University of Cyprus

cyprus acquisition team

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CATting Along: Pictures, Pronouns, Prospects

ATHENS READING GROUP IN LINGUISTICS
23 September 2011, Kalisperi, Athens

PART 1: BILINGUAL SLI

- Some issues behind **specific language impairment (SLI)**.
  - prevalence
  - assessment
- Additional issues arising for **bilingual SLI**:
  - diagnosis
  - testing
- In particular, we list available **language-specific and non-specific tools**.

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TALK OUTLINE

- Bilingual issues pertinent to Cyprus
- Issues central to bilingualism ('bi-*x*')
- Definition of Specific Language Impairment (SLI)
- Tools for profiling SLI in Cyprus (moSLI vs biSLI)
- Evidence for word retrieval impairments in SLI
- Study (participants, method, and procedure)
- Performances on the Cypriot Object and Action Test
- Discussion of the results
- Interpretation w.r.t. theories of SLI and bilingualism

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CENTRAL TOPICS FOR CYPRUS

Cypriot Greek (CG) and / or / vs. Standard Modern **Greek** (SMG):

- L2 acquisition as a sensitive measure for studying social-environmental effects (i.e. Cypriot and Greek)
- school context of some sort of bilingualism and potential early L2 acquisition (Greek)
- simultaneous bilingualism or even multilingualism (e.g. a child exposed to Cypriot and Russian from birth and later to Greek at school)

- Other bilingual types ('bi-*x*'): subordinate, coordinate, etc.

CYPRIOT (CG) VS. GREEK (SMG): MORPHO-PHONOLOGY AND LEXICON

- Among the better understood differences between CG and SMG are mostly lexical, phonetic, and (morpho-)phonological properties of the language. (e.g., Menardos, 1969 [1896]; Newton, 1972; Arvaniti, 2001)

Greek	written	Cypriot	translation
ke	και	**ʧe**	*and*
koritzi	κορίτσι	**gorua**	*girl*
ine ðen	είναι δεν	**en**	*COP (3.SG/PL)* *NEG*
θa	θα	**enna**	*FUT*

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CYPRIOT (CG) VS. GREEK (SMG): MORPHO-SYNTAX

- However, there is little work on morpho-syntactic description & analysis. (Terzi, 1999a, 1999b; Agouraki, 2006; Grohmann *et al.*, 2006; Tsiplakou *et al.*, 2006, Fotiou, 2009; ongoing research by CAT, the Cyprus Acquisition Team)

Cypriot	Greek	translation
***m*en** and *en*	*min* and ***ð*en**	'not' (negation)
*pinu**sin***	*pina**ne***	'they are hungry'
***e**milisame*	milisame	'we talked'
opos + **ACC**	*opos* + **NOM**	'like **X** (this student)'
enclisis	**pro**clisis	verb+CL / CL+verb
verb + **ACC or GEN**	verb + **ACC only**	direct object case
focus **clefting**	focus **movement**	focalization
wh + ***embu*** 'is-that'	**'normal'** *wh*-mvt.	*wh*-questions

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LANGUAGES IN CYPRUS (FOR CHILDREN)

- **Speaker–Hearer Languages**: English, Russian, Romanian, Bulgarian, Polish, Arabic (and more)
- **Reading–Writing Languages**: English, German, French, Italian, Spanish (at school)

official languages:
- **Greek**
- **Turkish**

minority languages:
- **Arabic** (Cypriot Maronite)
- **Armenian**

unofficial but widely used:
- **English**

prominent immigrant languages:
- **Russian** (**Ukranian**, also **Georgian**)
- **Bulgarian**, **Romanian**, etc.
- plus **British** and **Hellenic Greek**
- and many more, plus students…

taught in schools:
- **German**
- **French**
- **Italian**

labor immigration:
- Philippines
- Sri Lanka

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CENTRAL TOPICS TO BILINGUALISM

How is bilingual language development affected by the relationship between the two (or even more) languages being acquired?

- 'bi-*x*': diglossia, bidialectism, language distance…
- the inter-relations between second language (L2) acquisition and first language maintenance or loss
- bilingualism and the language–cognition interface
- two (or more) languages but one brain
- plasticity and language acquisition

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(BILINGUAL) LANGUAGE ACQUISITION AND DISORDERS: WHOSE DOMAIN?

- How children acquire language is fundamentally interdisciplinary,
- drawing on fields as different as linguistics, psychology, computer science, neuroscience, communication disorders, and education.
- Both linguistic and speech pathology stand to benefit from each others' perspectives by way of
- the types of breakdown inherent in communication disorders (and associated challenges), for instance,
- or the nature of characteristics and dynamics of linguistic and paralinguistic dimensions.

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OVERALL OUTCOMES

- By comparing children with language impairment to their typically developing peers, we may be able to differentiate with greater levels of sensitivity and specificity during language assessment
- by identifying particular grammatical structures that are more likely to affect children (and adults) with language impairment.
- These grammatical structures that are most problematic for children with language impairment may then be incorporated into both formal and informal measures of language assessment.

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By identifying factors that are most problematic in language impairment, we may be able to target language structures more efficiently that will have an impact on oral and written communication abilities.

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LET THE CHILDREN SPEAK (COST A33)

Cross-Linguistically Robust Stages of Children's Linguistic Performance with Applications to the Diagnosis of SLI

- COST Action A33 (Coordinator: Uli Sauerland)
- 25 countries (EU member states and others)
- 28 languages (some even non-Indo-European)
- 4 years of hard work (2006–2010 and beyond)
- testing 100s of typically developing children
- normative information: 5-year-olds
- 1 disorder: SLI

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SPECIFIC LANGUAGE IMPAIRMENT (SLI)

- Specific Language Impairment (SLI) is a severe limitation in language ability in the absence of other factors that typically accompany language problems (e.g., hearing impairment, low non-verbal IQ, neurological damage).
- SLI is the most common and most studied type of developmental language disorder, yet research comparing bi *and* monolingual development is surprisingly lacking, leaving potential implications of bilingualism for children with language disabilities an under-explored area.

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SLI AND LANGUAGE-SPECIFICITY

Specific to language

- expressive: syntax, vocabulary, phonology
- receptive: comprehension difficulties
- can be classified according to the language component that is impaired
- SySLI, PhoSLI, LeSLI, and PraSLI? (van der Lely, 2005; Conti-Ramsden & Botting, 2006; Friedmann & Novogrodsky, 2007)

Non-linguistic

- adequate hearing
- normal intelligence
- normal physical development
- no emotional/behavioural problems
- no gross motor difficulties
- no speech/articulation difficulties

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IS IT A DISORDER?

- The answer is largely pre-determined by the specific cut-off value chosen to define disorder.
- Difficult to determine whether prevalence changes with age because the same cut-off value should yield the same prevalence rate, regardless of age (Law et al., 2000).
- Children with language difficulties may simply represent the lower end of the normal distribution of language skills (Leonard, 1987).
- Children with SLI differ primarily in degree, rather than in kind, from their typically developing peers (Dollaghan, 2004).

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NORMAL VS. DISORDERED OR DELAYED

- Not always clear cut!
- requires expertise in child language development
- knowledge of risk factors predisposing to specific developmental problems
- co-morbidity and associated problems

- Multi-disciplinary teamwork is necessary in SLI diagnostics and follow-up to ensure early identification, proper diagnosis and sufficient supportive actions (Rutter, 2008).

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IS SLI SPECIFIC TO LANGUAGE?

- The construct of “specific” language impairment is to some extent artificial, and
- the observed impairments are frequently not entirely specific to the domain of language.

- language versus non-language performances (e.g. executive functions)
- auditory memory skills
- working memory
- executive control

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PREVALENCE

How many children have SLI?

- important question to parents, professionals, policymakers, and researchers
- EU national levels
- international level

Importance

- key starting points for other important enquiries
- lifespan prevalence data are valuable in understanding the natural history, course, and prognosis of SLI
- assessment of possible risk and protective factors

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Challenges for Prevalence Estimates

- an accepted definition
- reliable methods of identification
- complicated by questions related to co-morbidity, or
- overlap among language disorders, other communication disorders, and other developmental disorders

- Speech and language disorders are complex developmental conditions with varied behavioural manifestations.
- Estimates must be based on large representative community samples, and not clinical samples only.

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Aetiology

Genetic component

- genes (e.g., twin studies)
- different models of inheritance for SLI
- Observed characteristics of SLI vary individually and in relation to age, which makes determination of phenotypes difficult.

(Bishop, 2006)

Maternal factors

- young mothers, low SES
- mother's low educational level
- birth (2nd or later child)
- mother's own deficits in language and academic abilities

(Prathanee *et al*., 2007)

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Anomalous Neurodevelopment

Cortical structures

- cortical dysplasia
- abnormalities in white matter
- atypical asymmetry of the language cortex
- SLI as a disorder of neurobiological origin

(Webster & Shevell, 2004)

Subcortical structures

- subcortical region involvement

(Ors *et al*., 2005)

- memory systems (different underlying brain areas)

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At Risk Children

- delayed speech, but not always (Asikainen, 2005)
- early receptive language problems (Chiat & Roy, 2008)
- a positive family history of SLI
- poor RAP scores (Benasich & Tallal, 2002)

- Late talkers with receptive language problems and a familial risk for literacy problems had the worst outcomes on all language measures at 5.5 years of age (Lyytinen *et al*., 2005).

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Clinical Markers: COST A33 Findings

Universal

- children's knowledge of pronouns as a robust marker of linguistic development
- understanding of exhaustive questions
- delay in comprehension of passives in LI children across languages

Language-specific differences

- direct object clitics as a clinical marker of SLI: YES for French, Italian but perhaps NO for Cypriot (and/or Greek?)
- understanding of aspect
- understanding *wh*-questions
- acquisition of relative clauses
- comprehension of quantification and implicatures

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Evidence-Based Practice (EBP)

- Increasingly, SLTs are being asked by policy makers, supervisors, parents, and professional associations to provide a justification of their clinical practices on the basis of existing research evidence.
- assessment
- therapy

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Intervention

- individual speech and language therapy
  - ✓ When?
  - ✓ How much?
  - ✓ By whom?
  - ✓ On what?
- multimedia software for language development
- Evidence from a recent longitudinal study (van Weerdenburg *et al.*, 2006) suggests that language intervention over several domains (e.g. lexicon-syntax-auditory comprehension) may have greater impact than intervention on one separated language domain.

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Education and Academic Attainments

- sometimes unrecog-nized when the child has good phonological ability and reads superficially fluently (Nation, 2004)
- tutoring or other educational support at school

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Social and Emotional Aspects

- poor social competence and targets of bullying at age 11 (Conti-Ramsden & Botting, 2004)
- perceive themselves (at 10-13 years of age) as poor scholars, with little social acceptance
- low self esteem and shyness
- anti-social personalities

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Consistency of Symptoms across Lifespan

SLI persists through adolescence and into adulthood.

- ✓problems in academic and occupational attainment,
- ✓in emotional and mental health, and in social functioning (Clegg, 2005)
- ✓and social participation (Tomblin, 2008)

- Females with SLI became mothers at an earlier age than peers without language problems,
- and they were more likely to be single mothers at the age of 25 (Beitchman *et al.*, 2008).

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Health-Related Quality of Life

- 2- to 4-year-olds: lower overall well-being and psychosocial health than typically developing peers (Lau et al., 2006)
- 29 young adults with a history of SLI: feelings of less control over their lives, reduced mental competence, reduced global self esteem
- depression (Tomblin, 2008)

Overall, individuals with SLI and their families have problems in their day-to-day lives which extend beyond the symptoms that characterize their disorder.

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SLI Definition

- How is SLI defined precisely?
- So far, there are several definitions!
- European consensus (across the EU member states): exclusionary and/or inclusionary criteria
- other countries (e.g., Turkey, Russia)

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Widely Used Definitions

- Probably the most widely accepted definition of SLI is that proposed by (i) Tomblin *et al*. (1997) and (ii) Leonard (1998).
- SLI is defined as a combination of normal intelligence (performance IQ greater than 85) and language impairment (a composite language measure falling more than 1.25 SD below the mean).
- A –1.25 SD cut-off for language impairment (equivalent to the 10th percentile or below) was chosen by Tomblin *et al*. because this is the level at which speech-language pathologists consistently identify a child clinically as having a language impairment.

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WHO Definition

- The *International Classification of Diseases and Related Symptoms, 10* (*ICD-10*) by the World Health Organization (WHO) uses a statistical definition of specific language impairment
- and requires that a child's language skills fall more than 2 SD below the mean, with language skills being at least 1 SD below that measured for nonverbal skills.
- In Finland, ICD-10 is the basis for a diagnosis of SLI.

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DSM-IV-TR

- The *Diagnostic and Statistical Manual of Mental Disorders-IV-TR* (*DSM-IV-TR*) (American Psychological Association, 2000) uses similar criteria
- and subdivides specific language impairment into expressive language disorder and expressive-receptive language disorder.
- The definition includes a requirement that the language impairment is associated with functional impairment, and that there is a substantial discrepancy between language and non-verbal skills.

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Problems with the Definitions

2 diagnostic schemes

- ✓ WHO (1994)
- ✓ APA (2000)

Little consensus

- ✓ not scientifically validated
- ✓ not entirely consistent with each other
- ✓ differ markedly from those definitions used in research or clinical practice (e.g. Tallal, Tomblin, Bishop, Leonard)

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PROBLEMS WITH THE DEFINITIONS [CONT'D]

- What constitutes a substantial difference between language and non-verbal skills is not operationalized precisely.
- The discrepancy between verbal and non-verbal scores has also been questioned: Measures of verbal/non-verbal discrepancy may have poor reliability.
- Performance on tests of visual-spatial skills (e.g., Wechsler Intelligence Scale for Children (WISC) III picture completion and block design tests) is often used as a measure of non-verbal IQ; in children with SLI, there is evidence that visual-spatial skills are also impaired.

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PROBLEMS WITH THE DEFINITIONS [CONT'D]

- Specifying a particular non-verbal cut-off for SLI artificially divides what in reality is probably a spectrum disorder.
- There is ongoing disagreement as to how the discrepancy between cognition and language should be defined and measured.
- The debate results largely in both conceptual and psychometric differences as to whether SLI should be defined on the basis of a documented "statistical abnormality" or functional impairment.

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BILINGUALISM + SLI

How do we diagnose SLI in bilingual populations?

- Are bilingualism and SLI "two of a kind" (Crago & Paradis, 2003)?
- Do bilingual children with SLI show a "double delay" (Paradis 2007; Paradis *et al*., 2003; Paradis *et al*., 2005/6)?
- Can bilingualism be instructive for children with SLI (Roeper, 2009)?

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PREVALENCE?

- Children with SLI are estimated at 5–10% of the population (Bercow Report, 2008)
- An estimated 7% of 5-year-olds are said to have SLI (Tomblin *et al*., 1997).
- The number of 5-year-olds in public nurseries and kindergartens in Cyprus was 9,894 in 2008.
- The potential number of children with SLI in Cyprus alone could be around 700.

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CROSS-LINGUISTIC RESEARCH

- ongoing need for cross-linguistic studies of SLI
- SLI emerges as highly heterogeneous disorder
- languages investigated include: English, French, Italian, Hebrew, German, Greek
- local effort (CAT): Cypriot Greek

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SPEECH THERAPY IN CYPRUS

- Association of Speech Pathologists in Cyprus
  - info@speechtherapy.org.cy
- Member of CPLOL (Standing Liaison Committee of EU Speech and Language Therapists and Logopedists)

Practitioners got trained in:

- Bulgaria: 147
- USA: 67
- Greece: 43
- Russia: 23
- UK: 14
- Hungary: 7
- Germany: 6
- Canada: 2
- Ukraine: 1
- South Africa: 1

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SLI QUESTIONNAIRE

'An Examination of How
Speech and Language Therapists
Assess and Diagnose Children with SLI in Ireland'

- Lyons, R. *et al.* (2008), *International Journal of Speech-Language Pathology* 10 (6): 425–432.

'Assessment of Bilingual Children
for Identification of Language Impairment:
Current Findings and Implications for Practice'

- Bedore, L.M. & Peña, E.D. 2008. *International Journal of Bilingual Education & Bilingualism* 11 (1): 1–29.

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NON-LANGUAGE-SPECIFIC TOOLS

- Bilingual Language Questionnaire (Li *et al*., 2006)
- MacArthur-Bates Communication Developmental Inventories (CDI)
- COST A33 tools
- Raven Matrices
- Peabody Picture Vocabulary Test (PPVT)
- word and non-word repetition tasks
- sentence repetition tasks
- mean length of utterances (MLU)
- tests of executive function (COST IS0804)

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LANGUAGE-SPECIFIC ASSESSMENT TOOLS

Cypriot (CG)

- COST A33 tools
- COAT: Cypriot Object and Action Test
- informal articulation test
- word and non-word repetition subtest
- sentence repetition subtest
- CDI (0-18 months): toddlers' phonological development

Greek (SMG)

- COST A33 tools
- DVIQ: Developmental Verbal Intelligence Quotient (Tsimpli & Stavrakaki, 1999).
- PPVT (working test)
- GOAT: Greek Object and Action Test
- Phonetic and Phonological Articulation Test (Panhellenic Association of Logopedists)
- Athina Test (based on Illinois Test of Psycholinguistic Abilities)
- Picture Naming Test (based on Renfrew) (Vogindroukas, 2009)
- Auditory Comprehension Test (based on Reynell) (Vogindroukas, 2009)
- AnOmilo4 (Epreuves de Reperage des troubles du Language) (Panhellenic Association of Logopedists)

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LANGUAGE-SPECIFIC ASSESSMENT TOOLS (2)

English

- GOAT (English version)
- Boehm Test of Basic Concepts
- TACL: Test of Auditory Comprehension of Language
- CELF: Clinical Evaluation of Language Function
- PPVT
- Verb Agreement and Tense Test (VATT: Van der Lely)
- Test of Active and Passive Sentences-Revised (TAPS-R: van der Lely)
- Bus Story (Renfrew)
- Action Picture Test (Renfrew)
- Word finding Vocabulary Test (Renfrew)
- Preschool Language Scale (4th edn.)
- Goldmann-Fristoe Test of Articulation

Russian

Russian adaptations below serving as working tools:

- COAT
- Boehm Test of Basic Concepts
- TACL
- PPVT
- Narratives-MLU
- LH Questionnaire

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PART 2: LEXICAL ACCESS

- Involves the **progressive development** of the learner's mental lexicon (Nation, 2001).
- Is **incremental** given 3 major aspects of mastering words:
  – size
  – depth of lexical knowledge
  – operationalization of the lexical knowledge
- **Word knowledge**: knowing a word in terms of forms, meanings and use.

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BILINGUAL LEXICAL RETRIEVAL STUDY

Aim:
To study bilingual language development, we need to know about monolingual development in both languages.

Background:

- Children with SLI are less accurate at naming pictures of common objects (nouns) than age-matched peers with no language impairment (NLI) (Lahey & Edwards 1996, 1999).
- Children with SLI have difficulty retrieving and using verbs in communication.

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WHY IS WORD RETRIEVAL IMPORTANT?

- Word retrieval plays a central role in language processing and cognitive development, but there is little research (Tomblin & Zhang, 2006).
- It is useful for effective communication and psycho-social well-being (Tomblin, 2008).
- Difficulties with word retrieval are predictive of reading problems and poor performance at school (Messer *et al*., 2004).

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DEFINITIONS

What do we mean by word retrieval?

- To successfully access the phonological form of a word form from semantics.
- We will exclude impairments of phonological processes and articulation.

What is a word retrieval problem?

- When the target word is not the item most activated and/or selected from the lexicon.

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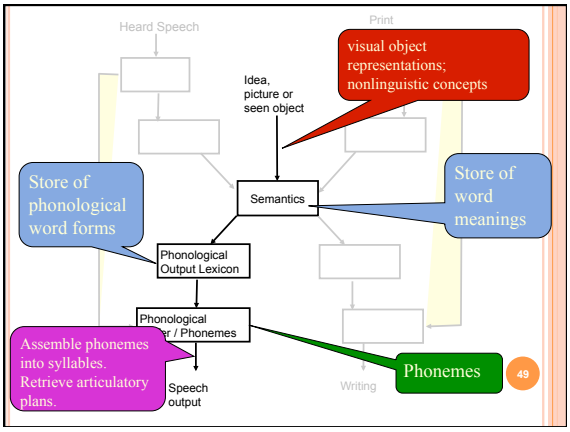
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visual object representations; nonlinguistic concepts
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Store of phonological word forms
Semantics
Store of word meanings
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Assemble phonemes into syllables. Retrieve articulatory plans.
Phonemes
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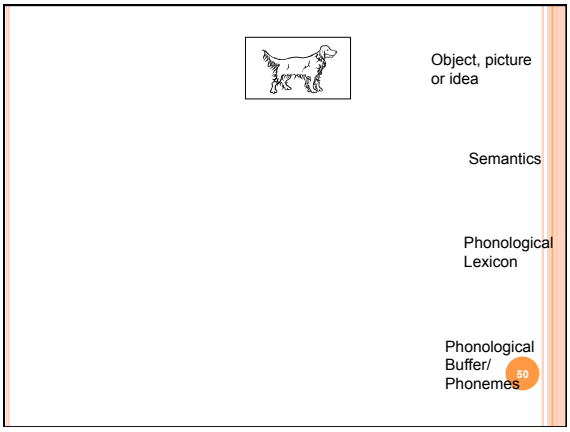
Speech output
Writing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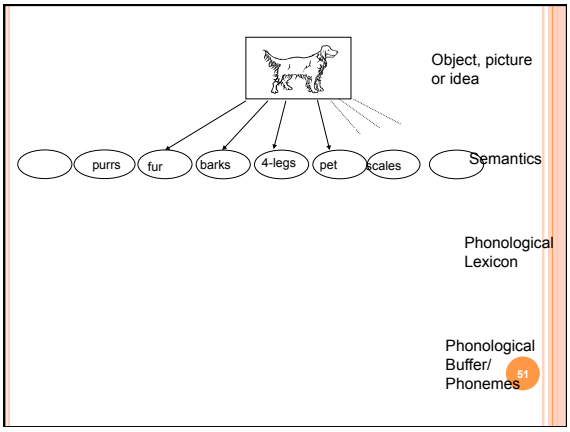
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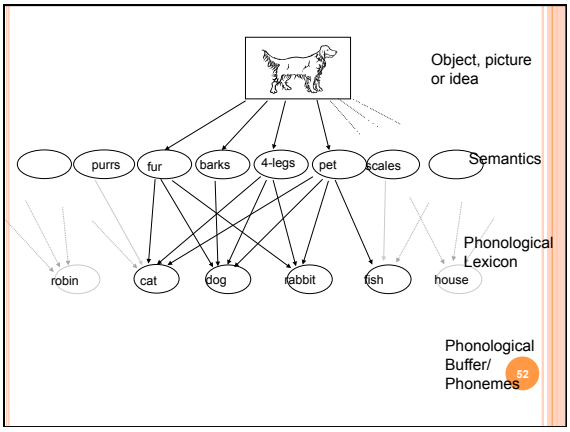
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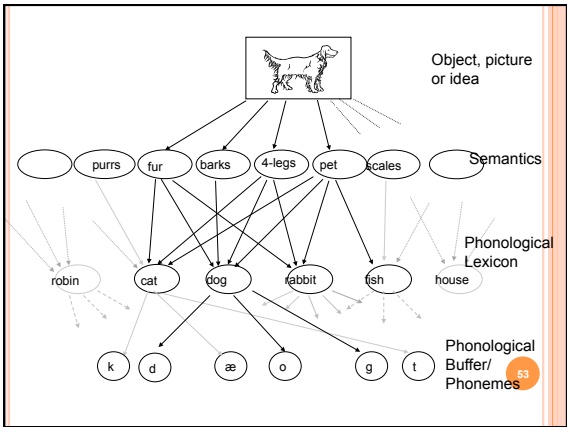
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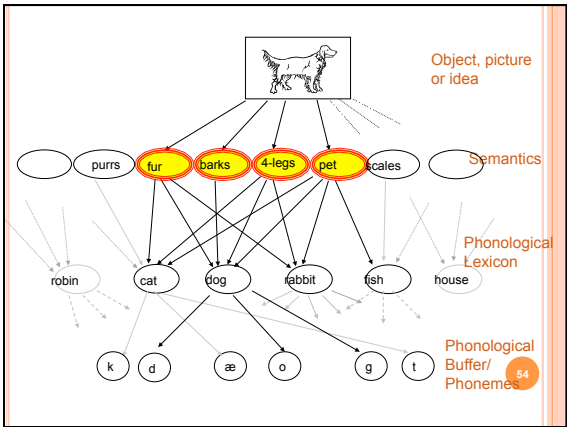
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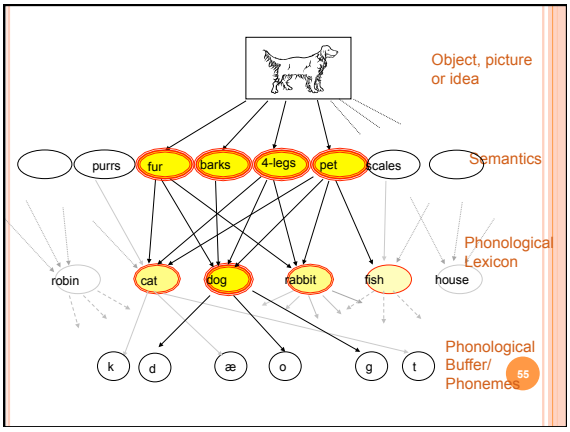
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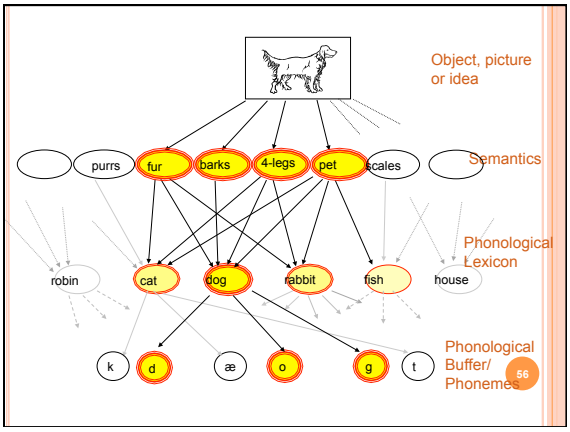
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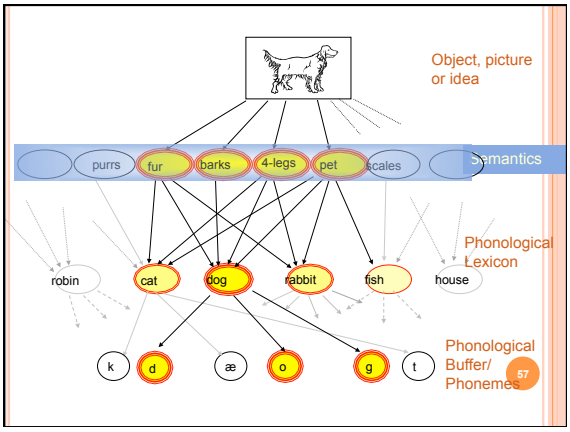
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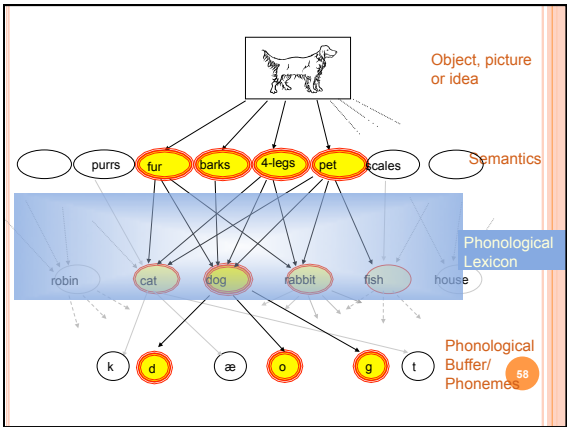
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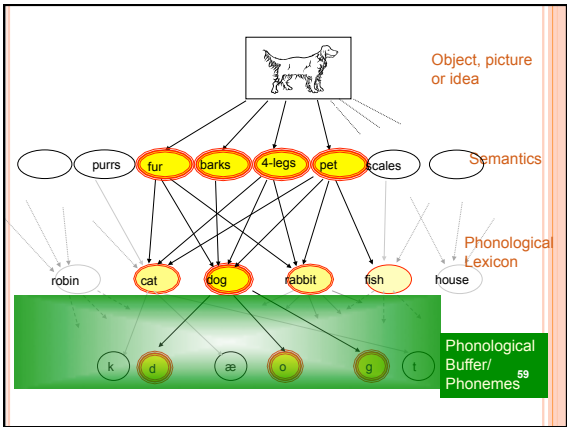
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Phonological Buffer/ Phonemes
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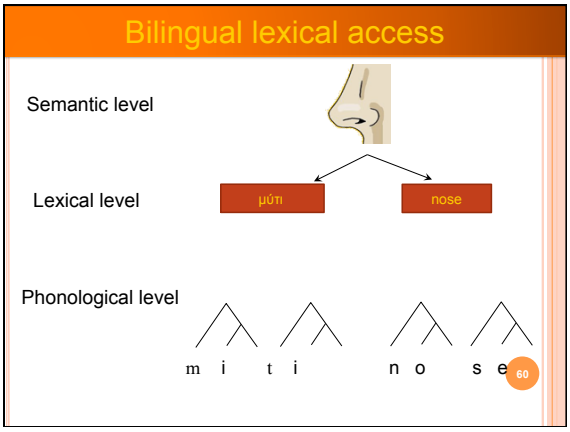
Bilingual lexical access
Semantic level
Lexical level
μύτι
nose
Phonological level
m i t i
n o s e
60

HOW DO YOU KNOW WHAT THE LEVEL OF IMPAIRMENT IS?

Why does it matter?

Different levels of impairment require different treatment

61

Observe behaviour & relate to the model of language processing

What errors do they make in speech production?

How do they do on other tasks that share the same processing components?

What factors affect the accuracy of their speech production?

Specific Language Impairment

62

WHAT ARE THE UNDERLYING CAUSES OF WORD RETRIEVAL IMPAIRMENTS?

Semantic impairment

- problem with the stored word meanings
- semantic representations and/or features might be degraded or lost
- no longer possible to clearly distinguish between closely semantically related items
- comprehension impaired (e.g., word-picture matching with semantically related distractors, synonym judgements)
- written naming impaired as well with similar rates of semantic errors

Post-semantic impairment

- problem within the lexicon
- problem with the links between semantics and the phonological output lexicon
- comprehension unimpaired
- writing possibly unimpaired as well or at least better than spoken naming

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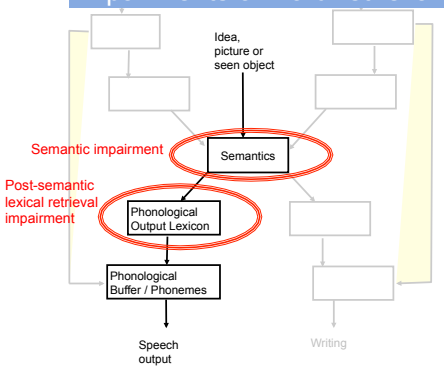
Impairments of word retrieval



64

NEUROLOGICAL PROCESSES UNDERPINNING WORD RETRIEVAL

- neuroimaging studies of adults and more recently children
- discussed in relation to more general theories of cognitive functioning e.g., Nicolson & Fawcett (1999) for dyslexia and Ullman (2004) for SLI
- location of different components of the word retrieval process according to task
- discrete picture naming (i.e., confrontational naming): associated with parietal and frontal lobe structures (Wiig, Zureich & Chan, 2000)
- implications of bilingualism

65

GRAMMATICAL WORD CLASS

Verbs

- √ Describe relational concepts
- √ Structured entities that vary in type and number of constituents
- √ Linked to thematic role assignment and argument structure
- √ Organised in matrices
- √ Multiple meanings (e.g. break a glass, break the news, break even)
- √ Harder for children to learn
- √ Harder for older adults to remember
- √ More abstract/less specific

Nouns

- √ non-relational
- √ single object reference
- √ organized in hierarchies: any given noun tends to be strongly related to a small group of nouns

66

Brain Areas

- Verbs: processed in Broca's area, in the frontal or prefrontal motor areas of the left cerebral hemisphere
- Nouns: posterior areas of the left cerebral hemisphere
- (S)LI: prefrontal abnormalities, particularly in motor regions (Jaencke *et al.* 2007)

67

GREEK OR CYPRIOT?

- Greek is a stem-based language, with a complex morphology (Holton *et al.* 1997)
- First, morpho-phonological word forms are inflected according to *grammatical category*, for instance *skoup-izi* 'he/she sweeps' is a verb and *skoup-a* 'broom' is a noun.
- Thus, nouns and verbs are differentiated by different suffixes, and they are also marked for phi-features (person, number, gender).
- Prominent morphosyntactic features in Greek must be accurately projected, marked, and expressed during single word production.
- Problems with verb and/or nouns may arise at any stage in the process of lexical retrieval, i.e. lexical-semantic, lemma, lexeme or articulation.

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CYPRIOT OBJECT AND ACTION TEST (COAT)

Single Word Naming

- Stimuli are concrete nouns and verbs depicted by coloured photographs showing objects or actions.
- The same sets of target items are included in tests for noun/verb comprehension and noun/verb production; nouns are common nouns, i.e. the names of common non-living objects/things and include no body parts.
- Nouns are not controlled for gender.
- The internal word structure of verbs consists of [root + affix] and [root + affix + affix].

69

MATERIALS: OBJECT WORD LIST EXAMPLE

Greek	Cypriot	translation
σφουγγαρίστρα	**φλόκκος**	*mop*
στυλός	**πέννα**	*pen*
τσουγκράνα	**χτενιά**	*rake*
κατσαρόλα	**μαείρισσα**	*saucepan*
βελόνα	**βελόνι**	*needle*
κρεβάτι	**καρκόλα**	*bed*

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MATERIALS: ACTION WORD LIST EXAMPLE

Greek	Cypriot	translation
ανακατεύει	**νεκατώνει**	*to stir*
κόβει	**κόφκει**	*to cut*
πλένει	**πλυνήσκει**	*to wash*
μαζεύει	**μαζεύκει**	*to gather/rake*
ψαρεύει	**ψαρεύκει**	*to fish*
μαγειρεύει	**μαγειρεύκει**	*to cook*

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TEST STIMULI

- Noun (object)

72

TEST STIMULI [CONT' D]

- Verb (action)

73

PSYCHOLINGUISTIC VARIABLES (COAT)

- mean item of characteristics for object and action pictures (standard deviations in brackets)

Picture type	Lemma frequency	Syllable length	AoA	Image-ability	Picture complexity
Objects	**0.0094** (0.023)	**2.88** (0.832)	**2.76** (0.562)	**6.59** **(0.49)**	**6.56** (0.28)
Actions	**0.0070** (0.015)	**2.92** (0.793)	**2.73** (0.475)	**6.42** (0.170)	**6.19** (0.670)

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PROCEDURE (COAT)

- *Object naming*: 35 photographs in total, all designed to elicit one correct response
- *Action naming*: 39 photographs designed to elicit one specific monotransitive verb
- *Word production*: Children were asked to name (one word) the object or action represented in the photograph.

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ONGOING WORD RETRIEVAL STUDIES ON CG

Lexical access of nouns and verbs

- accuracy of naming ➔
- speed of naming (reaction times)
- definitions of verbs and nouns
- picture description/narratives

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DIFFICULTIES INCLUDE:

- increased errors in naming ✔
- longer response times (RTs) to low frequency words
- differences in types of errors ✔
- more difficulties in word finding during spontaneous speech

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DIFFICULTIES WITH:

- different word frequencies
- different word classes (e.g. nouns versus verbs) ✔
- source of problem: general lexical delays or atypical patterns of lexical performance ✔

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AIMS

- to report whether Greek Cypriot children with SLI are less accurate than aged-matched peers with TLD on naming pictures of objects and actions;
- to explore quantitative and/or qualitative differences between monolingual and bilingual naming accuracies;
- to look for any grammatical word class effects (e.g. N<V or V<N) in naming performances.

79

AIMS [CONT'D]

- to examine naming errors (i.e. phonological and/or semantic) with reference to psycholinguistic models of word processing (e.g. Levelt *et al.* 1999);
- to determine whether error types differentiate children with SLI from peers;
- to determine effects of lexical (e.g. word frequency) and other psycholinguistic variables (e.g. age of acquisition and picture imageability) on children's naming accuracies.

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METHOD: PARTICIPANTS

64 children

14 monolingual children with SLI (3 girls and 9 boys), aged 5;5 – 9;9 years (average age: 6;9 years)

4 bilingual children with SLI (2 girls and 2 boys), aged 7;6 – 9;2 years (average age: 8;0)

- recruited from speech and language therapists in private practices and primary education

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METHOD: CONTROL GROUP

- 30 TLD children first graders matched on chronological age (CA) with the SLI children (15 girls, 15 boys), aged 6;0 – 6;11 years (average age: 6;3) [NL CA]
- 10 TLD pre-school children serving as a language control group for the moSLI children (2 girls, 8 boys), aged 3;05-5;2 years (average age: 4;4 years) [NL LA]
- 6 TLD bilingual pre-school children serving as a language control group for the biSLI children (4 girls, 2 boys), aged 5;2-6;11 years (average age: 6;1 years) [NL LA]

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INCLUSION CRITERIA

- a Greek Cypriot, "monolingual" (?) Cypriot-speaking background for the monolingual children
- a bilingual background for the bilingual children where Cypriot was one of the languages spoken (L1 or L2)
- no history of neurological, emotional, or behavioural problems
- hearing and vision adequate for testing purposes
- normal performance on screening measures of non-verbal intelligence or as reported by school psychologist
- normal articulation
- no gross motor difficulties
- medium-high socio-economic status

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RESULTS

Results of two subtests of the COAT will be reported in this study:

- object/noun naming and
- action/verb naming

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	MOSLI SLI (14)	BISLI SLI (4)	TD 1st graders (30)	TD younger – lang.matched (10)	TD Bilingual (6)
Ravens raw score	17.75	23			
Ravens standard score	85.42				
DVIQ-morphosyntax	12.29	15.75			
DVIQ-comprehension of morphosyntax	22.36	21			
DVIQ-sentence repetition	40.79	42.75			
PNT	27.5	26.25		24.4	24.33
PPVT	69.29	92.5		46.3	49
SES (mother's education)	2.89	4.25	4.5	4.8	4.25
COAT total	67.57	59.80	81.04	59.86	59.46
COAT nouns	72.45	65.00	85.05	62.29	66.67
COAT verbs	63.19	55.13	77.44	57.69	52.99

ERROR ANALYSIS

- semantic errors
- semantic descriptions/circumlocutions
- phonological errors
- grammatical class errors
- don't know/no response
- mixed errors (2+ errors)
- other errors
- code-switching errors (biSLI)

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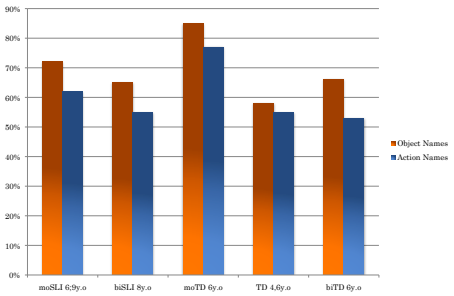
CORRECT PERCENTAGES

Participants	moSLI	biSLI	moTLD-o	moTLD-y	biTLD
Object names (nouns)	72%	65%	85%	58%	66%
Action names (verbs)	62%	55%	77%	55%	54%

87

RESULTS



88

RESULTS [CONT'D]

- Although the moSLI group have higher percentages correct than the biSLI group, this difference failed to reach significance using the Mann-Whitney U-test.
- A one-way analysis of variance (ANOVA), carried out on the results, yields:
- A statistically significant difference between the children with TLD and those with SLI — with the latter showing significantly more difficulties retrieving object and action names compared to typically developing peers.

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PRELIMINARY CONCLUSIONS: TLD VS. SLI

- TLD and SLI children had similar error types for action (semantic descriptions) and object names ('don't know')
- SLI children less accurate in naming than younger TLD children
- error type cannot differentiate the 2 groups
- SLI children delayed but not atypical
- SLI children showed no grammatical class effect

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PRELIMINARY CONCLUSIONS [CONT' D]

Psycholinguistic variables:

- no effect of word frequency-variable that operates at the level of the form (apart from object naming in TLD children)
- age of acquisition robust predictor of word retrieval performance for all 3 groups of children for both object and action naming

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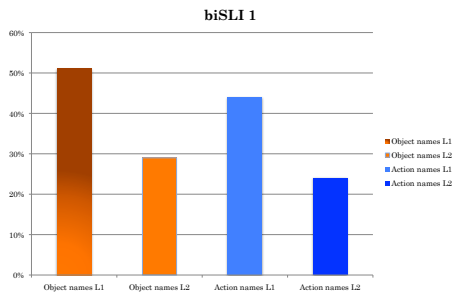
L2 RESULTS



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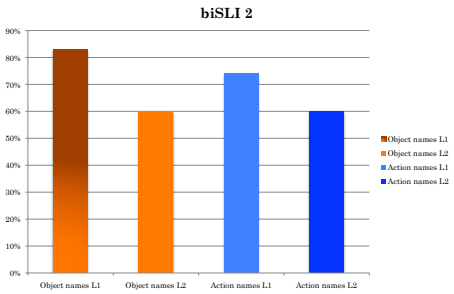
92

L2 RESULTS [CONT'D]



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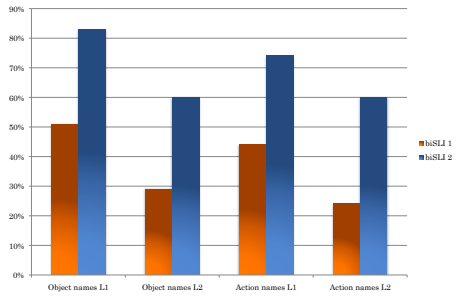
93

L2 RESULTS [CONT'D]



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PRELIMINARY CONCLUSIONS [CONT' D]

Why are action names more difficult ?

- naming actions involves different cognitive processes to the naming of objects
- "packaging" and "perspective" problems
- verbs are acquired later (maturational limitations)
- semantically more complex (semantic-conceptual explanations in early acquisition)
- grammatically more complex (order of information)

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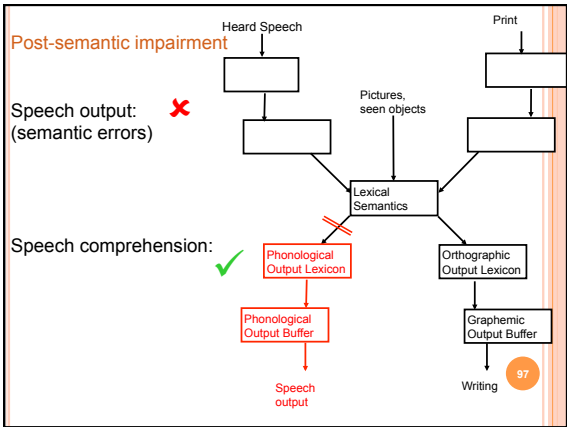
PRELIMINARY CONCLUSIONS [CONT' D]

For SLI children?

- ✓ general delay in acquiring words
- ✓ individual lexical items are poorly differentiated in their semantic-lexical representations
- ✓ poor organization of semantic-lexical representations

Inaccuracies in naming and perhaps word finding problems in general may vary with pattern of language deficit.

96



CONCLUSION

- The bilingual children with SLI (albeit 4 only) did not show a significant difference in naming accuracies for action and object names compared to their monolingual counterparts with SLI.
- This finding is in line with research indicating that bilingualism does not impact negatively on children affected with SLI (see Paradis *et al*. 2003).
- In other words, the outcome of SLI children learning two languages for verb and noun retrieval at the single word level revealed no significant differences between the bilingual and monolingual SLI groups.

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KEY QUESTIONS

1. Is SLI evident in both languages?

99

KEY QUESTIONS

1. Is SLI evident in both languages? **YES!**

- Kambanaros & Grohmann (in preparation)
- Hakansson, Salameh, & Nettelbladt (2003): Children with SLI are impaired in both languages.
- Ambert (1986), Restrepo & Kruth (2000), Peña *et al*. (1992, 2001), Simonsen (2002): Bilingual children with SLI show similar difficulties with learning (new) words and/or retrieving words as do monolingual children with SLI.

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KEY QUESTIONS [CONT'D]

2. Is bilingualism detrimental to LI children?

101

KEY QUESTIONS [CONT'D]

2. Is bilingualism detrimental to LI children? **NO!**

- Kambanaros & Grohmann (in preparation)
- Paradis, Crago, Genesee, & Rice (2003): French-English bilingual children with SLI — monolingual age matches with SLI, in each language.
  - Morpho-syntax in language production — the Extended Optional Infinitive framework (children's use of tense-bearing and non-tense-bearing morphemes in obligatory context in spontaneous speech)
  - All SLI children showed greater accuracy with non-tense than with tense morphemes.
    - All SLI children had similar mean accuracy scores for tense morphemes. The bilingual children did not exhibit more profound deficits in the use of these grammatical morphemes than their monolingual peers.
    - → SLI may not be an impediment to learning two languages, at least in the domain of grammatical morphology.

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KEY QUESTIONS [CONT'D]

3. Can bilingualism facilitate (S)LI?

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KEY QUESTIONS [CONT'D]

3. Can bilingualism facilitate (S)LI? **YES!**

- Armon-Lotem *et al.* (2007, 2008): prepositions in English-Hebrew and Russian-Hebrew Bilinguals with and without SLI
  - The omission errors are claimed here to place biSLI children in a better position regarding language acquisition potential, since they are indicative of both grammatical knowledge and knowledge of their other language.
  - → Bilingual children with SLI rely on their knowledge of L1 in acquiring L2, giving them an advantage over monolingual children with SLI.

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IN CLOSING

Our results are

more consistent with the predictions of a representational account of SLI

as opposed to a processing account of SLI,

suggesting that the observed difficulties retrieving grammatical word types (e.g., actions/verbs and objects/nouns) in SLI

are internal to the linguistic system

for both moSLI and biSLI.

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BUT…NO EU CONSENSUS ON:

- definition and diagnosis
- terminology
- classification
- aetiology
- prevalence
- early signs
- clinical marker(s)
- co-morbidity
- intervention
- education and academic attainments
- social and emotional aspects
- consistency of symptoms across life span
- health-related quality of life

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PART 3: NARRATIVE RE-TELL STORY

- Narrative is the **temporal organization and sequencing of past experience** into a linguistic device available to speakers.
  (Labov & Waletzky, 1967)
- Narrative is a recapitulation of past experience in which language is used to **structure a sequence of events** (real or fictional).
  (Crystal, 2003)

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Aims

① To report whether **monolingual and bilingual Cypriot Greek children with SLI** (Specific Language Impairment) are less accurate than monolingual peers on narratives abilities.

② To identify any special **area(s) of difficulty** with respect of narration.

③ To explore differences between monolingual and bilingual **narrative accuracies**.

④ To identify whether narratives might be **informative in language assessment**.

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Why Narratives?

- Narratives are found across different **cultures and times**. (Reilly et al., 2004)
- An informative approach to **language assessment**. (Justice, et al., 2009)
- Narratives can be predictive of later **academic skills**. (Appelbaum, 1986, Fey et al., 2004)
- Narratives may be sensitive indicators of **higher level language** skills. (Paul & Smith, 1993)
- Narratives offer important **theoretical and clinical implications** for linguists as well as speech and language pathologists.

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Narratives and SLI

Children with SLI…

- … produce and retell **less competent** narratives; (Gillam & Pearson, 2004; Botting, 2002)
- … produce **shorter** narratives; (Botting, 2002)
- … experience significant weakness in **composing and transmitting** oral narratives. (Epstein & Phillips, 2009; Fey et al., 2004; Catta et al., 2001)
- **Details** that make a story more complete, cohesive are missing in children with SLI. (Leonard, 1998)
- Narrative ability has been found to **impact** literacy development and academic achievement. (Fey et al., 2004; Dickinson & Tabors, 2001)
- Difficulties in narratives are less likely to **resolve** over time. (Girolametto et al., 2000; Manhardt & Rescorla, 2002)

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Analysis

Hughes, MacGillivray & Schmidek (1997)

Microstructure Analysis

- Mean Length of Utterances
- Number of clauses per t-unit
- Quantity of vocabulary
- Diversity of vocabulary

Macrostructure Analysis

- Episodic structure
- Setting information
- Coherence of the narrative

•strongest variables in predicting children with language impairment (Liles, et al.1995)

•can serve as a predictor of children's later comprehension, language development and literacy performance (Pankratz et al. 2007)

111

Renfrew Bus Story Test (BST)

- screening test of verbal expression
- examine story retell with picture support
- demonstrate difficulties with verbal comprehension, phonological, semantic, grammatical issues, and sequencing
- first published in 1969, 4th edition 1997
- can be given to children from 3 to 8 years
- and to adults who have learning difficulties

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Renfrew Bus Story Test (BST)

113

BST and Language Impairment

- BST predicts language impairment. (Stothard et al., 1998)
- BST reveals residual language problems in children who resolved impairment on other language measures. (Fey et al., 2004)
- BST can be used to discriminate between typically developing (TD) children and language-impaired (LI) children. (Paul & Smith, 1993)

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Method

Procedure

① The examiner read the story showing the corresponding pictures.

② The child re-told the story.

③ The narrations were recorded using digital voice recording equipment.

④ Stories were transcribed and scored.

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Method [cont'd]

Analysis

Stories were transcribed and scored:

- ✓ **information** (macro-)
- ✓ **mean sentences length- A5LS** (micro-)
- ✓ **subordinate clauses** (micro-)
- ✓ mean length of utterance (micro-)
- ✓ number of sentences (micro-)

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Method [cont'd]

Scoring scheme

- ✓ **Information**: A norm-referenced information score that the BST provides ('essential' information gets two points and 'subsidiary' information gets one point).
- ✓ **A5LS**: MLU–word was calculated for each produced sentence and the mean of the five longest sentences were computed.
- ✓ **Subordinated clauses**: The produced subordinate clauses were counted.
- ✓ **Mean Length of Utterances (MLU)–Word**: All words were added up and the sum was divided by produced sentences.
- ✓ **Sentences**: Total number of used sentences (T-unit).

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Example 1

1 2

/to leoforio efije ce vrice ena treno/

Το λεωφορείο έφυγε και βρήκε ένα τρένο.

'The bus left and it found a train.'

Scores : 1
information → 3
subordinate clauses → 0
mean length of utterance → 3
number of sentences → 1

Scores : 2
information → 2
subordinate clauses → 0
mean length of utterance → 3
number of sentences → 1

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Example 2

/paratirisen oti iʃe mɲa limni pco kato/

Παρατήρησε ότι είχε μια λίμνη πιο κάτω.

'It (the bus) noticed that a pond there was further down.'

Scores : 1
Information → 2
mean sentences length → 7
subordinate clause → 1
mean length of utterance → 7
number of sentences → 1

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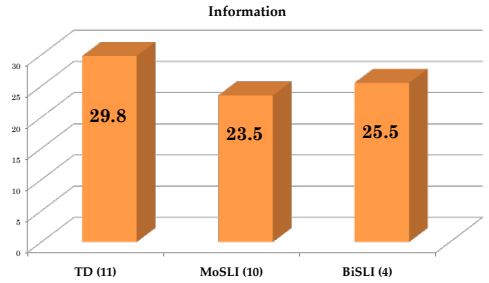
Results [1/6]

Child	TD (n = 11)		MoSLI (n = 10)		BiSLI (n = 4)	
Age	4;6 – 6;11		5;2 – 6;10		7;6 – 9;3	
	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.
Inf. Total (mean)	**29.8**	7.264	**23.5**	9.419	**25.5**	11.091
A5LS (mean)	**8.8**	2.581	**6.4**	2.047	**6.7**	2
Sub. Cl. (mean)	**4.1**	2.071	**2.0**	1.054	**2.3**	1.5
MLU- words (mean)	**5.1**	1.223	**3.8**	0.685	**4.2**	1.147
No. of sentences (mean)	**18.4**	3.957	**17.7**	3.974	**23.0**	4.082

Results [2/6]

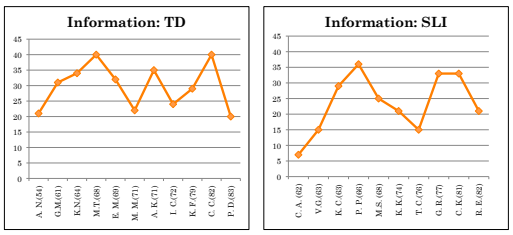


121

❖ Although the **TD group** have higher performance than both groups children with SLI, this difference **failed to reach significance** using a one-way analysis of variance (ANOVA).

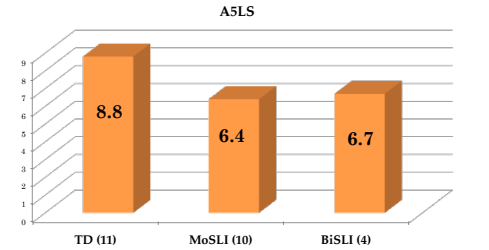
121

Information



122

Results [3/6]

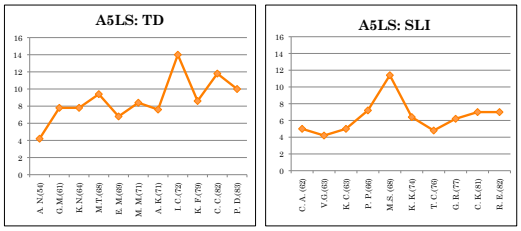


123

❖ ANOVA indicates significant difference between groups.
❖ A significant difference is revealed between TD children and MoSLI children according to a post-hoc *t*-test, with MoSLI producing significantly shorter sentences compared to TD.

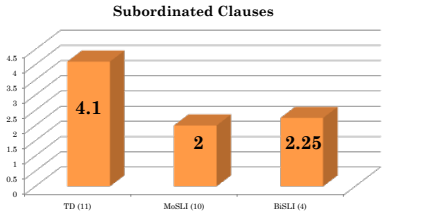
123

Mean Sentence Length



124

Results [4/6]

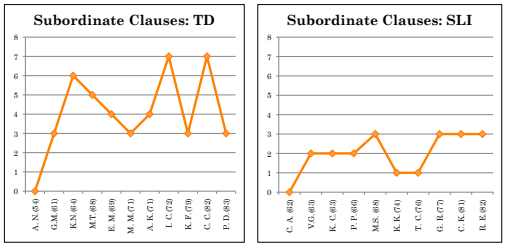


125

❖ ANOVA indicates significant difference between groups.
❖ A significant difference is revealed between TD children and both MoSLI and BiSLI according to a post-hoc *t*-test, with SLI producing significantly less subordinated clauses compared to TD.

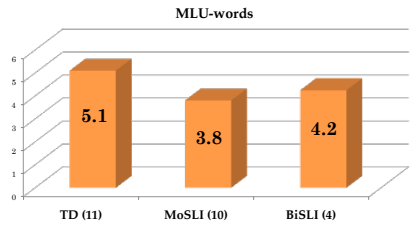
125

Subordinate Clauses



126

Results [5/6]



- ANOVA indicates significant difference between groups.
- A significant difference is revealed between TD children and MoSLI children according to a post-hoc *t*-test, with MoSLI producing significantly shorter sentences compared to TD.

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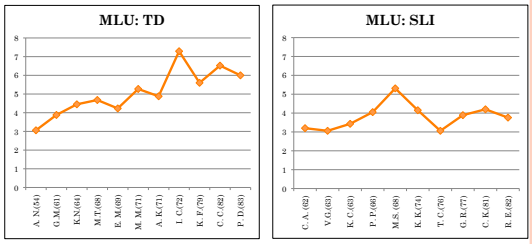
Mean Length of Utterances



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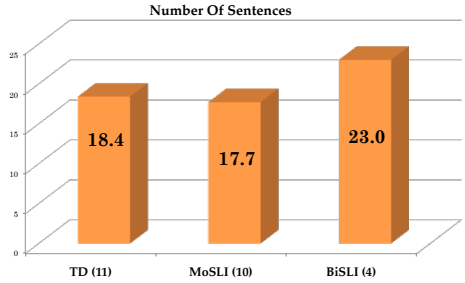
Results [6/6]



- The difference between groups failed to reach significance using ANOVA.

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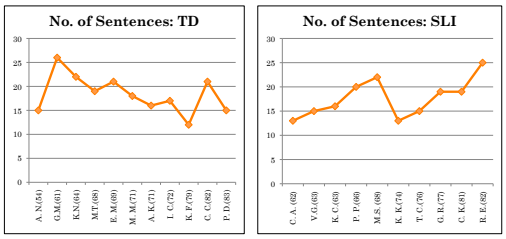
Number of Sentences



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Summary of the Results

- no significant differences between MoSLI and BiSLI children in narratives
- no significant differences between TD and BiSLI children in 4 measures (language-matched)
- significant differences between MoSLI and age-matched TD children
- significant differences in terms of sentence length and subordinated clauses
- significant difference between BiSLI and language-matched TD children in terms of subordinated clauses

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Discussion

- Children with SLI demonstrate difficulties with story retelling.
- Microstructural analysis can identify language-impaired children.
- Narrative can be used as a part of the assessment outcome in clinical practice.
- Using narratives to evaluate therapeutic procedure?
- More data are needed (age-matched TD, other language in BiSLI, and so on).

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Part 4: Clitic Placement

- Looking at the **acquisition of clitic production** how do Greek Cypriot children perform (cf. Petinou & Terzi, 2002)?
- We observed some apparent inconsistencies in terms of **clitic placement** by younger versus older children.
- In concurrent work with different groups of children, we try to find explanations along the lines of the **Socio-Syntax of Development Hypothesis** ("schooling factor", "competing motivations").

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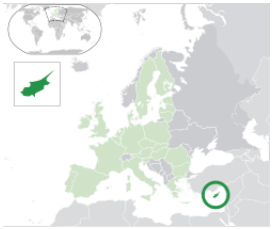
State of the Art: Greek in Cyprus

- **Cypriot Greek (CG)** is a dialect of **Standard Modern Greek (SMG)** spoken in… Cyprus



- Substantial differences between **CG** & **SMG**

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State of the Art: Linguistic Portrait

- Linguistically (formally) understudied, despite the **highly intriguing linguistic situation**
  - Two official languages: Greek (**SMG**) & Turkish
    - **trilingualism** in Greek, Turkish & English? (Arvaniti 2002)

    and/or
    - **bilingualism** in **SMG** and **CG**? (Newton 1972, Vassiliou 1995)

    and/or
    - **bidialectism** in **SMG** and **CG**? (Pavlou & Christodoulou 2001)
  - Among others: Russian, Georgian, Armenian, Arabic, German, French, Italian, and languages from Sri Lanka, the Philippines, and many others...

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State of the Art: Linguistic Portrait

- **CG** is spoken by (almost) everyone on the Southern part of the island, **but it is not taught**
- **SMG** (or some such ideal) is one of the two **official** languages which is "supposedly" taught at schools
- A similar pattern is observed for Cypriot Turkish and Turkish, in the Northern part of the island (not investigated here)

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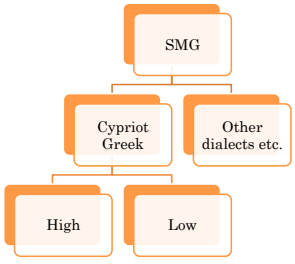
State of the Art: Bi-*x*

- The dialect (**CG**) within the Greek-speaking part of the island is not homogeneous



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State of the Art: Bi-*x*

What remains to be answered…

bi-*x*: diglossic, bidialectal, or bilingual environment?

How should we deal with 'bi-x' in language acquisition?

What is the target grammar?

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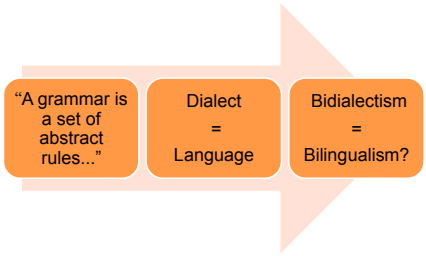
State of the Art: Bi-*x*

What remains to be answered…



Properties of CG Grammar

- mainly **lexical, phonetic, and (morpho-) phonological** differences between **CG** and **SMG** (Menardos 1969; Newton 1972; Arvaniti 2001; Firth 2006)

SMG	CG	Translation
ke	**ʧe**	and
koritzi	**gorua**	girl
ine ðen	**en**	COP (3.SG/PL) NEG
θa	**en na**	FUT

Properties of CG Grammar

- little work on **morpho-syntactic description & analysis**. (Terzi 1999a, 1999b; Agouraki 2006; Grohmann *et al*. 2006; Fotiou 2009; current research and some other CAT on-going research)
  - Wh-question formation (*embu* & clefting)
  - Object case assignment
  - Focus operations
  - **Clitic placement**

Properties of CG Grammar: Clitics

- **CG** shows mixed clitic placement and is largely **enclitic** (post-verbal), as opposed to **SMG**, which is **proclitic** (pre-verbal).
- Syntactic environments are similar to differences in clitic placement observed for **European Portuguese** vs **Iberian Spanish** (cf. Terzi 1999a, 1999b).

Properties of CG Grammar: Clitics

(1) (O Jannis) θk/diavazi to vivlio. [CG & SMG]
the Yiannis reads the book
'Yiannis/John is reading the book.'

(2) (O Jannis) θkiavazi **to**. [CG]
the Yiannis reads it
'Yiannis/John is reading it.'

(3) (O Jannis) **to** diavazi. [SMG]
the Jannis it reads
'Yiannis/John is reading it.'

Properties of CG Grammar: Clitics

Imperative

(4) θk/Diavase **to** tora! [CG & SMG]
'Read it now!'

NEG-clauses

(5) Dhen **to** diavazi (o Jannis)! [CG & SMG]
'Jannis doesn't read it.'

na-clauses

(6) Perimeno na **to** θk/diavasi (o Jannis). [CG & SMG]
'I expect [Jannis to read it].'

Clitic Study in CG

- Original intention: Carry out a clitic production study with **monolingual Greek Cypriot** children at 5 years of age (Grohmann 2011), then ranging from 2 to 6 (Grohmann et al. 2010).
- Compare clitic study administered to three groups:

  A. **monolingual Greek Cypriot** children (3;0–8;11)

  B. **monolingual Hellenic Greek** children (3;0–8;11)

  C. **binational Greek/Cypriot** children (3;9–9;1)

Clitic Study in CG

- Initial results obtained for COST A33 "Crosslinguistic Robust Stages of Children's Linguistic Performance"
- 4-year research network (COST-funded, 2006–2010) – over 50 MC members from 25 countries
- syntactic, semantic & pragmatic development – target group: **5-year-olds (TLD5)** across languages

➔ results and extensions of today's **clitic-test** tool

Clitic Study: Participants

Children:

- were randomly recruited all across Limassol
- attended Greek-speaking kindergartens/nurseries
- are monolingual speakers of CG
- did not receive speech & language therapy services
- were tested upon written parental consent
  - with approval from Ministry of Education & Culture

Control group:

- "monolingual" speakers of CG
- did not receive SLT services in the past
- randomly recruited all across Limassol

Clitic Study: Participants

Age Group	Age Range	Number of participants	Mean	Standard Deviation	Gender
1	2;8 – 2;11	6	**2;9**	1.04880	4 M, 2 F
2	3;0 – 3;11	20	**3;6**	3.23264	11 M, 9 F
3	4;0 – 4;11	21	**4;10**	3.04802	10 M, 11 F
4	5;0 – 5;11	50	**5;8**	3.50602	22 M, 28 F
5	6;0 – 6;11	20	**6;7**	2.48231	9 M, 11 F
6	Adults (27 – 56)	8	38	12	4 M, 4 F

Clitic Study: Procedure & Method

- production of 3rd person acc. clitics within islands
- after 2 warm-up sentences, 12 target structures plus 4 fillers were randomized
  - Replication of **COST A33 testing tool**

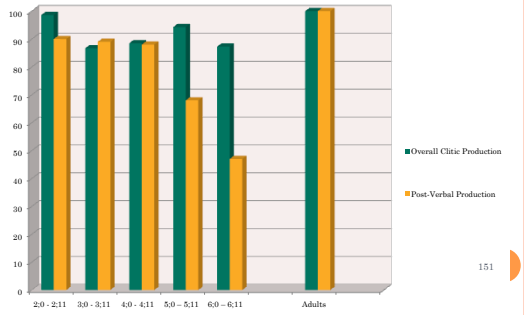
(7) I mama xtenizi ti korua ʧe i korua en omorfi. Jati i korua en omorfi? **I korua en omorfi jati i mama tis… [xtenizi tin-CL]**
Mommy is combing the girl and the girl is beautiful. Why is the girl beautiful? **The girl is beautiful because mommy**… **[combs her-CL]**

Results: Clitic Production

Age Group	Age Range	Overall Clitic Production %	Target (post-verbal) production %
1	2;0 – 2;11	**98.6**	**90**
2	3;0 – 3;11	**86.7**	**89**
3	4;0 – 4;11	**88.5**	**88**
4	5;0 – 5;11	**94.3**	**68**
5	6;0 – 6;11	**87.3**	**47**
6	Adults (27 – 56)	**100**	**100**

➔ The older the children, the less post-verbal clitics they produce.

Results: Clitic Production



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Results: Clitic Production

- **age groups 1, 2 & 3** performed as expected
  - high percentage of post-verbal production
- **age groups 4 & 5** are believed to be affected by school instruction ('Schooling Factor')

➔ ***Socio-Syntax of Development Hypothesis*** for CG

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Results: Re-Thinking Age Groups

Age Group	Class	Mean Age	Overall Clitic Production %	Target (post-verbal) production %
1	–2 (20)	3;3	**89.6**	**93**
2	–1 (18)	4;3	**88.0**	**82**
3	0 (59)	5;5	**93.6**	**73**
4	1 (20)	6;7	**87.3**	**47**
6		Adults	**100**	**100**

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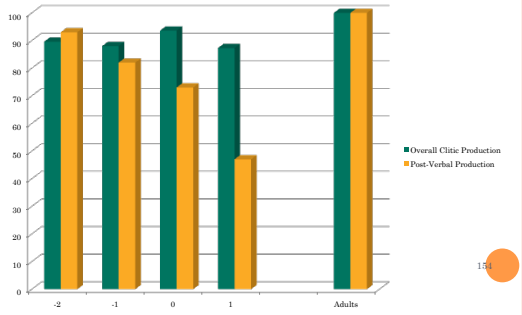
Results: Re-Thinking Age Groups



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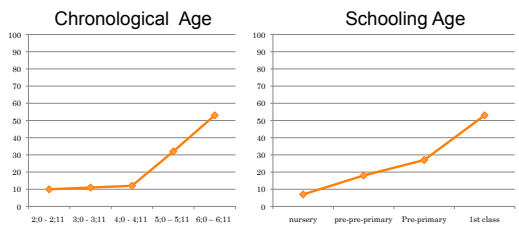
Results: Pre-Verbal Clitic Production



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Discussion

- Both types of analysis ➔
  The younger the children, the stronger the preference for post-verbal clitic placement.
- the ***Socio-Syntax of Development Hypothesis*** for CG (Grohmann in press, Grohmann et al. 2010)
- Metalinguistic and sociolinguistic factors may influence children to use more **'proper' language** (Grohmann et al. 2010, Leivada et al. 2010)

➔ Is this a(n un)conscious demonstration of **meta-linguistic awareness** driven by linguistic anxiety to (show that they are able to) speak 'properly'? (Leivada et al. 2010)

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2nd CG Clitic Study

- similar tool → in both **CG** and **SMG** version with different populations, namely:
  a. **Greek Cypriot Monolinguals** → born and schooled in Cyprus, with both parents from Cyprus
  b. **Hellenic Monolinguals** → born and schooled for some time in Greece, with both parents from Greece
  c. **Binationals** → born in either Cyprus or Greece and with one parent being Greek Cypriot and the other Greek

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2nd CG Clitic Study: Participants

- **Leivada et al. (2010):** All participants were tested in both versions with a week interval in between
- randomly selected from **Nicosia** district

Ethnic Group	No of Children	Age Group/ Range	Control Group
Hellenic Greek monolinguals	40 (10 per group)	3;0 – 4;5 4;6 – 5;11 6;0 – 7;5 7;6 – 8;11	6
Greek Cypriot monolinguals	40 (10 per group)	3;0 – 4;5 4;6 – 5;11 6;0 – 7;5 7;6 – 8;11	6
Hellenic Cypriot binationals	30	3;5 – 9;1 (M=6;5)	No control group

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2nd CG Clitic Study: Results

AGs	Hellenic Monolingual Children				Cypriot Monolingual Children			
	SMG version		CG version		SMG version		CG version	
	Clitic	Target	Clitic	Target	Clitic	Target	Clitic	Target
3;0-4;5	85.0	100	85.8	2.9	90.8	50.5	73.3	95.5
4;6-5;11	91.7	100	95.8	0.8	97.5	98.3	90.8	39.5
6;0-7;5	95.0	100	100	0	98.3	83.1	96.7	50.9
7;6-8;11	100	99.2	100	3.3	95.8	100	96.7	40.5

* Numbers above refer to %

Binational Children			
SMG version		CG version	
Clitic	Target	Clitic	Target
93.6	97.3	96.4	25.1

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2nd CG Clitic Study: Results

AGs	Hellenic Monolingual Children				Cypriot Monolingual Children			
	SMG version		CG version		SMG version		CG version	
	Clitic	Target	Clitic	Target	Clitic	Target	Clitic	Target
3;0-4;5	85.0	100	85.8	2.9	90.8	50.5	73.3	95.5
4;6-5;11	91.7	100	95.8	0.8	97.5	98.3	90.8	39.5
6;0-7;5	95.0	100	100	0	98.3	83.1	96.7	50.9
7;6-8;11	100	99.2	100	3.3	95.8	100	96.7	40.5

* Numbers above refer to %

Binational children			
SMG version		CG version	
Clitic	Target	Clitic	Target
93.6	97.3	96.4	25.1

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2nd CG Clitic Study: Results

Control Group

Hellenic Monolingual Adults				Cypriot Monolingual Adults			
SMG version		CG version		SMG version		CG version	
Clitic	Target	Clitic	Target	Clitic	Target	Clitic	Target
100	100	100	33.3	100	98.6	100	76.6

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2nd CG Clitic Study: Discussion

- Clitic production across all AGs (& adults) is very high
- 3;0–4;5 **CG** monolinguals show clear preference towards post-verbal clitic placement
- **Binational** children show stronger preference for pre-verbal clitic placement
- 4;6–8;11 **CG** and **SMG** monolinguals show stronger preference for pre-verbal clitic placement
- Verification of ***Socio-Syntax Hypothesis***
- **BUT: Why aren't the Binational and Hellenic Greek children affected by their peers' post-verbal placement?**

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Metalinguistic Awareness

- The importance of the **schooling factor**
- It signals the onset of exposure to a 'high' variety
- It discourages/marginalizes the use of the 'low' variety
- It **raises children's awareness** of the sociolinguistic functions and registers that each variety facilitates
- It promotes **SMG** as the 'standard', even 'polite' and 'appropriate', way to talk

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Metalinguistic Awareness

- Some **CG** monolinguals, even up until age 5;10, make use of non-target placement and verbs **that don't exist** in either variety.
- Misapplication of **SMG** morphological suffixes to a **CG** stem gave rise to forms that *prima facie* resemble but are **not SMG**.
- This type of error is absent from the production of the **binational** children due to:

i. **native SMG** competence that disallows such errors
ii. **lack of linguistic anxiety** to show that they are able to speak properly

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Metalinguistic Awareness

- Still, **CG** monolinguals commented on the experimental material in the post-test period in **CG**.
- Language awareness is manifested as awareness of the **sociolinguistic functions** of the two varieties in Cyprus (Yiakoumetti et al. 2005).
- This also explains the performance of **binationals**.
- Despite being exposed to both varieties from early on, **binationals** chose to align themselves with **SMG** and use mostly proclisis in both version of the test.

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Competing Motivations

- There is little evidence for a single sequence of acquisition of grammatical forms (Bates & MacWhinney 1987).
- Competing motivations (Du Bois 1985) arise in the process of language development in **different populations** residing and being schooled in Cyprus.
- Tsiplakou (2007: 27) discusses code-switching with respect to the dialect continuum of Cyprus:

i. How do acquisition factors enter the picture?
ii. Do data allow us to make a case for competing grammars?

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Competing Motivations

- Why assume competing motivations?
- **Hellenic Greek** children are exposed to **Cypriot Greek** both inside and outside class, yet their performance remains **unaltered**.
- They are reluctant to code-switch and employ the post-verbal clitic placement that pertains to **CG**.
- Indication that children of that age are aware of the sociolinguistic prestige that each variety carries.
- **Evaluation** of different sources of linguistic input.
- Motivation is to **stick to the 'high' variety**.

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Competing Motivations

- Findings of our two experimental studies on the acquisition of object clitic placement are indicative of what Delpit (1995: 48) identified as children's "sensitivity to language and its appropriate use".
- **Linguistic sensitivity** should be approached also with respect to the prestige each variety carries in diglossic environments and of how aware the children are made of it.
- **CG** monolingual adults also did not perform at ceiling with respect to target placement (76.7%).
- Can children's mixed performance be a licit option in adult **CG**…?

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Bi-*x*, Metalinguistic Awareness, or Both?

- The question addressed here does not refer to the linguistic production of **Greek Cypriot** and **binational** children in general.
- It is specific to the linguistic production that two experimental studies elicited.
- If Greek Cypriot children are bidialectal in **SMG** and **CG**, their production should resemble the production of the binational children.
- Could they be bidialectal in a 'high' and a 'low' form of **CG** (cf. Arvaniti 2006)?

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Bi-*x*, Metalinguistic Awareness, or Both?

- Bilinguals are exposed to both languages before age 3;0 (McLaughlin 1984, Meisel 1994).
- Bidialectals are exposed to two varieties of the same language before age 3;0.
- By this age, children in Cyprus receive no education whatsoever in **SMG**.
- There is some exposure to **SMG**, but sometimes what counts as **SMG** input resembles more what Arvaniti (2006) termed **'Cypriot Standard Greek'**.
- In this sense, children are indeed bidialectal, but in two forms of **CG**: one standard and one colloquial.

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Constructing a Socio-Syntactic Repertoire

- Recent inquiries into **socio-syntactic research** postulate that sociolinguistically determined functions facilitate choosing between variants.
- Distinctions between sociolinguistics, psycho-linguistics, and theoretical syntax might fade away somewhat (Grondelaers & Speelman 2007).
- "[E]ncoded in the semantics of grammar we find cultural values and ideas, we find clues about the social structures which speakers maintain (...)" (Enfield 2002: 3).
- Cultural values are also found to be interwoven to the choice of one **syntactic variant** over another.

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Constructing a Socio-Syntactic Repertoire

- A choice **might have no effect on semantics**; e.g., proclisis vs. enclisis in indicative structures in **CG**.
- Variants entail or mark different levels of proximity to the 'unmarked' norm that exists in the standard, 'high' variety, so morphosyntactic choices:

1. **signal** politeness strategies and register shifts (Tsiplakou et al. 2006: 271) which
2. point out to the necessity to explore the **context-specific** character of language acquisition (cf. Bates & MacWhinney 1987) through
3. taking into account the impact of **sociolinguistic implications** on the process of grammatical development.

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The Socio-Syntax of Development Hypothesis

- We're trying to develop an account for language acquisition in diglossic environments that aims to uncover its **context- or domain-specific** character.
- The current view of the **SSDH**:
  - For Greek Cypriot children, the process of building a sociolinguistic repertoire primarily involves the need to resolve linguistic anxiety and adjust to the 'high' variety.
  - For Hellenic Greek children, sociolinguistic development involves the need to stay true to the 'high' variety, so they are motivated to decipher different sources of input.

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The Socio-Syntax of Development Hypothesis

- The SSDH approaches the acquisition of syntactic variants through assuming competing motivations that arise depending on the level of proximity (in the dialectal continuum) between the home and the school variety and the school variety.
- Competing motivations may derive from the absence of bidialectal education that increases children's awareness of the low social prestige of their native variety.
- Awareness further shapes their linguistic performance in certain registers and (elicitation) tasks through investing it with an effort to show that they have command of the 'proper' language.

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Conclusion

- Target clitic placement is fully mastered by age 3.
- **CG** is the actual target grammar Greek Cypriot children are trying to acquire… or is it?
- 'Diglossia' may be real, but there is a distinction between **CG** and **SMG**, and the mixing/confusion possibly only arises after entering schooling.
- And of course the setting is still something to be considered and solved for future research.
- What are the varieties involved in this bi-*x* situation? **SMG** and **CG** or **Standard CG** and **CG**?
- Our preliminary working hypothesis is the **Socio-Syntax of Development Hypothesis** qua effects of schooling. (Grohmann in press, Grohmann et al. 2010)

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http://www.research.biolinguistics.eu/CAT

- **CAT activities** for COST Action **A33** & **IS0804**
  http://www.zas.gwz-berlin.de/cost.html?&L=0

http://www.bi-sli.org

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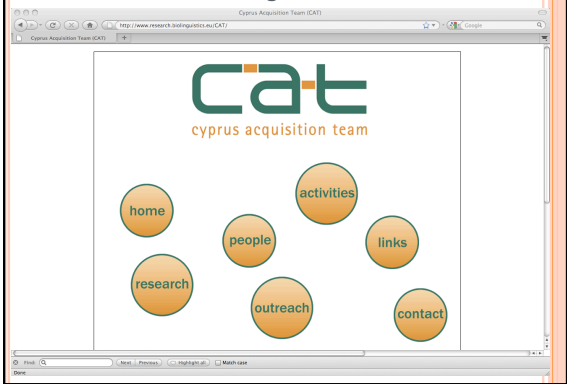
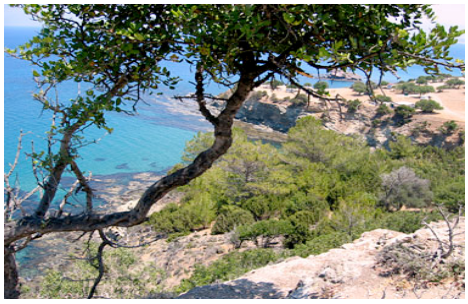
www.research.biolinguistics.eu/CAT



THANK YOU! Ευχαριστούμε σας!



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