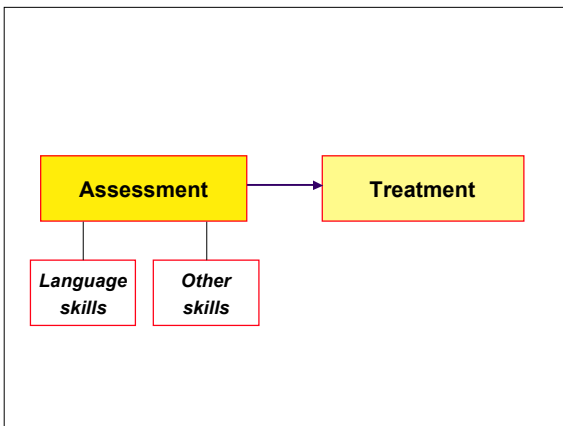


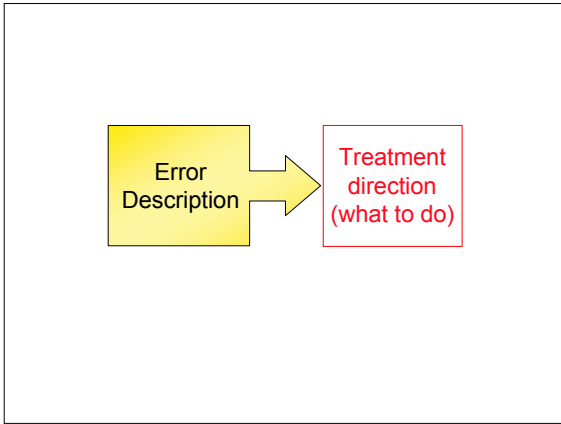
✦

Speech-Language Assessment:
Why it needs a behavioral analysis

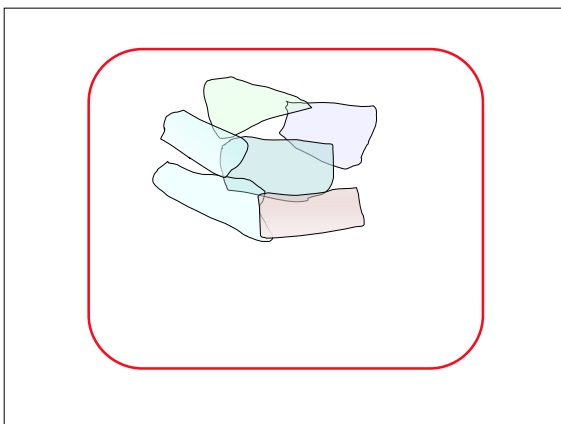
Barbara E. Esch, Ph.D.
*National Autism Conference
State College, Pennsylvania
July 31, 2012*



**The primary goal of S-L assessment is to
provide treatment direction.**



Traditional S-L tests are based on the assumption that language is a function of _____ and _____.



Interestingly, *non*-language skills are not typically described in _____ terms.
They are generally assumed to be a function of _____ and _____.

A: The cabinet drawer was open
B: She bumped into the drawer
C: Her knee hurts

Because of their linguistic focus, traditional S-L assessments describe errors in _____.

Sample skills areas on traditional S-L tests

- Auditory word recognition
- Grammatical completion
- Auditory discrimination
- Derivational adjectives
- Relational vocabulary
- Sentence completion
- Phonemic analysis
- Inflection verbs
- Word-finding
- Pluralization

Table 5: *Receptive-Expressive Language Tests*

Test and author(s)	Sub-test name or description	Relational vocabulary subtests
Clinical Evaluation of Language Fundamentals Ages 5-8 (CELF-4) Semel et al. (2003)	Concepts & Following Directions	
	Word Structure	
	Recalling Sentences	
	Formulated Sentences	
	Word Classes 1 (ages 5-7)	
	Word Classes 2 (ages 8-21)	
	Sentence Structure	
	Expressive Vocabulary	
	Understanding Spoken Paragraphs	
	Phonological Awareness	
	Word Associations	
	Number Repetition	
	Familiar Sequences	
Rapid Automatic Naming		
Pragmatics Profile		

Esch et al. (2010). Speech and language assessment: A verbal behavior analysis. *The Journal of Speech-Language Pathology and Applied Behavior Analysis*, 5, 186-191.

These words don't pinpoint _____
 _____.

This risks:
 _____ (_____)
 _____ (_____)

Treatment direction for this kind of error?

Test item: *Point to your nose.*

Q: Which one is little?
A: Points to the baby

Q: What's the opposite of big?
A: -----

Intervention?

Test item performance		
Passed	Label PP verb pix	T: What is he doing? S: <i>Running</i>
Failed	Say or finish a sentence with PP verb	T: Say a sentence with the word <i>running</i> . T: He likes to run. He is ____. S: (no response)

Intervention?

Test item performance		
Passed	Point to opposite (comparisons)	T: Which one is little? S: Points to puppy
Failed	Tell opposite	T: What's the opposite of big? S: (no response)

Intervention?

Fail on S-L assessment	Error described as...
Point to cat	
What animal says 'meow'	
Is a cat an animal?	
What word rhymes with 'cat'	
Say 'catfish' w/o saying 'fish'	
What goes with cat - fork or whiskers?	
1 cat, 2 ____ (cat or cats)?	
Name some pets	

Typical treatments

based on the assumption that the problem is a
defective or missing _____

Write the word 'CAT'

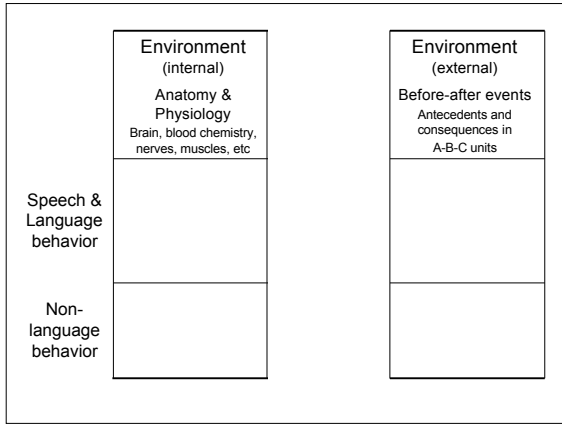
cat

Heard Word	Object _____ stimuli	Seen Word
---------------	-------------------------	--------------

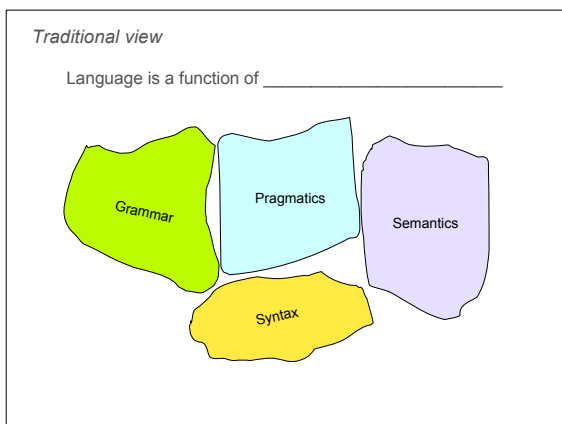
Spoken Word	_____ stimuli	Written Word
----------------	---------------	-----------------

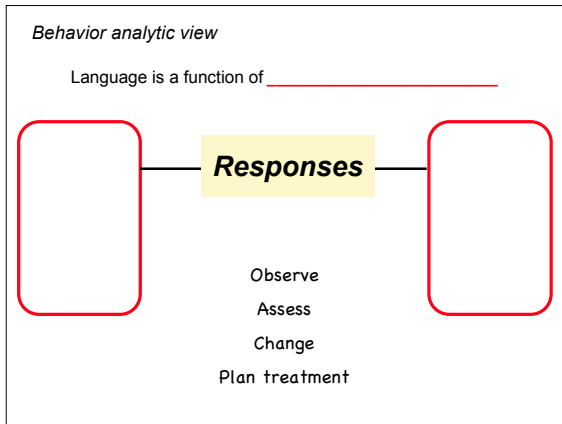
If _____ terminology doesn't
_____ treatment goals...

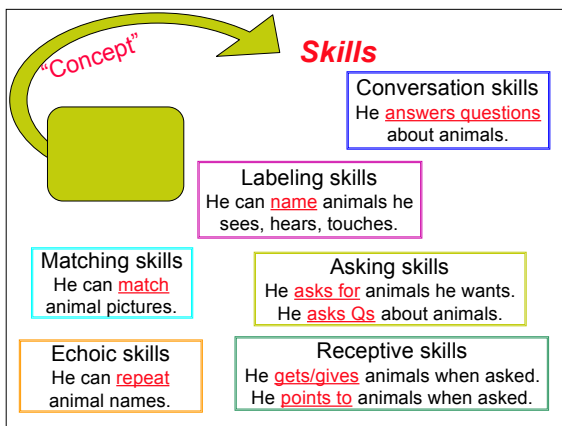
what _____
offers treatment direction?



Speech-Language = _____

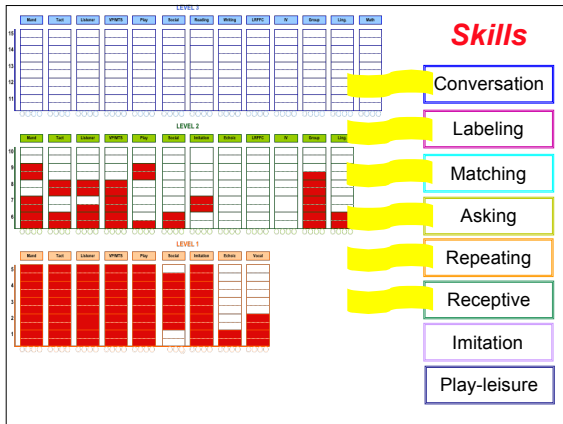






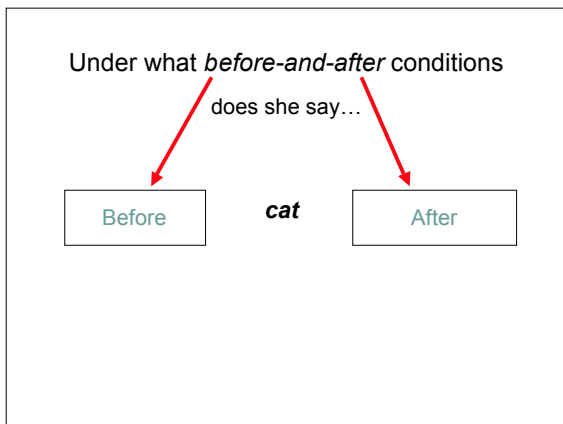
VB-MAPP
 Verbal Behavior Milestones Assessment & Placement Program
 Sundberg, M. L. (2007)

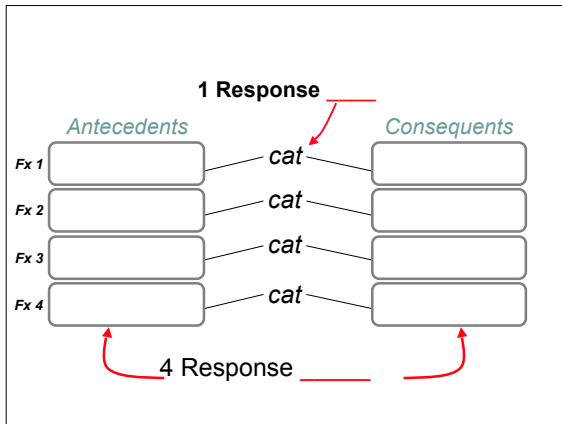
Vocal Echoic Imitation Mand (requesting) Tact (labeling) Intraverbal (conversing) Listener Play & Leisure Social Group routines Linguistic Vis'l Performance Reading, Writing, Math	LEVEL 3											
	Skills by 48 mos											
	LEVEL 2											
	Skills by 30 mos											
	LEVEL 1											
	Skills by 18 mos											



What do we mean when we say
 "She doesn't *get the meaning* of cat"

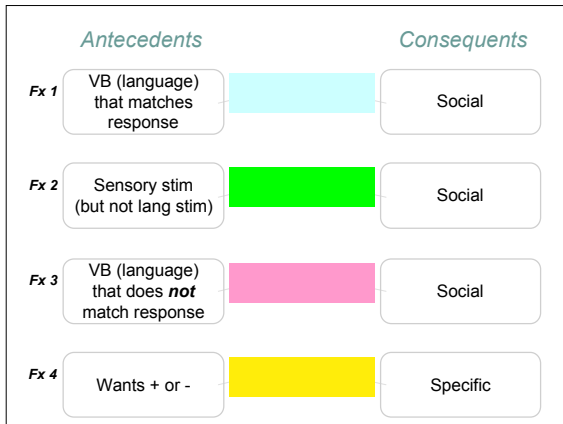
Meaning =

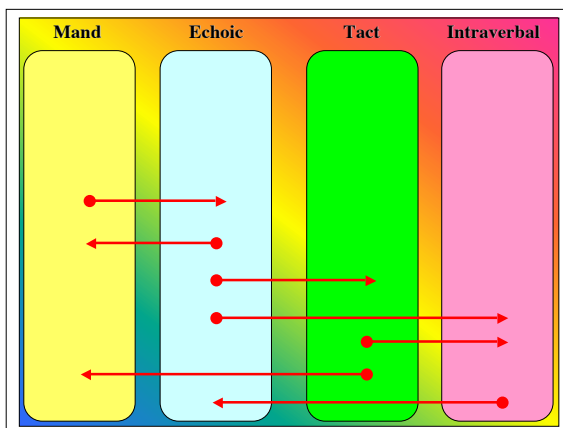


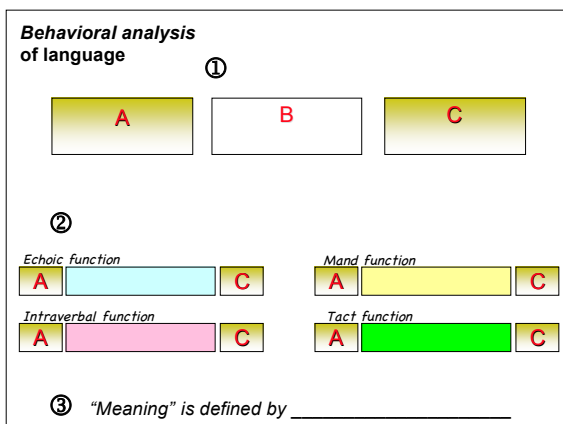


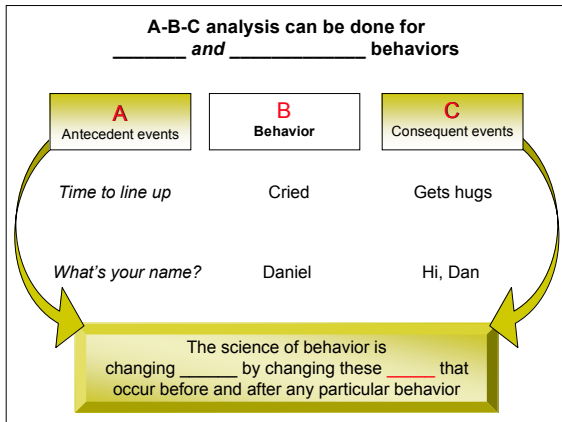
4 Verbal Functions		
Antecedent <i>Under this condition</i>	Behavior <i>This response ...</i>	Consequence <i>Produces this</i>
① wants cookie	cookie	
②	cookie	Social (praise)
③ "name a snack"	cookie	Social (praise)
④ "cookie"	cookie	Social (praise)

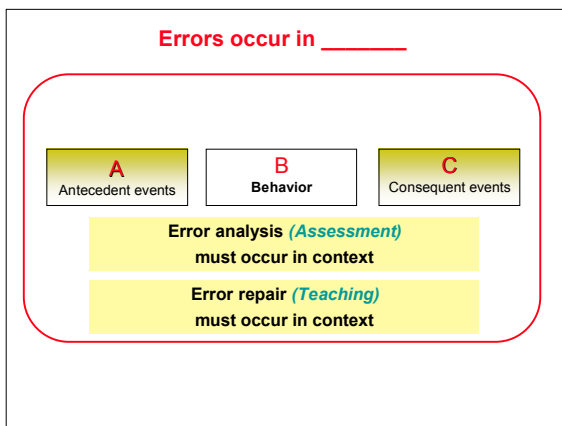
Conditions that evoke language responses	
Want it +/-	<input type="text"/>
Something you can see, hear, taste, touch, feel but it's not "language"	A response under these conditions is called ... <input type="text"/>
Verbal info It doesn't match the response	<input type="text"/>
VB It matches the response	<input type="text"/>



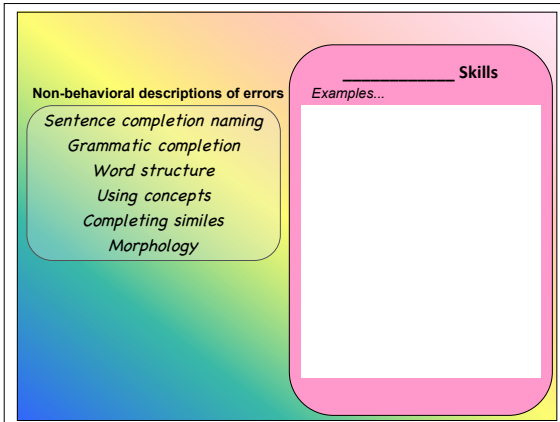








<p><i>Examples of</i></p> <p>_____ -based targets <i>(No A-B-C context)</i></p> <p>Verb tense Pronouns Articles Plurals Receptive language, etc</p>	<p><i>Examples of</i></p> <p>_____ -based targets <i>(A-B-C context)</i></p> <p>Mand, Tact Echoic Intraverbal</p>
<p>Procedures (interventions) available Procedures are <i>contextual descriptions of what to do</i></p>	
	<p>A-B-C analysis Errorless teaching Error correction Differential reinforcement Prompting, prompt-fading Motivating operations (MO) Stimulus control (transfers)</p>



Error analysis example
 -from linguistic to behavioral -

Table 5: Receptive-Expressive Language Tests

Test and author(s)	Sub-test name or description
Clinical	Concepts & Following Directions
Evaluation of Language Fundamentals	Word Structure
Ages 5-8 (CELF-4)	Recalling Sentences
Semel et al. (2003)	Formulated Sentences
	Word Classes 1 (ages 5-7)
	Word Classes 2 (ages 8-21)
	Sentence Structure
	Expressive Vocabulary
	Understanding Spoken Paragraphs
	Phonological Awareness
	Word Associations
	Number Repetition
	Familiar Sequences
	Rapid Automatic Naming
	Pragmatics Profile

Esch et al. (2010). Speech and language assessment: A verbal behavior analysis. *The Journal of Speech-Language Pathology and Applied Behavior Analysis*, 5, 168-191.

Point to the ones that go together.

How do the words ___ and ___ go together?

Correct	Error
Q: What's he doing? A: <i>Running</i>	Q: He likes to run. He is _____. A: <i>no response</i>

Possible language problems that might be identified by traditional S-L tests:

- Noun-verb construction
- Sentence completion
- Verb tense
- Repetition

Functional analysis of the error response

	"Before" context	Learner's response
This _____ (DN evoke right response)	<i>He likes to run.</i> <i>He is _____.</i> Picture	---
This _____ (it evoked right response)	<i>What's he doing?</i> Picture	running

Functional analysis of the error response

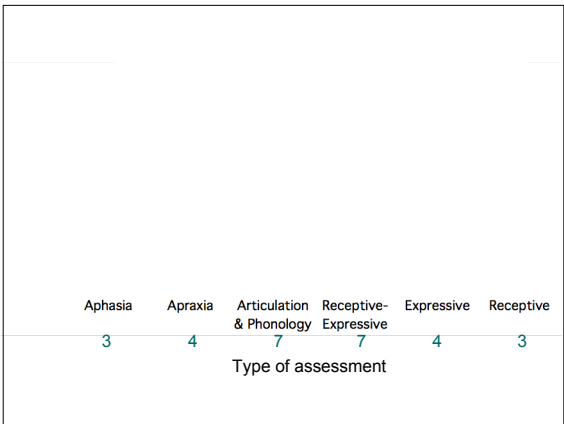
	"Before" context	Learner's response
This did not work (DN evoke right response)	He likes to run. He is _____.	running

		Learner's response
New context evokes correct response	② He likes to run. He is _____. Picture	running
Already effective context evokes correct response	① What's he doing? Picture	running

Traditional S-L assessment occurs within a context, but those _____
 This is a problem because _____

Error responses are reported in (non-behavioral) terms that fail to _____
 This is a problem because _____

A behavioral look at
traditional S-L assessments



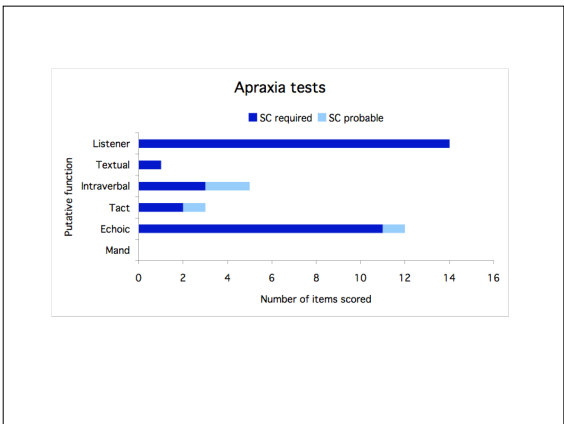


Table 3: Apraxia Tests

Test and author(s)	Sub-test name or description
Apraxia Battery for Adults (ABA-2) Dabul (2000)	Diadochokinetic Rate
	Increasing Word Length (A & B)
	Limb Apraxia & Oral Apraxia
	Latency Time and Utterance Time for Polysyllabic Words
	Repeated Trials
Kaufman Speech	Inventory of Articulation Characteristics of Apraxia
	Praxis Test for Children
The Apraxia Profile: Preschool (P) School-age (S) Hickman (1997)	Volitional Oral Movement - Verbal
	Diadochokinesis
	Words (repetition) (P)
	(S) Difficult word repetition
	Phrases and Sentences (P, S)
	(S) Rhymes
	(S) Counting
	(S) Prosody
	Connected Speech Sample

Esch, L.,Lounds, & Esch. (2010). Speech and language assessment: A verbal behavior analysis. The Journal of Speech-Language Pathology and Applied Behavior Analysis, 5, 188-191.

Problems that can affect treatment goals

Labels are _____

Items labeled as _____ are tested as _____

Labels do not reflect _____ required for + on test items

Stimuli that currently are required to evoke the response are not _____

Labels _____

Mand functions are _____

_____ instances of direct observation of mands

Table 2: Aphasia Tests

Test and author(s)	Sub-test name or description
Western Aphasia Battery Revised Kertesz (2007)	Spontaneous Speech
	A: Conversational Questions
	B: Picture Description
	Auditory Verbal Comprehension
	A: Yes/No Questions
	B: Auditory Word Recognition
	C: Sequential Commands
	Repetition
	Naming & Word Finding
	A: Object Naming
	B: Word Fluency
	C: Sentence Completion
	D: Responsive Speech

Esch et al. (2010). Speech and language assessment: A verbal behavior analysis. The Journal of Speech-Language Pathology and Applied Behavior Analysis, 5, 186-191.

Skill reportedly tested: ___
Skill actually tested: ___

Informant only

Mands might be under prompt control

Receptive Point to "DRINKING"

Table 7: Receptive Language Tests

Test and author(s)	Sub-test name or description	Implied function of test items*					
		Verbal			Nonverbal		
		Mand	Echoic	Tact	IntraVB	Textual	Listener
Peabody Picture Vocabulary Test (PPVT-3) Dunn et al. (1997)			(x)	(x)			x
Receptive One-Word Picture Vocabulary Test (ROWPVT) Brownell (2000)			(x)	(x)			x
Test for Auditory Comprehension of Language (TACL-3) Carrow-Woolfolk (1999)	Vocabulary		(x)	(x)			x
	Grammatical Morphemes		(x)	(x)			x
	Elaborated Phrases and Sentences		(x)	(x)			x

Esch et al. (2010). Speech and language assessment: A verbal behavior analysis. *The Journal of Speech-Language Pathology and Applied Behavior Analysis*, 5, 186-191.

Table 4: Articulation/Phonology

Test and author(s)	Sub-test name or description	Phonology	
		Difficulty understanding	_____
Comprehensive Test of Phonological Processing for ages 5 and 6 (CTOPP) Wagner et al. (1999)	Elision		
	Rapid Color Naming		
	Blending Words		
	Sound Matching		
	Rapid Object Naming		
	Memory for Digits		
	Nonword repetition Blending Nonwords		

Esch et al. (2010). Speech and language assessment: A verbal behavior analysis. *The Journal of Speech-Language Pathology and Applied Behavior Analysis*, 5, 186-191.

Non-word repetition

Instructions: Say it exactly as you heard it

Table 4: Articulation/Phonology Tests

Test and author(s)	Sub-test name or description
Comprehensive Test of Phonological Processing for ages 5 and 6 (CTOPP)	Elision Rapid Color Naming Blending Words Sound Matching Rapid Object Naming
Wagner et al. (1999)	Memory for Digits Nonword repetition Blending Nonwords

Esch et al. (2010). Speech and language assessment: A verbal behavior analysis. *The Journal of Speech-Language Pathology and Applied Behavior Analysis*, 5, 186-191.

Say *popcorn*. Now say popcorn without saying *corn*.

Say *baseball*. Now say baseball without saying *base*.

Say *spider*. Now say spider without saying *der*.

Say *fixed*. Now say fixed without saying */k/*.

Source: CTOPP

Table 5: Receptive/Expressive Language

Test and author(s)	Sub-test name or description
Test of Language Development - Primary (TOLD-P:3)	Picture Vocabulary Relational Vocabulary Oral Vocabulary
Newcomer & Hamill (1988)	Grammatical Understanding Sentence Imitation Grammatical Completion Word Discrimination Phonemic Analysis Word Articulation

Esch et al. (2010). Speech and language assessment: A verbal behavior analysis. *The Journal of Speech-Language Pathology and Applied Behavior Analysis*, 5, 186-191.

Assessing complex language skills

Point to "DRINKING"

Getting the answer right does not depend on _____ - it only depends on _____.

Because there are no _____, you can get the answer right by simply _____.

No conditional discrimination

Point to "DRINKING"

Stimulus 1: "Point to drinking"

Stimulus 2:

_____ depends on (is conditional on) _____.

Conditional discrimination

Sequencing test questions incorrectly can teach learners **not to attend to certain stimuli**

Point to dog eating	Who is by the desk?
Point to dog sleeping	Who is by the door?
Point to dog running	Who is by the sink
Point to dog jumping	Who is by the playroom?

What's your name?	What do we wear on our head?
What's your mom's name?	What do we wear on our feet?
What's your phone #?	What do we wear on our neck?
What's your dad's name?	What do we wear on our body?

Conditional discrimination task
One stimulus changes the strength of another stimulus to evoke a response

Translation: The correct answer depends on _____ the relevant information

Find _____ Find _____

Sample

_____ **stimulus control**

Multiple stimuli _____ to evoke a correct response

cows

horses

dogs

people

ducks

crabs

lions

INTRAVERBAL Subtests

Subtest	Content
1	Animal sounds & song fill-ins
2	Name, function fill-ins, related items
3	Simple <i>What</i> questions
4	Age, simple <i>Who</i> , <i>Where</i> questions
5	Categories, function, features
6	Adjectives, prepositions, adverbs
7	Multiple part questions
8	Multiple part questions

Rote or
divergent SC
 (many Rs correct)

Complex
 conditional VB
 discriminations
 requiring
convergent SC

Sundberg, M. L., & Sundberg, C. A. (2011). Intra-verbal behavior and verbal conditional discriminations in typically developing children and children with autism. *The Analysis of Verbal Behavior*.

Simple Intraverbals

See/say
 (tact)

Hear/say
 (echoic)

See/do
 (imitation)

Rote actions
 (Foll dirs/LR)

Other simple discriminations

Sundberg, M. L., & Sundberg, C. A. (2011). Intra-verbal behavior and verbal conditional discriminations in typically developing children and children with autism. *The Analysis of Verbal Behavior*, 27, 23-43.

Easy *What* Qs
 lots of diff correct answers

Complex IVs
 requiring
 VB conditional discriminations
 (VB CDs)

Sundberg, M. L., & Sundberg, C. A. (2011). Intra-verbal behavior and verbal conditional discriminations in typically developing children and children with autism. *The Analysis of Verbal Behavior*, 27, 23-43.

VB conditional discriminations (VBCDs)
 Response has to come under control of
 2 or more antecedent VB stimuli

Sundberg, M. L., & Sundberg, C. A. (2011). Intraverbal behavior and verbal conditional discriminations in typically developing children and children with autism. *The Analysis of Verbal Behavior*, 27, 23-43.

Subtest 4 Q: Who do you see on TV A: _____
 Item 9
Sundberg, M. L., & Sundberg, C. A. (2011)
 Missing/weak:

Multiple stimuli must _____
 correct response TV

Summary

1 Mands _____

2 A response may not be _____ if _____ stimuli are _____

3 Failure to describe _____ has _____

Research & clinical To-Do's

① **Identify S-L** _____
_____ that define
a competent speech-
language repertoire

② **Define** _____
_____ that need to be in place to
support acquisition of more
complex repertoires

③ **Translate this information into**

Contact:

besch1@mac.com
