



Open & Closed Set Recorded Speech Perception Material

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Special Thanks to.....

Lida Müller

Surida Booysen

Wendy Deverson

Tamara van Zyl

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Suleen Nortje (Speechtherapist & voice)

Minka Janse van Rensburg

Karin Smuts (Educational Psychologist)



South African Recordings in English & Afrikaans



Recording in the studio!



Gus Mueller (2017):
“The words are not the
test..... the recorded
version of the words are
the test”



1. Recorded Material for children (closed-set)

Word Intelligibility Picture Identification Test

- Developed by Ross & Lerman 1970 and revised by Cienkowski, Ross & Lerman 2009
- 4 lists of 25 words each
- “Show me the....., Where is the.....”
- Adaptive classroom babble noise added



1. Recorded Material for children (closed-set)

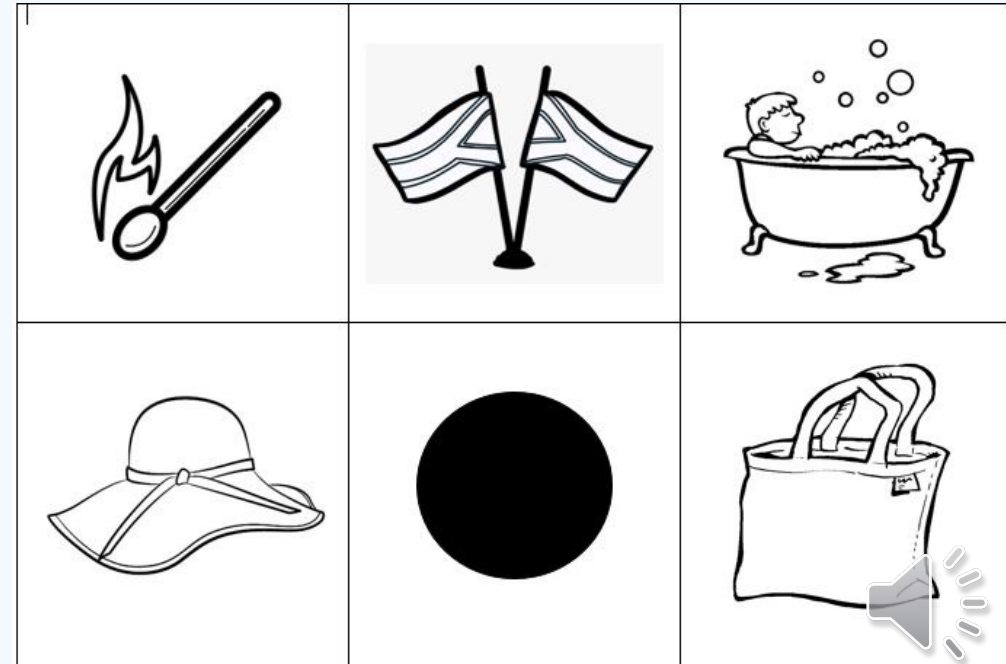
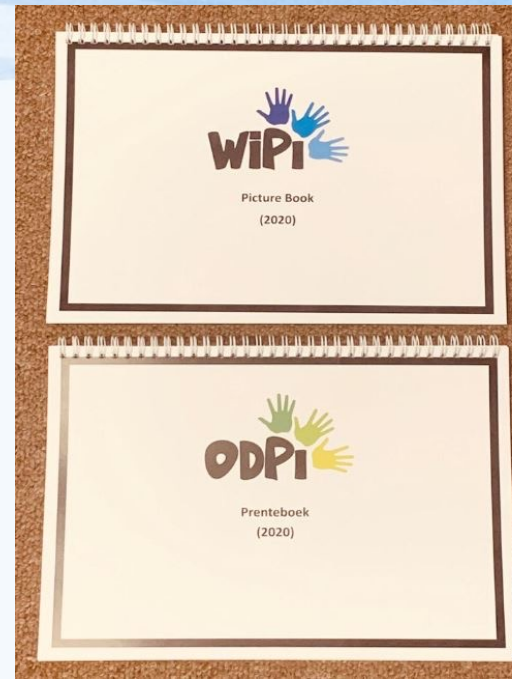
Ouditiewe Diskriminasie Prent Identifikasie Toets

- *Developed by Lida Müller in 1979*
- *“Wys vir my die..... / Waar is die.....?”*
- *Study Charlene Tocker 1982 (UCT)*
- *Adaptive classroom babble noise added*

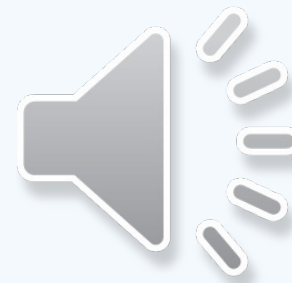


Picture books

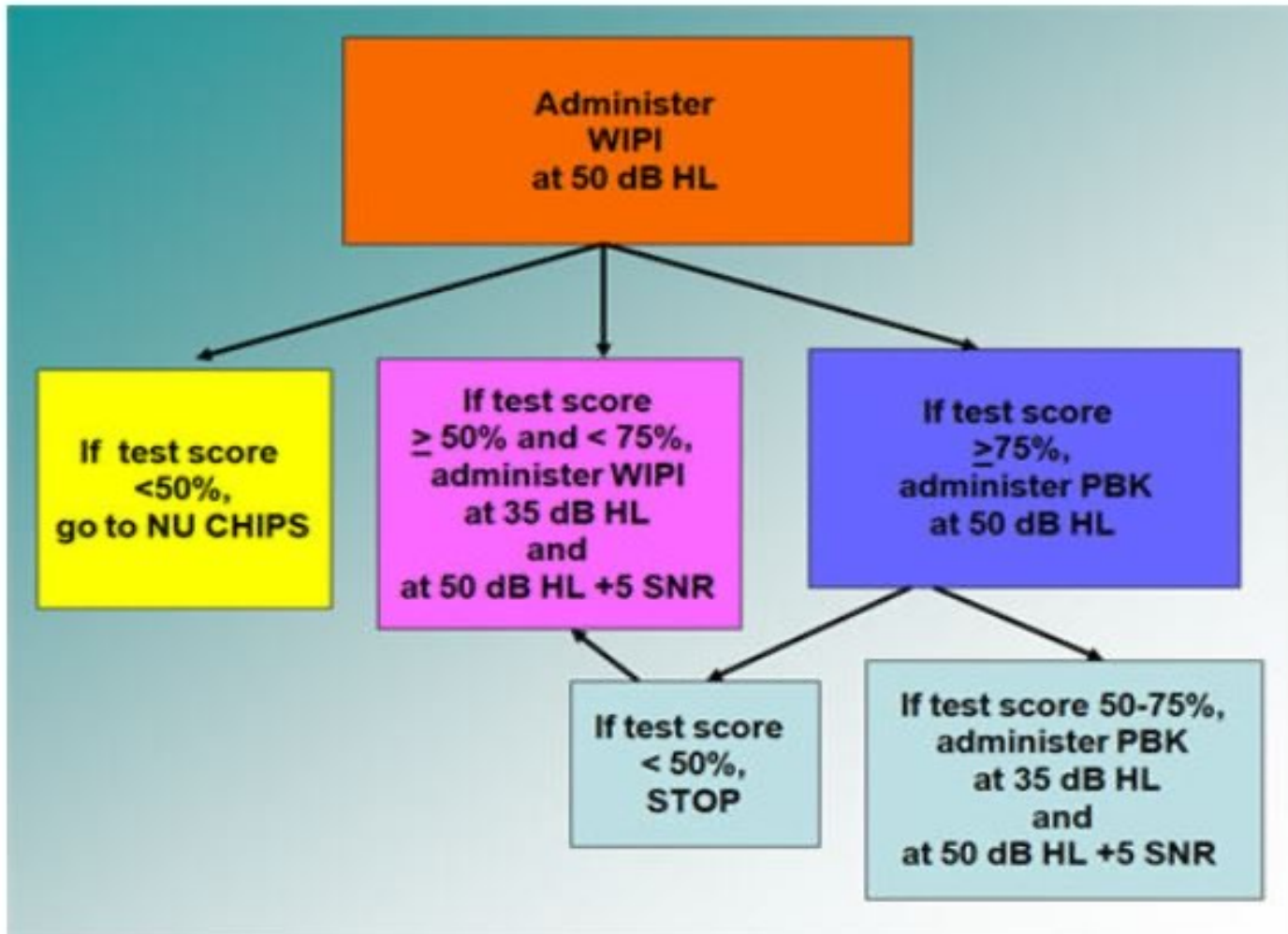
- “South African version” revised – cultural & SA context applicable
- Printed / digital version
- 6 pictures per page
- Black and white line drawings



Sound Examples



Test Protocol for the WIPI & ODPI (Madell, J. 2011)



2. CVC/KVK Children's Wordlists (open-set)



LIST 1 (4,14,24,34)				LIST 2 (5,15,25,35)			
sit				miss			
bat				can			
meat				leave			
talk				not			
name				sail			
soup				room			
phone				nose			
ten				bed			
ring				kiss			
bus				cup			
TOTAL		/30	%	TOTAL		/30	%



LYS 1 (4,14,24,34)				LYS 2 (5,15,25,35)			
vis				sit			
<u>rak</u>				man			
<u>dier</u>				<u>tien</u>			
<u>lem</u>				<u>mes</u>			
<u>bos</u>				<u>bok</u>			
<u>paal</u>				<u>raak</u>			
<u>wys</u>				<u>pyl</u>			
been				<u>deel</u>			
<u>roos</u>				boot			
<u>doek</u>				<u>boek</u>			
TOTAAL		/30	%	TOTAAL		/30	%

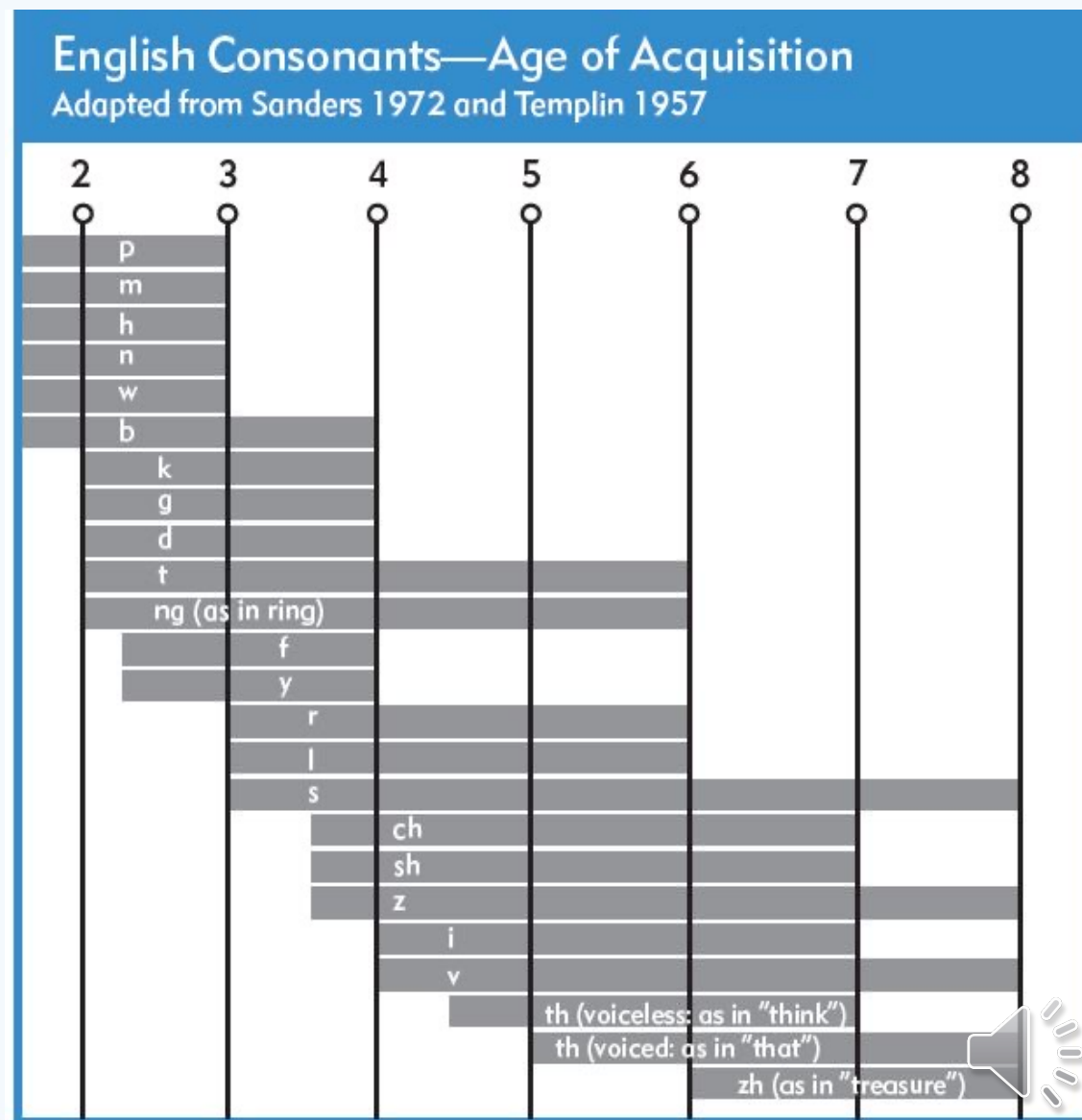


2. CVC/KVK – How were words chosen?

- Normal developmental for consonant production

E.K Sander (1972). "When are speech sounds learned?"
Journal of Speech and Hearing Disorders, 37 (1), 55-63.

- Vocabulary of ages 3-6 y
- Vowels: isophonemic



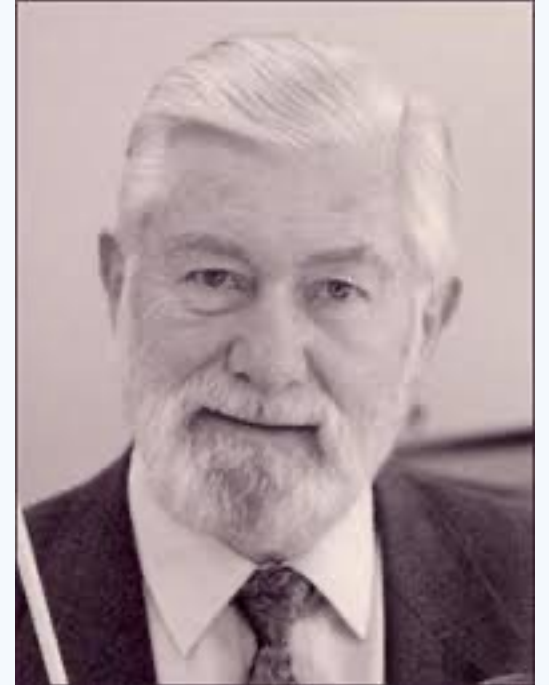
2. Content of Children's Wordlists

- 10 wordlist of 10 words each
- CVC words e.g. food, nose, doll / vis, rak, dier
- Phoneme Scoring, score /30
- Unaided & aided condition
- Perception in noise: Classroom & reading babble noise



Bonus tracks on the Children's Wordlists

- 6 Ling sound test
- Vowel imitation / Vokaal nabootsing
- Konsonant / Consonant verwarring



2. CVC/KVK Children's Recorded wordlists (open-set)

SOUND EXAMPLE IN QUIET



Speech-in-noise (SIN) testing

Two types of noise (Hillock-Dunn, 2015)

ENERGETIC MASKERS/NOISE

- E.g. fan noise/speech-shaped noise
- Impede speech recognition → peripheral interference
- ↑ speakers in background → “noise like” speech

INFORMATIVE MASKERS/NOISE

- E.g. 2 to 4 talkers speaking/reading
- Content is audible
- Peripheral and central interference
- More difficult task
- Segregate the target from the background speech.



Sound examples of competing noise

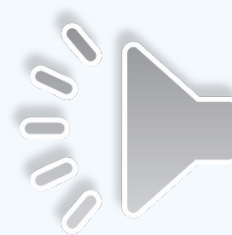
ENERGETIC MASKERS/NOISE

- Classroom noise



INFORMATIVE MASKERS/NOISE

- 4 children speaking/reading



Pediatric Protocol for amplification benefit (Madell, J 2011)

Aided audiogram & 3 Speech perception test conditions (aided):

1. Normal conversational level (50 dB HL) in QUIET
2. Soft conversational speech (35 dB HL) in QUIET
3. 50 dB HL + 5 dB S/N (classroom scenario)

- Free field

- Recommendations:

Stimuli – monosyllabic words – limited cues

Scoring – phoneme – reliable – exactly



3. Frequency Specific Wordlists (2019)

- Validation of amplification & audibility of words
- Monitor over time
- Configuration of loss → affects which speech sounds (e.g “s, t, f, tch, sh, ch)

	LOW	LOW-MID	MID-HIGH	HIGH
	Blue	Pump	Hit	Cheese
	Broom	Ball	Tail	Sight
Quiet Score				
SNR 0dB				
SNR +5dB				

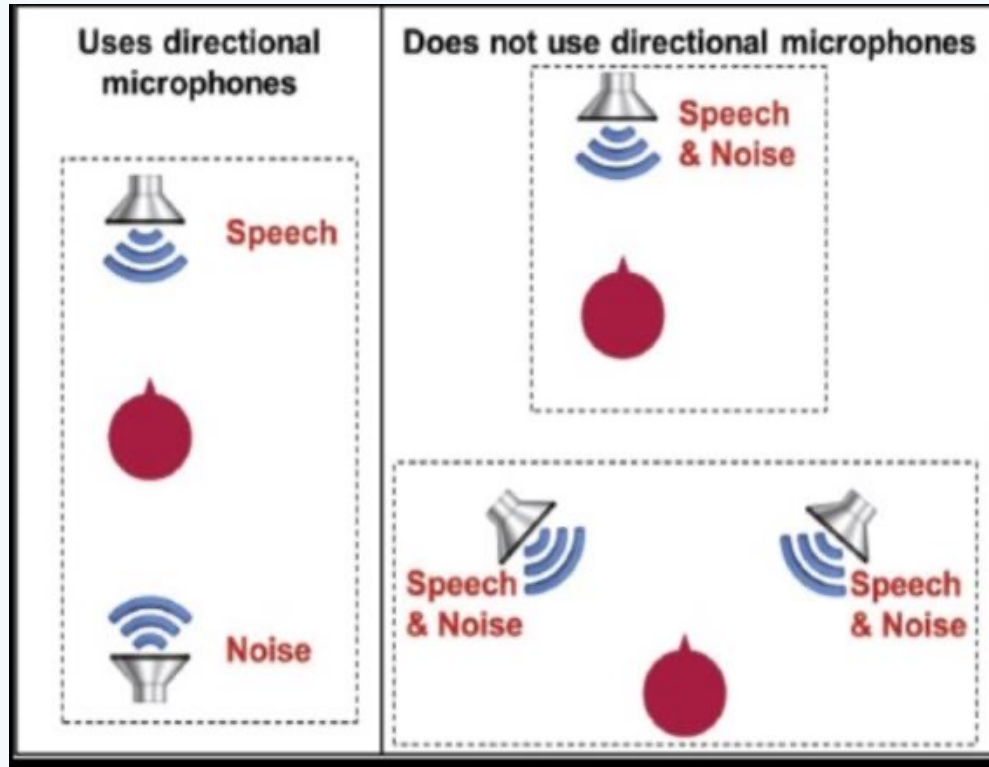


3. Frequency Specific Wordlists (2019)

SOUND SAMPLE OF HIGH FREQUENCY LOADED
WORDS



SET-UP when doing SIN testing (Portnuff & Bell, 2019)



Categories of impairment or ability of Word Recognition scores (PBmax)

Kramer & Brown (2019)



MAX SCORE %	DESCRIPTION
90 – 100 %	None impairment / Excellent or normal WR ability
75 – 89 %	Slight difficulty / Good WR ability
60 – 74 %	Moderate difficulty / Fair WR ability
50 – 59 %	Great difficulty / Poor WR ability
< 50 %	Very poor



Categories for scoring WR for children (Madell et al. 2011)

WRS (% correct)	Word Recognition Ability
90 – 100 %	Excellent
80 – 89 %	Good
70 – 79 %	Fair
< 70 %	Poor



FAVOURITE REFERENCES

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Thank you for listening to a recording!!

Questions?

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Recorded Oct 2010

Information was relevant and accurate at
time of recording

