The Assessment of Chinese Grammatical Knowledge in D/hh children
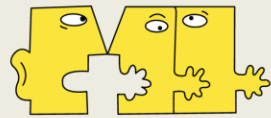# 听障儿童中文语法知识评估

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The philosophical basis of language assessment
语言评估的理念基础

- *Theories of language assessment:*
  语言评估理论：

  - *J.W. Oller's (1978) "unitary competence hypothesis"*
    J.W. Oller（*1978*）提出"整体能力假说"
    - *A "global" factor (i.e. a single trait) in accounting for language proficiency.*
      用以解释语言能力的"整体"因素（即单一特性）

  - *Backman (1990) refuted Oller's hypothesis*
    *Backman(1990)*驳斥了*Oller*的假说
    - *A "multi-dimensional hypothesis"*
      "多维度假说"
    - *The single factor may be further subdivided to account for language knowledge and use.*
      单一的因素可以被细分来解释语言知识和语言使用

The philosophical basis of language assessment
语言评估的理念基础

- *Yet, there is consensus among the language testing experts that **there is a common variance in measuring language proficiency**.*

- 但语言评估专家都认同**在评估语言能力时存在共同变量**

Language Acquisition research
语言获得研究

- *In the study of linguistics, language acquisition research aims to verify linguistic theories*

  在语言学研究中，语言获得研究致力于证实语言学理论

- *Ultimate goal: exploring the existence of an innate module of language in the human mind.*

  最终目标：探寻人脑中天生语言模块的存在

Language Acquisition research
语言获得研究

- *Examples of linguistic theories, e.g. Binding Principles A & B*
  语言学理论实例：约束条件A和B

1) 张三$_i$ 知道李四$_j$ 喜欢自己$_{i/j}$。

   Zhangsan know Lisi like self

   'Zhangsan knows that Lisi likes himself.'

2) 张三$_i$ 知道李四$_j$ 喜欢他$_{i/*j}$。

   Zhangsan know Lisi like him

   'Zhangsan knows that Lisi likes him.'

Convergence?
融合？

- *The paths of language assessment and language acquisition research are increasingly crossing each other*

语言评估和语言获得研究正在不断地相互融合

- *Common concepts*
- 常见概念
  - *Norms of typical vs. atypical learners = developmental timetable in child language acquisition*
    正常发展儿童常模 *vs.* 非正常发展儿童 = 儿童语言获得时刻表
  - *Methodology: Experimental vs. longitudinal*
    方法：实验 *vs.* 追踪
    - *Child language acquisition: mostly longitudinal, now more and more experimental in nature*
      儿童语言获得：多数是追踪调查，现在有越来越多的实验性研究
    - *Second language acquisition: mostly experimental*
      二语获得：大多为实验性研究
    - *Language assessment: mostly experimental methods, but may measure growth periodically*
      语言评估：多数用实验性方法，但可以阶段性地测量发展

Language assessment
in speech and language pathology
言语和语言治疗中的语言评估

- *Achievement* 成就性信息

  - *Determine the degree to which an atypical child has mastered language;*
    判断非正常发展儿童对于语言的掌握程度

  - *Determine whether an atypical child's language acquisition is similar to or on a par with that of typically developing children;*
    判断非正常发展儿童的语言获得进程是否与正常发展儿童的类似

- *Diagnostic* 诊断性信息

  - *Identify language impairments or language deficits;*
    确认语言损伤或语言缺陷

  - *Identify areas of specific strengths and weaknesses;*
    确认优势和劣势

→*Inform speech therapists (ST), educators, parents, and learners*
  为言语治疗师（ST）、教师、家长和学生提供信息

(Purpura, 2004; Mueller Gathercole et al., 2013)

Language Assessment with DHH learners: Crucial considerations
针对听障学生的语言评估：一些重要的考量

- *Mastery of grammatical competence of the target language lays the foundation for literacy development, in addition to vocabulary knowledge and print knowledge.*

  除词汇知识和文字知识外，掌握目标语的语法也能为读写能力发展奠定基础

ASSESSMENT OF GRAMMATICAL KNOWLEDGE IN ENGLISH
英文语法知识评估

Test of Syntactic Abilities(TSA)
句法能力测试
(Quigley et al., 1978)

The TSA employed *sentence completion* *and* *correction* *to assess DHH learners' comprehension and production of certain English syntactic structures:*

TSA使用"补充句子"和"改正句子"来评估听障学生对于某些英语句法结构的理解和表达

- *Negation: with 'be, do, have, modal'*
  否定：带"是、做、有"和情态动词
- *Conjunction: conjunction, deletion*
  连词：连词、删除
- *Question formation: wh-question, yes/no question, tag question*
  问句：特殊疑问句、是非问句、反问句
- *Pronominalization: personal pronouns, backward, possessive adjectives, possessive pronouns, reflexivization*
  代词：人称代词、后向回指、形容词性物主代词、名词性物主代词、反身代词
- *Verbs: verb auxiliaries, tense sequencing*
  动词：助动词、时态
- *Complementation: infinitives & gerunds*
  完成体：不定式、动名词
- *Relativization: embedding, relative pronoun referents*
  关系子句：嵌套、关系代词指称
- *Disjunction & Alternation*
  分解和替换

Comprehension of Nine Syntactic Structures in a comic book format
漫画形式的9大句法结构理解测试

Wilbur et al. (1983):
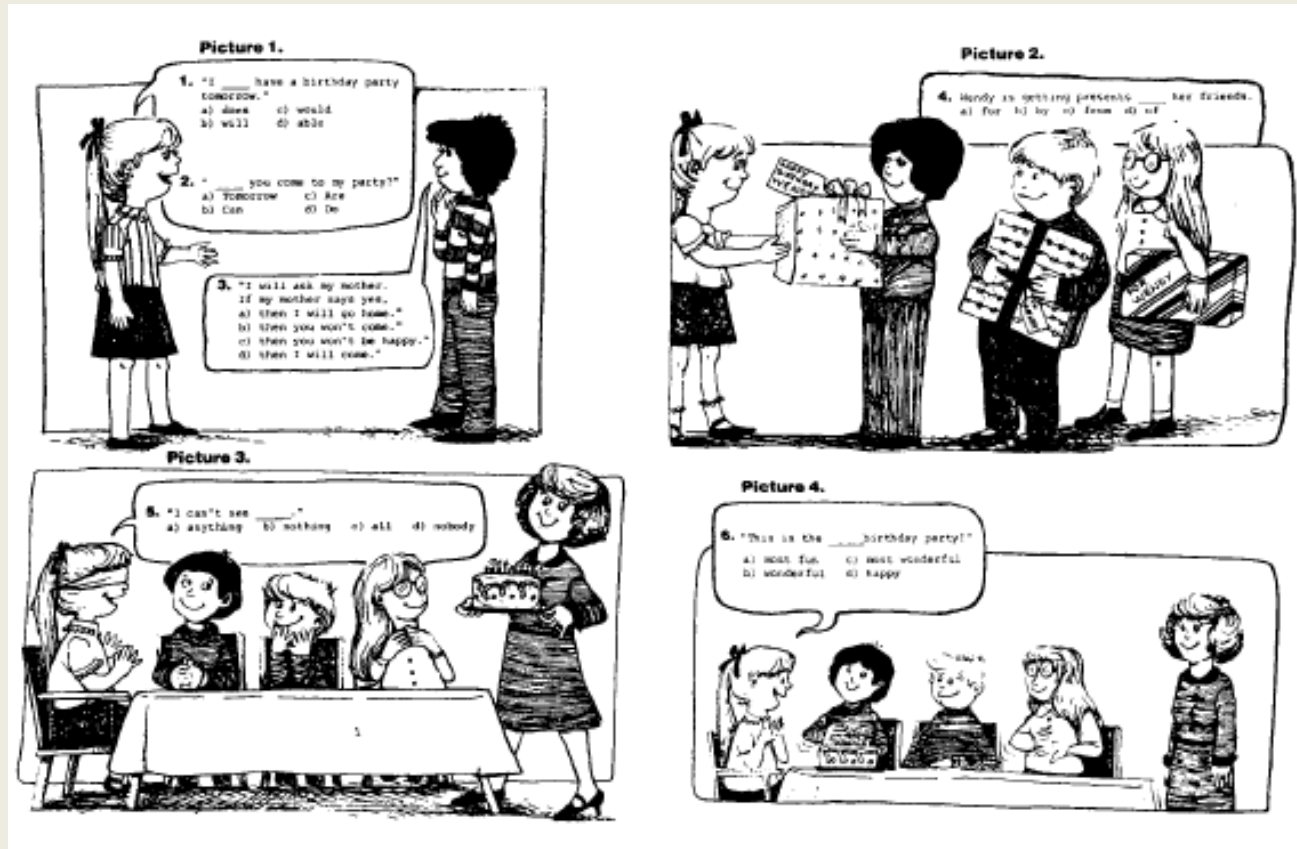
Used a comic book format with multiple choice items to provide a pragmatic context.
使用漫画来呈现多项选择题以便提供实际语境。

Wilbur et al. (1983)

Structures tested (not tested in TSA):
测试的结构（TSA没有评估这些结构）

- *Why-questions*
  询问原因
- *Conditionals: if, then*
  条件从句：如果、那么
- *Non-locative prepositions: about, by, for*
  非方位词的代词：关于、通过、为
- *Indefinite pronouns: some(thing), any(one), no(body)*
  不定代词：一些（事情）、任何（人）、没（人）
- *Quantifiers: each, every, some, all*
  量化词：每一、每个、一些、所有
- *Modal verbs: can, should, may*
  情态动词：可以、应该、或许
- *Elliptical constructions*
  省略结构
- *Reciprocal pronouns: each other*
  相互代词：彼此
- *Comparative constructions: than, like, as...as*
  比较结构：比、像、和……一样

Revised Test of Ability Subordinate
精细能力测试修订版
(Berent, 1988)

- *Phrasal structures* 短语结构：
  - *Prepositional phrases (e.g. 'Lay the clothes down <u>on the bed</u>')*
    介词短语（例：把衣服放<u>在床上。</u>）
  - *Prenominal adjectives (e.g. 'Bill lost <u>his</u> books')*
    形容词性物主代词（例：比尔把<u>他的</u>书丢了。）
  - *Adverbs (e.g. 'They <u>usually</u> meet on Monday')*
    副词（例：他们<u>通常</u>星期一见。）

- *Clausal structures* 句子结构:
  - *Adverbial clauses (e.g. 'I will cry <u>if you hit me</u>')*
    状语从句（例：<u>如果你打我</u>，我会哭。）
  - *Infinitive clauses (e.g. 'It is hard for me <u>to write letters</u>')*
    不定式从句（例：<u>写信</u>对我来说很难。）
  - *Noun clauses (e.g. 'We think <u>that she will go way</u>')*
    名词性从句（例：我们认为<u>她会离开</u>。）
  - *Gerund clauses (e.g. 'She was accused of <u>stealing it</u>')*
    动名词从句（例：她被指<u>偷窃</u>。）
  - *Relative clauses (e.g. 'I called a man <u>who might visit us</u>')*
    关系子句（例：我给一个可能会来探望我们的男人打了电话。）
  - *Participial clauses (e.g. 'I found a lesson clearly <u>explaining the grammar</u>')*
    分词性从句（例：我找到一堂清楚地<u>解释语法</u>的课。）

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Comprehension of Written Grammar
书面语法理解
(Cannon & Hubley, 2014)

Grammatical structures tested:
测试的语法结构

Imperative
NP +Vi
NP + Vi + Adv-p
NP + Vi + Adv-a
NP(S) + Vt + NP(D.O.)
NP + be + Adj
NP + be + Adv-p
NP + be + Adv-a
NP + be + NP
NP + be + (for+N)
is + ing
are + ing
was + ing
were + ing
Vh + tense (agreement)

Vh (idiomatic)
modal will
comparative
superlative
irregular plural
possessive 's
reversible passive
non-reversible passive
dative movement
for/to complement
adverbial clause
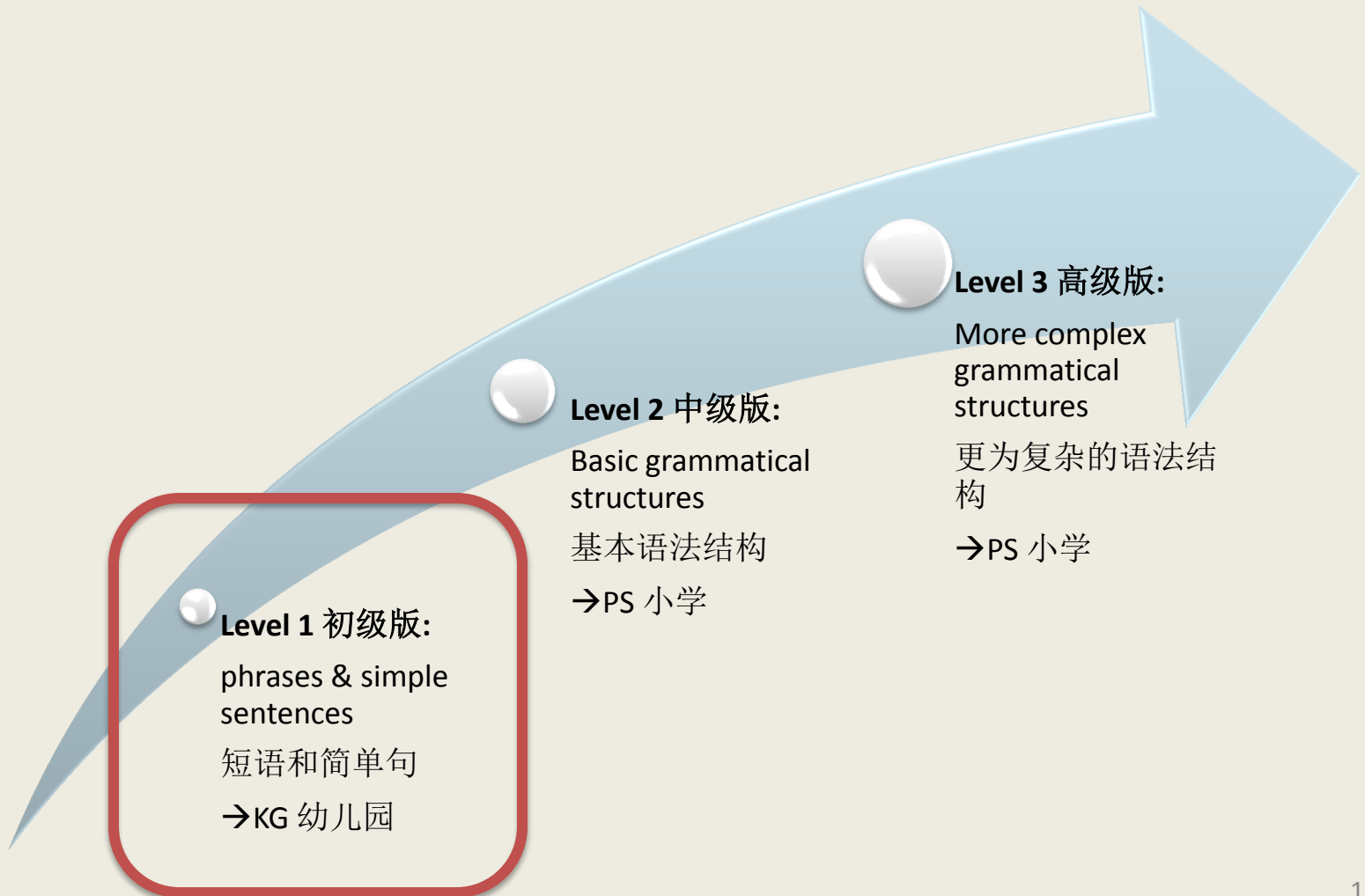medial relative clause
final relative clause
NP complement
perfect tense

DEVELOPING TOOLS FOR ASSESSING D/HH CHILDREN'S CHINESE GRAMMATICAL KNOWLEDGE

研发用于评估听障儿童中文语法知识的工具

The Assessment of Chinese Grammatical Knowledge (ACGK)
中文语法知识评估

Level 3 高级版:

More complex grammatical structures

更为复杂的语法结构

→PS 小学

Level 2 中级版:

Basic grammatical structures

基本语法结构

→PS 小学

Level 1 初级版:

phrases & simple sentences

短语和简单句

→KG 幼儿园

ACGK test materials
ACGK 测试内容
(Level 1: phrases & simple sentences)
初级版：短语和简单句

Phrases	Subcategories	examples
▪ Adjective phrases 形容词短语	Adj + N	黄叶子
▪ Adjective phrases 形容词短语	Adj + de + N	可爱的小猫
▪ Numeral phrases 数量词短语	Num + CL + N	三只猫
▪ Determinal phrases 限定词短语	Det + CL + N	那个篮球
▪ Possessive phrases 领属短语	Poss + DE + N	哥哥的衣服
▪ Verbal phrase 动词短语	Adv + VP	一起吃西瓜
▪ Verbal phrase 动词短语	Adv + de + V	安静地睡觉

Sentences	Subcategories	examples
▪ simple sentences 简单句	SV	爸爸唱歌。
▪ simple sentences 简单句	SVO	妈妈吃橙。
▪ sentences with modals 带情态动词的句子	modal: hui & yinggai	男孩会画火车。
▪ negative sentences 否定句	negator: bu	妈妈不买西瓜。
▪ Questions 问句	a-not-a	男孩打不打篮球？
▪ Questions 问句	wh-argument	妈妈买了什么？
▪ Questions 问句	yes-no	妹妹喜欢唱歌吗？

ACGK test methods
ACGK 测试方法
(Level 1)
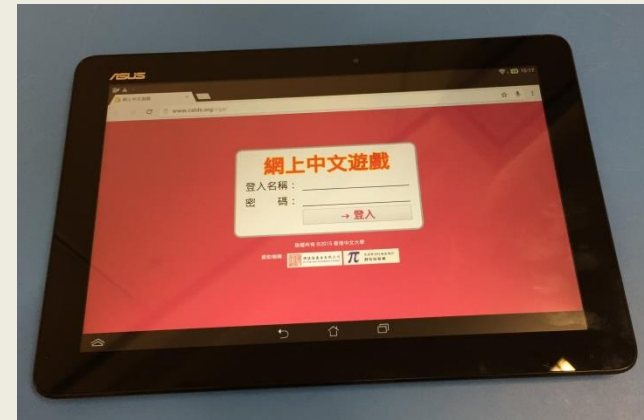
| Vocabulary Pretest | Sentence Selection | Word Reordering |
| 词汇前测 | 句子选择 | 词语重组 |

房屋 ●   ●

學生 ●   ●

星星 ●   ●

太陽 ●   ●

老師 ●   ●

這是什麼？

這是車消防

這是防消車

這是消防車

非排看

是　這　魚　金

Participants in this study
研究被试

Only children who achieved 70% in the vocabulary pretest could proceed to do the test
只有在词汇前测部分中正确率超过*70%*的儿童方能进入之后的评估

- **Typically developed (TD)** hearing children;
  正常发展的健听儿童
  - K2 (n= 91) & K3 (n=155)

    幼儿园二年级（91人）和三年级（155人）

- **Sign bilingual and Co-enrollment (SLCO)** children:
  手语双语共融班儿童
  - Hearing (K2: n=7; K3: n=13) 健听（幼儿园二年级7人，三年级13人）
  - D/hh (K2: n= 3; K3: n=3) 听障（幼儿园二年级3人，三年级3人）

  Note 注意:

  - *TD children in this study were from 13 KGs of HK;*
    参与研究的正常发展儿童来自香港*13*所幼儿园

  - *SLCO children in this study were from a sign bilingual and co-enrollment program, where hearing and D/hh children study together, with Cantonese and HKSL as instructional language in class;*
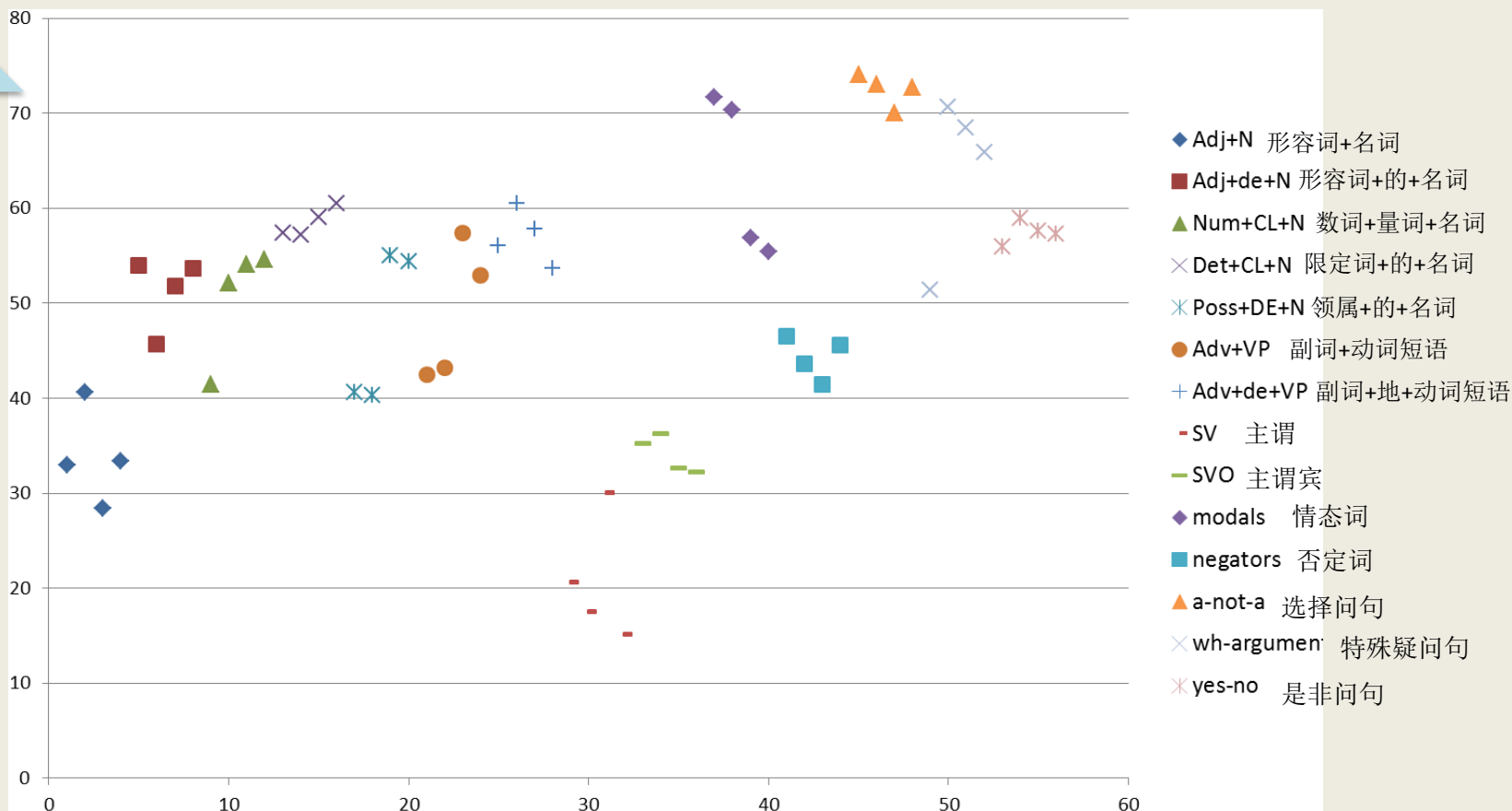   研究中的*SLCO*儿童来自手语双语共融计划，其中健听和听障学生一起学习，而老师以广东话和香港手语授课

The ACGK as an assessment tool
(item difficulty based on TD hearing children)
ACGK作为评估工具
(根据正常发展的健听儿童计算出的题目难度)

More difficult 难

less difficult 易

Legend:
- Adj+N 形容词+名词
- Adj+de+N 形容词+的+名词
- Num+CL+N 数词+量词+名词
- Det+CL+N 限定词+的+名词
- Poss+DE+N 领属+的+名词
- Adv+VP 副词+动词短语
- Adv+de+VP 副词+地+动词短语
- SV 主谓
- SVO 主谓宾
- modals 情态词
- negators 否定词
- a-not-a 选择问句
- wh-argument 特殊疑问句
- yes-no 是非问句

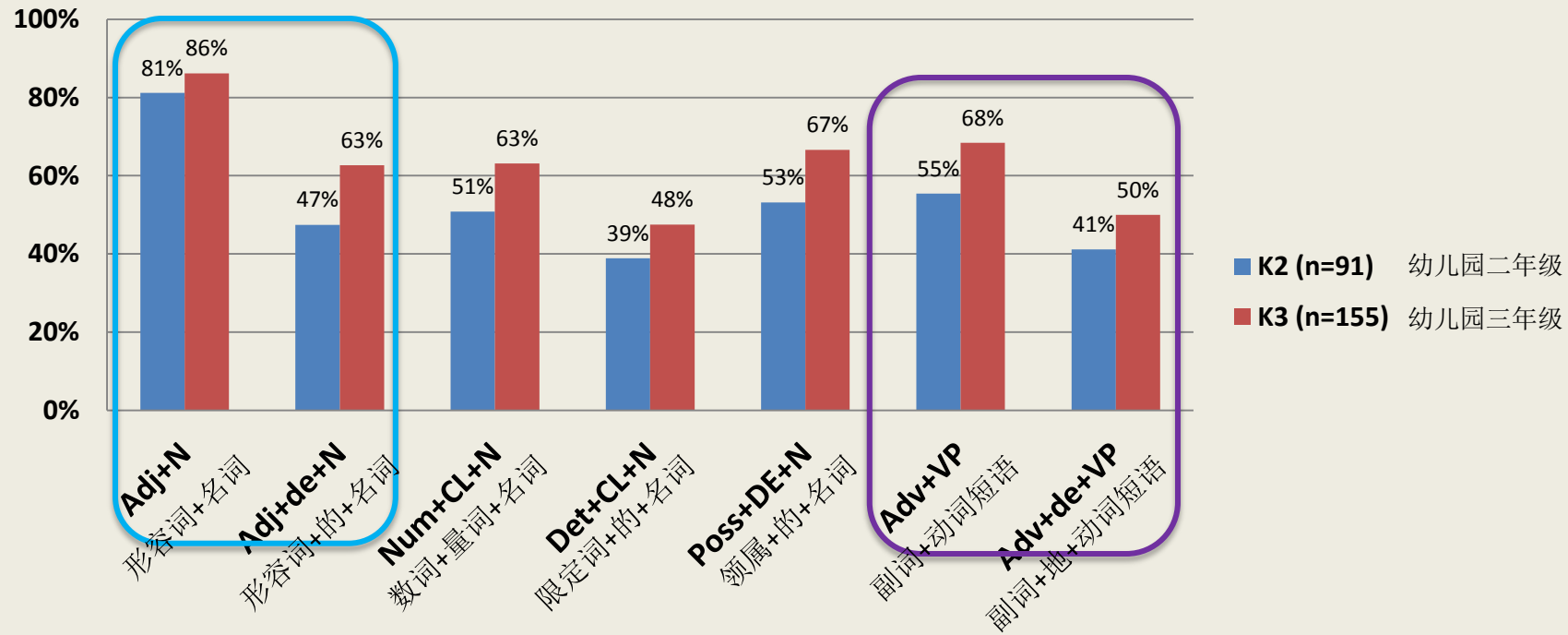- *The scale of item difficulty spread from 15 to 75；*
  题目的难度系数在15到75之间

- *Most items belonging to the same subcategories are clustered together, showing similar item sensitivity;*
  大多数属于同一分项的题目都聚合在一起，表明题目的敏感性类似

# TD children's performance on ACGK (phrases)
正常发展儿童在ACGK中的表现（短语）

- *Gradual improvement from K2 to K3 in all subcategories;*
  二年级到三年级在所有结构上都有进步

- › *Specific difficulty with functional elements 'de的/地', as the comparison between [Adj+N] and [Adj+**de**+N], as well as [Adv+VP] and [Adv+**de**+VP].*
  对功能词"的/地"有困难，譬如对[形容词+名词]和[形容词+的+名词]以及[副词+动词短语]和[副词+地+动词短语]的理解
  - − *E.g. [Adj+**de**+N] & [Adv+**de**+VP]*
    【可爱的小猫】【安静地睡觉】

TD children's performance on ACGK (sentences)
# 正常发展儿童在ACGK中的表现（句子）
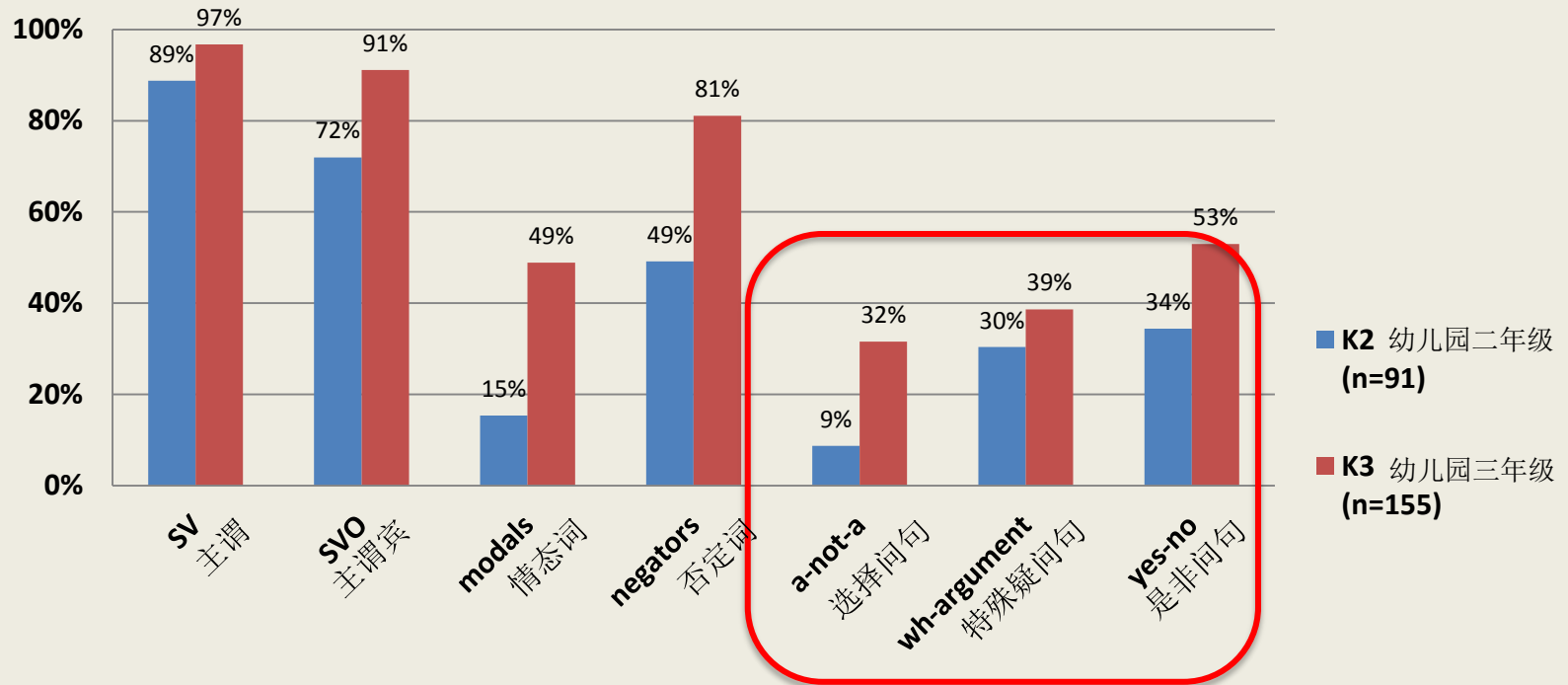
- *Perform well on simple active sentences from K2 onward, e.g. SV, SVO;*
  幼儿园二年级以后在简单主动句上的表现很好，例如主谓句、主谓宾句
- *Improve significantly on sentences with a **modal** or a **negator**;*
  在带情态动词和否定词的句子中有明显进步
  – *E.g.*【男孩会画火车。】【妈妈不买西瓜。】
- *Have difficulty in three types of questions;*
  对三类问句都有困难
  – *E.g.*【男孩打不打篮球？】【妈妈买了什么？】【妹妹喜欢唱歌吗？】

SLCO HEARING & D/HH CHILDREN'S PERFORMANCE IN THE ACGK?
SLCO健听和听障儿童在ACGK中的表现？

SLCO children's performance (phrases)
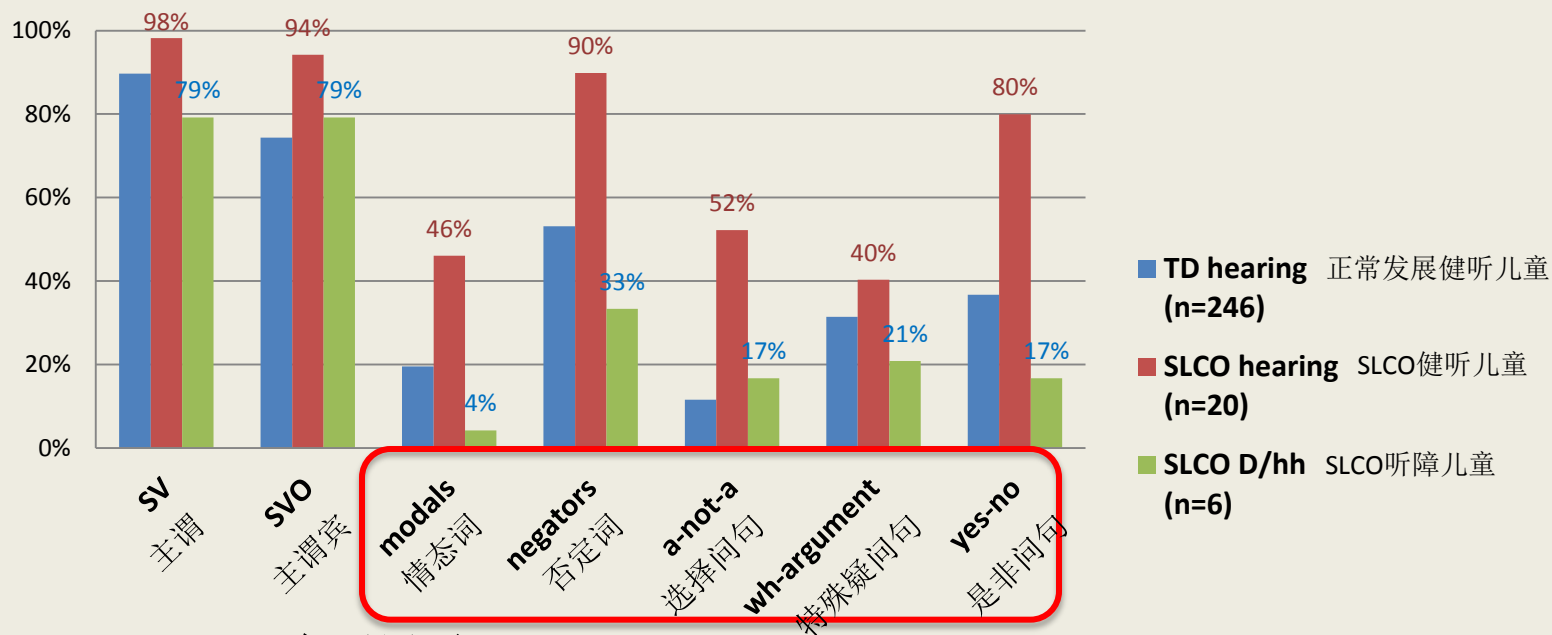# SLCO儿童的表现（短语）
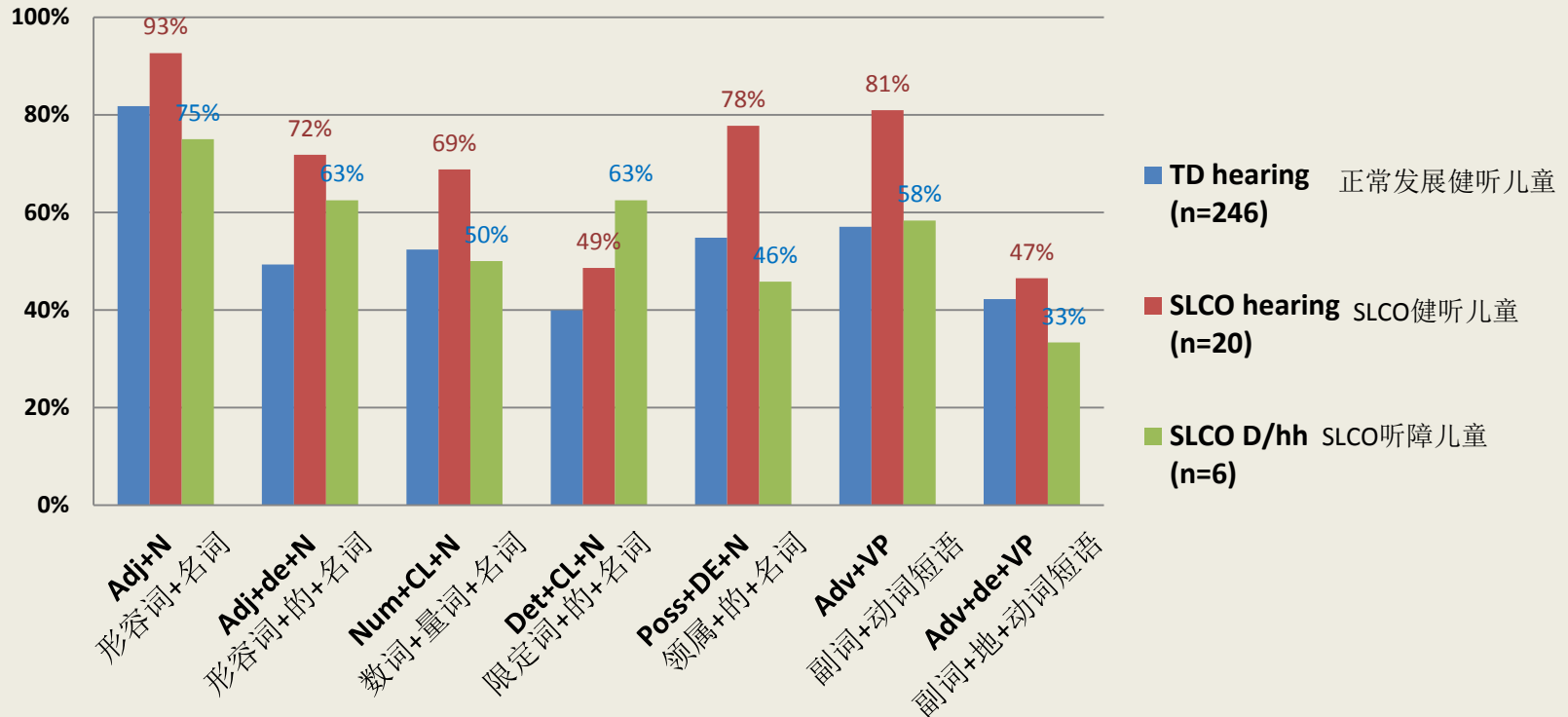
- **At phrases level 短语层面:**
  - *SLCO hearing children performed much better than TD hearing children;*
    SLCO健听儿童的表现比其他正常发展的健听儿童好很多
  - *SLCO D/hh children performed similarly to TD hearing children;*
    SLCO听障儿童的表现与正常发展健听儿童类似

SLCO children's performance (sentences)
SLCO儿童的表现（句子）

- *At the sentence level 句子层面:*
  - *SLCO hearing children performed much better than TD hearing children, especially for negative sentences and yes-no questions;*
  SLCO健听儿童比正常发展儿童的表现好很多，特别是在否定句和是非问句中
  - *SLCO D/hh children performed just as well as hearing children on SV & SVO simple sentences only;*
  SLCO听障儿童在主谓和主谓宾简单句上的表现和健听儿童类似
  - *SLCO D/hh children show more difficulty in sentences with modals and negators, as well as wh-argument questions and yes-no questions;*
  SLCO听障儿童在 带情态动词和否定词的句子、特殊疑问句和是非问句上有更多困难

Discussion
讨论

- *Comparing with TD hearing children*
- 与正常发展的健听儿童相比
  - *SLCO hearing children's better performance in the assessment suggests that:*
    SLCO健听儿童在评估中更好的表现表明
    - *hearing children exposed to **sign language input does not negatively impact their** acquisition of written language*
      健听儿童**得到手语输入并没有对他们获得书面语造成负面影响**
  - *SLCO D/hh children's specific difficulty in sentences with modals and negators, as well as questions **provide diagnostic information** for speech therapists and educators on their grammatical knowledge development*
    SLCO听障学生在带情态动词和否定词的句子以及问句上的特定困难为言语治疗师和教师提供了关于他们语法知识发展的**诊断性信息**

Implications
意义

- *As an language assessment tool, the Assessment of Chinese Grammatical Knowledge (Level 1)*
  作为语言评估工具，中文语法知识评估（初级版）

  - *Provides a language profiles for pre-primary school TD children;*
    提供了学前正常发展儿童的语言发展情况

  - *For D/hh children, the ACGK provides useful information for the STs and educators;*
    至于听障儿童，*ACGK*为言语治疗师和教师提供有效信息

    ➢ *Achievement information: determine to what extent D/hh children have mastered the basic Chinese grammatical structures;*
    成就性信息：判断听障儿童掌握中文语法基础结构的程度

    ➢ *Diagnostic information: identify D/hh children's specific learning difficulties in some Chinese grammatical structures at an early stage;*
    诊断性信息：在早期判断听障儿童在学习某些中文语法结构的困难

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COMMENTS
&
QUESTIONS
意见及疑问