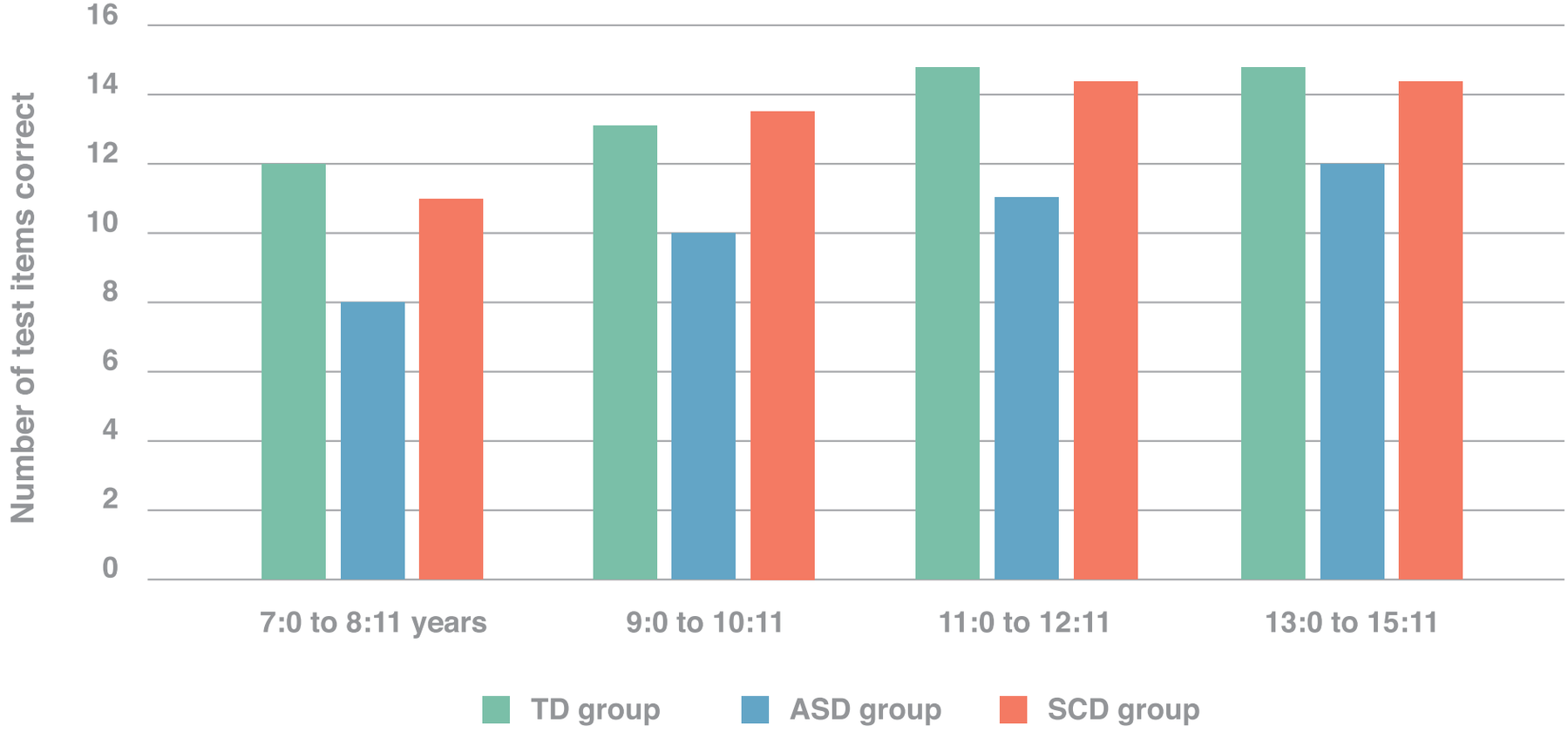
Reading Context Cues (SCA)



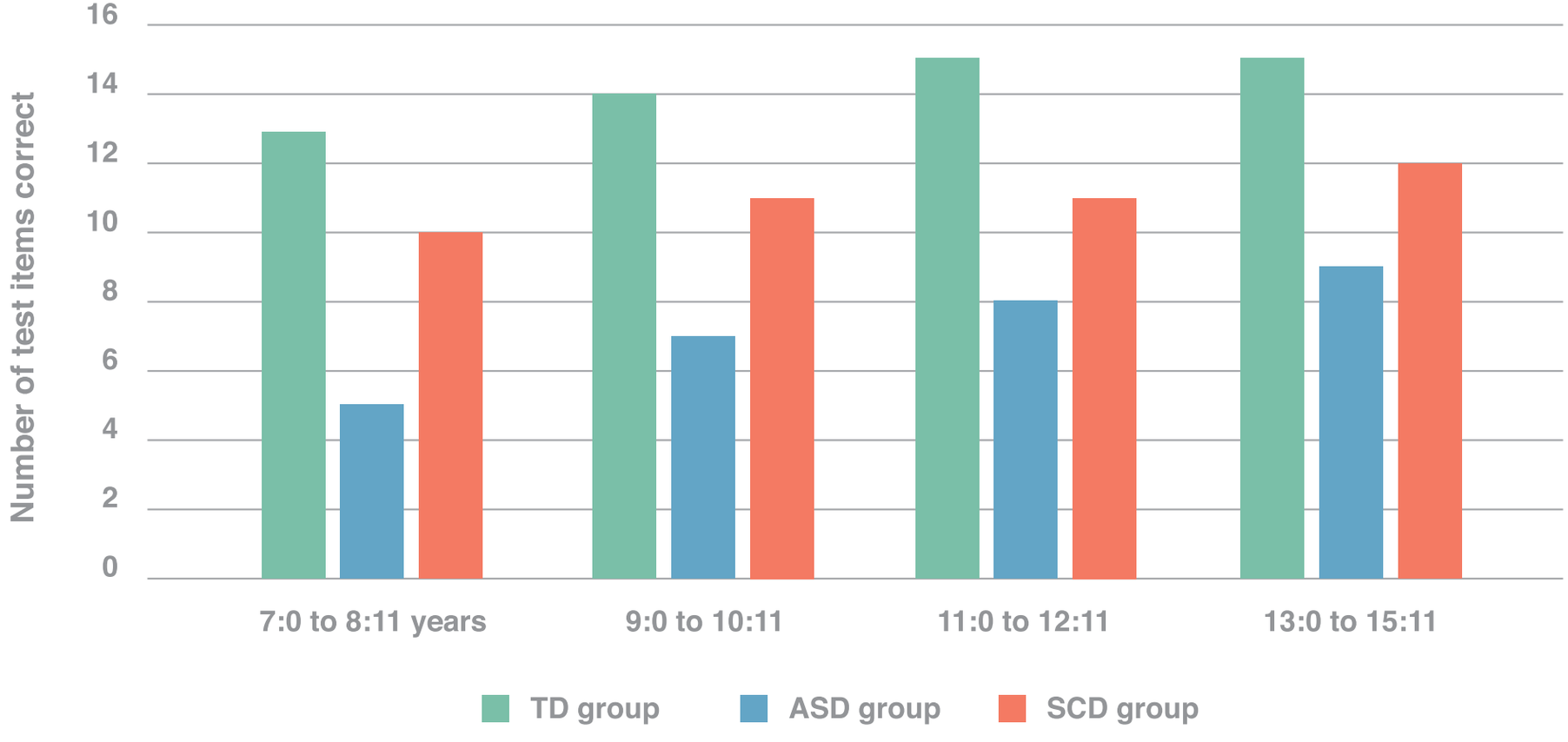
Reading Nonverbal Cues (PD)



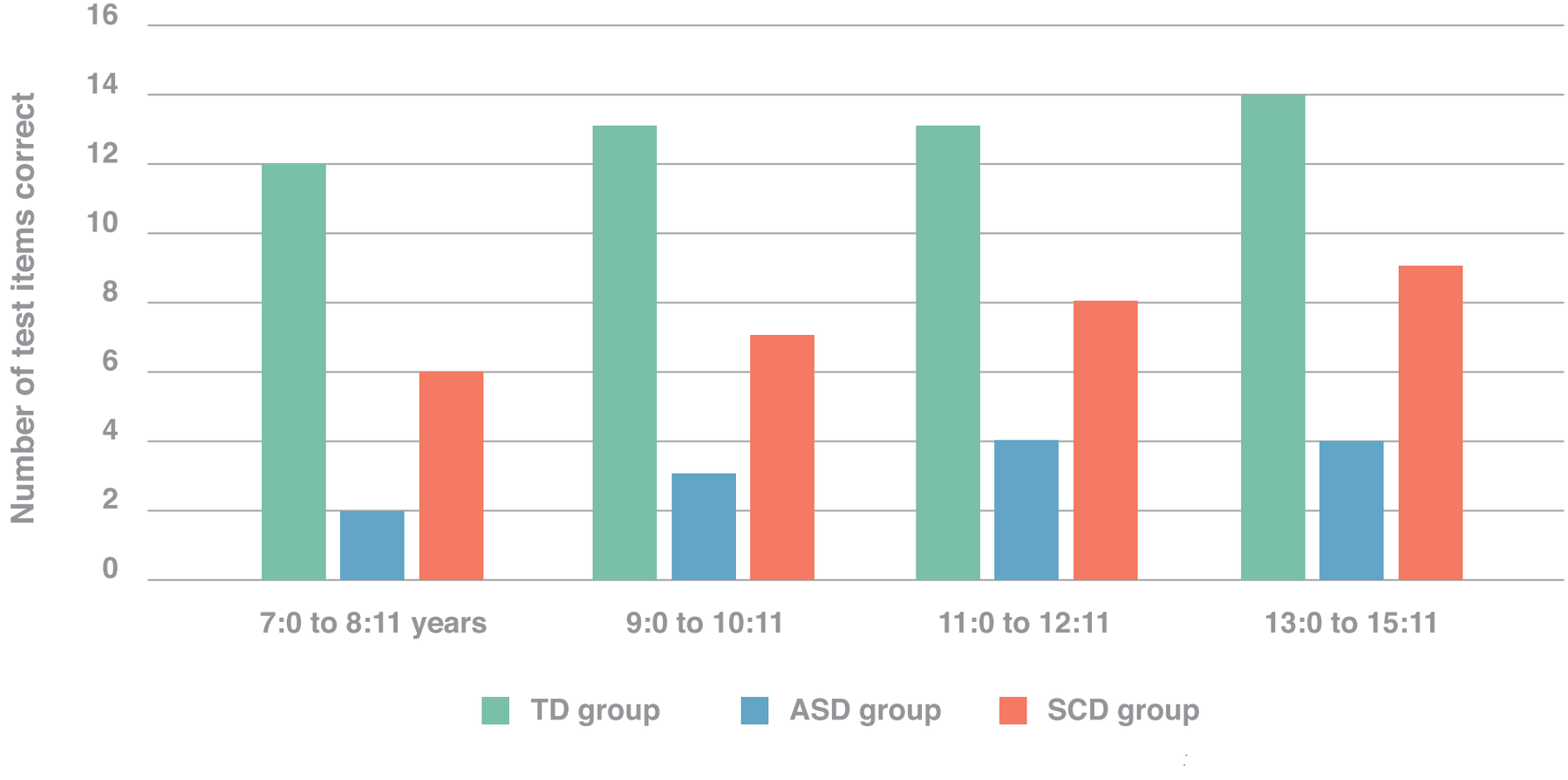
Using Social Routine Language (IP)



Expressing Emotions (AE)



Using Nonverbal Cues (PS)



DISCUSSION

Significant differences observed between all groups

- Receptive pragmatic tasks
- Expressive pragmatic tasks

Differences

- AUT and SCD groups performed adequately on instrumental tasks
  - However, significant difficulties on higher order pragmatics
- AUT group showed profound deficits in recognition and appropriate use of facial expressions
- SCD group performed better on tasks using paralinguistic signals

Clinical implications

Important findings:

Both AUT and SCD students able to comprehend and use instrumental pragmatic skills effectively.

Therefore:

Therapeutic interventions must move beyond instrumental tasks and focus on higher order pragmatic skills.

Clinical implications *(cont.)*

For both groups:

Understanding and responding to subtle social cues...

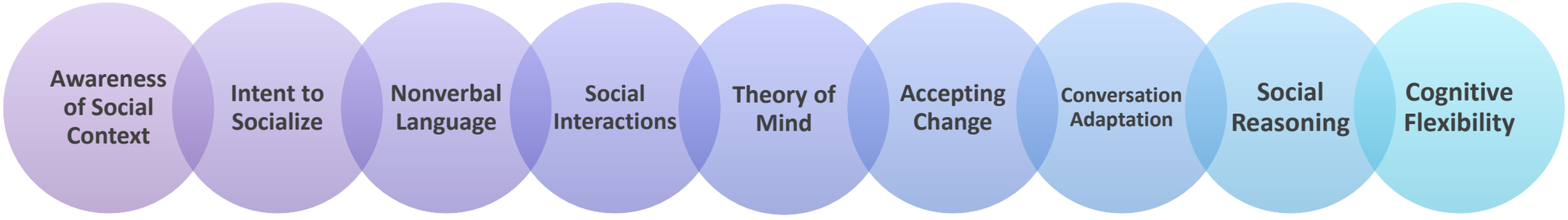
(e.g., inferences, irony, sarcasm)

...forms an effective therapeutic starting point.

Therapy goals for students with HFA should focus on:

Students' ability to recognize meanings of various facial expressions.

Appropriate use of paralinguistic codes.



How do we assess impact of pragmatics on educational performance?

We conducted a research study to evaluate impact of pragmatics on educational performance and social interactions. We developed a rating scale designed for children and young adults between the ages of 5 and 21, where clinicians, parents, and teachers are asked to evaluate a child's social language abilities across 9 areas

Pragmatics & school success

How can pragmatic language difficulties/differences impact a student's success in school?

Following Directions

Students with pragmatic language deficits often misinterpret inferred meanings, subtle remarks, and facial expressions (Brinton et al., 2010). Additionally, students may take non-literal language (e.g., idiomatic, metaphorical, or proverbial forms) literally, so that sarcasm can be misinterpreted, hints and allusions make no sense and the double meanings of jokes are lost.

A student's inability to understand non-literal language and implied ideas can manifest in both classroom and social situations (Reed, 2005).

Misinterpretation of language in any context can lead to a communication breakdown. During classroom instruction, this can lead to students having difficulty understanding or following directions. When students are unable to follow directions, they might struggle with the completion of an assignment or misunderstand what they are asked to do.

Additionally, when students misinterpret language (verbal and/or nonverbal), students may provide inappropriate reactions that might lead to a misperception by others of rudeness and disrespect towards authority figures such as teachers (Starling, Munro, Togher, & Arciuli, 2011).

Reading Comprehension

- Comprehension of central themes and main ideas
- Effective summarization of read text
- Interpretation of abstract language and double meaning of texts
- nterpretation of ambiguous and figurative language
- Analysis of author’s tone as related to story development
- Comprehension of dramatic story plots
- Comprehension of different types of irony (verbal including sarcasm, situational, dramatic)
- Ability to work with a variety of complex literary texts (e.g., poetry, prose, comedies, dramas, etc.

Written & Oral Expression

Perspective-taking relies on the pragmatic functioning of presupposition. In order for students to be able to use presupposition, it requires they have a strong social cognition and theory of mind, that they are able to make inferences regarding the actions, beliefs, and intentions of others and to able to adapt based on those inferences (Carruthers & Smith, 1996; McTear & Conti-Ramsden, 1991). How much a student presupposes about a reader's prior knowledge or background in a subject area is based on what the student predicts the reader or listener believes, knows, and wants.

Thus, students with pragmatic language differences may have difficulties with written and oral expression when it comes to perspective-taking and presupposition.

For example, children may presuppose too much shared knowledge between themselves and their readers or listeners, which result in ineffective communication because the reader or listener is left to wonder about unstated information because there was too little background knowledge shared.

Figurative Language

The ability to understand and use figurative language is crucial to a student's academic success because:

- nearly two thirds of spoken English is figurative (Arnold & Hornett, 1990);
- approximately a third of teachers' utterances contain multiple meaning words or idiomatic expressions; and
- about 7% of reading materials used in elementary schools contains idioms (Lazar, Warr-Leeper, Beel-Nicholson, & Johnson, 1989).

Difficulties using and understanding figurative language mayimpact a student's success in numerous areas, including writing, speaking, listening to and/or comprehending text that contains figurative expressions (idioms, proverbs, metaphors, and similes) and slang (Gerber & Bryen, 1981; Nippold, 2007; Rice, 1993; Rice, Sell, & Hadley, 1991), as well as using figurative language in writing to achieve personification, allusion, and symbolism (e.g., Nippold, 2007).

Discourse Regulation

Students with pragmatic language differences may have difficulty with discourse regulation when it comes to:

(a) organization of ideas and thoughts and topic maintenance (Botting, 2002; Norbury & Bishop, 2003);
(b) implementation of strategies to avoid misunderstanding (e.g., paraphrasing to simplify information, repeating an important idea, and elaborating on a new word or idea (Adams & Bishop, 1989; Brinton & Fujiki, 1982);
(c) grammatical cohesion via appropriate use of anaphoric and cataphoric reference, substitution, ellipsis, and clausal conjoining and embedding characteristic of the genre (e.g., Lapadat, 1991); and
(d) lexical cohesion through the use of synonyms, antonyms, hyponyms, repetition, and collocation (Troia, 2011).

Awareness of Social Context

Awareness of Social Context

Does the student check-in with peers/teachers/staff and seems aware of what peers are doing during class, recess, and lunch time.

For example, when a student walks into class in the morning or after lunch, does he/she look around the room to see who is present, does he/she offer eye contact or smile when they see a friend, or a staff member.

Intent to Socialize

Intent to Socialize

Does the student seek companionship, friendship, attention, and daily interaction with peers; initiates interactions to gain attention. Engages in conversations and playful social exchanges; Able to initiate conversations and gain peers' attention

For example, before class begins, does the student engage in conversation with his/her peers? Does he/she talk about their weekend? Maybe a TV show from last night? During group projects, does the student speak and converse with other students?

Nonverbal Language

Nonverbal Language

Does the student appear to be able to read teacher's unspoken cues (e.g., facial expressions, tone of voice, and gestures) to follow directions, stay on task, understand humor, etc.

For example, does the student recognize when the teacher uses humor or tells a joke? Do they understand when the teacher's instructions shift – maybe a group discussion has turned into independent work without explicitly stating so, or the teacher shows the students to stay on task using a firm tone of voice and a serious facial expression – does he/she understand these unspoken cues?)

Social Interactions

Social Interactions

Does the student appear to participate in group projects, social interactions, collaboration, and cooperation

During group work, the student is observed participating and working with others by adding comments, questions, suggestions, ideas, etc.)

Theory of Mind

Theory of Mind

Does the student appear to show empathy during class literature discussions, and when writing reports.

For example, during class discussions, student is able to talk about or relate to characters' thoughts and/or feelings)

Accepting Change

Accepting Change

Does the student appear to navigate changes in routine without excessive reassurance and without showing extreme reactions

For example, the student's schedule may change, maybe there is an assembly or PE class has been cancelled. The student is able to accept the change and go on with their day without a noticeable negative reaction – it's okay to show some disappointment or confusion, but it's not an extreme reaction

Conversational Adaptation

Conversational Adaptation

Does the student appear to ask questions in class or seek help from peers when needed

Does the student ask for clarification when he/she doesn't understand information

For example, the student is able to ask questions about an assignment and may seek help from the teacher or his/her peers

Social Reasoning

Social Reasoning

Does the student demonstrate difficulty seeing the “whole picture” during lectures and shows difficulty grasping main idea or key points and excessively focuses on irrelevant details.

For example, during class discussion, student may write down everything the teacher says or is unable to highlight the most relevant and meaningful key points.

Normative Sample

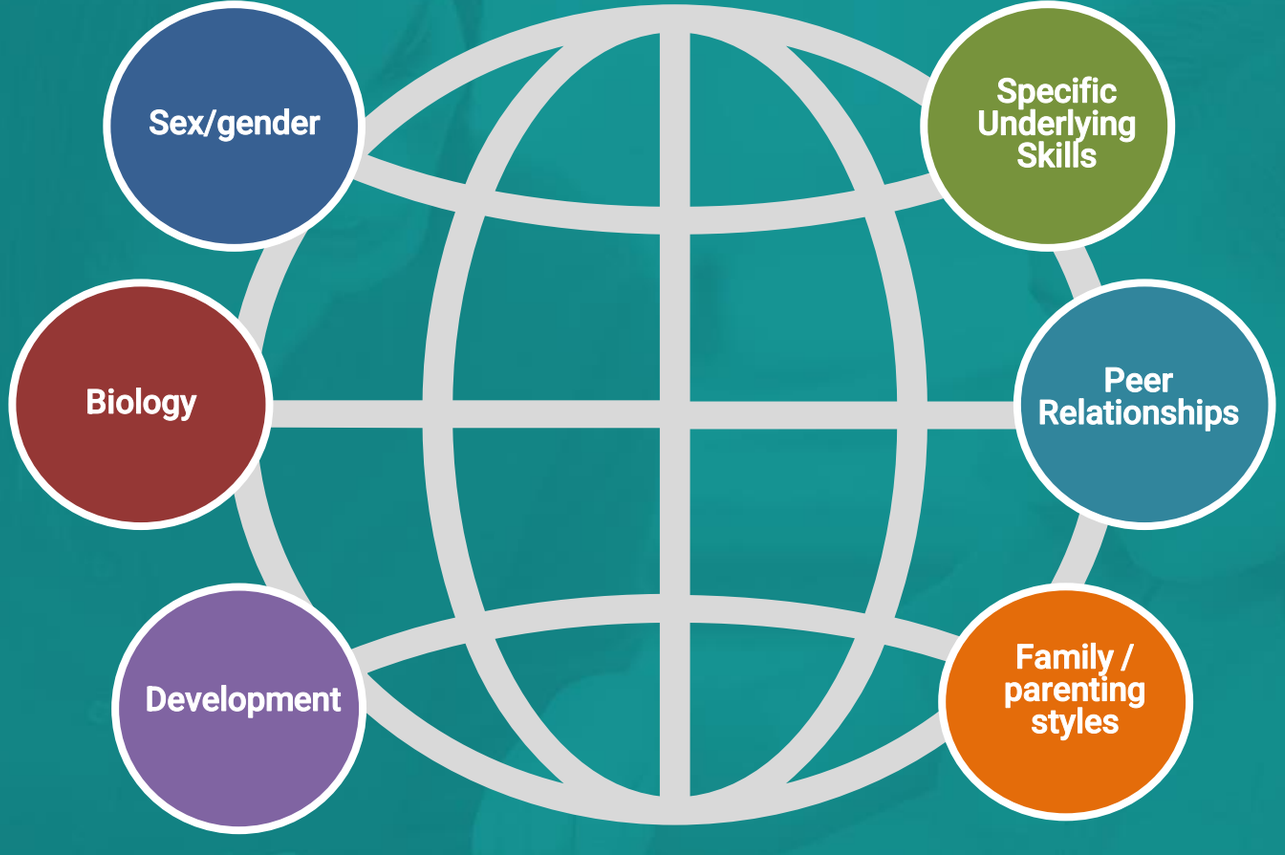
Representation of the Sample, by Age Group			
Age Group	Age	N	%
1	5-0 to 5-11	88	8.7
2	6-0 to 6-11	84	8.3
3	7-0 to 7-11	86	8.5
4	8-0 to 8-11	80	8.0
5	9-0 to 9-11	86	8.6
6	10-0 to 10-11	78	7.8
7	11-0 to 11-11	74	7.4
8	12-0 to 12-11	88	8.8
9	13-0 to 13-11	72	7.1
10	14-0 to 14-11	76	7.5
11	15-0 to 21-0	194	19.3
Total Sample		1006	100%

1006 typically developing examinees across 11 age groups (in 17 states (Arizona, California, Colorado, Nevada, Idaho, Illinois, Iowa, Kansas, Ohio, Minnesota, Florida, New York, Pennsylvania, Florida, South Carolina, Texas, Washington).

Scaled Score Means (and Standard Deviations) of Subtests for Two Clinical Groups and a Demographically Matched Typically Developing Group, (N= 212)

	ASD (n=74)	SCD (n=56)	TD group (n=82)	p –value*
Clinician [a,b,c]	68 (3.2)	76 (3.4)	101(3.3)	<.001
Teacher [a,b,c]	69 (3.5)	75 (3.1)	102 (4.3)	<.001
Parent [a,b,c]	66 (2.1)	72 (2.8)	100 (3.3)	<.001

Factors that impact pragmatic performance



Factors that impact pragmatic performance

Sex/gender

Gender was revealed to be a factor in stability of children's peer relationships (Benenson & Christakos, 2003)

Biology

False belief capacities might be relatively experience-independent and therefore strongly constrained by genetics

Development

Consideration of other confounding developmental delays

Specific Underlying Skills

Emotional and social competence, affect regulation, emotional reactivity/regulation, cognitive problem solving skills

Peer Relationships

Peers as models and gold standard

Family/ Parenting Style

Parents as models and coaches

Factors that impact pragmatic performance

Sex/gender

Gender has been found to be a factor in stability of children's peer relationships. A study of 10 to 15 year olds found that girls' closest same gender friendships were more fragile than those of boys (Benenson & Christakos, 2003).

Researchers suggested that girls' tendency to form close friendships in isolation from the larger group might jeopardize their relationships. Boys' same gender friendships are more often embedded in a larger group of relationships which provides a safety net and access to third party mediators, allies, and alternative partners.

Factors that impact pragmatic performance

Biology

Researchers suggest that infants are able to represent false belief-like states from as early as 7 months old (Onishi & Baillargeon, 2005); Surian et al., 2007). Barrett et al. (2013) conducted a gaze-direction study that suggests implicit false-belief understanding in young children (1 to 4 years old) is similar across many different cultures. Both of these studies suggest that these capacities might be relatively experience-independent and therefore strongly constrained by genetics.

Additionally, neuroimaging studies of both typically-developing adults and individuals with autism and other psychopathology suggest that humans have a brain network dedicated to theory of mind, which can be selectively impaired either from birth or through brain injury later in life (see Brune and Brune-Cohrs, 2006). These neurological findings suggest that theory of mind has a relatively clear biological and genetic basis without which it cannot develop normally.

Factors that impact pragmatic performance

Development

The relationship with emotional and behavioral problems and pragmatic competence (i.e., social language) is much stronger than for structural language aspects (e.g., syntax).

Pragmatic language impairment (PLI), specifically, has been connected to autism spectrum disorder (ASD) and attention-deficit/hyperactivity disorder (ADHD; Geurts et al., 2004; Bruce, Thernlund, & Nettelbladt, 2006).

Psychosocial Development

Evidence has suggested that children with developmental language disorder will have difficulties with psychosocial adjustment (e.g., academic, vocational, and social aptitude) (Clegg et al., 2005).

Longitudinal studies have revealed that social problems continue past adolescence (Young et al., 2002; Clegg et al., 2005).

Additionally, psychiatric disorders have also been linked to those with a history of language problems (Beitchman et al., 2001).

Psychosocial Development

(Beitchman et al. 2001)

Beitchman et al. (2001) analyzed the current psychiatric functioning of individuals who had previously had a childhood language disorder.

The results revealed that 40% of individuals met criteria for one or more disorders in the Diagnostic Statistic Manual – Fourth Edition (DSM-IV; American Psychiatric Association, 1994). Anxiety disorders made up 26.7% of these disorders, compared to only 8.1% in a typically developing sample.

Psychosocial Development

(Whitehouse, Watt, Line, & Bishop, 2009)

- Whitehouse, Watt, Line, and Bishop (2009) compared adult psychosocial outcomes of children with SLI, PLI, and autism spectrum disorder (ASD).
- The study began with 130 children as participants. At follow-up, 73 of these participants (51 language impaired and 22 typically developed) were located, and 49 individuals were re-assessed.
- The 49 young adults consisted of 19 individuals with a previous history of SLI, 7 with previous history of PLI, 11 previous history of high functioning autism (HFA), and 12 with a previous typical development history.
- The qualitative nature of childhood language impairment appeared to relate to adult outcome.

Psychosocial Development

(Whitehouse, Watt, Line, & Bishop, 2009)

- Participants with SLI had persisting language problems and were most likely to pursue vocational training and work in jobs not requiring a high level of language/literacy ability.

- In comparison, the PLI group, who did not have structural language impairments, tended to obtain higher levels of education and work in 'skilled' professions.

- A comparison group of adults with ASD presented with considerably greater psychosocial problems. Anxiety and affective disturbances were noted in several participants.

Psychosocial Development

Since the presence of language disorders has been linked to psychosocial disorders such as anxiety, it is important to address language skills early on in a student's school career.

The potential for students to learn how to correctly understand and use nonverbal language (e.g., facial expressions, gestures, tone of voice), understand and use nonliteral language, engage in turn taking, use topic maintenance, and turn taking are all valid reasons to assess and treat students pragmatic language.

Factors that impact pragmatic performance

Specific Underlying Skills

- Interoception/ Alexithymia
- Emotional Recognition/ Competence
- Social Competence
- Theory of Mind
- Cognitive Self-Regulation
- Reflective Problem Solving
- Empathy
- Social Behavior
- Social Cognition

Interoception & Emotional Regulation

- Emotion regulation is composed of both *attention* to and *awareness* of one's emotional state.
- The perception of the body's internal states is referred to as interoception (Craig, 2002). And this awareness of bodily signals is called **interoceptive awareness.**
- Several theories of emotions (James, 1884; Damasio, 1994; Craig, 2004) have suggested that there is a strong relationship between interoception (i.e., the perception of bodily changes) and emotional and cognitive processes.
- William James was the first to propose that an emotional stimulus can create visceral, vascular, or somatic activities (e.g., heart-rate), and the **perception** of these bodily reactions will impact an individual's emotional experience (James, 1884).

Interoception & Emotional Regulation

- Neural representations of bodily cognitions create an awareness of emotional feeling and these ‘somatic markers’ evoke feeling states that influence cognition and behavior (Damasio, 1994, 1999). Thus, these neural representations are an essential prerequisite for emotional feelings.

- Personal emotional awareness is a social cognition building block, enabling better identification and empathy for others' emotions (Neumann, Zupan, Malec, & Hammond, 2014; Williams & Wood, 2010).

- Quattrocki and Friston (2014) discovered that an interoceptive impairment can cause the social, sensory, and self-representation symptoms of autism spectrum disorder. Specifically, an interoceptive impairment can have an impact on socioemotional ability, including deficits in imitation, theory of mind, empathy, and emotion recognition.

Alexithymia & Emotional Self-Awareness

- A student's recognition of his/her own emotions and ability to communicate emotions will influence the verbal and nonverbal social cues sent to others, as well as how those cues are received.
- When a student’s emotional self-awareness is impaired, emotions may be inappropriately communicated to others.
- Alexithymia is an impairment in the ability to recognize emotion and is associated with interpersonal deficits and increased social rejection (Chester, Pond, & DeWall, 2015; Lane et al., 1996).
- Difficulties recognizing and communicating personal emotions are key features of alexithymia --- characterized by problems detecting, describing, and differentiating emotions, as well as poor interoceptive awareness (Messina et al., 2014).

Alexithymia & Emotional Self-Awareness

- Interoceptive ability is believed to be diminished in alexithymia (Brewer, Cook, & Bird, 2016; Longarzo et al., 2015) and autism (Garfinkel, Tiley, et al., 2016).
- Recent research has suggested that alexithymia may be responsible for some of the social deficits and impairment that have previously been attributed to ASD (Bird & Cook, 2013).
- When compared to neurotypical peers, adults with ASD have a significantly higher rate of alexithymia (Hill, Berthoz, & Frith, 2004; Lombardo, Barnes, Wheelwright, & Baron-Cohen, 2007)
- Additionally, recent studies have found evidence that it is the severity of alexithymia, and not the severity of ASD that predicts social deficits such as reduced emotion recognition and interoceptive accuracy (Brezis et al., 2017; Cook, Brewer, Shah, & Bird, 2013; Shah, Hall, Catmur, & Bird, 2016).

Emotional Recognition & Theory of Mind

- Students use nonverbal cues (e.g., body language, tone of voice, facial expressions) to communicate to others how they are feeling.
- Students also use nonverbal cues when they interpret how someone else is feeling. To do this, students must integrate nonverbal information, contextual cues, setting, the language itself, while making inferences about the mental state of the people involved in the exchange.
- Inferring people's intentions, thoughts, beliefs, and desires is referred to as **theory of mind.**
- The ability to make inferences allows students to understand how others are feeling and to predict their responses in a given situation (Premak & Woodruff, 1978).

Emotional Competence

Emotional Competence is composed of two key aspects:

Emotional expressiveness – the way children communicate their feelings to those around them (Denham, 2006).

- In order for young children to engage in successful interpersonal exchanges and create meaningful relationships that are needed for positive school experiences, children must be able to send and receive emotional messages in ways that are "advantageous to both themselves and others" (Hallberstadt, Denham, & Dunsmore, 2001)

Emotional Competence

Emotional regulation - the ability of children to adjust the experience and expression of feelings in context (Cole, Michel, & Teti, 1994).

- If emotions are being "regulated" it is assumed that these emotions have already been expressed or experienced (Cole, Martin, & Dennis, 2004).
- When children experience/express a positive or negative emotion, it may or may not require regulation. If the experience/expression may benefit from regulation, emotion regulation may or may not occur.

Emotional Competence

- Young children's ability to manage emotional arousal that accompanies social interactions is fundamental in order for children to interact and form relationships with others (Saarni,1990).

- As Saarni (1990) states, "we are talking about how children can respond emotionally, yet simultaneously and strategically apply their knowledge about emotions and their expressions to relationships with others, so that they can negotiate interpersonal exchanges and regulate their emotional experiences as well."

Emotional Competence

- Different levels of emotional competence from children who differ in age should be expected, often because of advances in language, perspective taking, and other social cognitive abilities.

- In a group of young children, older preschoolers' expression and understanding of emotions differed from toddlers, and even from younger preschoolers.

- The upper limit of this age range around the transition to kindergarten is often a time when children experience growth in their understanding of the causes and consequences of emotions and in the complexity of their emotions.

Cognitive Self-Regulation

- **Cognitive self-regulation**: impulse control, also inhibitions, very relevant for social skills.
- The ability *not* to do something (say something unexpected/inappropriate instead of just thinking it to oneself) … those who are capable of controlling their own actions are more capable of complying with social rules, following directions at school.
- The ability to manage emotions, known as self regulation helps children get along with each other. For example, there are two children who want to play with the same toy and one child decides to give the other child their first turn. That child does so knowing that they will get the next turn.

Cognitive Self-Regulation

- Children who are more able to manage emotions during conflict are more likely to share or cooperate.

- AS involves the right hemisphere. Martin and McDonald (2003) note that individuals with AS have the verbal skills to engage in 11 conversations, nevertheless still have difficulty engaging in cohesive social communication. Typical difficulties for individuals with AS include verbosity, specific and peculiar use of language, fixation on certain topics, and difficulty comprehending others' perspectives and abstract language. Individuals with AS had more difficulty with pragmatically problematic responses and social-emotional questions than with factual questions when compared to the control group.

Cognitive Self-Regulation

- Lin, Jing Chen, Justice, & Sawyer (2019) examined the extent to which children with and without disabilities play with each other in preschool inclusive classrooms.
  - Results of this study revealed that children with and without disabilities did not differ in the extent to which they formed cross-status play interactions after pragmatic language and self-regulation were taken into account.
  - The researchers did find that typically developing children were more likely to form same-status play interactions than children with disabilities.
  - Children's cross-status play interactions were predicted **by self-regulation ability**, which was fully mediated by their **pragmatic language**.
  - The impact of pragmatic language on the formation of cross-status play interaction was greater for children with disabilities than their typically developing peers.

Emotion Regulation

- If a young child shows certain patterns of expressiveness, he or she is more likely to be prosocial.
- A child who is sad or angry often self isolates, and is less likely to be able to see, let alone tend to the emotional needs of others. Young children's own expressed emotions are also related to evaluations of their social competence made by important persons in their widening world – happier children fare well and angrier children fare worse.
- Learning to get along in groups of age mates also presses a preschooler toward regulating emotional expressiveness. When a preschooler begins to regulate his or her own emotions, he or she gets along more successfully with peers.
- THE CROSSOVER: young children who understand the emotions of others should interact more successfully when a friend gets angry with him or her, and the preschooler who can talk about his or her own emotions is also better able to negotiate disputes with friends

Emotion Regulation – Frustration Tolerance

- Along with developing the ability to regulate emotions and reflectively solve problems, children need to develop frustration tolerance. Redirecting frustration into an impetus to solve a problem is a constructive way to reframe a negative emotion.

- With age and maturation, we learn to regulate (change or maintain) emotions. This ability to regulate emotions, leads into the cross-over of emotional and social competence. People experience emotions when valued goals have been either attained or thwarted.

- For example, we feel happy when we get a present that we wanted and sad when we fall off a new bike.

Emotion Regulation – Frustration Tolerance

- The emotions that signal the attainment or thwarting of a goal act as **interpersonal regulators**. When we feel negative emotions, we want to feel better, when we feel positive ones, we want to continue to feel good. We want to maintain or achieve a valued state and avoid an aversive one. We want to regulate our emotions.

- Even very young children learn the "feeling rules" of their community from their own experiences and the socialization of adults- what to feel in differing situations, how to interpret and manage these feelings and how to react to the feelings of others (Hochschild, 1979).

Empathy

- Emotions have a large influence on children's prosocial behaviors and altruistic motivation. For example, when we see a child fall and scrape his knee we experience some distress. Feeling the same emotions as another person is called **empathy**.

- Empathy is a form of perspective that involves an emotional response. How an individual deals with this emotional response affects whether the person acts in a prosocial manner. Usually, we set aside our own distress and begin to feel concern for others which leads us to comfort them.

Empathy

- There are two types of empathy:
  - Emotional Empathy: when an individual feels concern for another's emotional state, or the individual experiences a similar emotional or sensory state in response to another's feelings
  - Cognitive Empathy: when an individual is capable of understanding what another person is feeling – associated with emotional recognition, perspective taking, and theory of mind
- Empathy is highly influenced by other social cognition skills, for example, research has suggested that a child's own personal emotional experiences will influence/allow them to appreciate another person's emotions and feelings. For children to able to use their personal emotional experiences, he/she have emotional self-awareness. This could be why alexithymia has been associated with low emotional empathy.

Empathy

- There are two types of empathetic responses:
  - Sympathetic reactions to another person's distress
  - Personal distress reactions (Batson, 1991; Eisenberg, Schaller, et al., 1988)
- These two types of empathetic responses elicit two different patterns of facial muscle and physiological indices.
  - Sympathetic expressions include knit brows, slightly open mouth, and heart rate deceleration (suggestion of concentration)
  - Personal distress expressions are indexed by indrawn, raised eyebrows, licking of lips or touching of the face and heart rate acceleration (often found in fear)
- Children who experience sympathy are likely to behave prosocially, children who experience personal distress more often act distressed themselves.

Empathy

- Since children who experience sympathy focus more on the distress of the other person, sympathetic reactions should be more conducive than personal distress reactions to positive social behavior.

- A number of studies involving both televised and live individuals in distress have shown this same pattern in which preschoolers who demonstrated concern/sympathetic reactions behaved more prosocially than those who showed personal distress (Eisenberg et al,, 1990, Eisenber, McCreath, & Ahn, 1988; Mason Mitchell, Copeland & Denham, 1996)

Empathy

- Although these styles of reacting to others' emotions are often inversely related this is not a necessary condition (Zahn-Waxler & Radke-Yarrow, 1990); a child can be both sympathetic and distressed at the intensity of another's distressed.
- For example, a young daughter of a depressed parent may treat her crying mother very tenderly and almost assume the role of caregiver, but may also feel quite a bit of distress herself.
- On the other hand, a child may also be relatively oblivious to other persons' emotions or may react in an emotionally anomalous manner neither sympathetic nor distressed.

Moderators of Empathy

- Any given child may be high on both sympathy and personal distress; or may be low on both, or may show a particularly distinctive type of sympathetic or personal distress.
- Similarity to the victim and focus of attention
- Seeing the person experiencing distress is like oneself can be important in motivating sympathy or personal distress (M.A. Barnett 1984)
- Gender and general context - in at least one study, preschoolers were more likely to console crying girls and critique crying boys (Phinney et al. 1986). Furthermore a friend's crying elicits more sympathetic behavior than a mere acquaintances crying (Costin & Jones, 1992; Faver & Branstetter 1994)
- Emotionality and personal emotional profile

Moderators of Empathy

- Children's emotional expressiveness also moderates empathic responsiveness to others' emotions. Children need to be emotionally secure and have experience with emotions themselves to be sympathetically responsive to others (Strayer, 1980; Denham, 1986). Feeling generally positive emotions about oneself makes it easier to focus on others' emotions. Along these lines, children with more positive temperaments and positive peer interactions are more likely to exhibit behavioral sympathy to a crying person (comforting, mediating; Farver and Branstetter, 1994)

- Understanding the emotions that are being displayed by others is an important substrate for responding empathically. Certainly knowing whether another child is in pain sad angry disgusted or even contemptuous makes a big difference in how one responds. Children with higher level emotion knowledge are less apt to merely ignore their parents' emotions. Children who are more capable of explaining emotions in conversations with parents are also more sympathetic in response to peers emotions. (Denham, 1986; Denham & Couchoud, 1991)

Attributes

- Attributions are judgments made about other people’s behaviors. Attributions are influenced by the way an individual processes social information, and play a large role in interpersonal interaction by affecting emotional and behavioral responses.
- Interpersonal attributions are thought to be influenced by perception of verbal and nonverbal cues, theory of mind, perspective taking, executive function, past experiences, and mood.
- Deficits in these areas can lead to maladaptive thoughts, such as errors in judgment and negative attribution biases.

Social Behavior & Pragmatics

- Social behavior and pragmatics, of course, refers to the way a student receives and interprets messages with others. It includes the ability to convey a message in a way that others can understand and can be properly interpreted.
- Messages can be verbal or nonverbal. Often, when a message is communicated nonverbally, additional information may be conveyed than the actual words used.
- Children rely on pragmatic language skills to initiate reciprocal and positive interactions, express needs, understand others' perspectives, provide social support, or resolve conflicts (Asher, Parker, & Walker, 1996). Children who are able to initiate effective communication with others are more likely to display prosocial behavior and maintain their relationships with others (Dionne, Tremblay, Boivin, Laplante, & Perusse, 2003).
- In contrast, poor pragmatic language is associated with problem behaviors, social impairment, and impoverished relationships with others, and is more commonly seen in children with disabilities (Staikova et al., 2013).

Factors that impact pragmatic performance

Play and Peer Interactions

Play offers many opportunities for peer interactions (Howes, Rubin, Ross, & French, 1988) and the quality of these interactions are connected with both **academic engagement** and **motivation** (Coolahan, Fantuzzo, Mendez, & McDermott, 2000).

Children are given the opportunity to use their social competence during play interactions with their peers. For example, children can participate in social exchanges and engage in perspective taking, problem solving, social communication, and self-regulation (Howes, 2011).

Why peer relationships matter

- Peer relationships and friendships are critical to school and academic achievement for school-age children (Wentzel, Barry, & Caldwell, 2004; Newman Kingery, Erdley, & Marshall, 2011).
- Friendships are important in the development of social competences, as well as influencing children's performance on classroom-learning activities, specifically those that involve collaboration and cooperation (Faulkner & Meill, 1993).
- Children's ability to regulate their own emotional arousal is related to their social competence with peers (Eisenberg, 2000; Parke et al., 2006).
- Attention abilities, which are critical for noticing and tracking interactive partners' social cues, constitute a third set of skills acquired in the family.
- Children of socially responsive and warm parents have better attention abilities and, in turn, higher peer competence in 1st and 3rd grads (NICHD Early Child Care Research Network, 2009).

Why peer relationships matter

Children with Specific Language Impairment (SLI), Pragmatic Language Impairment (PLI), and Autism Spectrum Disorder (ASD) have been found to have difficulties establishing peer relationships and friendships (Whitehouse, Watt, Line, & Bishop, 2007).

Additionally, children with language impairments tend to engage less in active interactions than typically developing peers, exhibit poorer discourse skills, and are less likely to offer socially appropriate verbal and nonverbal responses in conversations (Brinton, Fujiki, & McKee, 1998; Landa, 2005).

Durkin and Conti-Ramsden (2007) compared friendship quality in 120 adolescents aged 16-years-old with and without SLI. Adolescents with SLI were found to exhibit poorer quality friendships. This study suggests that language difficulties (including social language deficits) may be predictive of poorer quality friendships, which in turn may impact academic success.

Why peer relationships matter

Since social language skills are such an integral part of an individual's ability to create and maintain friendships, and friendships are a strong predictor of mental health disorders such as anxiety and depression, it is crucial that students be assessed and treated for possible pragmatic language disorders.

The potential for students to make meaningful, long-lasting friendships relies on their social language abilities.

Why peer relationships matter

Social Language and Friendships

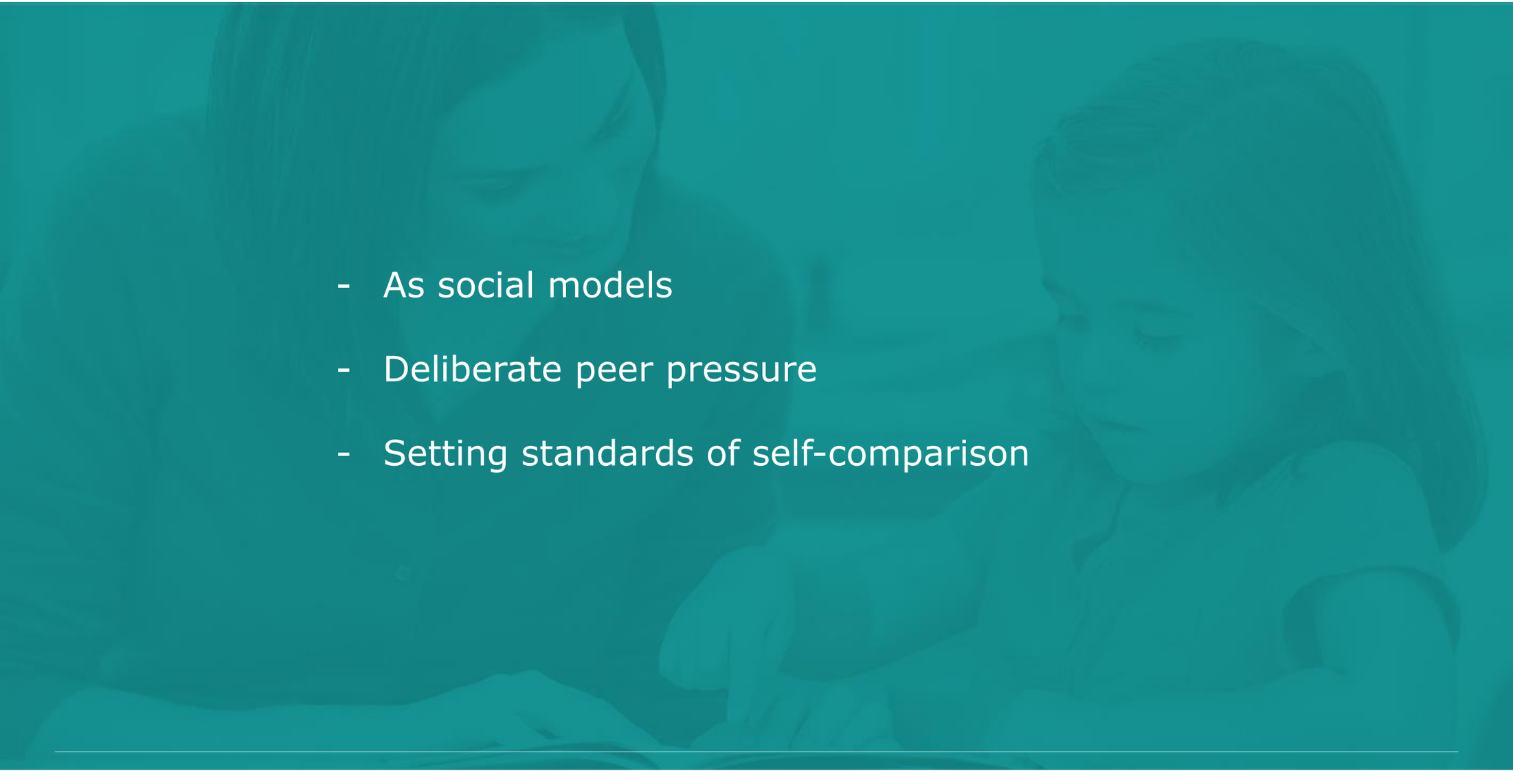
La Greca and Moore Harrison (2005) examined multiple levels of high school adolescents' interpersonal functioning, including peer relations (peer crowd affiliations, peer victimization), and qualities of best friendships and romantic relationships as predictors of symptoms of depression and social anxiety.

"Shield" against feelings of social anxiety:

- Peer crowd affiliations including both high status crowds (e.g., popular group) and low status crowds (e.g., alternative groups) (La Greca, Prinstein, & Fetter, 2001)
- Positive qualities in best friendships
- The presence of a dating relationship

Relational victimization and negative interactions in best friendships predicted high social anxiety

Ways that peers influence each other



- As social models
- Deliberate peer pressure
- Setting standards of self-comparison

Ways that peers influence each other

As social models

Peers influence each other by acting as social models. Children learn a great deal about how to behave simply by observing the actions of their peers. Even 2 year-olds imitate echoes they hear and are able to sustain an interaction and learn more sophisticated forms of play such as tossing a ball back and forth (Eckerman, 1993).

Deliberate peer pressure

Peers also influence each other in deliberate ways as the term peer pressure implies. Peers not only model behavior but actively try to shape the behavior of other children to engage with them. They reinforce, or punish, peers and are increasingly likely to reinforce each other as they get older (Charlesworth & Hartup, 1967).

Setting standards for self-comparison

This comparison plays a major role in determining self esteem (Harter, 2006). Children use social comparison with peers as a way to evaluate themselves with increasing frequency in the early years of elementary school and once begun the process never really stops.

Why do we care?

Areas impacted by pragmatic ability

Difficulty in the area of pragmatics and peer acceptance has meaningful implications to quality of life for children and adults. The following slides identify both short and long term potential ramifications of an unresolved difficulty with social language. The following graphic and slides are meant to underscore the importance of effectively identifying and treating pragmatic language differences.

Areas impacted by pragmatic ability

- Researchers using neuroimaging have determined the fact that social rejection hurts and that physical pain and social pain have similar neurological bases (Eisenberger & Lieberman, 2004)
- The more numerous the child's antipathies (relationships of mutual dislike), the poorer the child's socioemotional adjustment and academic performance (Hembree & Vandell, 2000)

Emotional Pain

long-term

- Children whose peers reject them are likely to develop behavioral and emotional problems, including anxiety, depressive symptoms, and low self esteem (Hoglund et al., 2008; Klima & Repetti, 2008; Nesdale & Lambert, 2008; Pederson et al., 2007)
- These children may even develop physical health problems (Brendgen & Vitaro, 2008)

School Success

Peer-relationships

- Children whose peers reject them tend to have difficulties in school; they have poorer quality relationships with their teachers and more trouble with their grades (Parker & Asher, 1987; Rubin et al., 2009).
- They are less active and cooperative in the classroom (Ladd et al., 2008) and more likely to drop out of school entirely (Nelson & Dishion, 2004).

Community Outcomes

Areas impacted by pragmatic ability

- For girls, same gender antipathies predicted lower achievement (Abecassis et al, 2002)

Legal Outcomes

- Children whose peers reject them are more likely to drop out of school entirely and to develop patterns of criminal activity (Nelson & Dishion, 2004).
- Having enemies in preadolescence foreshadows later problems in adolescence; boys who had same gender mutual antipathies at age 10 were more likely to have problems with substance addiction and delinquency in adolescence (Abecassis et al., 2002)

Factors that impact pragmatic ability

Family/Parenting Style

Parents play a critical role in a child's academic success and are so important to the collaborative team.

Head Start, the nation's largest intervention program for at-risk children, stresses the significance of parental involvement on early academic development.

Parental involvement can promote positive academic experiences as well as foster positive effects on parents' self-development and parenting skills.

Questions?

Working Together: SLPs and School Psychologists creating partnerships

Working together

Wagner, Kutash, Duchnowski, Epstein, and Sumi (2005) suggest that in order to strengthen special education programs:

- The needs of diverse groups of individuals must be identified;
- The least restrictive environment must always be considered; and
- Collaboration must occur within the school community.

When opportunities for collaboration occur, the learning environment may be able to respond to all of an individual's needs by teaching academic, language, and social skills.

For example…

- When considering emotional/ behavioral disorders (EBD), both school psychologists and SLPs play an important role. Often, students with EBD have speech and language disorders that may go undiagnosed and untreated.
- On the flip side, children who are diagnosed with speech and language disorders may demonstrate characteristics of EBD that have gone undiagnosed or untreated.
- Studies have demonstrated that children with SLI show higher rates of behavioral problems (Conti-Ramsden & Botting, 2004).

For example…

(cont.)

- The relationship with behavioral problems is much stronger for pragmatic competence (i.e., social language) than for structural language aspects (e.g., syntax). PLI, specifically, has been connected to autism spectrum disorder (ASD) and attention-deficit/hyperactivity disorder (ADHD; Geurts et al., 2004; Bruce, Thernlund, & Nettelbladt, 2006).

Social language and emotional/ behavioral disorders

- When comparing children who are diagnosed with SLI to those with PLI, children with PLI are four times more likely to have behavioral issues (Ketelaars, Cuperus, Jansonius, & Verhoeven, 2010).
- Children with emotional/behavioral disorders (EBD) face emotional, behavioral, social, and communicative disabilities that impact their academic and social success (Armstrong, 2011).
- The National Association of School Psychologists (2005) indicates that children with EBD are under-identified within the educational system, and only a small number receive the mental health services they need. Additionally, EBD often co-occurs with ADHD, anxiety disorders, mood disorders, and language disorders (Armstrong, 2011).

Social language and emotional/ behavioral disorders *(cont.)*

- A study conducted by Ketelaars, Cuperus, Jansonius, and Verhoeven (2010) investigated the relationship between PLI and behavioral problems in 1,364 children aged 4.
  - The study revealed that pragmatic competence, not structural language abilities, is highly correlated with and a strong predictor of behavioral problems. The structural language scales did not show high correlations with behavioral problems, which indicates no increased risk of behavioral problems for children who have only speech and syntax problems.

Social language and emotional/ behavioral disorders *(cont.)*

- The most prominent problems include hyperactivity and lack of prosocial behaviors (e.g., consideration, sharing, kindness, caring, helping out). This study reiterated the findings of Farmer and Oliver (2003), who also found that ratings of hyperactivity were significantly correlated with pragmatic language difficulties.
- Furthermore, children who display problematic behavior have been found to demonstrate low language proficiency, and children with low language proficiency have been found to display problematic behavior (Benner, Nelson, & Epstein, 2002).

Social language and emotional/ behavioral disorders

(cont.)

- Moreover, research has suggested that children with behavioral profiles are at risk for communication disorders (Cohen, Davine, Horodezky, Lipsett, & Isaacson, 1993; Donahue, Cole, & Hartas, 1994).
- Benner, Nelson, and Epstein (2002) completed a systematic review of research that looked at the association between language and behavior and found that 71% of students with EBD have concurrent language impairments; specifically, 64% were deficient in expressive language and 56% in receptive language skills.

Social language and friendships

- Peer relationships and friendships are critical to school and academic achievement for school-age children (Wentzel, Barry, & Caldwell, 2004; Newman Kingery, Erdley, & Marshall, 2011).
- Friendships are important in the development of social competencies, as well as influencing children's performance on classroom-learning activities, specifically those that involve collaboration and cooperation (Faulkner & Meill, 1993).

Social language and friendships *(cont.)*

- Children with specific language impairment (SLI), pragmatic language impairment (PLI), and autism spectrum disorder (ASD) have been found to have difficulties establishing peer relationships and friendships (Whitehouse, Watt, Line, & Bishop, 2009).
- Additionally, children with language impairments tend to engage less in active interactions and exhibit poorer discourse skills than typically developing peers, and are less likely to offer socially appropriate verbal and nonverbal responses in conversations (Brinton, Fujiki, & McKee, 1998; Landa, 2005).

Social language and friendships *(cont.)*

- Durkin and Conti-Ramsden (2007) compared friendship quality in 120 adolescents aged 16 years, with and without SLI.
  - Adolescents with SLI were found to exhibit poorer quality friendships.
  - This study suggests that language difficulties (including social language deficits) may be predictive of poorer quality friendships, which in turn may impact academic success.

Social language and friendships *(cont.)*

- La Greca and Moore Harrison (2005) examined multiple levels of high school adolescents' interpersonal functioning, including peer relations (peer crowd affiliations, peer victimization), and qualities of best friendships and romantic relationships as predictors of symptoms of depression and social anxiety.
  - Peer crowd affiliations (high and low status), positive qualities in best friendships, and the presence of a dating relationship shielded against feelings of social anxiety, whereas relational victimization and negative interactions in best friendships predicted high social anxiety.

Social language and friendships *(cont.)*

- Since social language skills are such an integral part of an individual's ability to create and maintain friendships, and friendships are a strong predictor of mental health disorders such as anxiety and depression, it is crucial that students be assessed and treated for possible pragmatic language disorders.
- The potential for students to make meaningful, long-lasting friendships relies on their social language abilities.

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