

Thanks for coming along! This webinar will begin shortly.

The webinar will be recorded so it is accessible to others after the live session.


Please remember to turn off your camera and microphone.

Feel free to post your questions into the chat box. I will attempt to answer them at the end of the presentation.

Webinar Series:  
Webinar 2: SALT – Just Beyond the Basics


Marleen Westerveld, PhD

## Webinar 2: SALT - Just Beyond the Basics



Marleen Westerveld, PhD


### Overview



- Overview of additional conventions: pausing, nonverbal turns, overlapping speech
- Conventions summary: choosing wisely (and saving time)
- Analysing language samples – which measures to choose
- Interpreting the results – and what to do next.
- Questions & Answers

<https://www.marleenwesterveld.com/salt-webinars/>

### What conventions to use? It depends on your LSA questions...



- Types of measures you are interested in: MLU, NDW, Grammatical Errors, Rate, Verbal Fluency, Turntaking, depending on your assessment questions.
- Depth of your planned analysis
- Age of your client
- Discourse context
- Describing and/or comparing to typical speakers

### Conventions: Pausing and when to use

Code	Explanation	Examples
:	Pause between utterance of different speakers	E Where did you go? :04 C To the toilet.
;	Pause between utterances of same speaker	C I love swimming. ;04 C but not in winter.
:	Unfilled time within an utterance (untimed or timed)	C I love : swimming. C I love :08 swimming.

### Conventions: nonverbal utterances

{ } nonverbal actions that support a turn, OR constitute the turn

E what have you got?  
C (points to the ball in his hand). ← Nonverbal content as its own 'turn'  
E is that a caterpillar?  
C (holds toy up) yes! ← Nonverbal content within utterance

**When to use = instead of { }**  
Use = if it does not relate to the immediate utterance

E What did you do this morning?  
= C gets up to turn the light on.

## Conventions: overlapping speech

< > When two or more speakers speak at the same time.

E What is <that>?

C <A ball>!

C I love playing < > with the ball.

E <uhuh>.

E what else do you like?

C going to soccer.

E Mhm.

C going to the beach.

You learn not to interrupt the child!

## Conventions: Summary (from session 1)

- Utterance segmentation – Communication units
- How to start an utterance: C, E, +, =
- How to end an utterance: ?, ., ~, >, ^, !
- Mazes: ( )
- Coding of morphemes: /s, /z, /ʒs, /ed, /en, /ing
- Coding of contractions: /'ll, /'m, /'d, /'re, /'s, /'ve, /'h's, /'h'd, /'d'd, /'us
- Omitted words or part words: \*word, w\*, /\*BM, /\*Contraction
- Errors at word, and utterance level: [EO], [EP], [EW], [EU]



## Analysis

- How does it work?
- What measures to use?
- Interpreting the results.



## Case study

Daniel, age 5 years, 10 months

History of speech/language difficulties

History of SLP intervention

You elicit a language sample as part of your six-monthly intervention review process.

CELF-P2 results – see RH panel.

Daniel is in Prep; teacher has concerns about his participation in the classroom.



Word Structure:	SS 6
Expressive Vocabulary:	SS 9
Recalling Sentences:	SS 6
Sum of Expressive language scores:	SS 83
Basic Concepts:	SS 11
Concepts and Following Directions:	SS 5
Sentence Structure:	SS 8
Sum of Receptive language scores:	SS 89

## Decisions

### Discourse context:

- Age appropriate, relevant to curriculum
- story retell and comprehension
- Compared to typical peers

### Hypotheses / Questions

- Struggling with Syntax/Morphology at discourse level?
- Ability to tell a coherent story?
- Difficulties in story comprehension?

### Measures:

- MLU-M, Grammatical Accuracy, Errors,
- Narrative Quality
- Comprehension

## SALT: Built-in Reference Databases

### Databases of English-fluent Speakers

- Play
  - ages 2;8 - 5;8 (grades Pre-K and K)
- Conversation
  - ages 2;9 - 13;3 (grades Pre-K, K - 3, 5, 7)
- Narrative SSS (student selects story)
  - ages 5;2 - 13;3 (grades K - 3, 5, 7)
- Narrative Story Retell
  - based on 4 stories
  - ages 4;4 - 12;8 (grades Pre-K, K - 6)
- Expository
  - ages 10;7 - 18;9 (grades 5 - 7, 9 - 12)
- Persuasion
  - ages 12;10 - 18;9 (grades 9 - 12)

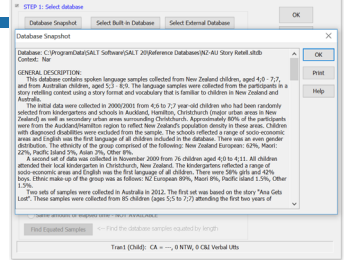
### Databases Contributed by Colleagues

- TNL2 Narrative Samples
  - narratives from TNL-2 (Gillam & Pearson, 2017)
  - ages 4;0 - 14;11
- TNL Narrative Samples
  - narratives from TNL (Gillam & Pearson, 2004)
  - ages 5;0 - 11;11
- New Zealand/Australia databases
  - conversation, personal narrative, story retell, and expository
  - ages 4;0 - 8;9
- ENNI
  - narratives from ENNI (Schneider, Dube & Hayward, 2005)
  - ages 4;0 - 10;0

<https://www.saltsoftware.com/resources/databases>


## How to elicit the narrative?

Database Snapshot




This will outline the procedures; provide transcription notes; give information about the database location etc.

**For Australia and NZ:**  
 Ana Gets Lost: ages 4;0 – 7;7  
 Bus Story: Prep, Grade 1, Grade 2



## Elicited Ana Gets Lost (email for a copy of the task)

- 0:00  
 E what happened in the beginning?  
**C Anna was going out of the door.**  
 E uhuh.  
**C and he looked into the shops.**  
**C and him was crying.**  
 E uhuh.  
**C And the police pat on his back.**  
 E uhuh.  
**C And take her home.**  
 E uhuh.  
**C and him got lost.**  
**C And the policeman said you don't have to go out of ever again.**  
 - 1:20



**ONC:** Daniel obtained a story comprehension score of 1 (out of 8)  
**ONQ:** Daniel scored 16 on the oral narrative quality rubric.

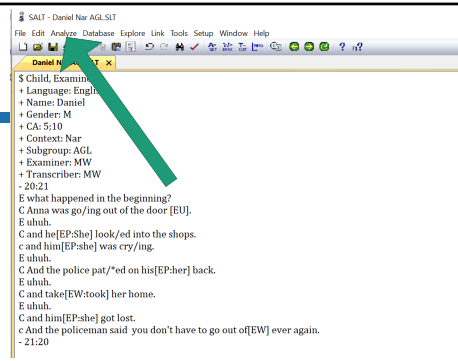
## Ana Gets Lost 'coding'

Child Utterance	A	B
Anna was going out of the door.	Anna was go/ing out of the door [EU].	Anna was go/ing out of the door.
and he looked into the shops.	And he[EP:she] looked into the shops.	And he[EP:she] look/ed into the shops.
and him was crying.	And him[EP:she] was cry/ing.	And him[EP:she] was crying.
And the police pat on his back.	And the police pat/*ed on his[EP:her] back.	And the police pat/*ed *her on his[EP:her] back.
and take her home.	And take[EW:took] her home.	And take[EO:took] her home.
and him got lost.	And him[EP:she] got lost.	And him [EP:she] got lost.
And the policeman said you don't have to go out of ever again.	And the policeman said you don't have to go out of ever again [EU].	And the policeman said you don't have to go out of[EW] ever again.

## Analysis


**Our questions:**

- MLU-M
- Grammatical accuracy
- Errors
- Comprehension
- Quality



## There is a long list of possible analyses you can perform.

Standard Measures report



## Analyze – standard measures report

**Our questions:**

- MLU-M: **6.86**
- Grammatical accuracy: **0%**
- Errors: **7 error codes, 1 omission**
- Comprehension: **1 question correct**
- Quality: **16 total score**

STANDARD MEASURES REPORT		
	Child	Examiner
<b>TRANSCRIPT LENGTH</b>		
Total Utterances	7	5
Analysis Set (C&I Verbal Utts)	7	5
All Words Including Meanes	45	9
Elapsed Time	(0:59)	0:58
<b>INTELLIGIBILITY</b>		
% Intelligible Utterances	100%	100%
% Intelligible Words	100%	100%
<b>MACRO ANALYSIS</b>		
Oral Narrative Quality	16	
Oral Narrative Comprehension	1	
<b>SYNTAX/MORPHOLOGY</b>		
MLU in Words	6.86	1.80
% MLU in Morphemes	0.60	1.80
% Utterances With Verbs	85.7%	20.0%
Mean Verbs per Utterance	1.29	0.20
<b>SEMANTICS</b>		
Number Total Words (NTW)	45	9
Number Different Words (NDW)	32	6
Moving Average NTW	45	9
Moving Average NDW	32	6
Moving Average Type-Token Ratio (TTR)	0.71	0.67
<b>VERBAL FLUENCY</b>		
Words/Minute	45.7%	9.15
Pause Time As % of Total Words	0.0%	0.0%
Mean Words As % of Total Words	0.0%	0.0%
% Abandoned Utterances	0.0%	0.0%
<b>ERRORS</b>		
% Utterances With Errors	100%	0.0%
Number of Omissions	1	0
Number of Error Codes	7	0

Calculations based on C&I Verbal Utts, Syntax/Morphology and Semantics sections. Mean Words As %

Analyze – Syntax/Morphology summary



Daniel Nar AGL  
Analysis Set: C&I Verbal Utts

SYNTAX/MORPHOLOGY SUMMARY			
	Child		Total Utterances
	Analysis Set		
MLU in Words	6.43		6.43
MLU in Morphemes	5.86		5.86
Brown's Stage	Post V		Post V
Expected Age Range (Months)	41--		41--
% Utterances With Verbs	85.7%		85.7%
Mean Verbs per Utterance	1.29		1.29
Number Total Words	45		45
Number of Bound Morphemes	3		3
/ED	1		1
/ING	2		2
Number of Omitted Words	0		0
Number of Omitted Bound Morphemes	1		1

Analyze – Bound Morpheme Table

Daniel Nar AGL  
Analysis Set: C&I Verbal Utts

BOUND MORPHEME TABLE C&I Verbal Utts - Main Body 1st Speaker			
	Child		
	Number Occurred	Number Omitted	% Obligatory Context
/ED	1	1	50.00
/ING	2	0	100.00

Analyze – Bound Morpheme Table – expanded

Daniel Nar AGL  
Analysis Set: C&I Verbal Utts

BOUND MORPHEME TABLE Table Expanded by Words And Codes C&I Verbal Utts - Main Body 1st Speaker				
	Child		Examiner	Total
	Total	Expanded		
/*ED	1			0
PAT/*ED		1		
/ED	1			0
LOOK/ED		1		
/ING	2			0
CRY/ING		1		
GO/ING		1		

Let's consider his errors: there were 7 errors and one omission

Daniel Nar AGL  
Analysis Set: C&I Verbal Utts

ERRORS SUMMARY		
	Child	
	Analysis Set	Total Utterances
% Utterances With Errors	100%	100%
Number of Omissions	1	1
Omitted Words	0	0
Omitted Bound Morphemes	1	1
Number of Error Codes	7	7
[EP:=]	4	4
[EW]=]	1	1
[EW:=]	1	1
[EU]	1	1

Analyze – Errors summary

Analyze – Word Code Tables

Daniel Nar AGL  
Analysis Set: C&I Verbal Utts

WORD CODE TABLE Table Expanded by Words And Codes C&I Verbal Utts - Main Body 1st Speaker			
	Child		Examiner
	Total	Expanded	
[EP:HER]	1		
[HS[EP:HER]		1	
[EP:SH]	3		
[HE[EP:SH]		1	
[HM[EP:SH]		2	
[EW:TOOK]	1		
[AKE[EW:TOOK]		1	
[EW]	1		
[OFEW]		1	

Analyze - Grammatical categories:

GRAMMATICAL CATEGORIES		
Category	Child	Examiner
<b>TOTAL UTTERANCES</b>		
Initiators	0	0
Determiners	5	1
Adjectives	0	0
Nouns	7	1
Personal Pronouns	5	0
Other Pronouns	0	0
Auxiliary Modals	0	0
Auxiliary Operators	3	0
Verbs	9	1
Copula Forms	0	0
Verb Particles	2	0
Adverbs	3	0
Intensifiers	0	0
Prepositions	4	1
Existential	0	0
Question Words	0	1
Coordinators	6	0
Subordinators	0	0

For further detail that may assist goal setting.

- Infinitives
- Possessives
- Negation Words
- Lets Words
- Interjections

Daniel Nar AGL	
ORAL NARRATIVE QUALITY	
Introduction	1
Theme	3
MainChar	3
SuppChar	1
Conflict	1
Coherence	1
Resolution	3
Conclusion	3
Oral Narrative Quality	16

Analyze – Oral Narrative Quality:

### Analyze – performance report

**Errors**  
 100.0% of Daniel's utterances contained errors. He omitted the past tense bound morpheme once, although he produced it once. He used the present progressive bound morpheme twice. His sample contained the following pronoun errors: HE[EP:SHE] once, HIM[EP:SHE] twice, and HIS[EP:HER] once, the following extraneous word: OF[EW], and the following other word-level error: TAKE[EW:TOOK]. His sample also contained the following utterance-level error:  
 c Anna was go/ing out of the door [EU].

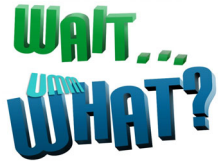
**Semantics**  
 Daniel used 32 different words (NDW) within an analysis set of 45 total words. NDW is a measure of vocabulary diversity with higher values indicating more diversity. Daniel used the negative DON'T and the personal pronouns HE, HER, HIM, and YOU. He did not use any question words, or modal auxiliaries.

### Summary: Analysis allows you to:

- Provide a detailed description of baseline performance – excellent for monitoring progress
- There is an option to link transcripts for comparison
- There is an option to include your own codes – e.g. to highlight articulation errors or semantic errors.
- You can ask SALT to explore your transcript for (e.g.) mental state verbs, conjunctions, personal pronouns.
- You can ask SALT to give you a list of all the words the child used when producing the language sample (Analyze – Word Root Table).

### But – I can analyse 7 utterances by hand!

- That is a very short sample!!
- 50 utterances for more detailed linguistic analysis.
- We also elicited personal narratives (see website)
- Daniel produced 59 utterances, of which 17 were incomplete/unintelligible.



### Daniel Personal Narrative sample

- MLU-M: 4.57
- Grammatical accuracy: 83.4%
- Number of error codes: 12

	Child	
	Total	Expanded
[EO-FELT]	1	1
FEEL[ED]EO-FELT		1
[EO-SEALICE]	1	1
SEALICE[EO-SEALICE]		1
[EP-HE]	2	2
HIM[EP-HE]		2
[EW-IR]	1	1
IR[EW-IR]		1
[EW-MANY]	1	1
MUCH[EW-MANY]		1
[EW-PERSON]	1	1
PEOPLE[EW-PERSON]		1
[EW-TO]	1	1
AT[EW-TO]		1
[EW]	1	1
CAUSE[EW]		1

### Daniel Personal Narrative sample

	Child	Exami
[EU]	3	
c and the ball/s lots [EU].		
c made the earth quake [EU].		
c then him got dirty (because) cause got bomb/s on him [EU].		

BOUND MORPHEME TABLE				
Comparison Based on Same Number Total Words				
Table Expanded By Words And Codes				
C&I Verbal Utts - Main Body				
Either Transcript - All				
	Time1		Time2	
	Total	Expanded	Total	Expanded
/ED	1		0	
FAT/ED		1		0
/RE	0		1	
YOU/RE		0		1
/ED	1		1	
FEE/ED(EO/FELT)		0		1
LOOK/ED		1		0
/ING	2		0	
CRY/ING		1		0
GO/ING		1		0
/S	0		6	
BALL/S		0		1
COIN/S		0		1
CRAB/S		0		2
SEALICE/(S)O-SEALICE		0		1
SLIDE/S		0		1

We can link the samples:

Daniel Nar AGL (Time1) & Daniel Nar NZPN (Time2)			
Analysis Set: C&I Verbal Utts			
STANDARD WORD LISTS			
Comparison Based on Same Number Total Words			
C&I Verbal Utts - Main Body			
	Conjunctions		
	Time1		Time2
AFTER	0		0
AND	6		6
AS	0		0
BECAUSE	0		1
BUT	0		0
IF	0		0
OR	0		0
SINCE	0		0
SO	0		0
THEN	0		0
UNTIL	0		0
WHILE	0		0
Total Frequency	6		7

We can link the samples:

### You've analysed the sample: What's next?

- Comparing LSA to standardised test results
- Detailed goal setting (significant difficulties in grammatical accuracy/morphology, significant difficulties retelling a story at macrostructure level, significant oral narrative comprehension difficulties):
  - Pronoun difficulties.
  - Verb tense
- Comparing to a database – next time 😊 to give us info compared to his peers:
  - Semantics (NDW)
  - MLU-M
  - Use of conjunctions, verbs etc etc.

### Where to go for more?



1. 1400 series: Analysis online courses
2. Step-by-Step exercise: Analyzing a transcript: [https://www.saltsoftware.com/media/wysiwyg/stepbystep/DE20\\_Analyze.pdf](https://www.saltsoftware.com/media/wysiwyg/stepbystep/DE20_Analyze.pdf)

### Webinar 3 – Tuesday 30 March, 12 noon AEST

Webinar 3 – SALT: Beyond the basics

- Comparing to a database and generating a performance report
- Linking transcripts for monitoring progress
- Inserting special codes

<https://www.eventbrite.com.au/e/webinar-three-salt-beyond-the-basics-tickets-147019628667>

### Questions/comments

- You will receive an email with a link to the recording + slides
- Visit [www.marleenwesterveld.com](http://www.marleenwesterveld.com) – go to eLearning
- Post questions here: <https://forms.gle/VP1nPkTeegFV8z7w7>

