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DELAD WORKSHOP

15-17-11-2017

CORK

IRELAND





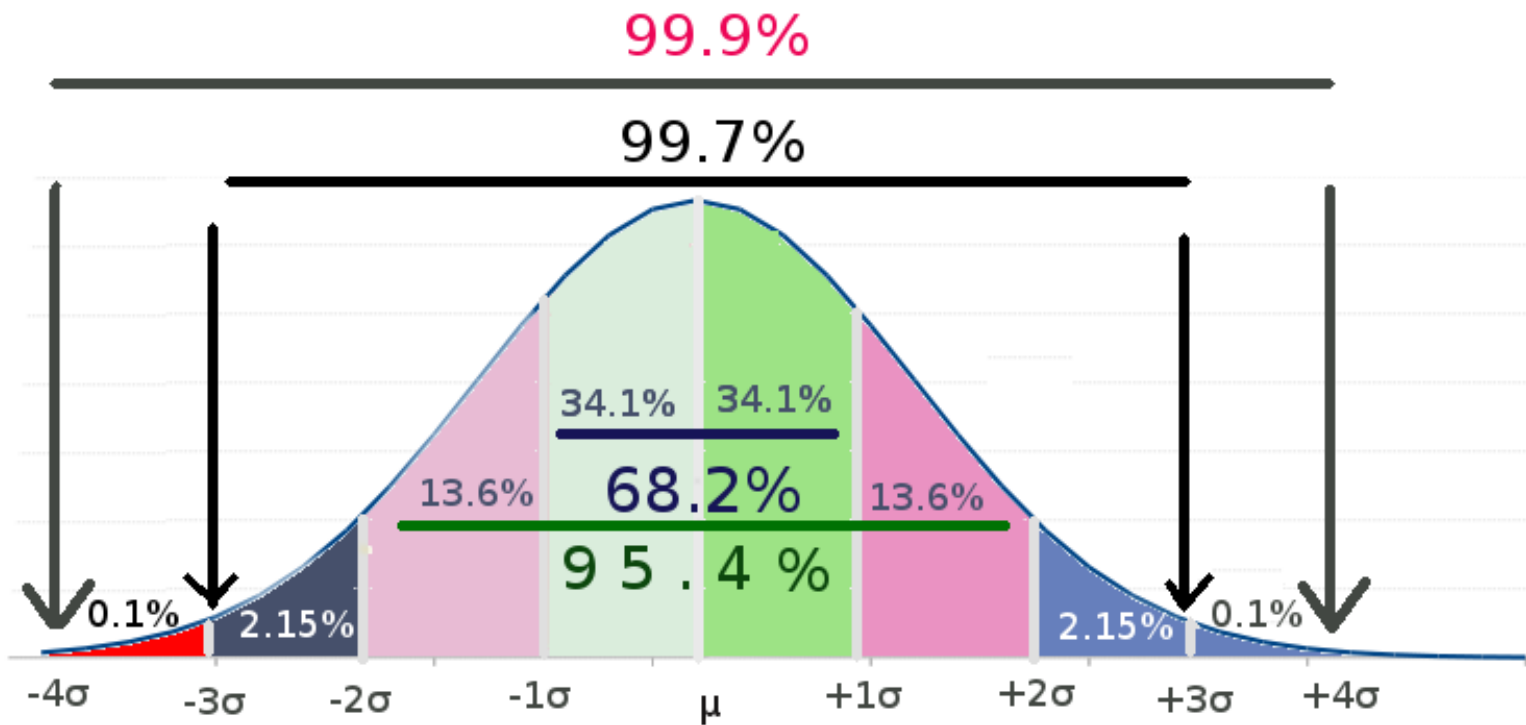
Introduction

- Research for the past 10 years with a focus on linguistic outcomes in LT toddlers longitudinally
- Phonological challenges occur in all cohorts cross-linguistically
- LT scenario maps on to
 - theoretical
 - research
 - clinical aspects

Participants

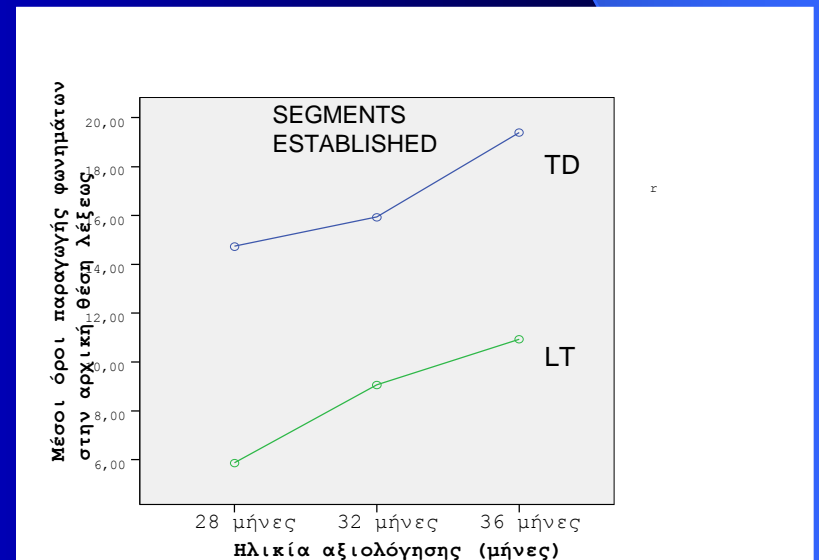
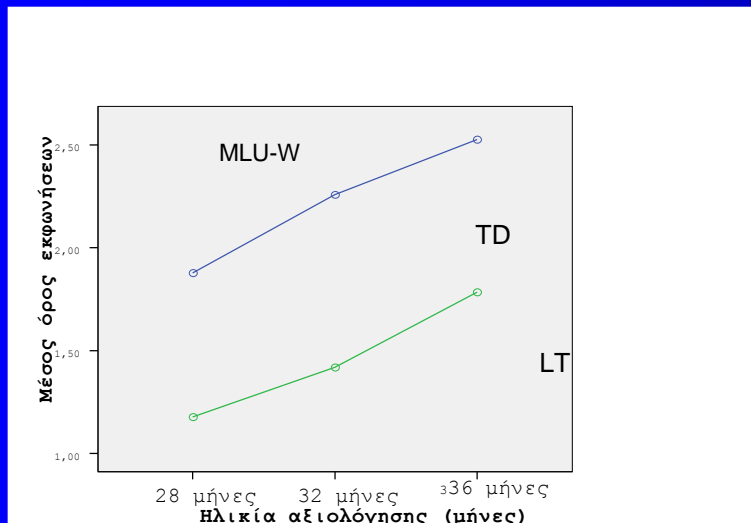
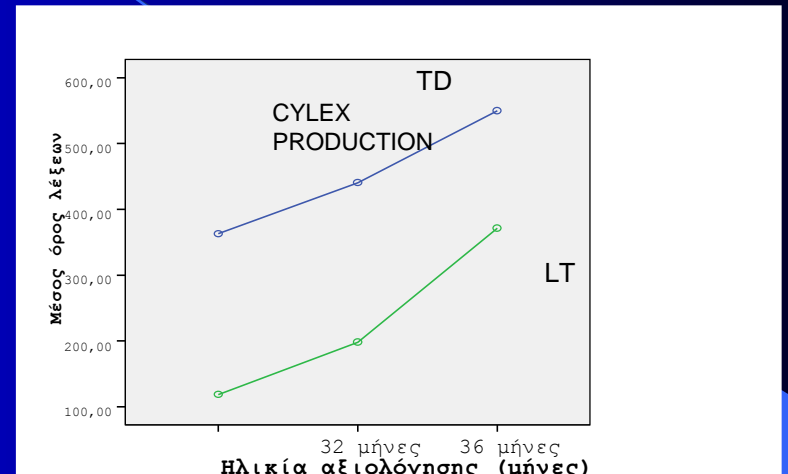
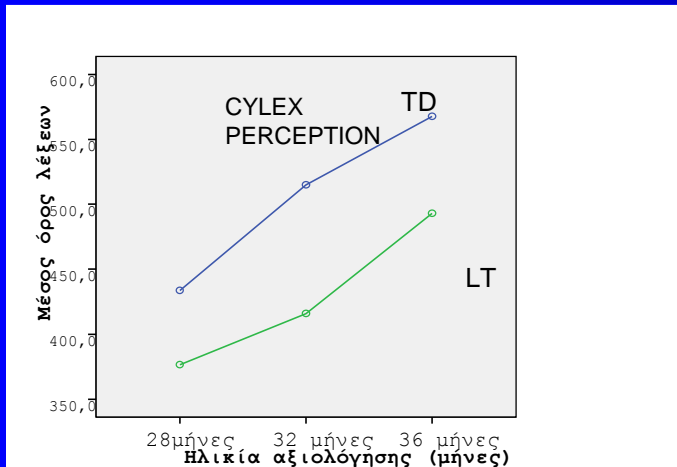
- Total Cohort of 74 TD toddlers
- Total of 24 LTs (14 boys and 10 girls) identified on the bases of restricted expressive vocabulary at intake (26-28 months)
- Matched 24 TDs (14 boys 10 girls)
- Monolingual Greek-Cypriot

ND Curve



Results [1]

Overall comparisons

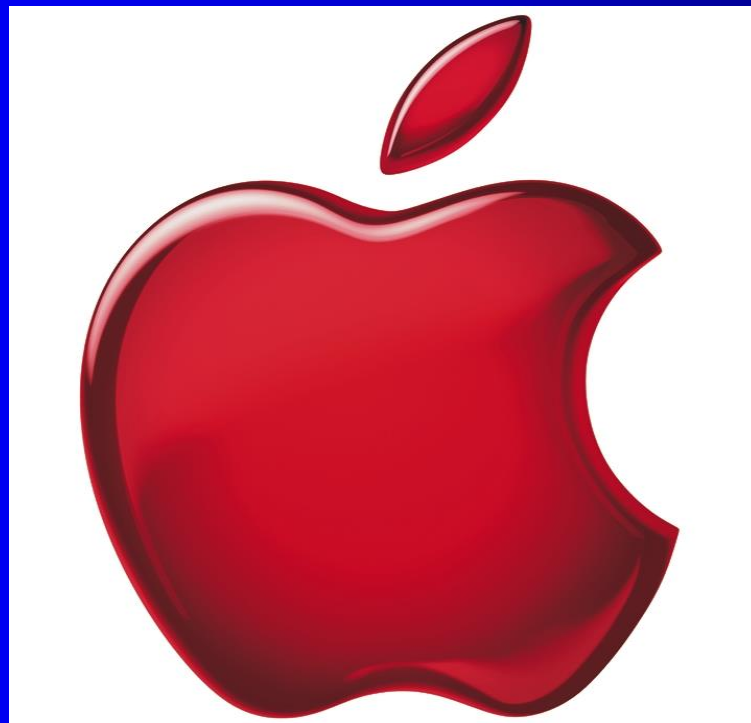


Phonological challenges

- Persistent use of word initial onset deletion (WIOD) followed by regressive assimilation (RASS) or consonant harmony

Example

- [‘m i l o]-> [‘i l o]->[‘**l** i l o]



Results

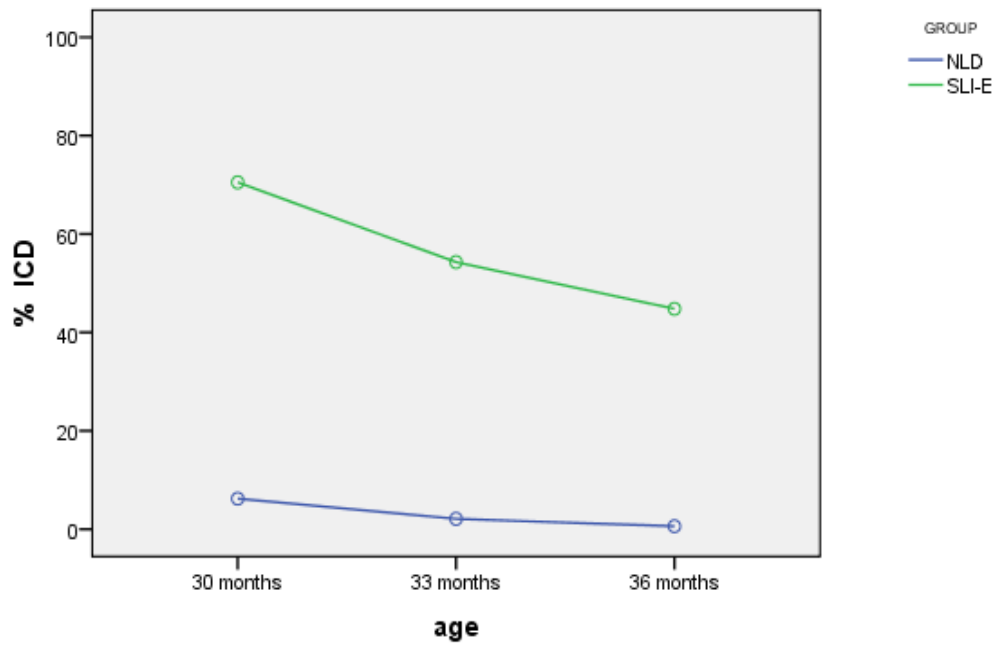
- A mixed-design ANOVA for percentage of phonological process occurrence was used
 - Group (TD vs. LT) as a between-subject variable
 - Age level (30, 33, 36 months) and Phonological process (WIOD, RAS) as within subject variables

Results [1]

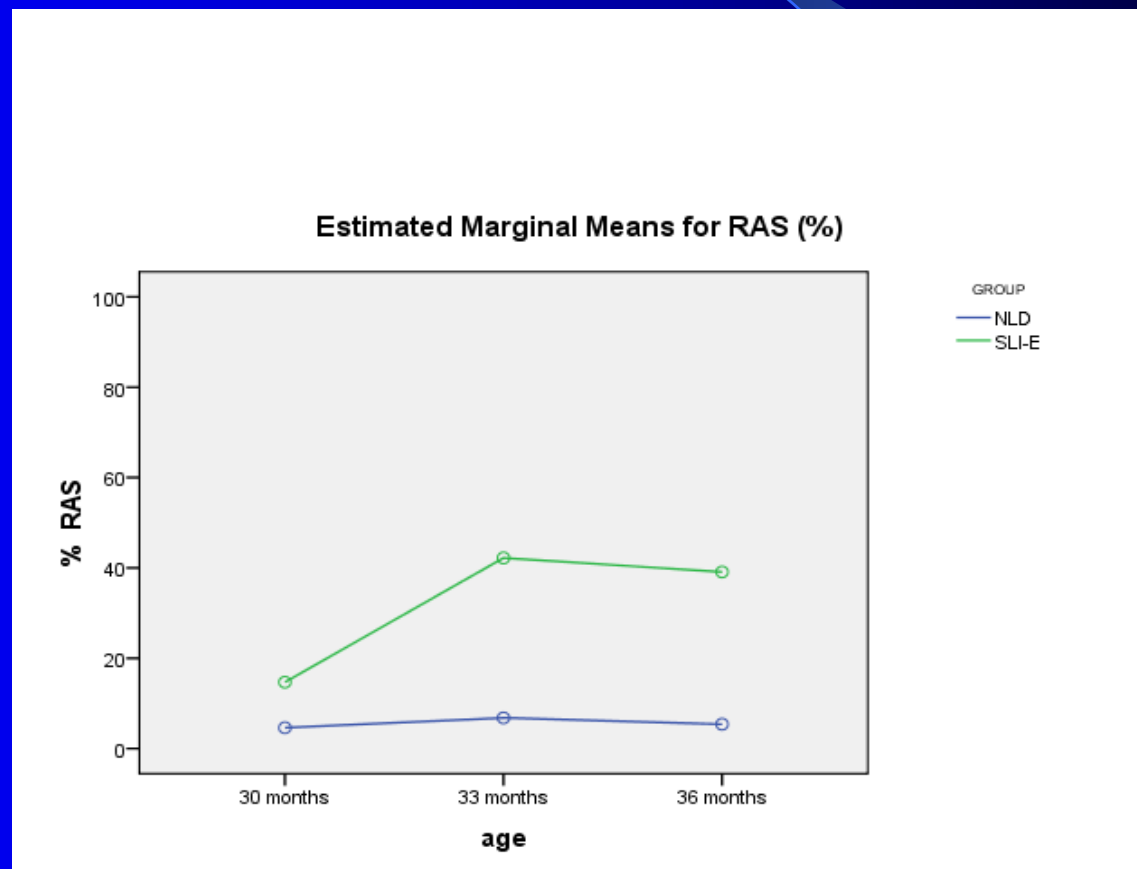
- Significant main effect of Group,
 - percentage of errors in phonological processes was significantly higher among participants in the LT compared to the TD group, $F(1,22) = 32.73, p < .001$.
- Significant main effect for Phonological Processes
 - higher percentage of WIOD cases compared to RAS across groups, $F(1,22) = 7.86, p < .05$.
- Significant interaction effect between Phonological Process and Group $F(1,22) = 12.10, p < .01$
 - indicated errors in Phonological Processes differed for TD and LT children.
- Significant interaction effect between Age and Phonological Process $F(1.50, 26.92) = 25.44, p < .01$,
 - percent of Phonological Processes differed across age levels.

WIOD for Group x Age

Estimated Marginal Mean of Initial Consonant Deletion (%)



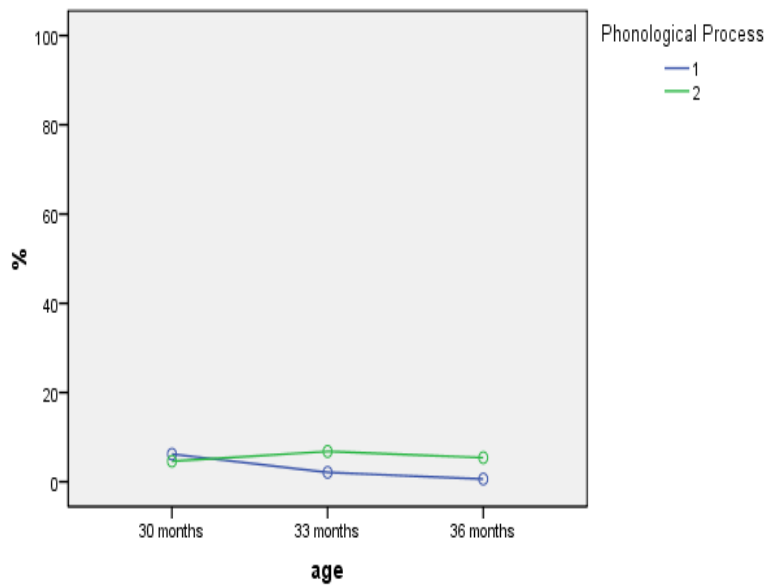
RAS for Group x Age



Figures TD vs. LT for WIOD and RASS X age

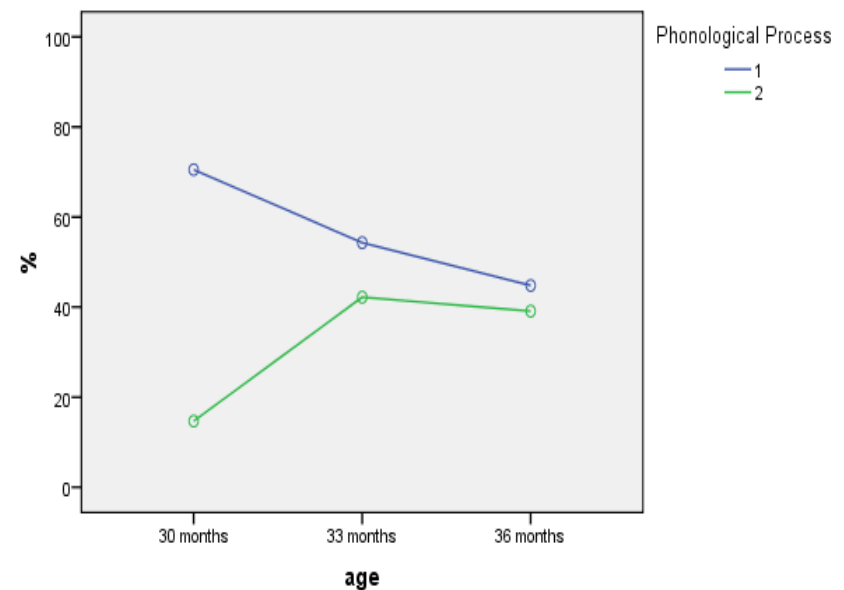
Estimated Marginal Means for ICD (1) and RAS (2)

GROUP = NLD



Estimated Marginal Means for ICD (1) and RAS (2)

GROUP = SLI-E

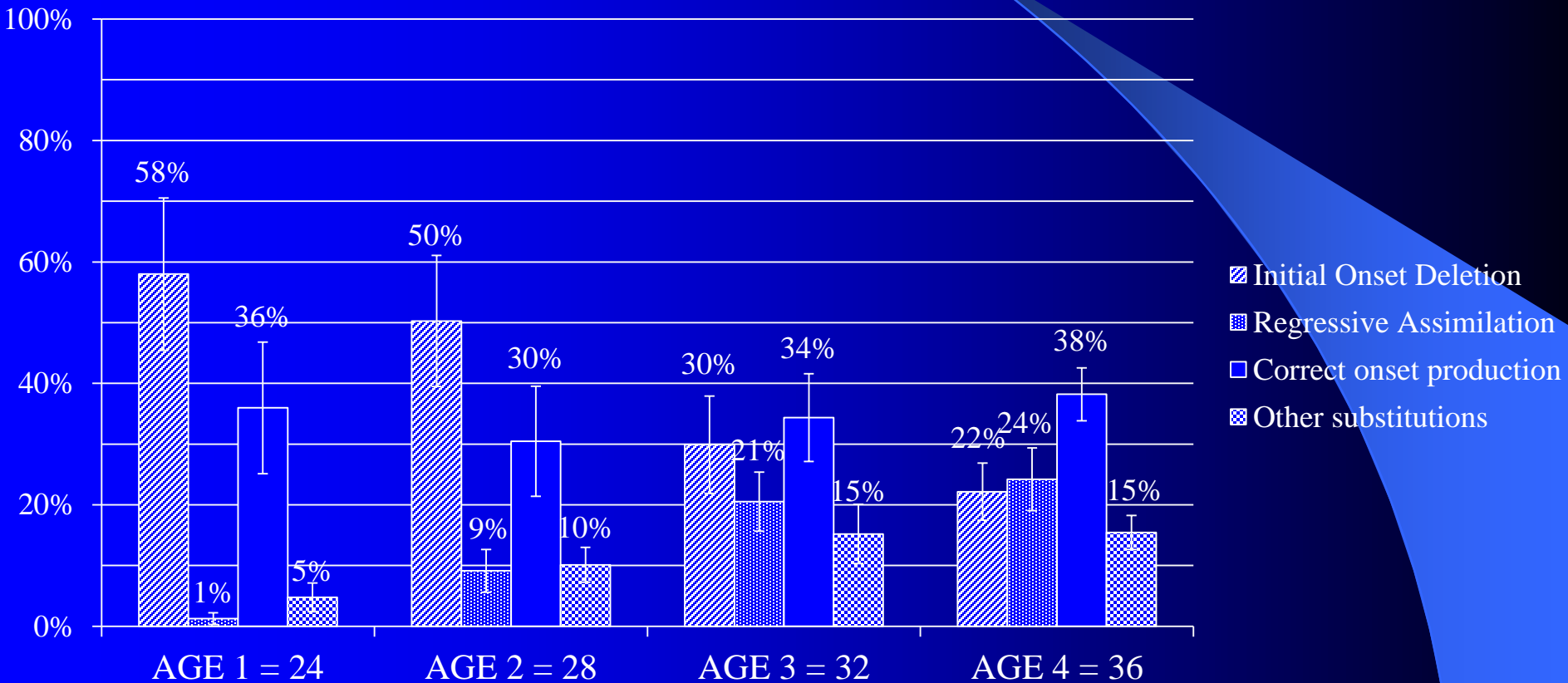


Additional phonological data-LTs set 2 (Petinou & Armostis, 2017)

- Examined an additional group of LTs
- Examined analyzed speech longitudinally at earlier developmental stages
- Mapped existence of PP use in the form of WIOND and RASS
 - 28 versus 36 months

Results

PERCENTAGE OF PHONOLOGICAL PROCESS OCCURENCE

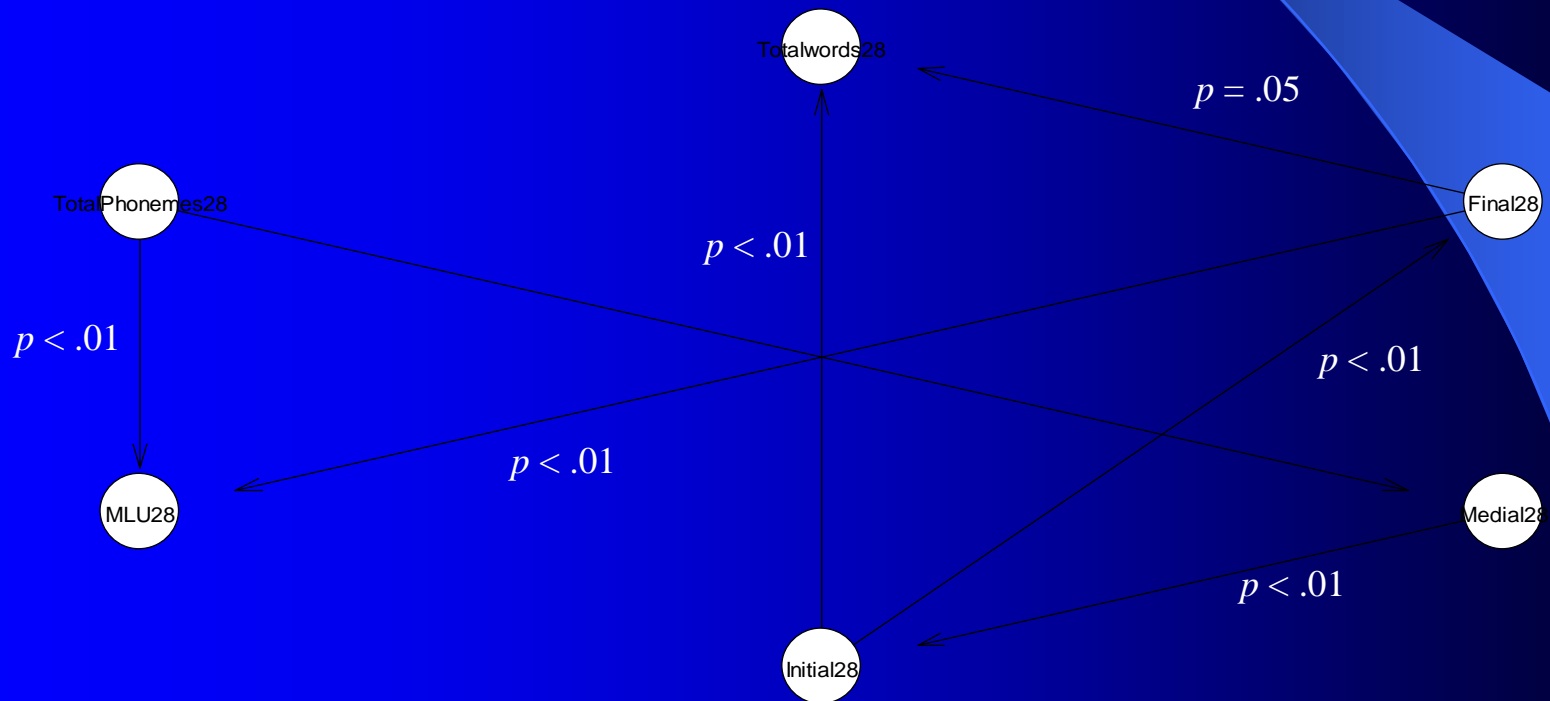


Interphases in Typically Developing Toddlers

- Do early phonetic abilities correlate with additional linguistic parameters, such as MLU-W and the Lexicon?
- If you have a rich PI what does it mean for your other skills?
- Is there a continuity?

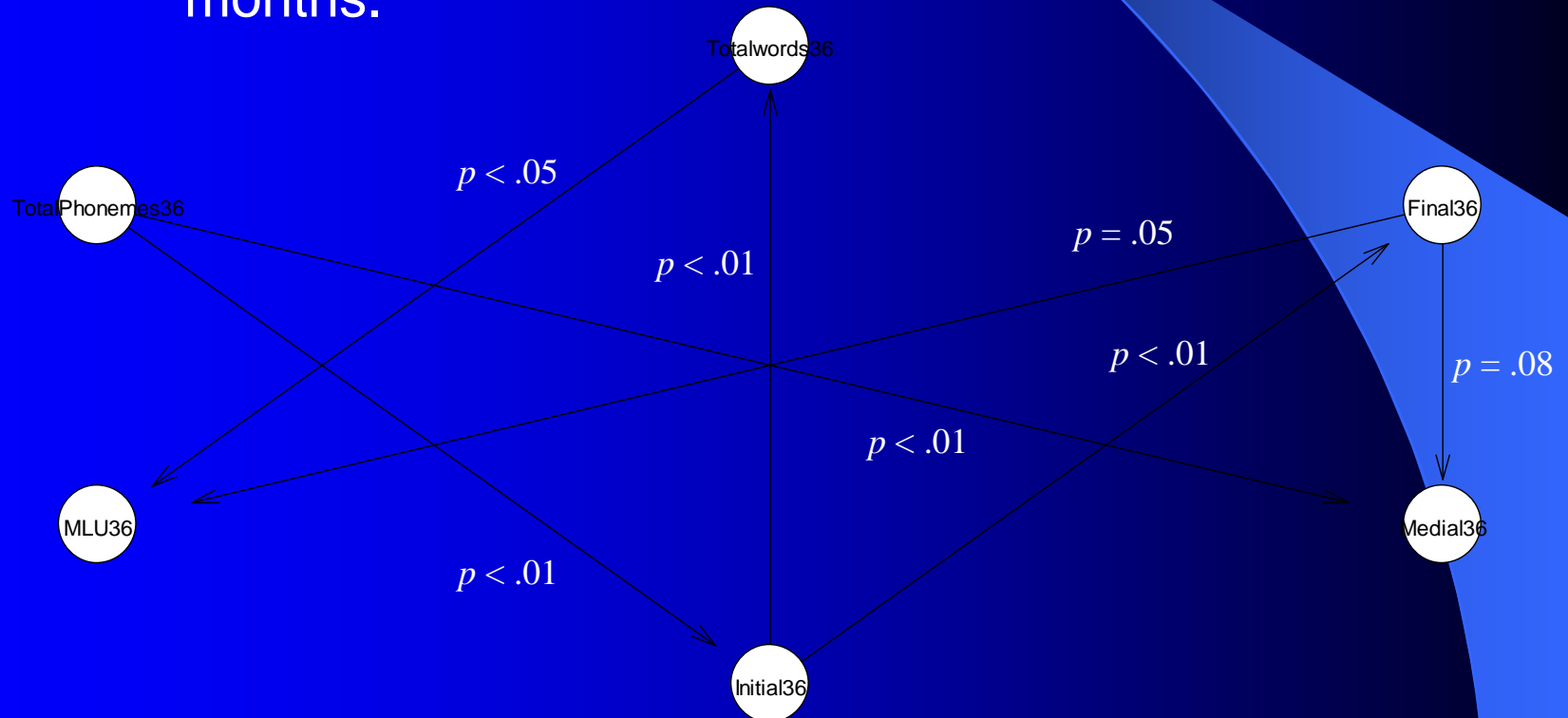
Results [1]

- Synchronic relationship between language skills @ 28 months



Results [2]

- Synchronic relationship between language skills @ 36 months.



Summary [1]

- Interdependent relationship among linguistic subsystems 28 months
- Total number of phonemes correlate with
 - MLU and PI phonemes established in medial position (Petinou & Theodorou, 2015)
- Word Medial position correlates with
 - Phonemes initial position (Petinou & Okalidou, 2006)
- PI initial
 - Total number of words

Summary [2]

- Total number of phonemes correlates with
 - Word Medial
 - Word Initial
- Word Initial correlates with
 - Total number of different words
- Total number of different words correlates
 - MLU

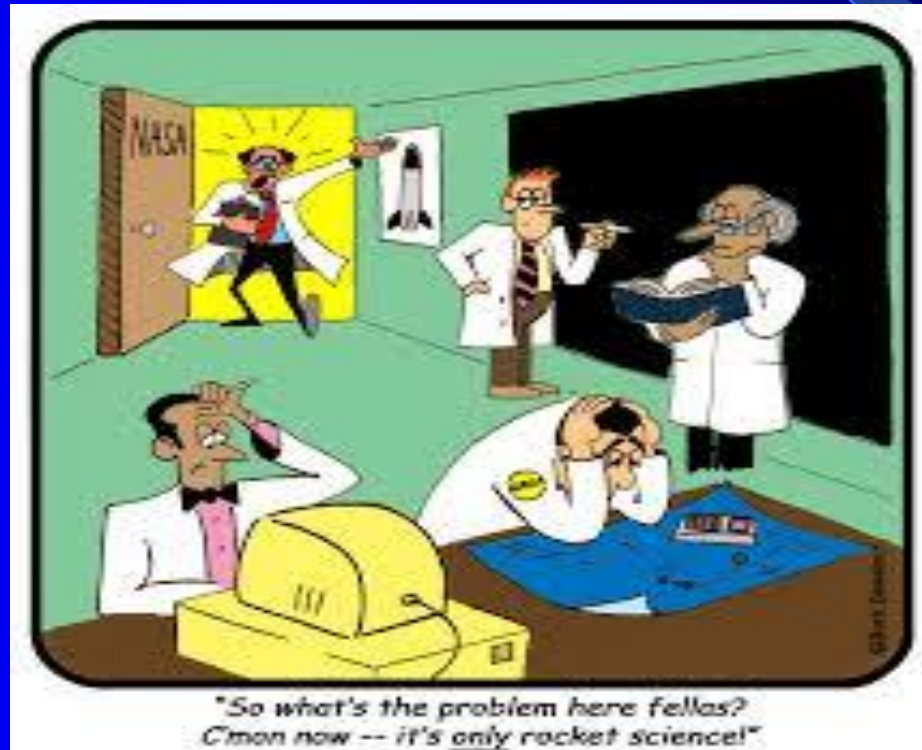
THE ACADEMIC COMFORT ZONE



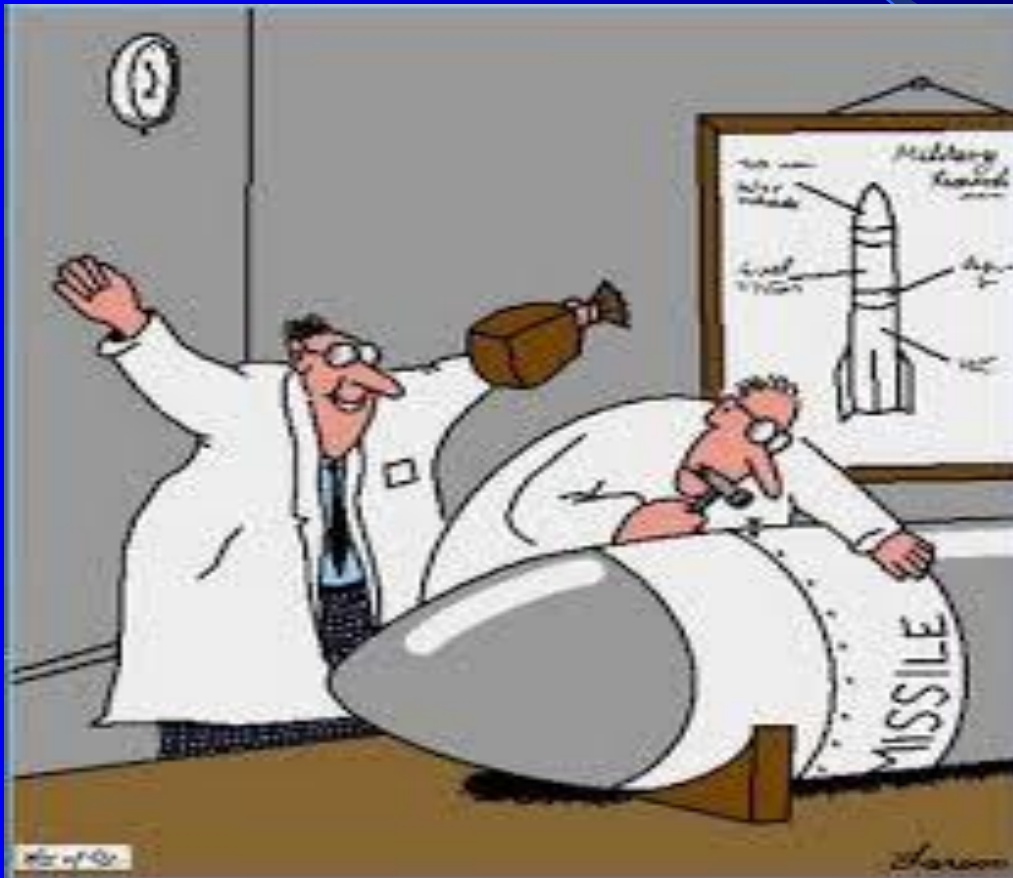
THE ACADEMIC COMFORT ZONE



Challenges



Unexpected surprises



Neurophysiological data

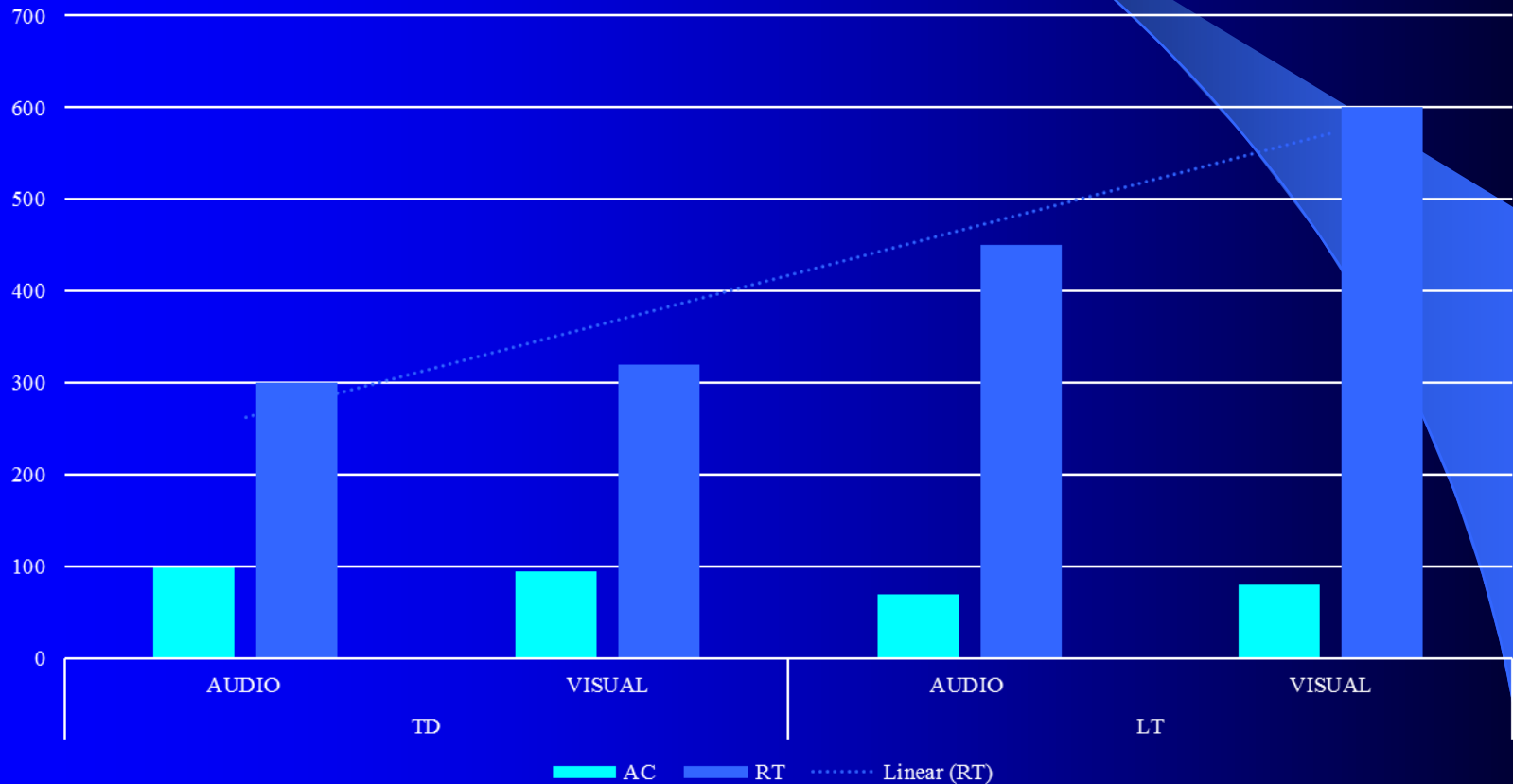
- Neurophysiological paradigms allow the evaluation of neural underpinnings of chronic speech language and literacy challenges
- Converge to challenges related to phonological processing/discrimination difficulties
- LTs continue to show persistent phonological deficits as compared to lexical gains (Rescorla, 2011; Petinou & Okalidou, 2016)
- Persistent phonological challenges need to be addressed to identify underlying neurocognitive factors related to communication/literacy challenges

The present study

- Preliminary data on 6 year-olds with TD and LTs language history
- LTs diagnosed with persistent language delay and phonological impairment
- Examined phonological processing skills via ERP responses
- Odd ball paradigm including
 - Detection of phonological violations in real word minimal pair targets

Means for Audio & Visual responses

REACTION TIMES AND ACCURACY ODD BALL DISCRIMINATION



Single Subject Intervention

- Single case studies can provide valuable information regarding intervention efficacy outcomes in children with speech sound disorders (SSD).
- Intervention Studies increase our theoretical knowledge regarding underlying processes influencing speech outcomes (e.g. Baker, et al., 2001).

Intervention [2]

- The current study reports on phonological outcomes in a 5-year-old child diagnosed with SSD.
- A Focused Phonological Intervention regime incorporated
 - ✓ a macro (general phonological analysis), and
 - ✓ a micro (training on specific word targets) Increased intelligibility with a focus on decreasing phonological neighborhood density has been shown to have positive outcomes in children with phonological challenges (Storkel & Hoover, 2011).

Method

Phase 1:
Set of single
words

/kala'mari/
'squad'



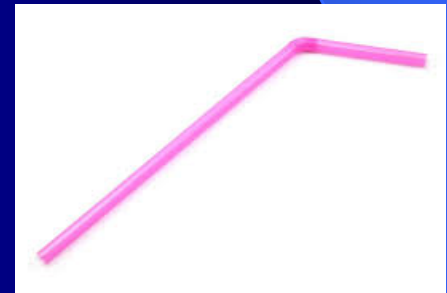
Phase 2:
Wider range of
single words

/ka'lami/
'fishing rod'



Phase 3:
Connected speech

/kala'maci/
'straw'



Results

A. Phonetic Inventory

	Phones			Clusters	
	Initial position	Medial position	Final position	Initial position	Medial position
Pre Interv. Phase	m, ɟ, k, k ^h , l, p, p ^h , v, ɔ̃, s, t, c, ʃ, ^m b, θ, ɣ, n, f, x, r, ts	m, t, t ^h , p, p ^h , f, λ, l, n, ɣ, v, ɔ̃, s, θ, k, ɟ, c, c ^h , ʃ, r, z, ⁿ d, x, ts	s, n	-	vɣ, rɟ
Post Interv. Phase	m, ɟ, k, k ^h , l, p, v, ɔ̃, s, t, t ^h , ⁿ d, c, c ^h , ʃ, b, θ, ɟ, n, f, x, z, ⁿ d, ts	m, t, t ^h , p, f, λ, l, n, ɣ, v, ɔ̃, s, θ, k, k ^h , ɟ, c, r, z, x, ⁿ d, ts	s, n	pt, st, sk, pl, ps	st, ps, ft, fl,

Results

B. Phonological Processes

Structural		
	Pre Interv.	Post Interv.
Syllable reduction	7,26%	0%
Initial Consonant Deletion	9,50%	5,36%
Medial Consonant Deletion	8,94%	8,93%
Final Consonant Deletion	7,82%	8,93%
Cluster Deletion	6,15%	7,14%
Cluster Reduction	31,84%	39,29%
Metathesis	0,56%	0%
Syllable Reduplication	0,56%	0%
Systematic		
Substitution	11,17%	17,86%
Fronting	2,23%	1,79%
Backing	5,59%	5,36%
Devoicing	1,12%	3,57%
Stopping	1,12%	0%

Summary & Conclusion

- For some LTs phonological challenges continue way beyond the “recovery” period
- Patterns of phonological challenges may emerge
- Cross-language framework we need to identify and code commonalities and differences
- Develop a solid databank accessible to all in need
 - Theoretical perspective
 - Research
 - Intervention studies can be designed

Proposal [1]

- Speech Corpora are hard to obtain
- Confidentiality issues
- Heterogeneity of collection, coding analysis procedures
- Lack of knowledge regards to articulation, phonetics, phonology
- CUT databank corpora from 85 toddlers longitudinal data (TD, LTs, OME, CI)
- Logistics program for PCC, PP occurrence, PI, S STR data extraction
- Frequent Phonotactic Probability in child speech
- Extracting a database of Phonologically dense words
- EBP DMI

Proposal [2]

- Best practices in FAIR data storage
- **Implementation of DELAD portal in CLARIN**
 - **Cyprus Research Foundation (Institution)**
 - **Provides pro gratis support and consulting services**
- **MSK Innovative Training Network**
 - Data coding
 - Dissemination
 - Workshop
 - Educate practitioners

Thank you!!!



**"Mr. Osborne, may I be excused?
My brain is full."**