

# Language Sample Analysis: Assessment and Intervention Planning

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How we define a problem usually determines how we analyze it. It sends us in a particular direction. And how we analyze a problem — the direction we take — absolutely determines whether we find a solution and what the quality of that solution is.

Jones, 1998

## Advance Organizer

- Interpreting SUGAR QUICK Analysis
- Deep Analysis
- Selecting Intervention Targets



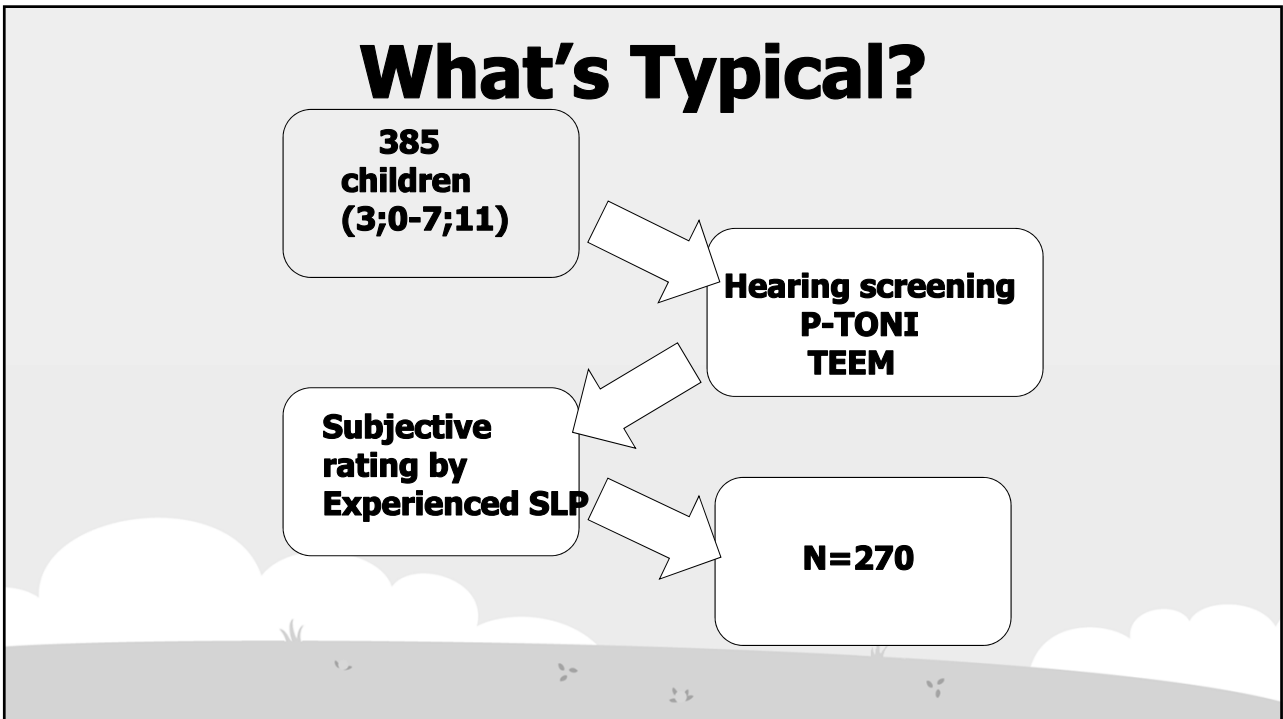
## What's Typical?

**385  
children  
(3;0-7;11)**

**Hearing screening  
P-TONI  
TEEM**

**Subjective  
rating by  
Experienced SLP**

**N=270**



## A little about the kids

<b>Race/Ethnicity</b>	<b>N</b>	<b>%</b>
Amer. Indian/Alaska Native	1	0.37%
Asian	8	2.96%
White	193	71.48%
Black/African American	25	9.26%
Multiracial	21	7.78%
Not Reported	22	8.15%

## A little about the kids

<b>Age</b>	<b>M</b>	<b>F</b>	<b>Total</b>
3;0-3;5	11	9	20
3;6-3;11	17	23	40
4;0-4;5	23	22	45
4;6-4;11	27	28	55
5;0-5;11	24	30	54
6;0-6;11	15	18	33
7;0-7;11	16	7	23
<b>TOTAL</b>	<b>133</b>	<b>137</b>	<b>270</b>

## Procedures

- Collected and transcribed 50-utterance language samples using SUGAR methods
- Calculated MLU, TNW, WPS, CPS
- Deep Analysis



## Tentative Norms

TNW	3;0-3;5	3;6-3;11	4;0-4;5	4;6-4;11	5;0-5;11	6;0-6;11	7;0-7;11
Mean	192.3	244	261.4	278.7	299.8	337.7	364.5
SD	61.2	58.1	70	60.1	61.5	72.5	54.2
-1 SD	131	186	191.4	218.6	238.3	265.2	310.3

MLU	3;0-3;5	3;6-3;11	4;0-4;5	4;6-4;11	5;0-5;11	6;0-6;11	7;0-7;11
Mean	4.25	5.42	5.79	6.18	6.67	7.60	8.19
SD	1.37	1.29	1.53	1.32	1.35	1.60	1.32
-1 SD	2.88	4.13	4.26	4.86	5.32	6.00	6.87

## Tentative Norms

WPS	3;0-3;5	3;6-3;11	4;0-4;5	4;6-4;11	5;0-5;11	6;0-6;11	7;0-7;11
Mean	5.27	6.24	6.48	6.97	7.33	8.05	8.61
SD	1.39	1.17	1.37	1.26	1.21	1.42	1.14
-1 SD	3.87	5.07	5.11	5.71	6.12	6.63	7.48

CPS	3;0-3;5	3;6-3;11	4;0-4;5	4;6-4;11	5;0-5;11	6;0-6;11	7;0-7;11
Mean	1.09	1.15	1.19	1.21	1.29	1.36	1.39
SD	0.13	0.11	0.13	0.11	0.13	0.14	0.14
-1 SD	1.00	1.04	1.06	1.10	1.16	1.22	1.25

Age Group	Average Times and Ranges	
	Total Average Time	Total Range
3;0-3;5	22.04	13.23 – 33.28
3;6-3;11	21.45	14.77 – 31.77
4;0-4;5	20.75	10.55 – 30.78
4;6-4;11	21.05	12.45 – 33.23
5;0-5;11	19.57	13.27 – 25.90
6;0-6;11	22.07	15.30 – 30.15
7;0-7;11	20.87	15.17 – 27.02

Hopefully coming soon in LSHSS...

Pavelko, S., & Owens, R. (2017). Sampling Utterances and Grammatical Analysis Revised (SUGAR): New Normative Values for Language Sample Analysis Measures. *Language, Speech, and Hearing Services in Schools*.

- Stay tuned... revision #2 is under review!



### Interpreting Quick Analysis

- **ALONG WITH OTHER ASSESSMENT DATA...**
  - If a child fails 3 or more of the SUGAR quick metrics, it **MIGHT** suggest the child has a language impairment.
  - Then, what...?



Let's Put This Into ACTION!



Why only 80%?

We're really talking about probability. If 80% of kids use a language feature within 50 utterances, we can safely assume more than 80% have that feature.

Even some language development studies use the 80% criterion for mastery, although admittedly not most.

It's nearly impossible to get many language features displayed by 90% of the children, the usual level for mastery, in just 50 utterances.



## We Examined....

- Noun phrases
- Verb phrases
- Infinitive and prepositional phrases
- Brown's 5 bound inflectional morphemes
  - -ing,
  - possessive -'s
  - plural -s
  - 3<sup>rd</sup> person -s
  - past -ed



## Noun Phrase Analysis

What's a noun phrase?

The noun/pronoun and all associated words that fill the noun function

Parts of a noun phrase:

Initiator

Determiner = Quantifier + Article + Possessive pronoun + Demonstrative + Numerical term

Adjective = Possessive Noun + Ordinal + Adverb + Adjective + Descriptor

Noun = Pronoun + Noun

Modifier = Prep. Phrase + Adjectival + Adverbial + Embedded clause

**Why should we care?**

**NPs are closely linked to literacy skills**



## Words in the Elements of a Noun Phrase

<b>Determiner</b>	Initiator	<i>Only, a few of, just, at least, nearly</i>
	Quantifier	<i>All, both, half, no, one-tenth, some</i>
	Article	<i>A, the, an</i>
	Possessive pronoun	<i>My, your, his, her, its, our, their</i>
	Demonstrative	<i>This, that, these, those</i>
<b>Adjective</b>	Numerical term	<i>One, two, thirty, one thousand</i>
	Possessive Noun	<i>Mommy's, boys', children's, Juan's</i>
	Ordinal	<i>First, next, last, next to, second, final</i>
	Adverb	<i>Really, very</i>
	Adjective	<i>Blue, big, fat, married, challenging</i>
<b>Modifier</b>	Descriptor	<i>Shopping (center), baseball (game)</i>
	<b>Noun/Pronoun</b>	<b><i>Dog, house, girl, couples, dish, cow</i></b>
	Prep. Phrase	<i>On TV, in the window, at the event</i>
	Adjectival	<i>Next door, loved by all, beloved</i>
	Adverbial	<i>Here, there</i>
	Embedded clause	<i>That lives next door, who you know</i>

## Elements in Noun Phrases

Number of elements with age\*

3;0-3;5	2-3 elements
3;6-3;11	2-3 elements
4;0-4;5	2-3 elements
4;6-4;11	2-3 elements
5;0-5;11	2-3 elements
6;0-6;11	2-3 elements
7;0-7;11	2-3 elements

(70% of 7;0-7;11 had 4 elements)

\*80% of samples

Elements in Noun Phrases	3;0-3;5	Article, Possessive pronoun, Noun
	3;6-3;11	Article, Possessive pronoun, Adjective, Descriptor, Noun
	4;0-4;5	Quantifier, Article, Possessive pronoun, Adjective, Descriptor, Noun
	4;6-6;11	NO NEW ELEMENTS ADDED
	7;0-7;11	Quantifier, Article, Possessive pronoun, Demonstrative, Numerical Term, Adjective, Descriptor, Noun

\*80% of samples; red denotes new elements added

Noun Phrase Examples	Age 3;0-3;5
	Article + Noun <i>A baby, the thing, a playground</i>
	Possessive pronoun + Noun <i>My brother, our car</i>

## Noun Phrase Examples

Age 3;6-3;11

Article + Adjective + Noun

*A yellow jeep, the other story, an underwater cake*

Article + Descriptor + Noun

*The Belle sticker, a ghost crab, a donkey kick*

Possessive pronoun + Adjective + Noun

*My favorite book, our other car*

Possessive pronoun + Descriptor + Noun

*My pirate game, our trailer bike*

Age 4;0-4;5 to 6;0-6;11

Quantifier + Article + Noun

*Some big dollars, some of the things*

Quantifier + Possessive pronoun + Noun

*All my books, a lot of my friends*

Article + Adjective + Noun

*A real store, the wrong bullet, the snapping clam*

Article + Descriptor + Noun

*The beach one, the bicycle store*

Possessive pronoun + Adjective + Noun

*Her favorite one, my stuffed animal*

Possessive pronoun + Descriptor + Noun

*Her pee-pee diapers, my toy penguin*

## Noun Phrase Examples

Age 7;0-7;11

Quantifier + Article + Noun: *All the animals*Quantifier + Adjective + Noun: *All kinds of different things, some more presents*Quantifier + Possessive pronoun + Noun: *A lot of my cousins*Quantifier + Demonstrative + Noun: *Some of those boys*Quantifier + Numerical term + Noun: *All three games*Article + Adjective + Noun: *The evil witch, the target practice*Demonstrative + Adjective + Noun: *This brown body, this big screen*

## Noun Phrase Examples

Age 7;0-7;11

Article + Descriptor + Noun: *A princess charm, the birthday person*Demonstrative + Descriptor + Noun: *This movie monster, these bomb things*Possessive pronoun + Adjective + Noun: *My older sister, my little brother*Possessive pronoun + Descriptor + Noun: *My air mattress*Possessive pronoun + Numerical term + Noun: *My three friends*Numerical term + adjective + Noun: *Two different words, one whole movie, three more times*

## Verb Phrase Analysis

What's a verb phrase?

The verb and everything that follows until the end of the clause

Parts of a verb phrase:

[Aux. Verb] + Verb +

{ [Adverb]  
[Prepositional Phrase]  
[Infinitive Phrase]  
[Noun Phrase]

Why should we care?

The VP contains the basic proposition of a sentence.

Reflects the form and type of sentence

Modal Auxiliary	Perfective Auxiliary	BE verb	Negative	Passive	Verb	Prepositional phrase Noun Phrase Noun Complement Adverb Adverbial Phrase
May, must, shall, will, might, can, should, could, would	Have, had, has	Am is are was were be been	Not, n't, never	Been, being	Run, eat, walk, see, write, throw	On the floor (prep. Ph.), the ball (NP), our old friend (NP-NPComp), a doctor (NP-NPComp), quickly, (ADV), late (ADV)

## Verb Phrase Examples

Age 3;0-3;5

BE copula:

She's just a little baby.

Irregular past:

They drove on the road.

Infinitive phrases:

I like to play.

Prepositional phrases:

I like to play with cars.

Red indicates new elements

## Verb Phrase Examples

Age 3;6-3;11

BE copula:

They're bigger than me.

Irregular past:

Then the blood came out.

Infinitive phrases:

I'm going to go to the beach.

Prepositional phrases:

I play with my pirate games.3<sup>rd</sup> person -s:

My baby sister always comes and snuggles.

Red indicates new elements

## Verb Phrase Examples

Age 4;0-4;5

BE copula:

It was on her neck.

Irregular past:

We went to one hotel and it was a beach one.

Infinitive phrases:

You have to come to my house.

Prepositional phrases:

She still have that thing at the house.3<sup>rd</sup> person -s:She likes American Girl dolls.

Do/does + V:

I don't know why.

Red indicates new elements

## Verb Phrase Examples

Age 4;6-4;11

BE copula:

Zoe's a little kid and she's my little sister.

Irregular past:

She made a friendship problem.

Infinitive phrases:

I like to watch TV while quiet time.

Prepositional phrases:

I just play all by my own self.3<sup>rd</sup> person -s:  
everything.Sid the Science Kid wants to know about

Do/does + V:

I don't really remember.

No new elements

## Verb Phrase Examples

Age 5;0-5;11

BE copula	One <u>is</u> a big castle and the other <u>is</u> a little fairy garden.
Irregular past	She <u>had</u> a little brother that was named Arthur.
Infinitive phrases	She used <u>to be</u> in my class but I don't remember.
Prepositional phrases	Sometimes I play <u>with my sister and brother</u> .
3 <sup>rd</sup> person -s	Sometimes he <u>knows</u> I won't play and he <u>asks</u> .
Do/does + V	I <u>don't</u> really know where one lives but I know where some live.
Regular past	I planted some vegetables too.

Red indicates new elements

## Verb Phrase Examples

Age 6;0-6;11

BE copula	It's really cool.
Irregular past	But people <u>found</u> her.
Infinitive phrases	Trying <u>to get</u> the other team from getting the ball.
Prepositional phrases	You go after the kid <u>with the ball</u> .
3 <sup>rd</sup> person -s	My brother <u>plays</u> tackle football.
Do/does + V	The other one <u>doesn't</u> really do anything.



## Verb Phrase Examples

Age 6;0-6;11

Regular past

My mom said it just needed a little ice..

Modal auxiliaries

There are two computers so that each of them can have a chance to play.

BE + Verbing

And this time we're doing the animal coffee.

Red indicates new elements

## Verb Phrase Examples

Age 7;0-7;11

BE copula

That's pretty much all.

Irregular past

And we had to spell what they were doing on top.

Infinitive phrases

And she showed us how to code some of them.

Prepositional phrases

I go over with her.3<sup>rd</sup> person -sHe takes those black spirals.

No new elements

## Verb Phrase Examples

Age 7;0-7;11

Do/does + V

But Elizabeth doesn't actually watch it anymore  
'cause she's almost at the end.

Regular past

Whenever someone hugged them they turned into  
dog, cat, and mouse.

Modal auxiliaries

But at the end of the day at Spanish maybe I might  
give him it.

BE + verbing

We were looking at pictures from our field trip that  
we did a few days ago.

No new elements

## Brown's Bound Morphemes

3;0-3;5

Plural -s, progressive -ing

3;6-3;11

Plural -s, progressive -ing, 3<sup>rd</sup> person -s

4;0-4;5

Plural -s, progressive -ing, 3<sup>rd</sup> person -s

4;6-4;11

Plural -s, progressive -ing, 3<sup>rd</sup> person -s

5;0-5;11

Plural -s, progressive -ing, 3<sup>rd</sup> person -s, regular past -ed

6;0-6;11

Plural -s, progressive -ing, 3<sup>rd</sup> person -s, regular past -ed

7;0-7;11

Plural -s, progressive -ing, 3<sup>rd</sup> person -s, regular past -ed

Although the children used possessive pronouns from age 3;0, they never used the possessive  
-s marker on nouns in sufficient numbers to reach 80% of the samples.

- Collect a ROBUST sample (10 minutes)
- Transcribe 50 child-only utterances (10 minutes)
- Quantitative analysis (10 minutes)
- Qualitative analysis (10 minutes)
- Identify intervention targets



Let's put this to work!

## Where is SUGAR going?



Diagnostic Accuracy

Norming with 8- and 9-year-olds

Collecting additional data on children  
speaking AAE

Additional sub-analysis

Adding intervention



*It's called...*

# SUGAR!



**Sampling Utterances  
and  
Grammatical Analysis  
Revised**

