第十五届演化语言学国际研讨会

CIEL-15

摘 要 汇 编

Collection of Abstracts

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目　　录

Whither Sapiens?

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The evolution of our species took on a unique trajectory when we adopted bipedalism over 3 mya. This resulted in a restructuring of our body with three major developments: deft use of our hands in making tools, enhanced capacity for vocal communication, and rapid expansion of our brain. From making tools and controlling fire, these interacting developments, coupled with our innately social nature, led to the ability to symbolize and the gradual invention of language. Language is like an operating system in computer technology; it is the interface that binds together our many cognitive, memorial, and sensori-motor faculties into a complex adaptive system. With language, cultural evolution has come to supersede biological evolution by an ever increasing margin. Following bipedalism and language, we are in the midst of entering a new third epoch, sometimes popularized by the words "singularity" or "the second machine age," where the technology is the latest form of Artificial Intelligence. I will briefly touch upon the possible directions for this new epoch, as well as discuss some of the research opportunities that have arisen.

（CIEL-15 主会场 13 日 9:00-9:30 报告人：王士元）

Cognitive Reserve and Aging: Contents, Measurement, and Clinical Application

戴浩一
台湾中正大学

Language plays an important role in the study of cognitive aging. On the one hand, the performance of language by the elderly provides useful indices for the progression of pathological aging as in the case of AD. On the other hand, linguistic ability acquired at early age has shown to be a crucial protective factor against the presence of AD pathology (Snowdon et al. 1996). Idea density and grammatical complexities, as articulated in the well-known 'Nun Study', has thus initiated the original concept of 'cognitive reserve', which has further been advanced by Stern (2002, 2007) to include educational attainment and professional

complexities. Furthermore, the concept has been associated with that of 'neuroplasticity', thus, obtained a plethora of working definitions.

In this short talk, I will first distinguish the 'cognitive reserve' from that 'brain reserve', which consists mainly brain size and/or synapse count, and delimit it to the ability to sustain the disruption and still be able to perform tasks demanded, or of the ability to use alternative paradigms to solve problems, thus involving 'creativity'. I then propose a tentative cognitive reserve index questionnaire (CRIq) which is sensitive to the culture and living environment of rural Southern Taiwan. Hopefully, the result of measurement in conjunction with the on-going health literacy among this largely less-educated population will be of help to clinical applications to caretakers in local hospitals and communities of various population compositions in rural Southern Taiwan.

A couple of final remarks include the role of epigenetics and the potential contribution of hand-writing Chinese characters and texts to the cognitive reserve.

（CIEL-15 主会场 13 日 9:30-10:00 报告人：戴浩一）

ChatGPT 距人类语言有多远——生成式语言大模型与人类语言生成的比较

杨亦鸣

江苏师范大学

以 ChatGPT 为代表的大语言模型（LLM）是指基于深度学习技术构成的具有巨大规模的自然语言处理模型。不同于以往自然语言处理模型需要依赖标注大数据，大语言模型克服了一些技术瓶颈，仅需要少量微调就能表现出超强的学习迁移能力：不仅可以生产高质量的文本，执行翻译、编程、创作等多样化的任务，在语言的正确率和答案的准确率方面也达到了新的高度，与人类自然语言相媲美。然而，大语言模型又时常"一本正经的胡说八道"，出现人工智能幻觉，让人们不禁产生怀疑：大语言模型真的理解人类语言吗？本演讲分析了大语言模型与人类语言在语言学习（习得）机制和加工机制方面的差异，指出大语言模型与人类自然语言存在本质的不同，指出人脑"预装"的语言机制是大语言模型难以超越人类语言的根本原因，并提出大语言模型发展与革新的一种可能的路径。

（CIEL-15 主会场 13 日 10:00-10:30 报告人：杨亦鸣）

History of the Mian-Yi Languages

David Bradley
拉筹伯大学

The spread of the Mian-Yi languages in southwest China over the last two millennia can be traced through linguistics and history. As the southern extension of Eastern Tibeto-Burman, they were the main Sino-Tibetan group in Yunnan. They later expanded into west Guizhou and southwest Sichuan, and much more recently into adjacent areas of Southeast Asia.

Names of ethnic groups and their rulers have changed through time. The early historical kingdoms associated with Mian-Yi languages in Yunnan were 滇 Dian (up to 109 BC), 爨 Cuan (225-602 AD) and 南诏 Nanzhao (738-902 AD). The main early ethnonyms were Mran for the west branch of Mian-Yi originating in far west Yunnan and Ngwi for the east branch of Mian-Yi across most of Yunnan. These groups had rulers whose title *ndzao2 is reflected in 诏 of Nanzhao.

The largest component of the Mian branch was the Mranma, who used the autonym *mran1. They entered Myanmar as part of a Nanzhao army which conquered the Pyu in 838 AD and ruled Myanmar subsequently; other languages of this branch include Nusu in Nujiang, Achang and related languages in Dehong and nearby in Myanmar, and Gong in west Thailand.

（CIEL-15 主会场 13 日 11:00-11:30 报告人：David Bradley）

语言演化与人类文明

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文明探源，主要有三个窗口：遗传，语言，考古。其中最直接的手段的就是考古。遗址、遗物是实实在在的东西，而语言就是这些遗址、遗物的概念和名称。

考古对象 ⟺ 语言概念（演化语素）
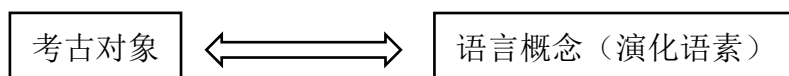
演化以时间为要素。实物传播的时间有时候很难确定，但是各语言的词语读音有时候却可以根据自然音变规则来推断时间早晚。什么叫自然音变？可以用发音与感知的原因加以解释的音变。比如一个演化语素在 A 语言的读音是 ɢ-，B 语言的读音是 g-，根据

自然音变规则 ɢ 会变到 g，而 g 不会变到 ɢ，由此可以推测 A 语言的读音比 B 语言更为古老，这可以用语言的演变时间来推断考古的时间。下面就是这种方法的例子。

中华五千年文明的标志是良渚文化，是稻作文化所产生的文明。水稻人工栽培的遗址有长江中下游、泰国的班清，印度的泰米尔等等，至今很难从水稻的遗址和遗物来断定它们出现的时间。但是，各语言的水稻读音却可以根据自然音变来推断它们出现的时间先后。

稻，定母幽部字，上声，上古音构拟为*glu?。再看侗台语的"稻"，名称很多，把侗台人群的稻米名称全列出来，用 Labov 的元音三大变化原理，可以有以下的音变链：
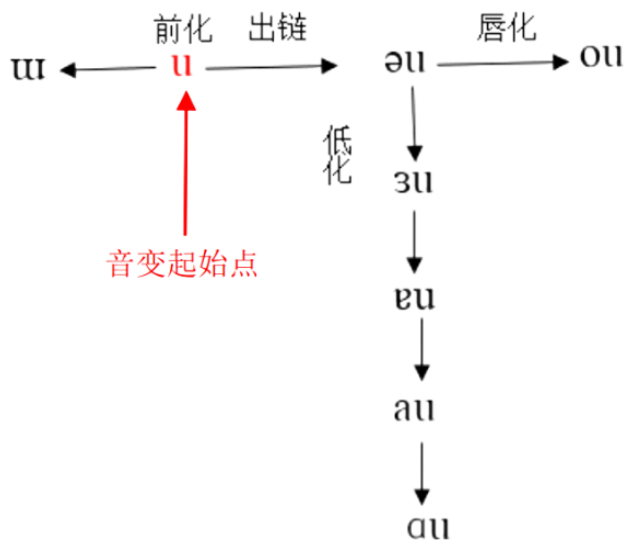
从音变链可以确定原始的元音是 u。还可以从声母、韵尾得出如下的完整构拟*glu? > glul?，上古汉语的读音与侗台语音变的第二阶段完全一致。

汉族的谷物里，最重要的是稷，即小米，稻谷作为主食是汉以后的事。而且，长江中下游水稻的出土遗址比黄河流域要早。所以，汉语的 glu?应是从南方的侗台语某个阶段传到汉语里来的。

苗瑶人群关于稻的名称更多，词根是*blu。侗台语中的稻没有 blu 的读音，苗瑶语中却有 glu 的。而且从音变规则看是*glu 变为*blu。根据自然音变规则，g 受圆唇 u 的同化变 bu，相反的情况就很少，闽语中就有大量*glu 变为*blu 的例子。所以"稻"应该是从侗台语进入到苗瑶语的。我们再来看看南亚语的"稻"，很多的读音是 gu，有时前面还有个鼻冠音 ŋ-。稻作文化的先后，从考古发掘的证据是定不下来的，但通过"稻"这个词的演变先后，可有以下的演化路径：侗台→汉、南亚→苗瑶、南岛、藏缅、泰米尔。东亚语言中稻米的语素集中地出现于侗台地区，这也能说明它的发源地。

语言演化有两个性质，一是确定每个语言的演化语素，一是确定每个语言的音变链。两者是相互关联的，不同语素在不同语言之间如有相同的音变链，它们之间就有演化关系，即同源和借用关系。举苗瑶语的"仓库"为例：

语言点	音变链	廪	犁	菜	石
罗香	g	gam	gai	gau	gaŋ
览金	gj	gjam	gjai	gjau	gjaŋ
长坪	ɣ	ɣam	ɣai	ɣau	ɣaŋ
大坪江	l	lam	lai	lai	laŋ
南岗	j	jum	——	ju	jɔŋ
砂坪	z	——	zau	——	zo
大坪	dz	dzum	——	dzu	dzɔŋ
摆托	v	vɦoŋ	vu	——	vɦoŋ
吉卫	ʐ	ʐe		ʐɯ	ʐɑŋ
大坪	dz	dzum	——	dzu	dzɔŋ
兴发	ʐ	ʐu	——	ʐei	ʐɔ
砂坪	z	——	zau	——	zo
摆托	vɦ/v	vɦoŋ	vu	——	vɦoŋ
摆梭	ʐ	ʐɯ	——	ʐe	——
沙井	ʐ	ʐoŋ	——	ʐe	ʐoŋ
吉卫	ʐ	ʐe		ʐɯ	ʐɑŋ

    上表中不同语言和语素之间的不同读音，可以用计算机统计出音变链的对应关系，由此可以用来确定是不是演化语素。但是，因为读音的不规则，统计会有困难，这是我们要解决的后面课题。

<p align="center">（CIEL-15 主会场 13 日 11:30-12:00 报告人：潘悟云）</p>

拉波夫之问：音在变，还是词在变？

石锋
南开大学

拉波夫在他的《语言变化原理：内部因素》中提出："在语音系统的演变中，音变的基本单位是词汇还是语音？"这就是拉波夫之问：到底是音在变，还是词在变？为了理清这个问题，给出一个妥善的回答，我们做了一个简略的回顾。如果不同学者的大方向一致，不同的理论和方法最终总会殊途同归，彼此相容。不仅王士元的词汇扩散和拉波夫的语言变异可以统合在一起，而且新语法学派和词汇扩散理论同样也可以相互补充，形成一个更具普遍性的理论体系。

文章分为以下四部分展开：

一、新语法学派和词汇扩散理论的差异性在于，新语法学派是观察音变的结果，词汇扩散能够观察到音变的过程。二者在音变的规则性方面具有同一性。

二、词汇扩散理论和语言变异研究的理论框架"接近一致"，语言变异论即词汇扩散的深化和拓展。拉波夫的"词群（word class）"变化就是词汇扩散的具体化和微观化。

三、拉波夫用线性预测和多元回归的方法为新语法学派增添了量化的论据。我们同样可以把词汇扩散论的原则从语音变化扩展到词汇、语法的变化。

四、回答拉波夫之问：音在词中变。更为详细的回答：音在音节中变，音在语素中变；语素在词中变；词在短语中变。

由此可以得出语言变化的上位扩散原理：在语言变化中，下位的成分的变化在上位成分中扩散。

（CIEL-15 主会场 13 日 12:00-12:30 报告人：石锋）

发展性语言障碍的早期识别

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发展性语言障碍（Developmental Language Disorder, DLD）是指儿童在发展过程中出现的语言学习和使用上的显著困难，这些困难不能由其他已知的生理、神经或心理条件（如听力损失或孤独症）解释。DLD 的表现具有多样性，个体差异显著，但通常涉及语言理解（即接受性语言）和/或语言表达（即表达性语言）方面的障碍，并可能涉及句法、词汇、语义、语用等多个层面的问题。

研究表明，DLD 通常与阅读障碍共患，有半数的 DLD 儿童入学后出现读写障碍。

此外，DLD 儿童的考试成绩也会低于正常儿童，比正常儿童更有可能放弃学业，且放弃学业的年龄也更早。DLD 作为一种发育障碍，其症状首先出现在儿童时期，在儿童早期就很明显，并且可能会持续下去，随着年龄的增长而发生变化。其发病率要远远高于孤独症、唐氏综合症、听力障碍等其他发展障碍引起的伴随性语言障碍。DLD 形成和发展是多方面的，涉及遗传、神经生物学的病因以及环境和语言使用等外部可塑性风险因素的影响。对儿童的认知发展、学业成就、社会交往、心理健康、职业发展领域存在危害。

在临床上，DLD 筛查通常涉及评估接受和表达性语言技能，包括词汇、语法以及社交语用能力。目前，国内外 DLD 筛查与评估诊断工具包括语法接受测试（Test for Reception of Grammar，TROG）、儿童沟通检查表第二版（Children's Communication Checklist – Second Edition，CCC-2）、普通话句子重复任务（Mandarin Sentence Repetition Task，MSRT）、学龄前语言测试第五版（Preschool Language Scales – Fifth Edition，PLS-5）、语言基础临床评估第五版（Clinical Evaluation of Language Fundamentals – Fifth Edition，CELF-5）等。

DLD 的早期识别是一个复杂的过程，需要对儿童的语言能力进行综合考量。DLD 的早期识别对于临床工作人员及时采取干预措施、减轻该疾病对患者的长期行为、社会、心理和情绪的负面影响至关重要。

（CIEL-15 分会场 1 13 日 14:30-14:50 报告人：王如蜜）

台湾学童阅读发展跟香港儿童阅读发展的差异

李俊仁

台湾师范大学教育心理与辅导学系

阅读的研究可分为成人字词辨识的认知历程分析以及学童阅读发展的成分分析。在阅读发展的研究里，不同书写系统的差异，如中、英、德文的差异或许还受到一定的关注；但同样的书写系统，如中文，在不同的教学以及文化环境，如两岸三地，可能产生认知运作的异同，却几乎没有任何的讨论。两岸三地都使用中文，但香港以及台北使用繁体字，北京使用简体字；北京以及台北都使用标音系统，香港几乎不使用标音系统；台北以及北京都使用普通话，但香港通用的语言是粤语；教育制度上，香港的文字教学，在年龄上早于台北跟北京。在这些实际运作差异下，到底对于识字发展以及认知对识字的影响，产生什么共通性以及权重的特异性？在这一个报告里，将报告以香港研究者所发展的测验工具，如识字、识词、听写、声韵觉识、正字法、快速念名、词素觉知等，以台湾学童为受试者进行测验，并以施测结果与发表文献资料相互比较，检视台湾跟香港资料的异同，从此较结果，提出中文阅读发展里应该需要检视的研究议题。

关键词：成分分析、认知成分、阅读发展

（CIEL-15 分会场 1 13 日 14:50-15:10 报告人：李俊仁）

轻度认知障碍老年人的宏观结构叙事能力研究

黄立鹤

同济大学老龄语言与看护研究中心

挖掘轻度认知障碍的各类语言标记物能够及早且有效地识别高风险人群，但目前相关标记物较少拓展至叙事话语层面。MSSG 是一种多层次的宏观结构叙事分析法，过往对于失语症和创伤性脑损伤患者的大样本研究已证实了该方法在临床上的应用价值，但尚未应用至老年认知障碍的临床评估中。本研究选取轻度认知障碍和认知健康老人各 27 名，开展《牛郎织女》的故事回忆任务，比较两组人群的叙事差异。研究发现：

（一）轻度认知障碍老人的宏观结构叙事能力受损

本研究结果表明，在故事回忆这一任务下，汉语轻度认知障碍老人话语的主要概念合成、顺序、逻辑语法成分、必要情节成分和情节复杂性上均低于健康对照组老人，差异具有统计学意义和实际意义，呈现中等效应至大效应。与此同时，MCI 老人的宏观结构叙事能力受损亦离不开其它语篇语用层面的损伤。譬如主要概念产出量与概念总量的比例也反映了被试的信息密度与信息传递效率，共同体现了语篇的简洁性，而且 MCI 老人还存在更高的重复和赘述频率。此外，语篇的句法结构复杂性与衔接性，也将影响叙事的结构复杂性，且双方是相互竞争关系（Kemper et al., 1990）。

（二）影响宏观结构叙事能力的认知功能

宏观结构叙事能力的受损可从以下几方面予以认知解释：记忆力和执行功能下降、逻辑推理能力衰退、要义加工能力受损与回忆入侵。记忆与执行功能一同影响叙事话语产出的宏观结构和效率。类似地，DAT 患者叙事时信息量和整体连贯性的下降，也主要与记忆力和执行功能的下降有关（Pistono et al., 2019）。MCI 组的顺序得分显著低于健康老人，则反映了伴随认知障碍进程产生的逻辑推理能力衰退。处于 MCI 阶段的老人相比认知健康老人虽有逻辑推理能力下降，但是不达痴呆程度，因此有时能够察觉逻辑的不恰当之处，但是无法做出充分的叙事修补。

（三）叙事话语对轻度认知障碍和健康老化的区分价值

本研究发现叙事话语分析对于区分轻度认知障碍和健康老化具有重要价值，其中主要概念合成、必要情节成分与情节复杂性是有效预测轻度认知障碍和健康老化分组的语言指标；顺序和逻辑语法成分尽管不是有效的预测因素，却呈现明显的组间差异。

在理论层面，本研究可增加关于轻度认知障碍老人叙事话语能力的知识与理解，也可为其他语言国家的轻度认知障碍老人宏观叙事话语能力研究提供参考，从而助力建构中国自主知识体系并发展其世界意义；在实践层面，有助于探索潜在的轻度认知障碍话语标志物，丰富机器学习模型的语言参数，以辅助轻度认知障碍的早期检测。

[关键词] 轻度认知障碍；语言老化；叙事能力；宏观结构分析；语言标志物

（CIEL-15 分会场 1 13 日 15:10-15:30 报告人：黄立鹤）

口语句子产生中语法编码老化的认知机制：眼动研究

王之昀 张清芳
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口语句子产生过程包括了概念化、形式化和发音执行三个阶段，其中形式化阶段包括了句法编码和韵律编码两个过程。句法编码过程中讲话者提取语义和语法信息，用特定的句法结构来表达具体意义。本研究采用图片描述范式结合眼动技术，同时测量了个体的工作记忆、加工速度、抑制控制等一般认知能力，通过两个研究考察口语句子产生中语法编码老化的认知机制。主要关注青年人和老年人在句法编码上的差异，以及句法编码的老化如何受到语言特异性因素和一般认知能力的影响？

研究一考察青老年组语法编码计划单元的差异。实验中操纵句首短语结构，要求被试说出不同句首短语长度的句子。结果发现青老年组在反应潜伏期上无显著差异。在说出句子前对客体 1（N1）的注视时间比例、从客体 1（N1）向客体 2（N2）的注意转移指标上，青年组和老年组在两种句式上的注视模式出现差异，老年组对 N1 的注视比例显著大于青年组，而老年组的注意转移以及对 N2 的注视时间比例均显著小于青年组，表明老年人的句法编码计划单元更小，出现了老化。

研究二采用图片描述范式结合图-词干扰范式，考察青老年组句法编码老化的差异。结果发现青年组的词汇计划单元是句首短语，而老年组是第一个词，表明老年组的 N2 词汇计划单元更小，而且老年组上表现出更大的语义干扰效应。此外，随着抑制能力的增加，青年组的潜伏期显著降低，且语义相关和语义无关两种条件之间的潜伏期差异变小。随着工作记忆广度的增加，青年组计划单元更小，而抑制能力和工作记忆对老年组的计划单元并未产生显著影响。上述结果表明，老年组在计划单元以及词汇计划上出现衰退，且计划单元和词汇计划的老化受到一般认知能力和语言特异性因素的共同影响。

（CIEL-15 分会场 1 13 日 15:30-15:50 报告人：张清芳）

言语产出中声门特征与舌位的协同作用—来自汉语和朝鲜语的证据

李英浩，周双，张京花

在世界语言的语音中，声门特征（laryngeal feature）是音位对立的重要表征，例如英语塞音的清浊对立、汉语普通话以及方言中的送气/不送气的对立以及朝鲜语塞音的紧、

松和送气的三分对立。在辅音和有特定发声态元音的产出过程中，声门动作姿态与舌的动作姿态存在复杂的相互影响（孔江平，2001）。然而，以往的言语发音生理研究往往把两者分开，极少把声门动作姿态和声门上动作姿态整合起来，进而考察两者的协同作用（synergy）。本文从两个方面讨论言语产出过程中声门特征与舌位的协同关系，我们使用超声语音的方法分析了汉语的送气/不送气塞音的声门特征以及朝鲜语的三分对立阻塞音的声门特征与舌位的协同关系。汉语普通话的发音人来自北京、长春、山东、安徽以及广东；朝鲜语发音人来自延边朝鲜族自治州的年轻组和老年组发音人。初步的分析结果表明，汉语的送气特征与主发音器官的收紧程度和舌根的位置存在明显协同作用，不送气塞音的主发音器官的收紧程度略大于同部位的送气塞音，同时舌根明显前移。朝鲜语的情况则相对复杂，声门动作姿态与声门上发音动作姿态的协同作用受到阻塞音成阻部位、发音方式以及社会语言因素的调制。最后，本文讨论了发音生理研究对语言演化和社会语言学研究的一些启示。

（CIEL-15 分会场 1 13 日 15:50-16:10 报告人：李英浩）

Systematic Correspondence in Co-evolving Languages

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Language co-evolution is an influential cultural force, impacting the past, present, and future of human languages. Systematic correspondence identifies corresponding features in languages evolving together, such as English "d" and German "t" in word pairs like "deed – Tat" and "deep – tief". This study examines how social ecology influences lexical-phonological systematic correspondence using a vector-based measurement – *weighted cosine systematicity* – across two co-evolutionary lexical datasets for comparison: old to recent English-German related words, and thirty-year sliced morphemic transcriptions for Chinese dialects in Shanghai. Results show that even when related but socially independent languages evolve in different directions, they can maintain an equilibrium in systematic correspondence over centuries. In contrast, dialects can rapidly converge towards their national high variety in terms of lexical phonological similarities, and the regional standard in terms of systematic correspondence within decades. This suggests that self-regulation of cross-linguistic systematic correspondence has its own, yet complementary, mechanism compared to the similarity-based co-evolutionary mechanism, making it a meaningful indicator and predictor for cross-linguistic lexical co-evolution.

$$sys\_cos = \sum_{i=1}^{n}(v_i)(vref_i)/(\sqrt{\sum_{i=1}^{n}v_i^2}\sqrt{\sum_{i=1}^{n}vref_i^2})$$

$$weight_a = npair_a/n$$
$$weight_b = npair_b/n$$
$$sys\_cos\_w_{ab} = (weight_a)(sys\_cos_{ab})$$
$$sys\_cos\_w_{ba} = (weight_b)(sys\_cos_{ba})$$
$$sys\_dist_{ab} = 1 - sys\_cos\_w_{ab}$$
$$sys\_dist_{ba} = 1 - sys\_cos\_w_{ba}$$
$$sys\_dist_m = (sys\_dist_{ab} + sys\_dist_{ba})/2$$
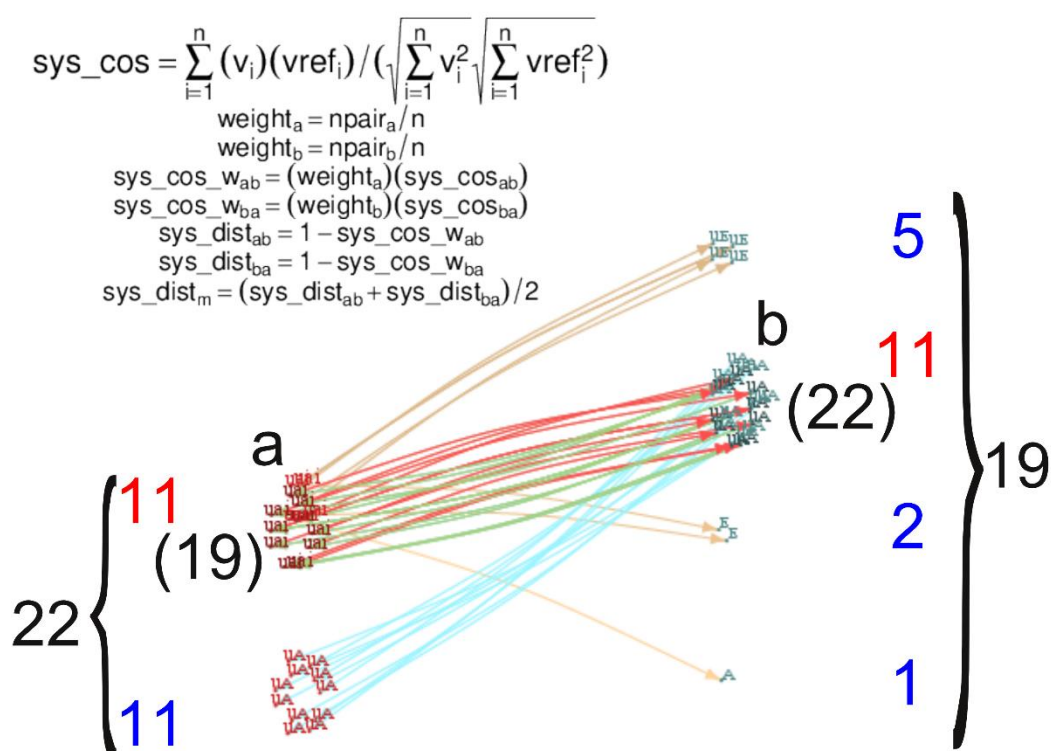
a -> b
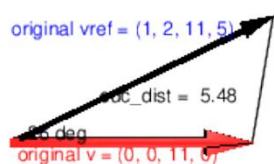
n = 3079
npairthis = 11
$npair_a$ = 19
sys_cos_{ab} = 0.895
$weight_a$ = 0.006
$sys\_cos\_w_{ab}$ = 0.005
sys_dist_{ab} = 0.995

b -> a
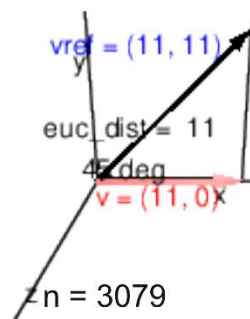
n = 3079
npairthis = 11
$npair_b$ = 22
sys_cos_{ba} = 0.707
$weight_b$ = 0.007
$sys\_cos\_w_{ba}$ = 0.005
sys_dist_{ba} = 0.995

（CIEL-15 分会场 1 13 日 16:30-16:50 报告人：吴君如）

Portmanteau Words in Chinese and Covert Variations among MSC and Dialects

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A notable development of the Chinese language in recent times is the upsurge of Portmanteau words such as "房屋"; "肥胖"; "沉重"; "溶化"; "驚慌"; "進入"; "霸佔"; "下落" etc. Each of these disyllabic Portmanteau words consists of a pair of near-synonyms. They are commonly found in MSC and quite often also in the High Registers of colloquial spoken Mandarin and Cantonese, as well as in other dialects. However, the colloquial spoken variety of the dialects would often use only one of the two constituent morphemes, and the choice of the monosyllabic constituent as well as its position in the disyllabic Portmanteau word is not random. Thus, the incorrect choice would be a typical case of language interference. Perhaps because of the acceptance of such words in the High Register, this kind of covert variation has not readily drawn attention. We note, for example, in matchmaking （相亲）events，pre-ownership of a dwelling is an important pre-requisite for a successful match. To ask for such information, a Cantonese participant would not say *"* *jau mou fong?"* (*有冇房?) but only *"jau mou uk?"* (有冇屋?) while a Mandarin participant would not say *"*you wu ma?"* (*有屋嗎?) but only *"you fang ma?"* (有房嗎?).

Another notable evolutionary development in the Chinese language is the attrition of syllabic structure. Mandarin, being one of the least conservative dialects, has now about 400 segmental syllables in its syllabary, and Cantonese, being among the most conservative dialects, has nearly three times more syllabic types. Such a development has been linked with the rise of homophony in the language and has been associated with the development of disyllabic morphemes (Tsou 1976; ke 2007).

This paper explores the extent of such variations in the context of common Portmanteau compounds and attempts to account for the dialectal variations synchronically and diachronically with reference to the LIVAC corpus (http://www.livac.org/) . It also attempts to shed light on covert differences among the spoken dialects and MSC, which are consequences of linguistic evolution and which deserve wider attention.

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（CIEL-15 分会场 1 13 日 16:50-17:10 报告人：邹嘉彦）

英国-北欧学派语音演化思想再思考

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摘要：19 世纪末 20 世纪初，英国语音学家斯威特（Henry Sweet，1845—1912）以及与之密切往来的北欧学者叶斯柏森（Otto Jespersen，1860—1943）、斯托姆（Johan Storm，1836—1920）等，共同构筑了经典语音学的中坚力量，这一研究群体因而被叶斯柏森称作"英国-北欧学派"（Jespersen 1899；参见叶斯柏森 2021）。进入 21 世纪以来，英国-北欧学派的语言学思想得到了较为系统的探讨（如 Linn 2004）。不过，该学派虽因对音义关系等共时语音学问题的论述（Sweet 1877；Jespersen 1904）而为世人所知，但是其在语音演化方面的思考同样值得深入探究。这类论述分散于该学派学者以英、德以及北欧丹、挪、瑞等语言撰写的众多著作中，因而不如他们的共时语音学思想那样易于集中把握。本文的研究，以英国-北欧语音学派学者的一手著作文本为依据，这类文本不仅涉及被公认为该学派成员的斯威特、斯托姆、叶斯柏森等学者在语音演化方面的著述，还包括同一时期应用领域出现的与之高度相关的语言学思想，如瑞典学者泰格奈尔（Esaias Tegnér Jr.，1843—1928）关于语言正确性评价标准的论述，挪威学者克努德森（Knud Knudsen，1812—1895）对正字法改革原则的探讨等。透过上述文本，本文尝试揭示英国

-北欧学派在语音演化方面的较为完整的思想图景，从而探究并评价该学派在语言异质化倾向、语音分化的制约因素以及语言演化的总方向等问题上的论述，从而在多语种文本中提炼出该学派的语言演化观构架。

关键词：英国-北欧学派；语音演化；思想史研究

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（CIEL-15 分会场 1 13 日 17:10-17:30 报告人：曲长亮）

从音节发声机制对立看上海浦东方言内爆音的历史演变

沈向荣　　姚宇杰

赵元任（1928）很早就报告了浦东和松江方言有两种浊音，即：中古浊声字在吴语中普遍念持阻不带声的"清音浊流"音，而中古全清塞音字念持阻带声的真浊音。他(Chao 1935)在描述塞音类型时指出，中古全清塞音字上海市区念不送气强清塞音['p]，郊区念声门有紧缩的带声音。这类真浊音早期被称为"先喉塞音"或者"缩气音"，朱晓农(2006)通过实验阐明了其发音机制是非肺部气流的"内爆音"，之后学界通常统一使用"内爆音"这一术语。对内爆音历史演变的问题则有两种代表性的看法。一种认为，浦东为代表的上海郊区内爆音来源于古百越语（包括古侗台语）的底层(陈忠敏 1995; 侯兴泉 2006; 燕海雄 and 江荻 2011)；另一种观点认为(朱晓农 2021)，内爆音是自源的，因其分布广泛，远远超出古百越语地区，底层说缺少严格的事实依据。底层说注意到内爆音的特殊性，自源说强调了内爆音的一般性。但无论是遗存还是自源，前提都是音相似，那么中古全清与内爆真浊的对应这一共识现象的内在机制是什么，相似点在哪里就值得探究。

从音系标记理论看（黄行 2012），"根据汉藏语系语言声母与声调配合的普遍规律，阴声调的原始声母为清音，因此内爆音应该来自于清音声母。内爆音如果由清声母浊化而来，则违反语音的音变共性。"这样看来二者似乎差的很远。

朱晓农（2006）的"清浊音变圈"理论对这一问题做了一种回答："发'p（强清塞音）时，从喉头声门到声道到成阻点都比较紧张，声门紧张可由多种方法取得，其中之一便是压低喉头。一旦发生，便增大了上声道容量，就有可能变成内爆音。"这种解释有两个要点：（1）全清字的强清塞音和内爆音都存在喉头声门"紧张"。（2）声门紧张的实现方

式用了降低喉头。并认为这一"清音浊化"过程主要是塞音长化。不过，迄今尚无内爆音时长更长的报告，同时这一解释对关键的生理机制也并未有详细的实证描述：喉头声门"紧张"具体是怎样的生理过程；为什么这个生理过程中会出现真浊内爆。

本研究利用声波、声门波、声门高速摄影同步采集分析技术对浦东方言塞音及阴阳对立的鼻音、边音甚至零声母做了系统的发声生理机制考察。我们发现，浦东方言出现看似违反类型学标记理论的"清音浊化"现象是由其发声生理机制的三分对立格局决定的。具体来说，浦东方言喉头声门状态可以概括为：两种发声类型和三种闭合方式，即常态声和气嗓声两种发声型，以及硬闭合(Hard glottal attack)、软闭合（soft attack）和舒适闭合（Easy onset）三种声门闭合方式。从音节的发声型看，阴调类是常态声，阳调类是气嗓声。从声门闭合方式看，清不送气塞音、内爆音以及阴调类鼻音边音零声母音节都是硬闭合；清送气塞音、喉擦音（[h]实际是[x]）音节都是舒适闭合；清音浊流音、阳调类鼻音边音和零声母（常记做[ɦ]）音节都是松启动。详细的发音生理观测结果是：常态声和气嗓声发声型声门摄影分别是声门全接触振动和软骨声门漏气振动，CQ 表现上气嗓声更小；硬闭合、舒适闭合和软闭合在声带起振初期的 CQ 依次递减，而声门闭合到声门接触振动的时间（voice initial time, VIT）依次递增。因此，我们认为，浦东方言为代表的"清音浊化"内爆音产生现象，无论闭塞段带声（清）还是不带声（浊），在音节发声机制上都是常态型硬闭合发声。浦东方言音节发声机制可以根据发声型和声门闭合方式分为三种对立发声机制：常态型硬闭合发声（I）、常态型舒适闭合发声（II）、气嗓型软闭合发声（III）。声母和声调对立和演变都在这个框架内变化，内爆音的"清音浊化"只是常态型硬闭合发声（I）的声门闭合音姿提前到阻塞段，其中硬闭合的声门闭合方式要求VIT 时间短便利了这一现象的发生。

<div align="center">（CIEL-15 分会场 1 13 日 17:30-17:50 报告人：沈向荣）</div>

Musical Background, Familiarity, and Musical Forms Affect Categorization of Music and Speech

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The separation between music and speech is believed to be evolutionary (Mithen, 2006) and the ability to categorize these two domains is developmental (Vanden Bosch der Nederlanden et al., 2023). The categorization of music and speech in auditory processing is crucial for elucidating the relationship between the two, yet it remains to be examined. This study seeks to explore potential factors on classification between music and speech.

Sixty participants (37 females, 20.48 ± 1.98 yrs) with different musical background was recruited. They were divided into musician and non-musician groups based on self-reported

experiences on professional musical training. Four speech-to-music continua were constructed, with the speech-side unchanged. For music side of continua, the melody was designed to have the closest f0 with the syllables of speech. Two of the music stimuli were sung by the same talker. The other two music stimuli were generated as cello timber. Within the same type of music production, there were two song pieces with high and low familiarity, respectively. Consequently, these four continua were different in terms of familiarity (high or low) and musical forms (vocal or instrumental). Identification task in the Categorical Perception (Repp, 1984) framework was adopted, with identification slope and boundary position as parameters.

Separate three-way repeated ANOVAs were conducted on identification slope and boundary position with Musical training (musicians vs. non-musicians) as between-subject variable and Familiarity (high vs. low) and Musical form (vocal vs. instrumental) as within-subject variable. For identification slope, significant main effects was found for musical training ($F(1) = 5.606$, $p = 0.019$), familiarity ($F(1) = 30.274$, $p < 0.001$), and form ($F(1) = 12.682$, $p < 0.001$). Post hoc analysis showed that the identification slope of musicians (mean = -1.61, SD = 0.35) was steeper than that of non-musicians (mean = -1.51, SD = 0.36), $t(231) = 2.368$, $p = 0.019$. Higher familiarity of songs have also yielded steeper slope (mean = -1.68, SD = 0.31) than those with lower familiarity (mean = -1.45, SD = 0.37), $t(231) = 5.209$, $p < 0.001$. Vocal continua have yielded steeper slope (mean = -1.63, SD = 0.34) than instrumental continua (mean = -1.50, SD = 0.37), $t(231) = 3.456$, $p < 0.001$. For boundary position, significant main effects was found for musical training ($F(1) = 13.795$, $p < 0.001$) and familiarity ($F(1) = 25.78$, $p < 0.001$). The boundary position of musicians was significantly smaller (mean = 4.39, SD = 1.22) than that of non-musicians (mean = 4.95, SD =1.34), $t(231) = 3.714$, $p < 0.001$. Higher familiarity of songs have yielded smaller boundary position (mean = 4.24, SD = 0.91) than those with lower familiarity (mean = 5.01, SD = 1.50), $t(231) = 4.961$, $p < 0.001$.

Collectively, listeners with musical training and higher familiarity of music have yielded more music responses and greater degree of categorization. Additionally, vocal music instead of instrumental music has also elicited higher degree of categorization between music and speech. This study sheds light on the factors influencing the differentiation between these auditory stimuli, and thus enhancing our understanding of the cognitive processes involved in the categorization of music and speech.

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（CIEL-15 分会场 2 13 日 14：30-14：42 报告人：叶延缘）

音乐学习对老年人普通话声调范畴感知的影响

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已有研究表明，普通话声调感知具有范畴性特征，但随着年龄增长，范畴感知能力会出现不同程度地退化。作为人类社会两种主要沟通工具，音乐与语言共享相似的声学信息且都涉及复杂的感知运动过程。音乐学习对老年人声调范畴感知是否存在影响，以及哪些个体性因素会对音乐学习改善老年人声调范畴感知产生直接或间接的影响尚未明确。本研究采用经典范畴感知行为实验范式，探究在安静和噪音背景下音乐学习对老年人普通话声调范畴感知的影响，并明确年龄、工作记忆、认知能力、训练时长等因素对声调范畴感知能力的潜在影响。

研究将 109 名被试分为四组，包括年轻音乐家组(27 人)、年轻非音乐家组(27 人)、老年音乐家组(28 人)、老年非音乐家组(27 人)。所有被试分别接受问卷调查、认知能力测试、工作记忆测试、纯音听力阈值测试、安静和噪音背景下的普通话声调阴平—阳平范畴感知实验。实验通过 2 (年龄:年老与年轻) × 2 (音乐经验:音乐家与非音乐家)方差分析探讨年龄和音乐经验是否影响被试感知声调范畴时的边界位置、斜率、区分峰度、范畴内和范畴间区分准确度，并采用路径分析探讨个体性因素对声调范畴感知的直接及间接影响。

研究得出以下结论：（1）在安静环境下，辨认曲线的斜率上年龄和音乐经验主效应显著，且区分峰值年龄和音乐经验交互作用显著。这表明老年人比年轻人有着更平缓的辨认曲线斜率和更小的区分峰值，老年音乐组比老年非音乐组有着更大的区分峰值。在安静环境下，音乐学习可以延缓由老年化所引起的普通话声调范畴感知能力的衰退。路径分析发现年龄和训练时长通过工作记忆对声调范畴感知产生相反的影响。（2）在噪音环境下，辨认曲线的斜率上年龄和音乐经验主效应显著，而在区分峰值上仅年龄主效应显著。这表明相比于年轻人，老年人有着更平缓的辨认曲线斜率和更小的区分峰值，有音乐经验的人比没有音乐经验的人有着更陡峭的辨认曲线斜率。由此可见，在噪音环境下，音乐经验对延缓老年人声调辨认能力的退化有一定作用，但在区分能力上未有显著作用。路径分析表明年龄对噪音环境下声调范畴感知能力的退化有直接影响。

总体而言，本研究表明尽管老化降低了老年人普通话声调范畴感知能力，但音乐学习能延缓老年人安静和噪音环境下声调范畴感知能力衰退。结果进一步完善了音乐与语言共享加工理论模型，印证了听觉老化和音乐学习的相关性，可为探索人类更一般的交流机制提供实证依据。

关键词：声调范畴感知；音乐经验；听觉老化；跨领域迁移

（CIEL-15 分会场 2 13 日 14:42-14:54 报告人：贺梦洁）

A Study on the Influence of Musical Experience on Emotional Word Processing in Chinese English Learners of Different Proficiency Levels

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湖南大学

This study explores the impact of musical experience on emotional word processing among Chinese English learners at different proficiency levels. Using the Test for Rating of Emotions in Speech (T-RES) and dividing 84 participants into four groups based on their results in the Musical Experience Test (MET) and the Quick Placement Test for English, we examined the emotional word processing across groups: 19 with high musical and high English proficiency, 24 with high musical and low English proficiency, 22 with low musical and high English proficiency, and 19 with low musical and low English proficiency, all aged 18-25. This methodology aims to elucidate the cognitive and neural overlaps between music and language processing, potentially guiding educational strategies that integrate musical training to enhance emotional understanding in second language learners.

（CIEL-15 分会场 2 13 日 14:54-15:06 报告人：陈子龙）

EEG Performance on Scene-Word Processing May Reflect Individual Autistic Traits

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复旦大学

Previous studies have claimed that the human beings can not only learn the association between each word and its corresponding entity, but also categorize the words based on the daily scenes they encounter. Some EEG evidence employing an object-scene paradigm has found a N400-like component that indicate the semantic congruency effect between visual objects and scenes. However, there are few studies that examine the processing of scenes in conjunction with spoken words. Further, compared to typically developing infants, those with autism seem exhibit the diminished abilities in category formation. Thus, to elucidate whether and how such 'autistic' traits influence the recognition of word categorization based on scene information, we here conducted an EEG study with the newly-designed scene-spoken-word paradigm and also assessed individual autistic traits for further analysis. Thirty-one healthy, right-handed native Mandarin Chinese speakers (M = 22.4 years, SD = 3.9 years; 16 females)

participated in the experiment. Six scenes (kitchen, bathroom, bedroom, living room, street, and park) were chosen, each with 12 images of the scene and 6 words matching the scene. In each trial, a scene image was presented for 500 ms, and a spoken word was played 700 ms after the scene image disappeared. In half of the trials, the scene image and the word were congruent, while in the other half they were not. Participants' autistic traits were assessed using the Autism Spectrum Quotient (ASQ). ERP waveforms of the word processing showed that the scene-word incongruent condition elicited a stronger N400 component than the congruent condition. The linear mixed-effects model of the single-trial mean amplitude in the 400-600ms time window showed a significant main effect between congruency, anteriority, laterality, ASQ, and ASQ by anteriority interaction. The scene-word incongruent condition elicited a significantly stronger negativity compared to the congruent condition. Amplitudes were more negative in the frontal region and in the right hemisphere. Participants with higher ASQ scores (i.e., less autistic traits) tended to show more negativity, and the distribution of negativity was more frontal. This suggests that the mechanism underlying the perception of scene-word congruence may be inextricably linked to autistic traits. We used a cluster-based permutation test to further analyze the time course of scene image decoding and found that the ERPs of participants with higher ASQ scores discriminated whether the scene was indoor or outdoor for a longer period of time. This is consistent with previous findings that individuals with more pronounced autistic traits often exhibit a detail-focused processing style rather than engaging in superordinate-level categorization. Further, individual autistic traits may be highly correlated with the degree of scene image decoding, which may contribute to different neural sources of the scene-word N400 effect. Therefore, the present findings propose the relationship between individual cognitive style and scene-word processing, and also illustrate the human's developing ability to integrate and process language contextually.
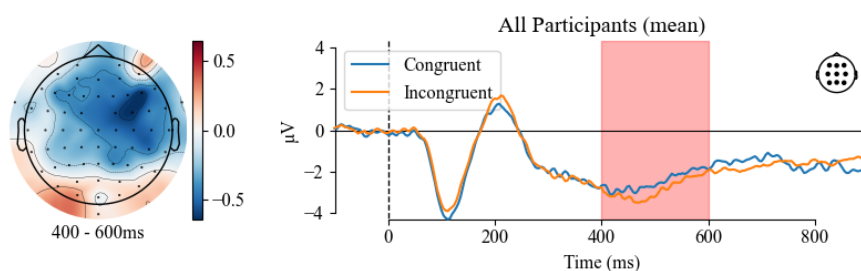
Figure 1. The ERP waveforms for congruent and incongruent condition across participants and the corresponding topographic distribution of the N400 effect by comparing incongruent trials to congruent ones.

（CIEL-15 分会场 2 13 日 15:06-15:18 报告人：薛仅一）

Syntactic and Executive Contributions to Theory of Mind in Mandarin-Speaking Children with Autism Spectrum Disorder

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Background

Children with autism spectrum disorder (ASD) are often impaired in theory of mind (ToM). A close relation between ToM and embedding syntax, namely complement sentences (CS) and relative clause sentences (RCS), has been indicated. However, it is still unclear which syntactic structure plays a more critical role in ToM success in ASD. Another important factor for ToM reasoning is executive functions (EF). Questions have also been raised about whether syntax or EF contributes more to ToM understanding in ASD. Besides, the links between ToM and syntax or EF are primarily based on the previous exclusive use of verbal false belief (FB) task, which is only one aspect of ToM. Little is known about the syntactic and executive contributions to general ToM beyond FB in ASD.

Objectives

The current study aimed to evaluate the contributions of embedding syntactic structures and EF skills to ToM abilities in Mandarin-speaking typically developing (TD) children and children with ASD.

Methods

Our participants included nine Mandarin-speaking children with ASD aged 5.0-10.4 years (Mage = 7.5, SD = 1.8) and twenty-three TD children aged 4.7-7.0 years (Mage = 5.8, SD = 0.8). Two groups were matched on scores of the Chinese Peabody Picture Vocabulary Test (C-PPVT) and the Combined Raven's Test (CRT) (Table 1). We administered a low-verbal ToM scale, a non-verbal FB task, an assessment of two embedded syntactic structures: CS and RCS, and an evaluation of EF abilities: inhibition, flexibility, and working memory (WM).

Results

Results indicated that children with ASD showed significant impairments in global ToM ($U = 45$, $p = .013$) and flexibility ($U = 45.5$, $p = .013$). For TD children, their global ToM was significantly correlated with age ($r = .425$, $p = .043$), CRT ($r = .525$, $p = .021$), CS ($r = .418$, $p = .047$), RCS ($r = .585$, $p = .003$), and WM ($r = .441$, $p = .035$) and their FB was significantly correlated with age ($r = .577$, $p = .004$), CRT ($r = .535$, $p = .018$). For children with ASD, significant correlations were found between global ToM and inhibition ($r = .902$, $p = .001$), flexibility ($r = .676$, $p = .046$), and WM ($r = .866$, $p = .003$) and no variables correlated with FB. Results of stepwise regression analyses demonstrated that RCS [$F (1, 17) = 7.367$, $p = .015$] and flexibility [$F (2, 16) = 9.825$, $p = .002$] were significant predictors for TD children's ToM; moreover, CRT significantly predicted their FB [$F (1, 17) = 9.164$, $p = .008$]. While only

inhibition significantly predicted global ToM in ASD [F (1, 7) = 8.818, p = .021] and no variables were useful to predict FB of children with ASD (Table 2).

Conclusions

Both syntax (i.e., RCS) and EF (i.e., inhibition) contributed to ToM understanding of Mandarin-speaking TD children. While only cognitive functions involved in EF are more related to ToM in ASD, revealing a predominant role of EF over syntax to predict ToM abilities of Mandarin-speaking children with ASD.

（CIEL-15 分会场 2 13 日 15:18-15:30 报告人：周牧宇）

Auditory Challenges and Listening Effort in School-Age Children with Autism: Insights from Pupillary Dynamics during Speech in Noise Perception

许粟芸

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Purpose: This study aimed to investigate challenges in speech-in-noise (SiN) processing faced by school-age children with autism spectrum conditions (ASC) and their impact on listening effort.

Methods: Participants, including 23 Mandarin-speaking children with ASC and 19 age-matched neurotypical (NT) peers, underwent sentence recognition tests in both quiet and noisy conditions, with a speech-shaped steady-state noise masker presented at 0 dB signal-to-noise ratio in the noisy condition. Recognition accuracy rates and task-evoked pupil responses were compared to assess behavioral performance and listening effort during auditory tasks.

Results: No main effect of group was found on accuracy rates. Instead, significant effects emerged for autistic trait scores, listening conditions, and their interaction, indicating that higher trait scores were associated with poorer performance in noise. Pupillometric data revealed significantly larger and earlier peak dilations, along with more varied pupillary dynamics in the ASC group relative to the NT group, especially under noisy conditions. Importantly, the ASC group's peak dilation in quiet mirrored the NT group's in noise. However, the ASC group consistently exhibited reduced mean dilations than the NT group.

Conclusion: Pupillary responses suggest a different resource allocation pattern in ASC: an initial sharper and larger dilation may signal an intense, narrowed resource allocation, likely linked to heightened arousal, engagement and cognitive load, while a subsequent faster tail-off may indicate a greater decrease in resource availability and engagement, or a quicker release of arousal and cognitive load. The presence of noise further accentuates this pattern. This highlights the unique SiN processing challenges children with ASC may face, underscoring the

importance of a nuanced, individual-centric approach for interventions and support.

Second-Order Mentalizing Ability in People with Down Syndrome

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湖南大学

Background: Understanding other people's minds is an important cognitive ability in social cognition and interpersonal communication. The ability of mentalizing second-order false belief is critical to social interaction. Being able to represent what one person thinks about what a second person thinks allows us to understand not only another's belief about the world (a first-order belief) but also to understand that person's concern about yet another person's belief about the world (a second-order belief). Previous studies revealed people with Down syndrome (DS) have difficulties in solving tasks related to reasoning of mental states. This study aimed at examining whether the ability of second-order false belief comprehension in people with DS would be improved by using dynamic animations as stimuli.

Method: Participants received twenty trials of a second-order mentalizing task in animations. Validation of the stimuli was conducted by recruiting typically developing 5-year-old children (n = 22) and 6-year-old children (n = 22). After viewing each animation, participants responded to comprehension questions by speaking or pointing, including character-recognition, memory, reality, and second-order false belief questions. The results confirmed the classic second-order false belief effect at 6 years of age. Three groups of participants (n = 69) were recruited: people with DS (n = 23), CA-matched controls (n = 23), and MA-matched controls (n = 23) to examine the effect

Results: People with DS recognized cartoon characters with 100% correctness in the second-order false belief task and memorized the targeted locations with 75% accuracy. Moreover, people with DS responded to the reality question with 86% accuracy in the second-order false belief task. However, people with DS failed to infer second-order false belief situations with low passing rate of 33% while the CA controls showed 86% and the MA controls showed 100% passing rate.

Conclusions: With presenting dynamic animations, people with DS were left behind in mentalizing other people's minds. People with DS still could not pass the second-order false belief task at around 16 years of age chronologically and around 8.8 years of age mentally. It was concluded that people with DS were seriously impaired in advanced mentalizing other people's minds, leading to deficient social cognition.

Keywords：Down syndrome, second-order false belief, mentalizing ability, social cognition, theory of mind

Virtual Reality Evaluation of Memory Abilities in People with Williams Syndrome

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湖南大学

Background: People with Williams syndrome (WS) are reported to have strong verbal short-term memory but challenged verbal long-term memory. Previous studies took traditional research methods to probe memory of people with WS, yet the nature of their memory ability is still under investigation.

Aims: Virtual reality (VR) technique was used to evaluate memory abilities of people with WS. It was further interested to examine the possibility of improvement of memory performance of people with WS.

Methods: Four virtual supermarkets with different layouts of categories were generated. Participants should navigate each supermarket three times through completing three shopping lists. Twelve trials were tested in total. On each shopping list, six items in distinct categories should be purchased. To evaluate the memory abilities of people with WS, fourteen indexes were recorded while participants navigated all virtual supermarkets. Two control groups were recruited to match chronological age and mental age. To find out the patterns in navigation of the four shopping malls, equivalent number of the fifth graders, and college students were recruited. All were Chinese speaking participants with right handedness.

Results: The fourteen indexes were analyzed across groups. The results revealed that the WS group showed the lowest accuracy overall compared to typically developing controls. Among the indexes, people with WS responded worst in choosing item types and item number than the controls. People with WS differed from the CA but not MA controls in walking distance upon entering into the supermarkets, shopping distance upon purchasing the first target item, correct types, and correct quantities of all target items. Distinct replacement patterns were further identified.

Conclusions: People with WS showed mixed abilities of delayed and deviant navigation by using VR technique. These findings suggest that people with WS were developmental disorders regarding lexical semantics, executive functions, and verbal long-term memory.

Implications: With VR technique, the nature of memory abilities of people with WS was evaluated. The current study serves as a foundation to future intervention for people with WS.

（CIEL-15 分会场 2 13 日 15:54-16:06 报告人：蒋倩）

Identification and Analysis of Autism Spectrum Disorder via Largescale Dynamic Functional Network States

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Autism spectrum disorder (ASD) is an early neurodevelopmental disorder, usually characterized by language delays and difficulties in communication. Early identification has being a crucial objective in ASD research, however, clinical recognition and diagnosis remain challenging due to the complexity and heterogeneity of ASD. Besides, traditional fMRI studies have primarily focused on static connectivity patterns, which limit the capture of dynamic network interactions. Therefore, the utilization of large-scale dynamic brain network features for ASD identification is essential for improving diagnostic accuracy and revealing underlying neural mechanisms.

This study utilized the publicly available dataset from the New York University Langone Medical Center (Autism Brain Imaging Data Exchange I, http://fcon_1000.projects.nitrc.org/indi/abide/abide_I.html), comprising 51 ASDs and 51 healthy controls (HCs). Utilizing large-scale brain gray matter network atlases, time series signals were extracted for each participant across various network nodes, including the Sensorimotor Network (SMN), Frontoparietal Network (FPN), Default Mode Network (DMN), Ventral Attention Network (VAN), Posterior Cerebellum Network (PCEN), Dorsal Attention Network (DAN), Anterior Cerebellum Network (ACEN), Temporo-Orbitofrontal Network (TOFN), and Visual Network (VN). Additionally, dynamic functional connectivity matrices were computed based on time series using a sliding window correlation analysis approach (window length=20 TRs, step length=1 TR, total windows=151). K-means clustering algorithm was then applied to all dFNC matrices to extract discrete dynamic state features for each participant. Combining these state features with linear Support Vector Machine (SVM), an ASD/HC classification framework was constructed, and the performance was evaluated using nested leave-one-out cross-validation (LOOCV) to identify the optimal dFNC states for classification. Finally, pearson correlation analysis was employed to assess the relationship between the dynamic states and clinical variable (ADOS communication).

The results revealed that participants exhibited four discrete dFNC states. Furthermore, nested LOOCV validation demonstrated robust classification performance (ACC=83%, SEN=86%, SPE=80%, AUC=70%), with states 1 and 2 showing the best performance in classification. Additionally, in states 1, DMN-FPN (r = -0.4628, p= $0.6272×10^{-3}$) and DMN-DAN (r = -0.5212, p = $0.088×10^{-3}$) connectivity were both observed a significant negative correlation with ADOS communication scores. Similarly, in state 2, DMN-FPN connectivity showed a negative correlation with ADOS communication scores (r = -0.5636, p = $0.0166×10^{-3}$), so as DMN-DAN connectivity (r = -0.4779, p = $0.3901×10^{-3}$).

These findings suggest that the classification method based on large-scale dynamic functional network state features not only effectively discriminates ASD from HC but also

correlates closely with ASD communication symptoms, offering a new insight and approach for early ASD identification.

Perceptual Training Facilitates Mandarin Tone Production for Preschoolers with Cochlear Implants: Evidence from Acoustic Analysis

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山东大学

Purpose: As the standard of care in the treatment of profound hearing loss in childhood, cochlear implant (CI) provides audition and access to speech sound to the recipients. In addition, auditory training is a feasible practice to maximize benefits of cochlear implantation. This study primarily aimed to investigate the cross-modal transfer of perceptual learning induced by an established training protocol to the production modality of lexical tones for the hearing-impaired children with cochlear implants.

Method: Thirty-two pediatric CI recipients were tested in this study. Half of the child participants received five sessions of high variability phonetic training (HVPT) within a period of three weeks, whereas the other half served as control who did not receive the formal training. The HVPT adopted phonetic identification task with a four-alternative forced-choice (4 AFC) paradigm. During the training sessions, trial-by-trial feedback was provided instantaneously and trial repetition was offered accordingly. Production of Mandarin tones was administered via a picture naming task before the provision (pretest), immediately after (posttest), and 10 weeks post (follow-up test) the completion of the training protocol. Test stimuli of picture naming task were 20 cartoon drawings of concrete objects, with five lexical items for each type of Mandarin tones.The production samples were coded and analyzed acoustically with automatic pitch tracking implemented in the software of *Praat*. Statistical analyses were performed threefold in R to corroborate generalization of perceptual learning to lexical tone production and retention of perceptual training-induced gains in production modality, including overall acoustic parameters (i.e., pitch mean, pitch range, and pitch SD), dynamic pitch contours, and tonal ellipse features (i.e., tone differentiability and tone hit rate).

Results: Trained children with CIs exhibited significant enhancements in Mandarin tone production from pretest to posttest as evaluated in terms of pitch modulations, pitch curvatures, and acoustic differentiations. More specifically, significantly enhanced concave

characteristic of dynamic pitch contours for the trained children's Mandarin tones produced in posttest relative to pretest using growth curve analysis. In addition, a tonal ellipse analysis indicated significantly improved tone differentiability and tone hit rate from pretest to posttest following training. By contrast, no significant changes were observed in the control children between the two test sessions. Moreover, the training-induced acoustic change retained for for up to 10 weeks after training termination, which was mainly observed in the concave characteristic of T3 contour.

Conclusion: The findings represent initial acoustic evidence of HVPT-induced benefits in lexical tone production for the pediatric CI population, which lends supports to applying this perceptual training technique as a viable tool in aural rehabilitation practices.

Keywords: high variability phonetic training (HVPT), lexical tone production, Mandarin-speaking children, cochlear implant (CI), perceptual learning

（CIEL-15 分会场 2 13 日 16:42-16:54 报告人：张昊）

Morphological Features of Language Regions in Children with Autism Spectrum Disorders and Varying Language Abilities

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Background: Individuals with autism spectrum disorder (ASD) manifest with varying language abilities, potentially attributed to distinct morphological features of language-related brain regions (Bethlehem et al., 2020; Durkut et al., 2022; Ning et al., 2021). Previous studies have predominantly compared the morphological characteristics of individuals with ASD to those of typically developing (TD) controls. However, there remains a notable gap in research investigating these differences while accounting for significant within-group variations in language abilities, especially among preschool children with ASD.

Objectives: We aimed to investigate the morphological features of cortical language regions and the asymmetry therein in children with ASD and varying language abilities compared to TD children.

Methods: We analyzed structural magnetic resonance imaging (MRI) data obtained from a cohort of Chinese preschool children, including 37 TD children (32 M/5 F, 3.39±1.49 years) and 68 children with ASD (57 M/11 F, 3.18±1.17 years). Given the heterogenous of language abilities within the ASD group, we categorized the ASD group into two subgroups by the median of language scores: ASD children with higher language ability (ASDHL, 32 M/2 F) and those with lower language ability (ASDLL, 32 M/2 F). MRI data were segmented using the

FreeSurfer pipeline. Following previous research (Ahtam et al., 2023), we extracted gray matter volume, cortical thickness, and cortical surface area from 10 language-related regions, including pars orbitalis, pars triangularis, pars opercularis, caudal middle frontal gyrus, supramarginal gyrus, inferior parietal gyrus, transverse temporal gyrus, superior temporal gyrus, middle temporal gyrus, and lingual gyrus. The total intracranial volume (TIV) was computed for each participant.

We first examined the within-group differences in the morphological features for each ROI between the two hemispheres within each group using a mixed linear regression model, where hemisphere was a independent variable, age, gender, and TIV as covariates. We then tested the between-group differences in the morphological features for each ROI between TD and two ASD subgroups using regression analyses, with age, gender, and TIV as covariates. Subsequently, we tested the correlations between language scores and morphological features for each ROI in TD and two ASD subgroups, separately.

Results: Hemispheric asymmetry was observed in both surface area and gray matter volume of several language regions in TD children and two ASD subgroups. The ASDLL subgroup also displayed right hemispheric asymmetry in cortical thickness of the pars triangularis. Compared to TD children, both the ASDHL and ASDLL subgroups exhibited greater cortical thickness in the right superior temporal gyrus, with the ASDLL subgroup also demonstrating increased thickness in the left superior temporal gyrus and transverse temporal gyrus. Moreover, in the TD group, significant correlations were identified between language scores and the gray matter volume of the right superior temporal gyrus ($p = 0.046$), cortical thickness of the right transverse temporal gyrus ($p = 0.015$), and surface area of the right pars orbitalis ($p = 0.014$). Additionally, significant associations were found between language scores and the gray matter volume of the left pars opercularis ($p = 0.005$) and right inferior parietal gyrus ($p = 0.028$), as well as the surface area of the left pars opercularis in the ASDHL group ($p = 0.009$) (Figure 1).
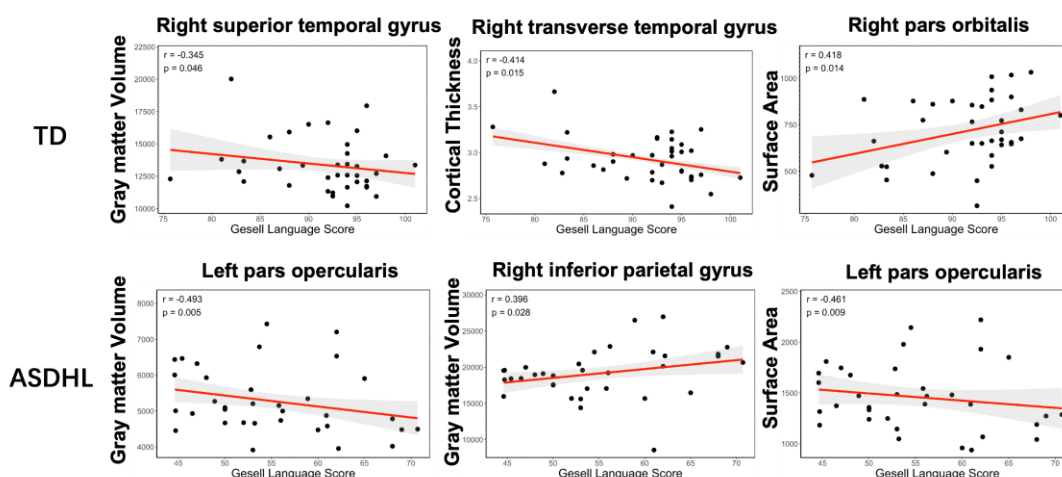
Figure 1 Significant relationships between morphological features of language-related ROIs and language abilities in typically developing (TD) children (upper row) and children with autism spectrum disorder (ASD) and higher language scores (ASDHL subgroup) (lower row) .

Conclusion: Hemispheric asymmetry in cortical language regions was evident in TD children and two ASD subgroups, especially in gray matter volume and surface area.

Furthermore, significant correlations were found between language scores and various neuroanatomical measures, highlighting the intricate relationship between brain morphology and language abilities across both ASD and TD groups. In conclusion, our study provides valuable insights into the neuroanatomical underpinnings of language deficits in ASD across different subgroups.

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（CIEL-15 分会场 2 13 日 16:54-17:06 报告人：胡愉彬）

3-6 岁中国学龄前儿童语音意识的发展特点

尹艺红　杨亚希　李佳阳　谭力海
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　　语音意识是儿童语言习得过程中的一个核心构建，对语言能力的形成起着决定性作用。在国际研究领域，语音意识被广泛认可为评判语言发展水平的关键性指标。对于以汉字为载体的中文语境而言，尽管汉字具有其独特的表意特性，语音意识的重要性依旧不容忽视。在儿童的语言习得初期，大量的语音输入是语言能力增长的主要驱动力。同时，语音意识的早期发展状况被证实能够预测儿童在未来的阅读能力和口语技能上的成就。

　　本研究通过横断测量 2215 名 3-6 岁的中国学龄前儿童音节、声调、音素等三个维度的语音意识任务，探究了音节意识、声调意识、声母意识和韵母意识的发展情况。从音节和声调意识的正确率而言，声调意识的发展显著优于音节意识，可能揭示着学龄前儿童优先发展声调意识。同时，音节意识和声调意识在 5-6 岁均趋于平稳发展且正确率高达 80%以上，说明 5 岁的儿童已经基本具备音节和声调意识。从音素意识的正确率分析，3-6 岁儿童的韵母意识普遍要优于声母意识。值得注意的是，3-6 岁中国学龄前儿童

的音素意识发展缓慢，具体表现在 3-6 岁的儿童声母意识均低于随机水平，同时 3-4 岁儿童的韵母意识低于随机水平。虽然 4-6 岁儿童的韵母意识略高于随机水平，但是由于声母意识和韵母意识是平行的，均属于音素水平，所以很难断定 3-6 岁学龄前儿童已具备了音素意识，故不将音素意识纳入总体语音意识的讨论。

总体上，从年龄发展阶段来看，3-4 岁是儿童语音意识快速发展的阶段，4 岁后发展逐渐趋于平稳。从性别角度来看，整体上 3-6 岁女童的语音意识显著优于男童，就具体年龄段分析，3-4 岁女孩的语音意识显著均高于同龄男孩，4-6 岁男女差异均不显著。本研究通过 3-6 岁儿童的大样本横向研究，探究了学龄前儿童的语音意识的发展情况，为了解中国学龄前儿童语音意识的发展特点，设计语言教育策略和语言发展干预具有显著的理论与实践意义。

（CIEL-15 分会场 2 13 日 17:06-17:18 报告人：尹艺红）

脑网络结构随龄发展和字词加工的关系

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中国人民大学

字词加工在儿童语言发展过程中发挥重要的作用。已有研究表明，字词加工的神经基础涉及一个大规模分布的、相互连接的语言特异性网络。此外，一般性认知网络，如默认网络或多重需求网络，也支持字词加工。但是以往研究主要基于成年人被试，儿童和青少年语言特异性网络以及一般性认知网络的结构变化是否在其字词加工能力发展过程中发挥作用尚不明确。本研究采用"彩巢计划—成长在中国"北京地区 200 多名儿童和青少年的发育数据，基于网络分割方法，提取大脑皮层的灰质体积作为大脑形态学指标，利用词汇判断任务和形音整合任务获取被试的行为数据。同时，在词汇判断任务中，将词汇语义加工类别分为基于共同特征进行表征的类别关系和基于共现事件或场景的主题关系。在数据分析中通过建立广义可加模型探讨语言特异性网络和一般性认知网络与字词加工的关联，比较不同网络的体积对字词加工的贡献，并进一步探索在发育过程中，不同语义关系是否调节三个网络贡献的权重。结果发现，三个网络的体积和词汇加工能力显著相关，年龄和三个网络体积的交互作用也会影响字词加工。经过比较发现，字词加工和默认网络的相关比和多需求网络相关程度更大。此外，结果还发现仅有语言网络的体积和类别知识加工显著相关。该研究结果表明，三个网络的体积变化会影响字词加工的发展，但是不同脑网络对字词加工的贡献程度不同，同时，年龄和不同语义知识也会调节三个网络的体积对字词加工的影响。

关键词 灰质体积；字词加工；儿童青少年；默认网络；多重需求网络

（CIEL-15 分会场 2 13 日 17:18-17:30 报告人：居萍）

How Children Segment Words from Speech Streams Through Statistical Learning: Evidence from Complex and Dynamic Neural Entrainment Patterns in an EEG Study

徐坤宇，薛仅一，黄明轩

复旦大学

How children segment words from continuous speech streams during language learning has still been an unsolved question for decades. Previous behavioral studies have proposed that humans may glean rules through predictive probabilistic statistics. However, it remains elusive about the mechanism underlying statistical learning. In this study, we thus adopted an artificial word learning experiment to investigate how preschool children learn to segment words using the EEG technique. Twenty-three children (M = 56 months, SD = 14 months; 10 girls) were recruited for this study. We recorded twelve 250-millisecond CV syllables, which were then concatenated into four trisyllabic nonsense words (hilega, satomi, pidaku, vobina). At the beginning, participants were exposed to a 3-minute continuous speech stream for training. The training stream was comprised of those four nonsense words without any acoustic cues to indicate word boundaries. The word boundaries were only cued by the transitional probabilities (1 or 1/3) between syllables, 1 within a word and 1/3 across words. Subsequently, participants were presented with a 5-minute stream that contained the 12 syllables in random order and with another 5-minute stream consisting of the four words. The EEG signals in each session (training, random and word) were continuously recorded and then analyzed using the intertrial coherence (ITC) method to elucidate whether the participants were able to track the syllable frequency (4 Hz) and the word frequency (1.33 Hz) while listening to the speech stream.

Significant higher ITCs were observed at the word frequency in the training and word sessions relative to the random session (see Fig. 1A), reflecting successful recognition of words in the speech streams. Besides, we found a similar pattern at the syllable frequency, which implied that the entrainment to words might also facilitate the tracking of their constituent syllables. Further, the scalp distribution of ITCs indicated different sources of neural entrainment in the training and word sessions. While the source of neural entrainment to the word or syllable level was primarily distributed on both sides of the frontocentral electrodes during the training session, the word-level entrainment was more centrally distributed while the syllable-level entrainment tended to be left-lateralized for the word session (see Fig. 1B). The sliding-window analysis of the training session further showed the complex and dynamic pattern during the exposure to speech stream. The initial competition between the syllable frequency and word frequency entrainments was finally found to reach a relatively stable state after exposure to approximately 150 words (see Fig. 1C). Therefore, learning seems to be a process of reorganizing neural entrainments along a competitive pattern until being a stable and long-term state, rather than a simple process of increasing entrainment toward word frequency relative to syllable frequency. The findings of the present study not only support the view that

the ability of statistical learning may facilitate word learning in the speech stream, but also suggest a complex and dynamic multi-level neural entrainment system that serves the word learning process for language acquisition.
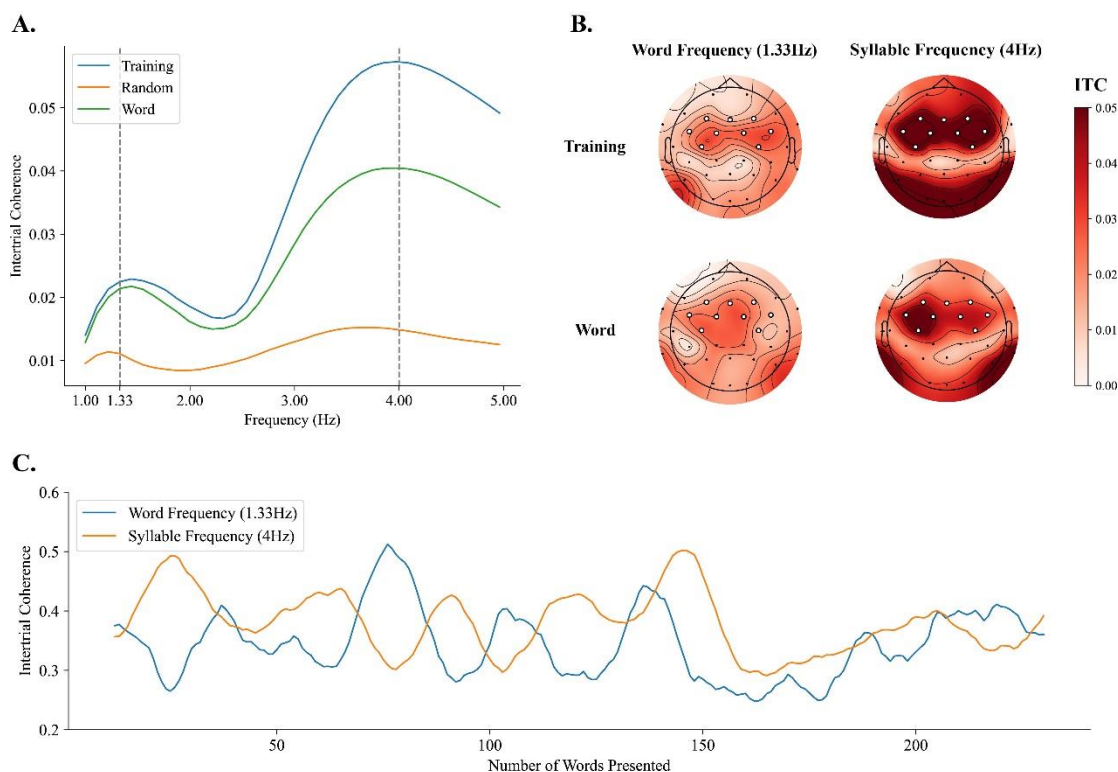
Figure 1. Intertrial coherence (ITC) results at the word and syllable frequency. A) The ITC by frequency patterns in the training, random, and word sessions. B) The scalp distributions of ITCs at the word and syllable frequency in the training and word sessions. C) The ITC data generated along the trajectories at the word and syllable frequency in the training session.

（CIEL-15 分会场 2 13 日 17:30-17:42 报告人：徐坤宇）

汉语儿童量词量化功能的习得：一项眼动实验研究

何云祺 黄爱军 战立侃 吴芙芸
上海交通大学 北京语言文化大学语言康复学院

　　汉语量词是汉语中的一个重要类型学特征，其基本语义功能是量化作用，即通过量词来表达一个计量单位。汉语量词的量化功能涉及单数性(singularity)和单位性(unification)两个语义维度。尽管目前有关汉语儿童量词习得的研究文献颇为丰富，但对于量词的量化功能的习得过程，尤其是通过眼动追踪技术进行的实证研究，仍然缺乏深

入理解。本研究采用视觉情景范式结合眼动仪的实验方法，选取个体量词"个"和容器量词"碗"、"盒"、"盘"、"袋"、"盆"作为研究对象，探究两岁八个月至六岁汉语儿童对这些量词的量化功能的习得过程。

我们的实验结果表明，3 岁儿童对量词的量化功能不敏感，但随着年龄的增长，儿童的敏感性逐渐提高。4 岁儿童开始表现出对个体量词单数性和单位性的敏感性，而对容器量词的单数性敏感性则在 5 岁时才显现。此外，个体量词的量化功能习得先于容器量词，且它们的单位性和单数性的习得是相对独立的。值得注意的是，尽管数词"一"的出现显著促进了成人对目标兴趣区的注视，但对未习得量词量化功能的儿童而言，数词"一"的促进作用不显著。这一发现表明，汉语儿童对量词量化功能的习得并不依赖于数词"一"的掌握。本研究将进一步深入探讨汉语儿童习得这两种量词量化功能的具体发展路径。

（CIEL-15 分会场 2 13 日 17:42-17:54 报告人：黄爱军、何云祺）

"X+起来"构式网络历时演变研究

王赫琛

北京师范大学

"起来"作为典型的汉语趋向补语，具有丰富的语义句法使用特征。既往研究多侧重于对"起来"及其相关结构共时性特征尤其是语义特征进行描述，而历时视角研究则多集中在对"起来"一词语法化路径的讨论，及对于"起来"相关构式的单一特征的历时变化描述。对"起来"相关构式在不同阶段的细粒度历时变化及其演变机制的探讨相对较少。

语言的演变不只存在于单一的层面，更是多个层面相互作用和影响的结果。因此，对于"X 起来"构式网络及网络中子构式的历时演变研究应从不同层面多角度进行观察分析，展现其历时演变规律。本研究将"X 起来"纳入结构网络的视角，运用多重对应分析这一统计方法，整合"起来"及其相关构式的句法语义特征，以"时期"与"子构式类型"分别作为补充变量，展示不同特征的聚类对应关系，同时进一步展现整个网络的历时演化路径，探索构式网络演化过程中各个节点的发展以及节点之间的相互影响作用，探究构式演变背后的认知机制。

研究发现：1）起始义"X 起来"构式及结果义"X 起来"构式与趋向义"X起来"构式基于同样的意象图式，由趋向义到起始义与结果义是是隐喻化机制作用的结果，由空间运动的起点向终点的延伸来隐喻事件的开始与发展。评价义"X起来"与起始义"X 起来"密切相关，事件起始到发展的整个过程引申出了构式的评价作用。2)"V 起来"到"A 起来"的演变是受类比的演化机制驱动。由于特征的相似性，状态的增加和减少可以类比空间位置变化的情况，因此动作的改变进一步类比状态的变化。3)"V 将起来"与"V 了起来"构式的竞争导致了"V将起来"构式的不断衰败。构式的更新机制及构式的事件语义融合驱动了"V 将起来"构式的消亡。

关键词："X+起来"；趋向补语；历史演变；构式网络；历时构式语法

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（CIEL-15 分会场 3 13 日 14:30-14:42 报告人：王赫琛）

梵藏语言接触引发的语法演变——以藏译否定复合词为例

边巴多吉
西藏大学

复合词（*samāsa*）是由两个或两个以上的词（*pada*）组合在一起而构成的词。梵语复合词共分六个大类。他们的名称是：依主释（*tatpuruṣa*）、持业释（*karmadhāraya*）、双牛释（*dvigu*）、相违释（*dvandva*）、多财释（*bahuvrīhi*）、 副词复合词（*avyayībhāva*）。否定复合词是依主释复合词的细分类别，也称为否定依主释（*naÑ-tatpuruṣa*）。藏语出现语法论著的时间较早，《三十颂》中介绍了藏语否定标记的来源及其用法，有关注释侧重于以实例对藏文否定标记的详加阐释，却未能对梵语否定复合词翻译等问题作进一步说明，致使后世产生种种疑惑。借助接触理论，对梵语否定复合词的语音形式和语义，其藏译特点进行分析，发现大译师们用藏语翻译梵语复合词的过程中，采用了直接翻译语义的方法，致使藏语中出现了很多含否定意义的词，并丰富了藏语的否定范畴。藏译否定复合词对梵藏语言比较、语言接触等多方面研究具有特殊意义。

[**关键词**]　梵藏语言　语言接触学　否定　复合词

（CIEL-15 分会场 3 13 日 14:42-14:54 报告人：边巴多吉）

南阳方言的情态副词"高低"

李玉晶

广东海洋大学

南阳方言情态副词"高低"有多种用法，可表"稍微""无论如何""一定""终究"义，能与多种句法成分共现，根据修饰对象的不同在句中位于不同位置，还具有语篇衔接功能。结合历史文献，"高低"作为反义复合词，其形成经历了词汇化语法化的过程，表现为两个反义关系的形容词"高""低"共现于同一构式，从名词短语词汇化为名词，再语法化为副词，隐喻、转喻、语境义吸纳和主观化是其演变的重要机制。

关键词：高低；情态副词；南阳方言；语篇功能；反义复合词

（CIEL-15 分会场 3 13 日 14:54-15:06 报告人：李玉晶）

"值得+NP"的构式生成与情态义浮现

李艳芝 朱一顺

浙江师范大学

"值得"是现代汉语"V 得"类双音节动词典型成员，李行健、苏新春（2021）所编写、总收词量为 56790 的《现代汉语常用词表（第 2 版）》中"值得"频次排序 1064，属日常生活高频词。据屈哨兵（2008）统计，现代汉语"值得+VP"结构居绝对优势，例如：

（1）中国消费者要求也不高，但赔偿金额总得让人觉得值得跑一趟吧。（人民日报 1996-3，CCL 语料库）

有趣的是，现实生活中，"值得"所带的体词性宾语类型多样，能产性日益增强，例如：

（2）那大夫大怒，将妈妈推倒在地下，又用力踢了她一脚，还拉住她要赔袍子，说这袍子是新缝的，值得二两银子。（《天龙八部》1980，CCL 语料库）

（3）他们敢于突破自我、创造"不可能"的体育精神，同样值得热烈的掌声。（人民网 2022-2-8）

（4）我们这些"访客"一直被这群"小青椒"的阳光和自信感动着，她们值得更好的未来。（人民网 2023-8-7）

然而，诸多成果认为，"值得"为助动词，只能带谓宾，不可带体宾，如朱德熙（1982：58-56）、马庆株（1988）、彭利贞（2007：103-104）、Chao（2011：746）等。语义上，屈哨兵（2006，2008）、陈爱锋&郭继懋（2016）、蔡淑美（2019）对"值得+VP"语义结构、

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VP 的语义特征及"值得"的概念基础进行了深入探究。

总之，以上研究成果为本文的进一步推进提供了重要基础。然而，"值得"的句法性质究竟如何，为何具有谓宾性质的"值得"，现在可以带上体宾，并如此多产，"值得+NP"构式是如何生成的，语义有无变化等问题均需进一步细化。

针对以上几个问题，首先，本文对微博数据库（2023 年 1 月至 10 月底）进行抽样检索，共搜集到"值得+NP"用例 1600 余条。其次，本文以构式语法理论与生成词库理论为基础，对"值得+NP"的语义机制和构式生成深入剖析，以期探究这一现象的本质。

基于构式语法与物性结构理论，本文认为新兴"值得+NP"构式，（1）构式义为"通过评估潜在事件实现后的效果来对事物的内涵或价值做出评述"，其中"值得"的"获得"义浮现，宾语为事件行为的副产品 NP，要求符合功用凸显和施成可控的语义特征；（2）借助构式压制的认知加工机制在线加工 NP 的物性结构，隐含事件行为动词，凸显事件行为的副产品 NP，并使之进入构式宾语槽位；（3）承继了"直+NP"构式的形式与意义，并在客观评价义基础上和"值得+VP"构式情态义影响下浮现出了道义情态义，最后发展出估价情态义。

（CIEL-15 分会场 3 13 日 15:06-15:18 报告人：朱一顺）

"方所-称谓"同词化模式的表现及其演化

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同词化理论属于词汇类型学的重要组成部分，研究多义寄于一形的词汇现象，其外延包括同音词、多义词和一词多用（语用）现象。现在一般认为，同词化只包括多义词和一词多用现象，前者是词义引申的结果，后者则是一种临时的语用现象，蕴涵着语义演变（引申）。我们已经证明，"方所-称谓"同词化模式是汉语反复出现的同词化模式（吴福祥 胡平（2024）和胡平（2024）），即从古到今都不断出现方所引申出指称人的用法，具体来说，同词化模式表现如下：

1. "方位-称谓"模式，即方位词引申出对人的称谓，具体分为"纯方位-称谓"和"附用方位"两类：

（1）"纯方位-称谓"同词化现象，包括古代汉语把作为方位的"上""下"分别同"君主""臣下/老百姓"同词化，"上下"也把方位词和"所有的人"同词化；古代战车上左边是弓箭手、右边是勇士，因此，作为方位的"左""右"同"弓箭手""勇士"同词化；"左右"两边的位置是身边之人，因此，方位词"左右"和"身边之人"同词化。现代汉语把作为方位的"上面"和"下面"分别同"上级""下级"同词化。

（2）"附用方位-称谓"同词化现象，包括"殿下""东宫"本是"宫殿台阶之下""宫殿东部"，后来分别引申出对"君主"和"太子"尊称；"足下""房东"本是"足底之下""房子东

面"，后来分别引申出对说话听者和"房子主人"的称谓。

2. "处所-称谓"模式，即处所引申出对人的称谓，具体分为"地区-称谓""楼馆-称谓""部门-称谓"和"席位-称谓"四个小类：

（1）"地区-称谓"同词化现象，即作为行政区划的地名引申出对人的称谓，包括先秦表诸侯国、采邑的地名用于称谓姓氏，赵、周、吴、郑、王等例不烦举，先秦之后往往出现郡望地、出生地、仕宦地等地名用作别名的同词化现象，比如韩愈人称韩昌黎，苏轼则有苏眉州、苏黄州、苏东坡等不同的别称。艾青《大堰河——我的保姆》中"大堰河"，本是其出生地方，身份卑微得没有自己的名字，"她的名字，就是她出生的村庄的名字"。

（2）"楼馆-称谓"同词化现象，即住宅、宫殿等楼馆类建筑引申出对人的称谓，由于富贵人家的家庭成员各有自己独立的房间，"分别部居，不相杂厕"，因此，能够"以其所居，命其称谓"，比如用"正宫"和"萱堂"分别指称皇后和母亲；此外，方丈本是佛寺主持所居之地。亦有若干职业称谓亦是如此：屠户、猎户本是其各自居所，此外，"老圃"指经验丰富的菜农，而其构成语素"圃"本是"菜园"之义；朱自清《背影》中用"茶房"指火车上的服务员，应是以其工作场所来作为其职业称谓。

（3）"部门-称谓"同词化现象，即古代的衙署和当今的单位引申出职官称谓。比如"官"本是官府，后来引申出官员、官吏义；又比如"知府""巡抚"等既是官署名，也是职官名。现代汉语里，学校、纪委、派出所等机构，实际上已经"主观化"，可以像人一样发号施令，表明态度等。

（4）"席位-称谓"同词化现象，即坐卧类器物可以引申出指人的称谓。比如"主席""首席"至今仍在使用。今天，前台是服务员站立的地方，同时也可用来指服务员。此外，在快餐店、咖啡厅、医院，可以用座位、床位来指代顾客、患者。

汉语史上既然存在这样一个反复出现的同词化模式，那么，各个同词化模式小类之间先行后续的引申关系，即该模式的演化过程，以及背后的动因和机制，都是我们所要重点解决的问题。

（CIEL-15 分会场 3 13 日 15:18-15:30 报告人：胡平）

重叠背景功能的跨语言研究

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A background clause is one that provides 'supportive material which does not itself narrate the main events [of the story line]' (Hopper, 1979). Verbs that express durative, stative or iterative meanings tend to occur in background clauses (Hopper, 1979). Previous surveys found that predicative reduplication, i.e., the repetition of all or part of a predicate to form a new predicate, is frequently used to express iterative, durative, continuative meanings across

languages (cf. Key, 1965, Moravcsik, 1978, Bybee et al, 1994 among others). It is therefore expected that predicative reduplication will be used cross-linguistically to describe the backgrounded event in narration. The backgrounding function is rarely mentioned in previous cross-linguistic studies on reduplication. This study fills the gap by examining this use in my database on functions of predicative reduplication (containing 118 spoken languages and 8 sign languages). I find that predicative reduplication occurs in background clauses in only 9 languages, in comparison to 65 languages where predicative reduplication expresses meanings of either iteration, duration or continuation. The low frequency is possibly due to grammarians' neglect. In addition, I examine 10 Sinitic languages (not included in the database) in greater detail. I find that predicative reduplication may serve the backgrounding function in 3 Sinitic languages.

Based on my data, I identify two distinct types of event structuring that involve backgrounding clauses with predicative reduplication. I summarize their features in the table below.

Features	Type I	Type II
Relation between the backgrounded event and the foregrounded event	The backgrounded event describes the static scene upon which the foregrounded event is set	The backgrounded event precedes and builds up to the foregrounded event, often involving an abrupt transition
Presence of temporal overlap between the two events	Overlap either entirely or partially	No overlap
Boundedness of the backgrounded event	No clear starting point or endpoint	No clear starting point, but the endpoint is clear
Interdependence between the two events	No necessary interdependence	The realization of the foregrounded event depends on that of the backgrounded event

While the Type I event structure is attested across a wide variety of languages in my data, the Type II event structure appears to be limited to the Sinitic languages. No language is found to use predicative reduplication with both types of event structures. I further suggest that the two types of backgrounding use have developed along separate pathways: the former developed from the use of predicative reduplication in foregrounded clauses to express iteration, continuation or duration, whereas the latter may be historically related to the construction [Predicative Reduplication + Resultative Complement].

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关键词：backgrounding；reduplication；event structure；cross-linguistic and cross-modal study

（CIEL-15 分会场 3 13 日 15:30-15:42 报告人：李悦园）

Enjoy The Silence? A Cross-cultural Approach to Inter-turn Speech Pauses and Their Relation to the Evolutionary Dynamics of Interaction

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Language and cooperation are closely intertwined aspects of human social interaction, with language serving as an important tool in the assessment of potential cooperation partners (Fox Tree, 2002; Brennan & Williams, 1995). Since pauses between turns of a conversation perform important social-communicative functions, we argue that pauses and their perception may have played a significant role in the co-evolution of language and cooperation and the evolutionary dynamics of interaction.

We support this with data from a cross-cultural experiment testing how listeners use the duration of inter-turn speech pauses to assess others' knowledge, confidence and willingness to grant requests – all of which are highly relevant when evaluating others as potential cooperation partners (Matzinger et al., 2023; Matzinger et al., in prep). We hypothesized that, in general, speakers making long pauses would be regarded as less apt and willing (Roberts & Francis, 2013) but that listeners would be more tolerant towards long pauses in non-native speakers. This is because in non-native speakers, long pauses may result from prolonged cognitive processing when answering in a non-native language (Cenoz, 2000; Guyer et al., 2019) rather than from a lack of knowledge or willingness. Crucially, since evaluating others' cooperativeness is important across cultures, and pause production and perception are similar cross-linguistically (Matzinger & Fitch, 2021), we predicted similar effects across languages.

In our experiment, 100 native Polish-speaking raters listened to short staged conversations, during which a speaker asked questions or made requests that were answered or granted by either native speakers of Polish or non-native speakers of Polish whose native language was

Chinese. The pauses before the answers were manipulated to be either short (200 ms) or long (1200 ms; cf. Roberts & Francis, 2013; Dingemanse & Liesenfeld, 2022). After listening, the raters judged each respondent on their knowledge, confidence and willingness. To test for cross-linguistic similarities, we replicated the experiment with Chinese raters and the two languages reversed.

Our results suggest similarities across languages and cultures: as predicted, Polish and Chinese raters perceived native speakers making long pauses as less knowledgeable, confident and willing. Also, for both rater groups, linear mixed effects models revealed a mediating effect of non-native accent on perceived willingness (interaction: pause duration * accent: $p < 0.001$ each), but not on knowledge and confidence. A potential reason for the difference between the findings on willingness versus knowledge and confidence is that requests may be more socially engaging and more directly relevant for interpersonal cooperative interactions than knowledge that reflects on partners' competence but not cooperativeness. The raters may therefore have evaluated willingness more carefully.

To further support the point that pauses may have been used as communicative signals in early stages of language evolution when fully-developed shared linguistic communication systems had not yet been established, we also present results from a follow-up study showing that broadly similar relationships hold if participants don't know the language spoken in the conversations. That is, even for naive participants who didn't know the meaning of the conversations, accent and pauses played an important role in their evaluations with similar interaction effects as in the original studies.

Finally, since pauses in turn-taking occur across species (Levinson, 2016), we will also discuss inter-turn pauses as promising candidates to investigate links between communication and cooperativeness across species.

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（CIEL-15 分会场 3 13 日 15:42-15:54 报告人：张情）

"这"的话题标记功能及其形成机制——兼论指示词发展为话题标记的现象

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特定范畴向其他语义域的扩张是库藏类型学的关注重点之一，指示词相关研究也一直是语法研究的重要课题。De Vries(1995)、Matthias Gerner（2003）、刘丹青（2005、2013）、陈玉洁（2010）等的研究探讨了指示词向领属及广义定语标记、定冠词及类指标记、话题标记等功能域的扩张，其中，指示词向话题标记功能域的扩张现象还有待进一步深入研究。

我们基于汉语各类会话语料，分析由指示词发展而来的话题标记"这"在会话交际中所标引话题的特点和浮现的话题标记功能，并探究其功能形成机制。本文的汉语会话语料涉及影视会话、媒体访谈和自然口语等三类。分析发现，话题标记"这"所标引的论元共指性话题多于语域式话题。相较于一般话题表现出的强烈有定倾向，"这"所标引话题的类指倾向较为突出。话题标记"这"一般用于言者对听者进行劝解的对话语境，所在话题句突显言者对自我立场的强调，其核心话语功能是"同盟关系建构"。"这"的功能内涵体现了基于空间位置关系的隐喻机制：一种是从物理空间到当前话语空间 CDS 的隐喻投射，另一种是从物理空间到认知心理域的隐喻投射。此外，Carstensen（2023）基于认知领域的注意力参照对指示词的分析也有助于我们理解指示词发展为话题标记的现象。

指示词向话题标记功能域的扩张较为普遍地存在于多种语言中，如 Urim 语、Wambon 语、Weining Neasu 语、诺苏彝语等许多语言以及商水话、汨罗话等多种汉语方言都存在该现象，这可以说是类型研究的重要参项。文章还从跨语言角度探讨了指示词发展为话题标记的共同认知基础，也明确了话题标记"这"在类型学上的研究价值。

关键词：话题标记　指示词　"这"　同盟关系建构　类型学

（CIEL-15 分会场 3 13 日 15:54-16:06 报告人：邓莹洁）

官话是否大陆东南亚语言区域的延伸

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　　大陆东南亚是一个宽松定义为由中南半岛和中国西南部组成的地理区域的语言区域（Comrie 2007, Vittrant and Watkins 2019, Enfield 2021）。 然而，官话在类型上似乎与大陆大陆东南亚更相似，而不是与东北亚的其他非华语语系（例如韩语或蒙古语）更相似（Yurayong and Szeto 2020, cf）。 官话在所有核心领域特征，例如动词介词句法、孤立词法、音节音韵，都指向非常典型的大陆东南亚特征。

　　使用来自 Grambank (Skirgård et al. 2023) 的形态句法数据和来自 Phonotacticon (Joo and Hsu 2024) 的音系数据，我们发现官话在特征上与其东北亚的邻居语言不同，而在类型上更接近于大陆东南亚。 基于 Grambank 中编码为二进制参数的特征，官话和其他语言之间的语法距离被计算为特征值向量之间的曼哈顿距离。 官话和其他词句之间的音系距离主要根据音段之间的特征距离或每对声母、韵腹和韵尾位置所允许的音段序列来计算。 两个数据库的结果清楚地表明，官话与大陆东南亚语系的相似度远高于与东北亚其他语言的相似度。 下图根据归一化语音和形态句法距离的平均值，显示了 Grambank 和 Phonotacticon 的 222 个欧亚语言样本中与官话最相似的 50 个语系的地理位置。

Lects　● 50 Eurasian lects closest to Mandarin　● Mandarin　○ Other
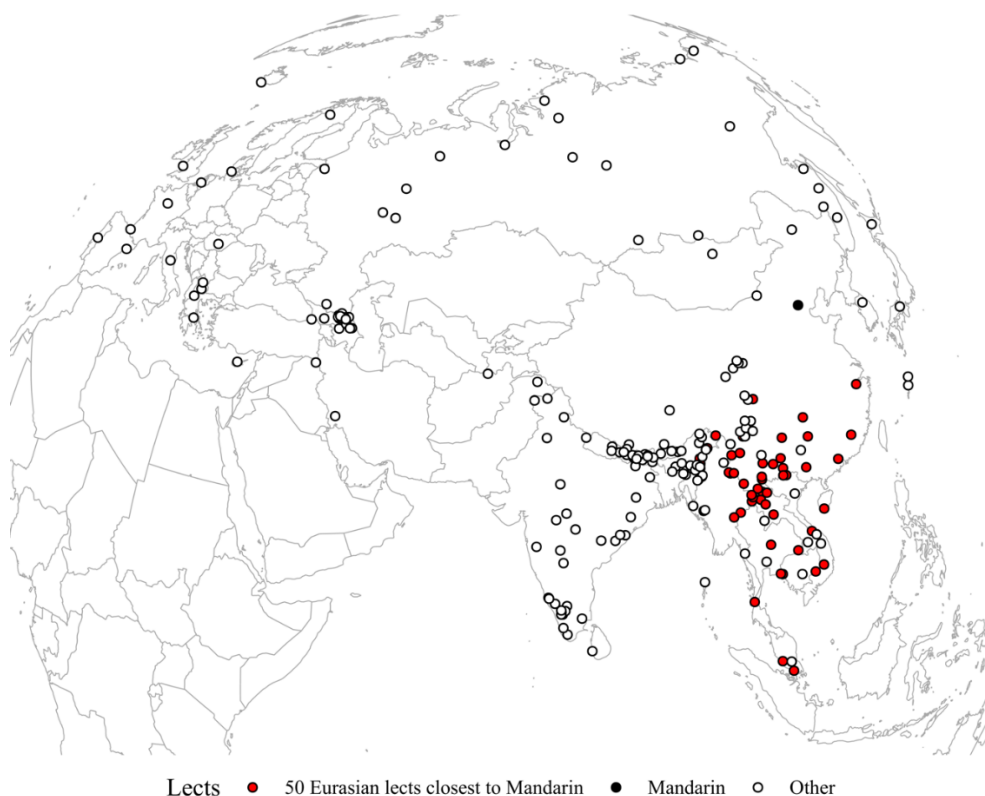
　　因此，官话可以被归类为大陆东南亚语言区域向北的"延伸"，因为虽然地理位置上位于东北亚，但在类型上它有大陆东南亚的特色。

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（CIEL-15 分会场 3 13 日 16:30-16:42 报告人：朱易安）

Brow and Palm Reveal the Origin of Question Markers: Evidence from Home Sign, Sign Language, and Spoken Language

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Language needs a mechanism to mark questions, which can be realised by morphological forms, syntactic movement, or by prosodic features such as intonation. For example, nearly all modern spoken languages and sign languages have at least one WH word (Dryer & Haspelmath 2013). Despite some variations, brow movement is universally observed in both WH questions and polar questions, as shown in a typological studies on question marker of 37 sign languages (Zeshan, 2006). Many spoken languages and a few sign languages have question particles (ibid.) to mark polar questions. Where are our interrogative markings from? What is the prototype of interrogative marking? This paper argues that brow movements and palm-up are the origin of interrogative markers based on evidence from sign language (including home sign communication system), gesture and speech.

Firstly, we examined the use of brow movements and palm-up (PU) in Chinese Sign Language (CSL) and Chinese home signers. Lin 2019 found that brow movement is the dominant interrogative markers in the interrogative question. We analyzed the data from home signers (N = 9, Mean age =48, 5 females) in a Chinese village, who do not have any WH signs

or question particles but BB is the sole interrogative marker. The results showed that BB is the sole marker once there is no other interrogative makers in the signers. PU might be the manual prototype of interrogative marking in users of CSL and Chinese home signers. Here brow-movement is representative of co-articulated facial expression, for example, a brow-raising with eye widening, held-tilting, all of which constitute 'beseeching brow' (BB) etc.

Additionally, we studied the behaviour of (1) Deaf CSL teacher who taught CSL to the hearing learners of CSL at beginners' classes and (2) CSL signers communicate with stranger home signers. We found that 1) PU often co-occurs with BB in interrogatives in the communication among the CSL signers; 2) PU+BB is the main marker for Chinese deaf gestures, which typically appear in the scenario where the CSL signers have to resort to more gestures to communicate with hearing non-signers; and (3) Home signers only rely on BB for interrogative markings.

Finally, we examined the functions of BB and PU in Mandarin spoken language. We looked at their prevalence and frequency in the elliptical questions in speech from publicly available data. For example, there are content questions without WH words, (e.g., "You are going to——" "time——"), whose interrogative marking is realized by a rising intonation, a pause and in particular, also a brow- movement, or occasionally a PU. Here in print, we use a slash to represent all three. The results showed that out of all 193 occurrences, BB appeared in all elliptical questions and co-occurred 24 times with PU (BB+PU).

In summary, supported by the evidence of gestures from the hearing and the deaf, we argue that a brow movement is the prototypical interrogative marker in our language, either for spoken or sign language. The essence of the question marking mechanism is that it needs a placeholder and an indicating cue to trigger the reaction of an answer for the audience. The pause or prolonging of the last word in spoken language or sign language is showing 'there is an information hole'. A PU gesture is semantically 'empty', whose function is similar to a 'pause'. It can be easily produced to enhance the visual prominence of BB as an interrogative marker. When these two co-occur and can hold, PU is originally an emphatic gesture functioning like a slash '——', symbiosis of BB (host) and PU (parasite) continues to work for a long time. Later, PU gets the function of marking interrogatives from its host. Thus, it becomes the manual prototype of interrogative marker in the sign language.

Keywords: brow movement, interrogative marker, palm-up, gesture

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（CIEL-15 分会场 3 13 日 16:42-16:54 报告人：林皓）

The Role of Semantic Extension and Metaphor in the Evolutionary Dynamics of Language

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Where does the unlimited expressive potential of human language come from? Previous research has focused on the important contributions of the massive size of the lexicon (Hurford 2012) and compositionality, which allows for the combination of lexical items to yield new meanings (Pleyer et al. 2022). However, another important factor in extending the range of expressible meanings is the process of meaning extension, by which lexical items become polysemous (Vicente & Falkum 2017). Polysemy is pervasive in modern language (Floyd & Goldberg 2021).

The emergence of polysemy, extended meanings and the factors involved in it have been documented in historical linguistics, especially historical semantics (e.g. Allan & Robinson 2012). In such work, metaphorical extension has been shown to be a key factor in licensing semantic change (e.g. Sweetser 1990; Anderson 2017).

More recently it has been argued that processes of metaphorical semantic extension observed in historical language change also served as drivers in the evolution of language (e.g. Smith & Höfler 2015). Specifically, semantic extension provides a pathway to extend the lexicon of languages. It is this process that enables the emergence of one of the key properties of modern languages, namely that they are open-ended, systematic, polysemous, structured semiotic systems.

Here, we review results from three approaches whose integration presents an important cornerstone for an interdisciplinary account of the role of semantic extension and metaphor in the evolutionary dynamics of language: (1) Historical linguistics and diachronic semantics (2) Computational approaches and natural language processing, and (3) Experimental semiotics. Research in historical linguistics has shown that metaphor is a major mechanism of semantic change. Diachronic semantic analyses have not only mapped detailed historical trajectories of semantic extension motivated by metaphor, but also identified common metaphoric pathways of change as well as shared cognitive principles underlying them (e.g. Anderson et al. 2016). Computational approaches and natural language processing have used findings and data from historical linguistics in attempts to automate the detection of metaphoric semantic change and to build data-driven models of the cognitive and communicative principles underlying it (e.g. Brochhagen et al. 2023; Xu et al. 2017; Pleyer et al. 2024). Experimental semiotics is a paradigm in which participants have to create novel communication systems in the absence of language (e.g. Galantucci et al. 2012; Nölle & Galantucci 2023). Given the task of communicating with each other in an interactive scenario, participants quickly negotiate meaningful symbols to communicate about referents. What is more, these symbols become increasingly structured over the course of continuing interactions via processes of interactive cultural evolution. It therefore represents a paradigm that can investigate cultural linguistic

evolution under controlled laboratory settings to shed light on the interactional and cognitive principles involved in it (Pleyer & Hartmann 2024). More recently, Experimental Semiotics studies have also begun to investigate the role of metaphor (Verhoef et al. 2024) and semantic extension (Smith et al. 2024) in bootstrapping communication systems and leading to the emergence of metaphor-based and polysemous systematic semiotic systems.

Combining results from these approaches represents an important first step towards an interdisciplinary, integrative account of the role of metaphor, and processes of polysemous meaning extension more generally, in the evolutionary dynamics of language.

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（CIEL-15 分会场 3 13 日 16:54-17:06 报告人：Michael Pleyer）

Multilevel Phylogenetic Inference of Syntactic Harmony

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One of the most well-known typological generalizations is that languages tend to order the grammatical head and its dependents in a consistent way (Dryer 1992; Greenberg 1963). For example, VO languages are more likely to have prepositions while OV languages are more likely to have postpositions. Over the past decades, new empirical findings and competing theories have been advanced to explain the word order harmony. These theories range from functional explanations focusing on cognitive and learning biases (Culbertson, Smolensky, and Legendre 2012; Futrell, Levy, and Gibson 2020; Hawkins 1983), to alternative views, emphasizing the roles of cultural evolution and historical accidents in language change (Bybee 1988; Cristofaro 2019; Dunn et al. 2011). So far, there is little evolutionary evidence favoring or against harmony based on cross-linguistic corpus data, and it remains unclear whether the functional explanations can be reflected in the history of languages.

Using 45 dependency-annotated corpora from Universal Dependencies v2.10 (Zeman et al. 2022), we are trying to detect the evolutionary bias of harmony vs. disharmony in the history of Indo-European. To assess the cognitive benefits of consistency in head direction, we measure harmony by counting pairs of word orders (V-O and N-Gen, V-S and N-Adj, etc) that co-occur in the same direction in a sentence. Since word orders are not uniformly distributed, e.g., subjects almost always come before the verb, we need to control for the base distribution of each word order in a language. For this, we introduce two random baselines: one fixes the

overall head direction in a language (random 1), and the other keeps unchanged the order of each dependency type in a language (random 2). By comparing the observed against the baselines, we can remove the confound of other possible processes (e.g., word order rigidity) in language change. We go beyond previous phylogenetic approaches that model the correlated evolution separately for each pair of word orders (Dunn et al. 2011; Jäger and Wahle 2021). Instead, we have developed a multilevel phylogenetic Continuous-time Markov Chain model that can estimate evolutionary rates for harmony and disharmony at both population and group levels (Nalborczyk et al. 2019; Stan Development Team 2022).

Our results reveal no clear difference in the estimated rate ratio for harmony between observed and random baselines (Figure 1). In particular, the observed rate ratio (mean rate ratio: 1.64, 90% CI = [0.17, 4.47]) has substantial overlaps with the second baseline (mean rate ratio: 1.76, 90% CI = [0.17, 5]). Our findings challenge the functional motivations for harmony during language comprehension, production, or learning. When the distribution of each individual word order is kept constant in a language, there is not much room left for any additional harmonic constraint between pairs of word orders in real utterances. This further suggests that the attested word order universals in previous work might emerge as a side-effect of word order rigidity in language evolution, and no appeal to cross-category harmony may be needed. In addition, when compared to the first baseline (mean rate ratio: 3.13, 90% CI = [0.67, 6.23]), the observed data show a lower rate ratio or a weaker evolutionary bias for harmony. This also contradicts previous theories that predict a general head-initial or head-final preference (Ferrer i Cancho 2017; Hawkins 1994). Conversely, word orders seem to be less constrained than commonly assumed, and they tend to evolve towards a more mixed configuration at least in Indo-European. We illustrate the potential of this approach by further expanding data to other language families while accommodating lineage-specific variation.
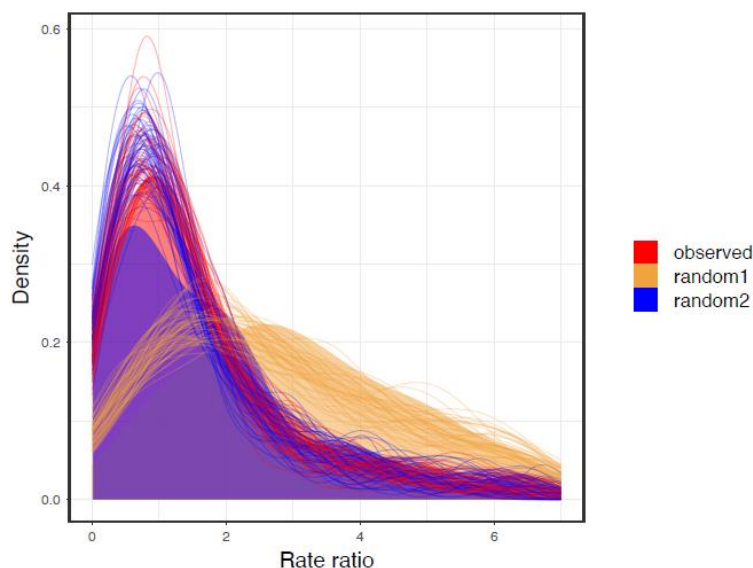
Figure 1: Posterior density of rate ratio of harmony to disharmony from the multilevel phylogenetic model. Higher rate ratios indicate a stronger evolutionary bias towards harmony. The shaded areas under the curve represent the rate ratio at the population level ("fixed effects"), and the thin lines represent the rate ratio at the group level ("random effects").

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（CIEL-15 分会场 3 13 日 17:18-17:30 报告人：敬应奇）

Language in Digital Communication

Yiqiong Zhang, Susan C. Herring, Rongle Tan, Qingwen Zhang, Dingxu Shi

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Graphicons are graphical icons used in digital communication, including (but not limited to) emoticons, emojis, stickers, GIFs, and images (Herring & Dainas, 2017). Graphicons are increasingly ubiquitous with their forms and functions constantly evolving. In tandem with their growing popularity is the emergence of a discourse of "language endangerment" that graphicons are viewed as a threat to words (Thurlow & Jaroski, 2020). It remains, however, largely unexplored that to what extent and how language is affected by the use of graphicons.

Our recent diachronic study found that graphicons have taken over some of the functions of sentence-final particles in Chinese (Zhang et al., 2023). The current study focuses on the impact of graphicons on the use of evaluative adverb (EA) in Chinese (such as 终于[finally], 果然[expectedly]) based on a 14-year longitudinal corpus of 992,856 comments posted on the popular Chinese social media platform Bilibili. We obtained normalized frequencies of both graphicons and EAs based on the total number of messages, based on which a sampled corpus was selected for qualitative analysis. Findings show that graphicon frequencies increase while EA frequencies decrease over time, and that the correlation between these two trends is statistically significant. However, qualitative analysis on the EAs with an increasing trend shows that EAs that encode negation, rhetorical questions, or doubts and uncertainty are less likely to be replaced by graphicons, which is consistent with the overall positive meanings associated with graphicon use.

We conclude that, diachronically, graphicons are developing into alternatives for a limited set of linguistic categories on Bilibili. As such, they are indeed in competition with language, but we argue that the competition is enriching rather than debasing language.

Keywords: graphicon, diachronic, competition, language endangerment, evaluative adverbs

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（CIEL-15 分会场 3 13 日 17:30-17:42 报告人：张艺琼）

湘语岳阳荣家湾话的浊音对立与气声分调

陈禹风 夏俐萍
山东大学

岳阳县荣家湾镇位于湘鄂赣交界地带，以往研究记录了荣家湾话的次清和全浊合流的现象，但是不同研究的音系处理结果存在差异。前人学者在[浊音]和[送气]特征的判断上出现了不同的结果。一般情况下，清与浊，送气与不送气往往是互相对立的，但是在同一方言点出现截然不同的调查结果令人疑惑。此外，学者们对次清去声分调的问题也有不同的结论。本研究旨在确定荣家湾话的浊音和声调的具体语音表现，讨论前人调查结果差异的原因。并从微观语音表现探讨该方言次清声母字浊化和分调的互动机制。

语音实验结果发现，荣家湾话的塞音 VOT 基本都为正值，次清和全浊的 CPP 值低于全清字，这意味着荣家湾的次清浊化表现为韵母段存在气声发声，同吴语的"清音浊流"。具体来说，在单字中，次清来源的塞音有相对更长的 VOT，表明其有一定的送气特征，但远不如普通话的清送气塞音，甚至只是接近北京话的不送气音的 VOT 时长（30ms 左右）。这可能是造成前人学者对[送气]特征判断有别的原因之一。荣家湾话全清、 次清、全浊三个来源的塞音都是不带音，意味着次清和全浊是况。因此，当调查者只关注声母本身，很容易将辅音判断为清音。但是当调查者关注整个音节的特点，就会将清音音节和浊音音节区别开。这也是前人对[浊音]特征判断有别的原因。

本研究更进一步地揭示了荣家湾话特殊的"浊音"对立，这在汉语方言中非常少见。通过对 VOT 时长、闭塞时长、H1-H2 以及 CPP 值等多项参数进行测量验证，我们指出荣家湾话的次清和全浊分别是"清爆音弱送气弛声"与"清爆音不送气弱弛声"，全清为常见的"清爆音不送气常态带声"。此外，荣家湾话还存在"气声分调"的特殊语音现象。实验发现，去声的全清和次清两类的基频曲线完全分开（图3），上去入三类依"清浊"出现调头分离，调尾接近的特点，反映出荣家湾方言声调依气声发声态变异分化的特点。最后，本文从语音的接触和演变角度认为荣家湾话的次清浊化和分调表现受到北部赣语和老湘语的共同影响。
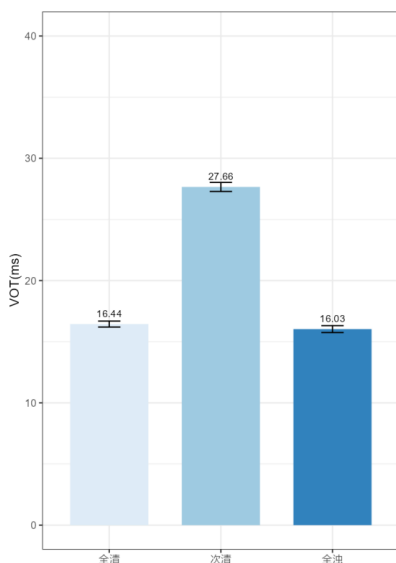
图 1 荣家湾话塞音 VOT 对比
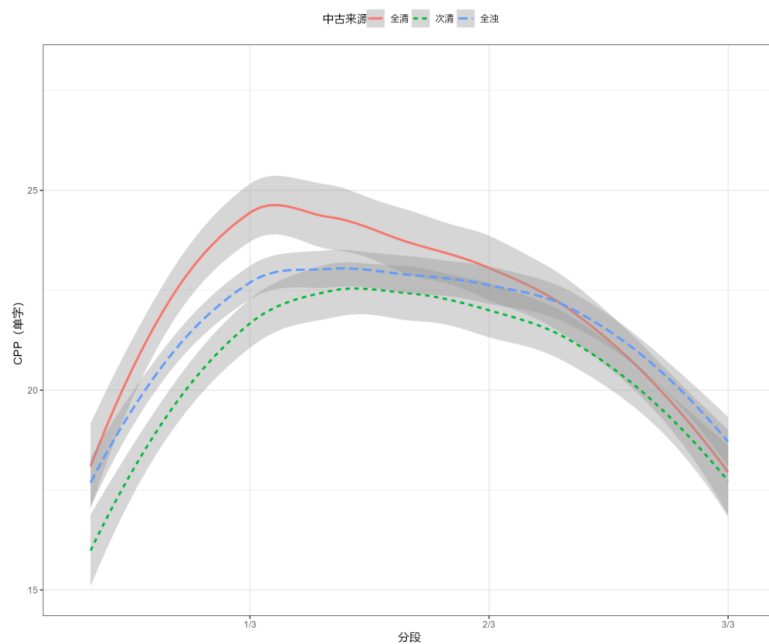
图 2 荣家湾话全清、次清、全浊音节韵母段 CPP 对比
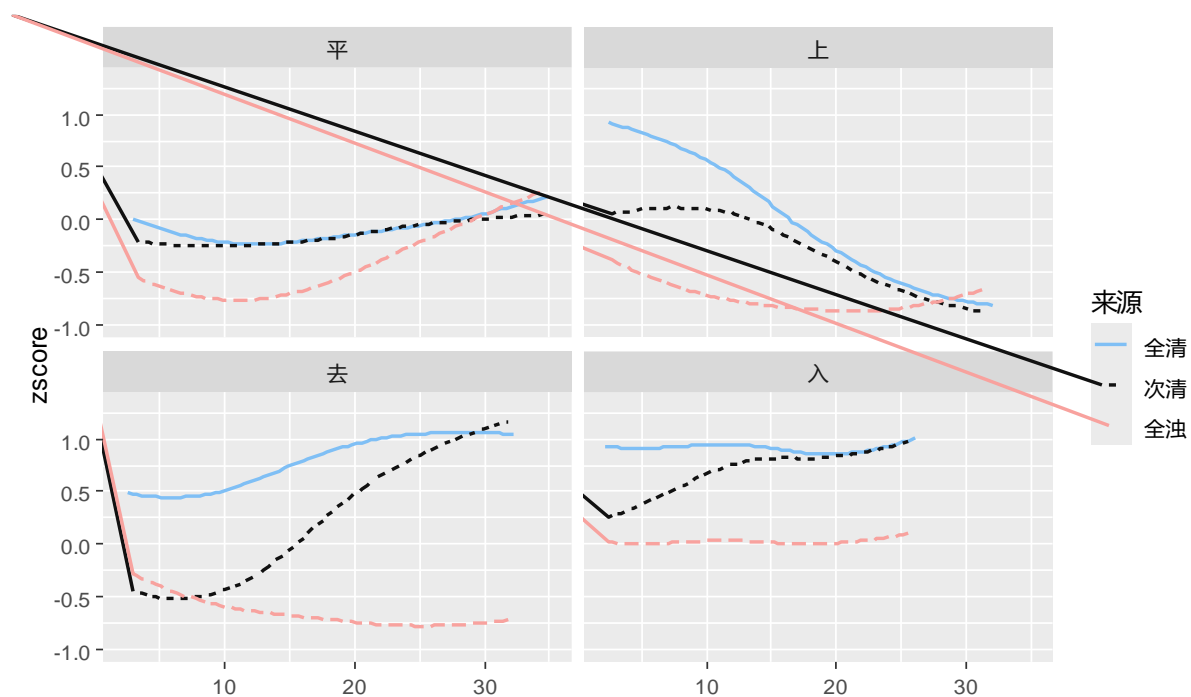
图 3 荣家湾话各来源的声调曲线

（CIEL-15 分会场 4 13 日 14:30-14:42 报告人：陈禹风）

山西文水发言古全浊声母的演变

李笑笑

天津师范大学

山西文水方言的古全浊声母今已全部清化，清化之后不送气是原生层，送气是变异层。变异层主要有两个来源：一是山西南部地区的中原官话汾河片，少量仄声字读送气音源于此；二是普通话，今大量平声字读送气音源于此，且中原官话汾河片对文水方言的影响时间上要早于普通话。

关键词 文水方言 古全浊声母 演变 历史层次

（CIEL-15 分会场 4 13 日 14:42-14:54 报告人：李笑笑）

近三十五年来陕西方言单字调的演化

李斌

西安翻译学院

本文比较了陕西各地方志与《陕西方言集成》中单字调。

在调值演化方面，调值演化分为调值相同与调值变化。

调值变化又分为调值提高、调值降低及其组合形式。调值变化中的调值提高分为高一度、前高一度、后高一度、前高两度、后高两度、前高一度与后高两度、前高两度与后高一度、前高两度与后高三度等 8 种情况。调值变化中的调值降低分为低一度、前低一度、后低一度、后低两度、前低一度与后低两度、前低两度与后低三度等 6 种情况。调值变化的组合形式分为调值提高+调值降低、调值降低+调值提高、调值提高+调值相同+调值提高、调值提高+调值相同+调值降低、调值降低+调值相同+调值提高、调值降低+调值提高+调值降低等 6 种形式。

在调型演化方面，调型演化分为调型相同与调型变化。

调型变化又分为平调变升调、平调变降调、平调变凹形曲折调、平调变凸形曲折调、升调变平调、升调变降调、升调变凹形曲折调、升调变凸形曲折调、降调变平调、降调变凹形曲折调、凹形曲折调变平调、凹形曲折调变升调、凹形曲折调变降调、凹形曲折调变凸形曲折调等 14 种形式。

除此之外，还有其它情况。

陕西省分为三个地区——陕北地区、关中地区及陕南地区。不同地区的声调演化，具体如下所示。下表的 A 表示变化最大，B 表示变化较小，C 表示变化最小。

表 1：陕西不同地区声调的演化排序

	调值相同	调值变化	调型相同	调型变化	其它
陕北地区	B	C	C	B	A
关中地区	A	B	A	C	C
陕南地区	C	A	B	A	B

（CIEL-15 分会场 4 13 日 14:54-15:06 报告人：李斌）

山东"煎饼"语音变异研究

张瀛月
枣庄学院

煎饼是山东的特色饮食，而在煎饼习俗区，"煎饼"一词的本音、本字问题一直以来都是困扰方言学与民俗学的难题。本文通过对山东境内 655 名居民"煎饼"一词发音情况的实际考察，发现"煎饼"的语音形式共有八种。且通过不同地域的变异形式，推断出"煎饼"声母音变的不同阶段与实现路径。通过研究，得出如下结论：1. 现阶段，"煎饼"的声母音变形式是内部与外部因素共同作用的结果。内部是语流音变的结果，外部是普通话及煎饼习俗的影响。2."煎饼"的本音是[tɕiɛn piŋ]，本字是"煎饼"。3."煎饼"语音演化的全过程为：① tsiɛn piŋ→②tɕiɛn piŋ →③ nian niŋ/ɲiã ŋiŋ→④tɕiɛn piŋ，且各阶段音变层次与原因各不相同。前面段是系统性历史性音变，而后面是非系统性语流音变，二者性质不同。

（CIEL-15 分会场 4 15:06-15:18 报告人：张瀛月）

Phonological Dynamics and Evolution in the Chengdu Dialect: An Analysis of Segmental Inventories and Tonal Variation

罗洋天
Northwest University

The formation and evolution of dialects are deeply influenced by the amalgamation of phonetic backgrounds and phonological phenomena. This paper presents an intricate analysis

of the Chengdu dialect, which serves as a prominent representation of Sichuan Mandarin, born from the blend of immigrant languages in the early Qing Dynasty. The study meticulously details the phonological architecture of the dialect, shedding light on its evolutionary trajectory and sociolinguistic significance.

The phonetic framework of the Chengdu dialect is distinct, possessing unique initial consonants and finals compared to Standard Mandarin. The analysis delineates 21 initials, including the rare presence of [ŋ] and [nʲ], and 36 finals, where several are unique to the dialect. These segmental features highlight the rich phonetic heritage and the subtle influences of migration and topography on the dialect's development.

The tonal aspect of the Chengdu dialect is equally complex. The study dissects the four primary tones, identifying deviations from the tonal patterns of Standard Mandarin. Past research on these tones has revealed discrepancies in their classification, with differing perceptions leading to varied academic conclusions. Recent experimental data within this paper strive for a more objective and standardized interpretation of the Chengdu tonal system.

The tone sandhi phenomenon within the Chengdu dialect challenges the prevailing right-dominant or left-dominant dichotomy found in other Chinese dialects. Disyllabic and polysyllabic structures demonstrate that the dialect employs a more intricate, non-linear approach to tone sandhi. This complexity not only contributes to the phonological diversity of the dialect but also provides an empirical basis for understanding its evolution.

A particularly intriguing aspect of the Chengdu dialect's evolution is the morphological tone of sandhi. The paper explores the nuanced rules governing tone alterations in reduplicated structures, which are a testament to the dialect's dynamic sound system. These rules underscore the shifting linguistic landscape and reflect ongoing changes in regional speech patterns.

Additionally, the study explores the evolutionary phonetics of vowel raising, where certain vowel sounds are being advanced to higher articulatory positions by younger generations. This phonetic shift is particularly significant as it is predominantly led by female speakers, indicating a gender-based trend in the linguistic evolution of the dialect.

The paper also examines other phonological phenomena such as voicing, nasalization, assimilation, and deletion. These processes occur within the confines of specific phonological domains and further illustrate the dialect's adaptive nature. Through careful observation and acoustic experimentation, the study reveals the fading presence of the nasal initial and the emergent prevalence of free variation in phonetic realizations.

Conclusively, the comprehensive phonological exploration of the Chengdu dialect not only enhances the understanding of its formation and evolutionary path but also serves as an exemplar of dialectal studies. It reflects the complexity of linguistic evolution influenced by historical migrations, societal changes, and linguistic innovation. This paper contributes to the field of evolutionary linguistics by offering a detailed snapshot of a living language's constant adaptation and resilience.

Keywords: Chengdu dialect, Sichuan Mandarin, phonological evolution, segmental inventory, tonal analysis, tone sandhi, vowel raising, linguistic adaptation.

（CIEL-15 分会场 4 13 日 15:18-15:30 报告人：罗洋天）

湖北官话方言阳韵邪母塞擦音化现象研究

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　　湖北官话方言包括分布在湖北省内的西南官话和江淮官话黄孝片。在湖北被官话方言中存在古阳韵邪母塞擦化的现象。

　　宕摄包括一等唐韵和三等阳韵，邪母只同三等阳韵相拼。邪母字在北京音中今绝大多数是擦音，只有"辞词祠囚"四字今为舌尖塞擦音。西南官话邪母字大多数为舌尖擦音，但除"辞词祠囚"四字外，还有一些阳韵邪母字今为舌面塞擦音，例如武汉方言"祥"tɕʰiaŋ2"详"tɕʰiaŋ2 "像"tɕiaŋ5。该现象也见于江淮官话和湘语等南方方言，例如扬州"详"□tɕʰiaŋ"祥"□tɕʰiaŋ，长沙"详"tɕian，"祥"tɕian，双峰"详"dziɒŋ"祥"dziɒŋ。

　　下面列出几个方言点的材料，如下（武汉、成都、长沙、双峰、广州的材料取自《汉语方音字汇》页 323-324，贵阳的材料取自《普通基础方言基本词汇集》和《贵阳方言词典》；绍兴方言的材料来自《绍兴方言同音字汇》，王福堂，2008）：

表 1 阳韵邪母字今读表

方言点	祥	翔	像	象
武汉	□tɕʰiaŋ	□tɕʰiaŋ	ɕiaŋ□ / tɕʰiaŋ□	ɕiaŋ□
成都	□ɕiaŋ	□ɕiaŋ	ɕiaŋ□ / tɕʰiaŋ□	ɕiaŋ□
贵阳	□tɕʰiaŋ	□tɕʰiaŋ（详）	tɕʰiaŋ□	tɕʰiaŋ□
昆明	□tɕiã	□tɕiã（详）	ɕiã□ tɕʰiã□	ɕiã□
绍兴	dziaŋ²	dziaŋ²	dziaŋ⁴/ziaŋ⁴	dziaŋ⁴
长沙	□tɕian	□tɕian	ɕian□/ɕian□	ɕian□
双峰	□dziɒŋ	□dziɒŋ	dziɒŋ□	ɕiɒŋ□
广州	□tʃʰœŋ	□tʃʰœŋ	tʃœŋ□	tʃœŋ□

　　记载湖北方言的文献，如《凡海书》载"象,想。...吾乡土语音读若匠..."。《汉音集字》（hankou syllabary）记载 Ch`iang[tɕʰiaŋ2] 下平"庠详祥翔"，这说明邪母读为舌面塞擦音的现象至少在一百多年前的湖北方言中就已普遍存在。

　　在反映南方官话的近代韵书记载了邪母读塞擦音现象。如《西儒耳目资》第三十二摄浊平、共生字子、测阳切所辖字有"详祥庠翔墙樯戕嫱蔷"、色阳切所辖字有"祥庠翔详"；"祥庠翔详"四字有"测初母阳切和色生母阳切"两个反切，既反映了精组字与庄组字混，又记录下了"邪"母有塞擦音和擦音两读的现象。

　　擦音塞擦化现象在汉语方言中比较常见，不仅见于阳韵邪母字，还见于中古清擦音如"心生书晓"和浊擦音"禅匣"，这六个擦音都不同程度的出现了塞擦化现象。其中"心"母字出现塞擦化的字数最多，如下：

表 2：心母字今读塞擦音表

方言点	例　　　　字
北京	赐 tshɿ⁵¹½峻 tɕyn ⁵¹½伺 tshɿ ⁵¹½粹 tshuei ⁵¹½浚 tɕyn ⁵¹½燥 tsɑu ⁵¹½僧 tsəŋ ⁵⁵½栖 tɕhi ⁵⁵½鞘 tɕhiou ⁵¹
昆明	赐 tshɿ ɿ⁵¹½噪 tshɔ⁵¹½粹 tshuei⁵¹½膝 tɕhi⁵¹½鞘 tɕhiɔ⁵¹½纤 tɕhiɛ̃¹
成都	赐 tshɿ⁵¹½粹 tshuei⁵¹½峻 tɕyn⁵¹½浚 tɕyn⁵¹½栖 tɕhi¹¹½伺 tshɿ⁵¹½碎 tshuei⁵¹½膝 tɕhi²¹½纤 tɕhian⁵¹½噪 tshau⁵¹½燥 tshau⁵
武汉	赐 tshɿ⁵¹½粹 tshei⁵¹½峻 tɕin⁵¹½峻 tɕyn⁵¹½鞘 tɕhiau⁵¹½伺 tshɿ⁵¹½膝 tɕhi⁵¹½燥 tsau⁵
贵阳	赐 tshɿ⁵¹½粹 tshuei⁵¹½栖 tɕhi1½鞘 tɕhiau⁵¹½撕 tsɿ¹½伺 tshɿ⁵¹½怂 tshoŋ³¹½碎 tshuei⁵¹½膝 tɕhi¹¹½膝 tɕhi²¹½纤 tɕhian¹¹½噪 tshau⁵¹½浚 tɕin⁵
重庆	赐 tshɿ⁵¹½粹 tshuei⁵¹½栖 tɕhi¹

从各地的情况看，心母塞擦化主要出现在"赐峻伺燥噪粹"这几个字上，它们都是书面语词，同北京话读音相同。"膝"字在北京话中有□ɕi，□tɕʰi 两读。《汉语方音字汇》所收录的 20 个方言点中就有 17 个点"膝"字声母今读塞擦音 tɕʰ。

书母读塞擦音的常见于"翅伸春"三字，如贵阳：翅 tshɿ⁵¹½伸 tshən¹¹½春 tshoŋ¹¹½翅 tsɿ⁵；其中"春"同普通话读音相同，是书面词汇，最具代表的字是"翅伸"两字。

晓母今读塞擦音的字是"吸迄"，如武汉：迄 tɕhi²½；贵阳：吸 tɕi²¹½迄 tɕhi²，其中"吸"字是常用的口语词，"迄"是书面语词；

匣母今读塞擦音的字不多见，以武汉方言为例，主要有以下例字：迥 tɕyn³¹½茎 tɕin¹¹½胫 tɕin⁵¹½匣 tɕia²¹½狎 tɕia²。"匣狎"是受声符"甲"的影响而产生的误读，"茎胫迥"是非口语词，承接普通话的读音。

本文将对湖北官话方言中的阳韵邪母塞擦化现象来源进行讨论。

（CIEL-15 分会场 4 13 日 15:30-15:42 报告人：郭丽）

山西晋语入声舒化的变异研究

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山西晋语吕梁片入声包括阴入与阳入两类，本文以晋语吕梁片的入声为研究对象，通过实验考察吕梁片方言入声音高、时长、韵尾的声学表现，研究吕梁片入声发展演化的过程。

研究发现吕梁片入声在演化过程中存在新老派差异。在音高方面，老年与青年入声调值与音区有不同，青年入声单念时已经不再保持音高独立，合流进程快于老年；在入声的单双字调长化变异过程中，青年的入声长化进程明显快于老年；在韵尾发声态方面，入声无论单念还是在双字组中，老年入声发声时喉部更加紧张，发声类型存在较多的喉塞尾与嘎裂声，青年的入声韵尾常浊化显著，入声韵尾的舒化进程快于老年人，从入声变异看，吕梁片老年人的入声舒化进程慢于年青人。同时吕梁方言阴入在时长方面与阳平区分，阳入在韵尾发声态方面与上声区分，表明吕梁入声至少在一个方面与舒声有所差别，入声目前仍可以作为一个独立的调类存在。吕梁片入声未完全舒化，但正处于舒化进程中，吕梁片入声舒化进程不同，差别主要体现在时长与韵尾发声态方面：汾阳方言入声处于舒化阶段的最前端，入声长化最快，韵尾常浊化明显；岚县方言的入声长化最慢，韵尾的喉部紧张度更高。吕梁片入声的变异表现了入声演化进程中

关键词　晋语 吕梁片 入声变异 演化 声学

（CIEL-15 分会场 4 13 日 15:42-15:54 报告人：白静茹）

Dynamics of Language Change in the Digital Era: The Potential of Indonesian Dialects to Challenge the Dominance of Jakarta Dialect Indonesian

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In discussions concerning language change, we recognize that languages evolve in tandem with their speaker communities. Poedjosoedarmo (2006) posits that these changes stem from the interactions among speakers in their daily lives, adapting to one another and innovating within familiar social groups. These initial shifts cascade into subsequent changes, resulting in a chain-like evolution and ultimately fostering linguistic diversity.

With the advancement of digital technology, the landscape of art and culture undergoes profound transformations. This digital evolution oQers a platform for diverse language variants, including Indonesian dialects, to thrive and compete against the dominance of the Jakarta Indonesian dialect. Notably, on social media, the use of Indonesian dialects often emerges as a distinctive feature for conveying messages or humor, indirectly reinforcing linguistic identity and diversity.

The development of the Indonesian language has witnessed numerous transformations influenced by various languages. Moreover, its widespread usage and the diversity of its

speakers contribute to variations in its application. Regional dialects, formed based on specific geographical regions, add further richness to Indonesian linguistic diversity. Beyond the well-known Jakarta dialect, Indonesian encompasses other regional dialects such as Papua, Minangkabau, Medan, Ambon, among others.

Hence, it is intriguing to explore how digital technology fosters the development of dialects beyond the Jakarta Indonesian dialect. This research falls within the realm of sociolinguistic inquiry, a field that delves into language within its societal usage context. Through a sociolinguistic lens, language variation is understood as an integral aspect of language usage reality.

The research methodology employs a qualitative approach, utilizing techniques like literature review, participatory observation, interviews, and digital text analysis. It focuses on identifying and analyzing the linguistic characteristics of Indonesian dialects emerging in digital platforms, alongside exploring the evolving communication patterns within them. Additionally, it examines the social, economic, and technological factors influencing language change in the digital context.

Ultimately, the research aims to uncover the dynamics of language shifts in the digital era, including the role and potential of Indonesian dialects in challenging the dominance of the Jakarta Indonesian dialect. Its implications provide a deeper understanding of language diversification in the digital context, oQering insights for policymakers, educators, and the general public on the importance of preserving and appreciating language diversity in an increasingly interconnected digital era.

（CIEL-15 分会场 4 13 日 15:54-16:06 报告人：Maria Magdalena Sinta Wardani）

东部占语与回辉话的语音演变：以身体部位词为例

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占语主要分为东部占语和西部占语，回辉话划归东部占语，与东部 Roglai 语、Chru 语关系最近（Thurgood1999：36）。

占婆文是古占婆王国的古老文字。操回辉话的三亚回民，至今仍在使用。回辉话的语言系属和特征学界一直争论不休，引起高度重视。根据《占语-越南语词典》编写组（1995）介绍，占婆文在所有记录占婆语的文字中，东占文是最悠久且最常见的。刘志强（2013）对占婆文字及占语的语音系统作一个详细的总结，占语有 37 个辅音音素，6 个独立元音音素，16 个非独立元音音素。文章内容包括占婆文的转写、占语与回辉话的语音对应关系和语音演变路径。

作者试图把占文字转写成拉丁文，然后从历时视角以身体部位词为例，尝试从一个新的研究视角看回辉话的语言属性，语料从作者调查回辉话一手语料中获取的身体部位词汇，研究思路如下：

义项	越南文	发音	占文字	占语	发音	回辉话	印尼语	原始占语
眼睛	mắt	mat³⁵	᩠ᩮᩯ	mata	[məta:]	san²¹tɑ³³	mata	*mata
脸	mặt	mat²²	ᨣᩮᩢ	mbaok	[ɓɔ:ʔ]	ɓo²¹	wajah	* ɓɔ:ʔ

眼睛 双音节词，两个音节都是 a 字母，输入占文时同时把两个辅音字母输入后再输入 a 字母，只需要输入一次即可。占语 məta:， 回辉话 san²¹tɑ³³，原始占语*mata。原始高棉语中"眼睛"拟为*mǎt，越南语为 mat³⁵，可见越南语"眼睛"可能来源于高棉语，可占语还是保留南岛语的双音节为主，到了回辉话仍然是双音节，音节 mə 脱落，元音央化很容易导致音节脱落的。

脸 内爆音在占文中就已经存在，文字输入时时一体的，同时输入 mb 就成为 ɓ。占语"脸"来源于原始占语，不过在各占语方言中长元音已经变为短元音，Thurgood 认为元音可能来源于孟高棉语。

关键词：占文字；占语；回辉话；身体部位词；语音演变

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（CIEL-15 分会场 4 13 日 16:30-16:42 报告人：张会叶）

粤东闽语声调的共时分布与历时演变——以广东潮阳方言为例

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平山久雄（1975）提出，运用"历史语言学"的比较方法，可以拟测汉祖语的祖调值。具体方法有二："方言间比较法"和"内部比较法"。以此对福建闽南方言声调进行了历时构拟，推演现代各方言单字调和连读调的演变过程。平山久雄（2016）又结合粤

东沿海闽南方言情况进行了进一步的推演。但同时也指出，对潮阳方言的阴上变调来历暂时存疑。

广东潮阳方言作为潮汕方言中的下位方言，在语音方面与区域内其他方言差异较大，而声调差异（包括基本调和连读调）尤为显著。本文基于田野调查中所得之数据，介绍潮阳方言各地点的声调情况，阐述其主要特点并对该区域的古调值进行构拟，推演其在基本调（base tone）及连读调（sandhi tone）上所呈现的不同演变过程。同时，对阴上调的演变情况作重点考察，为完善潮汕方言声调的环流框架提供更多有力支撑。

对此，我们选取潮阳方言中具有代表性的三个地点：棉北街道、峡山街道和井都镇。从地理上看，棉北街道靠近榕江流域，峡山街道属于练江流域中游，井都镇属于练江流域下游，选取这三地有一定的代表性，以窥不同地理位置上代表点的声调系统状况。从行政区划上看，棉北街道属于潮阳区，峡山街道和井都镇属于潮南区，且棉北街道和峡山街道分别为两区的中心地。基于对潮阳方言的三个地点声调的考察，本文初步得出如下结论：

1.潮阳方言内部，基本调一致性较强，连读调呈现出不同的调值，主要集中在阳平调、阴上调和阳去调。同时，阳上调也有细微差异。从声调调型上看，无论基本调还是连读调，降调调型总是占优势。

2.无论基本调还是连读调，声调演变均为链移式交替和调位区别的中性化这两种方式。

3.根据潮阳方言各地点所构拟的古调值如下：

	平声	上声	去声	入声
阴调	T1[*33]	T3[*53]	T5[*55]	T7[*54]
阳调	T2[*11]	T4[*213]	T6[*11]	T8[*32]

（CIEL-15 分会场 4 13 日 16:42-16:54 报告人：黄绮烨）

Rhythmic Features of Checked Tones (Rusheng) in Chinese Dialects: Synchronic Spectrum and Implications to the Diachronic Change

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Checked tone (CT, henceforth) was one of the four tone categories (c.f. Ping, Shang, Qu) in Middle Chinese, which was featured as abrupt and short with a stop coda ([-p/-t/-k/-ʔ]).

However, this feature has been weakening or has even disappeared from Middle Chinese to many Chinese dialects and Standard Mandarin Chinese today, and this is one of the most important diachronic changes in Chinese historical phonology. For those contemporary Chinese dialects where CTs are still preserved, there is a spectrum from the well-preserved end to the vanishing end, with various conditions of tone merger, coda-type reduction, and lengthening effect. Synchronically, the variations of CTs are an important aspect in Chinese dialectology. Diachronically, the mechanism of this sound change calls for in-depth studies in Chinese historical phonology.

This paper conducted studies on variations of CTs from the perspective of rhythmic features, obtaining a comprehensive overview of the synchronic spectrum across Chinese dialects and shedding light on the mechanism of the diachronic vanishing of CTs. Preliminary cross-dialectal phonetic studies were carried out on Cantonese in Hong Kong, Hakka in Hong Kong, Southern Min in Quanzhou, Wu in Hangzhou, Jianghuai Mandarin in Nanjing. The experimental paradigm in Zhang (2022) was adopted as a consistent experimental design across the five selected dialects. To address the context effects, in the controlled acoustic experiment, the targeted syllables with CTs and non-checked tones (NCTs) were placed into the conditions of isolated syllables, disyllabic words, and disyllabic words at different positions in carrier sentences.

The acoustic data of our experiments showed a spectrum of durational differences between NCT and CT in different contexts (in isolated syllables versus in carrier sentences) across Chinese dialects. For Cantonese, Hakka, and Southern Min, the durational difference between CT and NCT is around 100ms in isolated syllables and around 40~80ms in carrier sentences. For Wu, this difference is also around 100ms in isolated syllables but only 10~20ms in carrier sentences. For Jianghuai Mandarin, this durational difference is around 30~50ms in isolated syllables and only about 10ms in carrier sentences.

In view of uniformitarianism (i.e., the spatial and temporal invariance of natural process), the synchronic cross-dialectal spectrum can reveal the natural process of CT vanishing and flash back to the different stages of this sound change. The pilot data of the synchronic cross-dialectal spectrum suggested that the lengthening process (probably caused by the lenition of stop codas) of CTs happens in continuous speech first, when this process is nearly complete, it spreads to the isolated citation form.

The research paradigm in this study, i.e., applying the present-day acoustic measurement in the cross-dialectal spectrum to solve traditional sound change problems in Chinese historical phonology, is inspiring. Further cross-dialectal investigations in this approach can be considered and carried out for inferring the mechanisms of various sound changes in Chinese historical phonology.

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（CIEL-15 分会场 4 13 日 16:54-17:06 报告人：张凌）

从潮汕东部闽南方言连读变调的地域差异看末重式连调的演变规律

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广东潮汕地区东部的闽南方言有一个特点：单字调相差无几，连读变调却各有不同。单字调都是 8 个，平上去入各分阴阳，调值也大同小异；连读变调大体以末重式的位置变调为主，但在调类数量和调值上都有重要差异，同时还能观察到语境变调从无到有、末位变调从无到有的多样变化。前人研究对这些基本特点已有所提及，并对其中可能存在的音系规则进行了讨论（林伦伦 1995；Bao 1996；徐馥琼 2010：162-177；黄绮烨 2017 等），但受限于传统的声调描写和连调分析方法，尚未能完整揭示出其中的音理及演变规律。

本文以潮汕东部 12 个点的声调声学实验数据为依据，采用分域四度制详细描写各地连读变调的差异，并打破"单字调⇄连读调"共时变换规则的经典视角，从末重式位置变调的特点出发，将非末调独立出来进行跨地比较，追踪可能的变化路径，最后从演化音法学视角解释其演变的规律和动因。由于这 12 个点的单字调相差无几，它们在连读调上的复杂变化能够真正代表连调自身的演变历史。

研究结果发现，潮汕东部方言的末重式连读变调有非末调平微化和去底化两大演变趋势：在演变较快的地点，直降直升调要么整类演变为微升微降或平调，要么只在特定语境下保留原调值；类似的，常域最低调值｛2｝要么整类抬高为｛3｝或｛4｝，要么只在特定语境下保留原调值。我们推测这两大演变趋势可能分别是顺应韵律组块和语调音高下倾影响的结果，是声调常见变异音系化的结果。这些演变可能导向调类合并，但有时也会分化出更多的非末调类。

此外，文章也探讨了在末重的连调格局中新生末位变调的机制。

（CIEL-15 分会场 4 13 日 17:06-17:18 报告人：林晴）

江苏溧水吴语的浊送气音

宋益丹

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高本汉在《中国音韵学研究》中对吴语的浊音声母展开过讨论，他认为吴语中的浊塞音在除阻的时候伴随一个浊的送气（ɦ）。但是这个送气很弱，不够认为送气。赵元任（1928）根据该类音的语音特点命名为"清音浊流"，指发音时声母段声带不振动，后接浊气流。陈忠敏 （2010）用声学实验证明吴语的浊音单念时"不浊"，并进一

步指出是后接元音有气嗓音发声态，但当浊音位于词中位置时，气声特征消失，演变为声带振动的真浊音。

溧水吴语隶属于宣州吴语太高小片，离吴语核心区有一定距离。溧水话的浊音与苏州、上海等地有所区别，气流更强，侯超（2019）将其命名为强气流辅音，并认为其实际音质是清送气音，并认为其是从"清音浊流"演变而来。

2022 年，我们对溧水吴语进行了调查。共录制了 20 位发音人（10 男 10 女）的样本，均来自溧水明觉镇。结果发现溧水吴语具有塞辅音三分格局，即不送气清音、送气清音与浊送气音形成三分对立。之所以命名为浊送气音，主要基于四点：（1）来源于全浊声母的这类辅音具有明显的送气时长，与送气清音具备相近的 VOT 值。（2）听感上有明显浊感，在辅元结合处有气流与声带振动的并存阶段。（3）无论单念还是词中位置，后接元音都具有气声化特征。因此，我们认为之所以声带没有在声母起首位置振动是由于气流过强阻碍了声带的起振，其实质是浊送气音而非清送气音。

研究还发现部分发音人的阳平起首基频抬高，与阴平调接近，从上升的调型演变为两头高、中间低的凹调。重新检阅数据后发现调型改变的样本，其音段特征也发生了同步的改变。音节的气声特征消失，演变为清送气音，听感与浊送气音辅音也有明显不同，而与清送气辅音相近。临近的江淮官话泰如片，全浊声母演变为送气清音，在声调方面形成"阴低阳高"的总体特征。可以推测，气嗓音的消失与这一区域的声调演变密切相关。声调在失去气声特征后就不再与低调绑定，而是走上了独立发展的道路，阴高阳低以及阴低阳高两种模式并存。
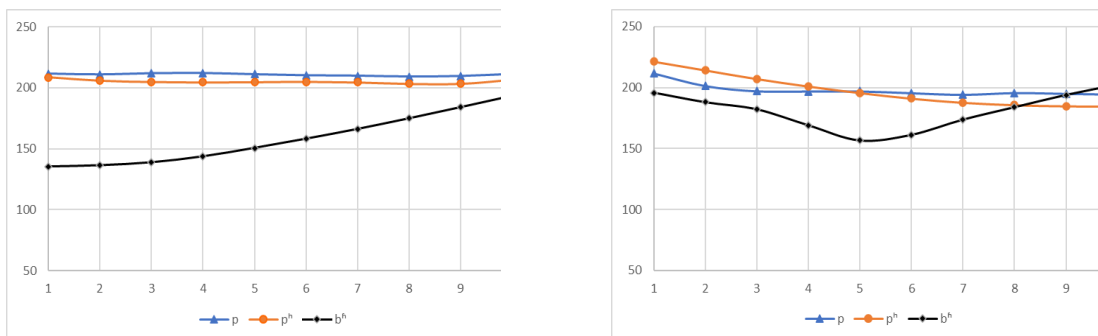
图 1 溧水话塞音音节的两种基频曲线图（左为气嗓音音节，右为常态嗓音音节）

（CIEL-15 分会场 4 13 日 17:18-17:30 报告人：宋益丹）

张家界永定区方言复辅音[kv/kʰv]声学性质与音系处理

邵燕梅
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在张家界永定区方言调查中，我们发现中古遇摄、臻摄和通摄合口一等见溪两母字今声母实际为复辅音[kv/kʰv]，[k/kʰ]和[v]在听辨上具有音质的跳跃性，应是两个辅音音段的结合。为了说明复辅音[kv/kʰv]的声学性质，我们从音段时长、摩擦状态、语音格局、

音轨频率等方面对[kv/kʰv]和同音系的塞音、擦音以及塞擦音进行了对比分析。从塞音时长来看，[kv/kʰv]塞音音段的 GAP 与 DOF 值与声母[k/kʰ]相比 GAP 值几无差异，[kv/kʰv]中的[k/kʰ]应是独立的辅音音段；从擦音摩擦状态来看，其擦音音段的谱重心与离散度与浊擦音声母[v]相比亦几无差异，[kv/kʰv]中的[v]亦应是独立的辅音音段；与塞擦音的时长和摩擦状态进行比较，[kv/kʰv]在时长性质指数上没有呈现出聚集性特征而在语音格局上显示其独立性，这充分说明了复辅音[kv/kʰv]与塞擦音的声学差异。从音轨角度来看，复辅音[kv/kʰv]与塞音的差异较大，其内部的差异性比塞音复杂，用单一的音轨频率或公式来描写复合音段的状态不能很好地说明问题。因此，我们认为[kv/kʰv]的声学表现与永定区方言音系中的塞音、擦音、塞擦音以及带有附加特征的各辅音均有差异，其性质确为塞音与擦音组合而成的复辅音。鉴于复辅音的语音事实，是否把该复辅音整理到张家界的声母系统中，是我们进行实验研究的关键所在。由于中古遇摄、臻摄和通摄合口一等见溪两母字和其他声母字的读音呈互补分布，因此，我们认为该复辅音不建议整理到声母系统中，而是作为声化韵放入到韵母系统中。

关键词：复辅音 kv/khv；时长；摩擦状态；语音格局；音轨；张家界永定区方言

（CIEL-15 分会场 4 13 日 17:30-17:42 报告人：邵燕梅）

The Effect of Syntax on Prosodic Parsing among Chinese L2-English Learners

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Aim: Previous studies have shown strong licensed effects of syntax on the chunking of prosodic boundaries among native speakers. However, studies exploring the interplay between syntax and prosodic boundaries in second language (L2) learners are rare. The Shallow Structure Hypothesis (SSH) proposes that L2 processing primarily focuses on meaning interpretation rather than syntactic information, resulting in reduced sensitivity to syntactic constraints compared to native language (L1) processing. Unlike native listeners, L2 learners rely more on non-structural cues, such as lexical, prosodic, semantic, and pragmatic elements, to form "good-enough" representations. According to the SSH, this heightened sensitivity to non-structural cues and diminished sensitivity to structural constraints occur in L2 processing regardless of syntactic similarities between a learner's L1 and L2. The current study aims to explore the interaction between syntax and prosody among native Mandarin Chinese speakers learning English, to further investigate the SSH hypothesis.

Method: In our study, we manipulated both the syntactic locations and prosodic boundary strengths within English sentences. These sentences were designed to share similar syntactic structures with Chinese. (1) The three main acoustic cues for relatively large prosodic

boundaries, including pause, final lengthening, and pitch change, were manipulated simultaneously to create four sets of 9-step acoustic prosodic boundary continuums representing different strengths of boundaries. (2) These acoustic continuums were placed at both syntactically licensed positions, where relatively large syntactic boundaries coincide with plausible large prosodic boundaries, and at syntactically unlicensed positions. Both native American English listeners and nonnative Chinese L2 listeners with high proficiency level participated in an online judgment task using Gorilla, a platform specifically designed for conducting psychological experiments.

Results: At syntactically licensed locations, both native and nonnative listeners showed a significant syntactic license on prosodic perception. Both groups reported over 70% boundary perception even when the acoustic evidence for an intonational boundary was controlled. However, the licensed effect among nonnative listeners was significantly smaller compared to native listeners. In unlicensed positions, nonnative listeners judged prosodic boundaries mainly based on acoustic information, while native listeners depended mainly on syntactic information.

Implication: Our study aligns with the predictions based on the SSH hypothesis, showing that L2 learners were less sensitive to syntactic information compared with L1 listeners. Our study further suggests that syntactic types might influence prosodic parsing as L2 learners are more native-like in syntactically licensed positions compared to syntactically unlicensed positions.

（CIEL-15 分会场 5 13 日 14:30-14:42 报告人：季金鑫）

基底节和丘脑在言语产生过程中的具体作用：结合声学-行为学-影像学分析方法

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背景： 言语产生是一项高度复杂的感知运动过程，涉及到广泛的大脑皮层的精密协调和处理。近年来，虽然计算神经网络模型和功能影像学研究取得了相当大的进展，大量研究发现皮层下核团不仅参与了运动控制过程，其在言语产生的各个阶段也发挥着重要的作用。例如，基底节和/或丘脑的损伤会造成不同类型、程度的言语病理表现。但是，这些皮层下结构对言语功能水平、认知、发声器官运动、以及语音质量等方面的具体作用，仍然是不清楚的。

方法： 针对这个问题，本研究首次结合卒中后构音障碍患者的多模态发声数据，采集了 20 名皮层下损伤的构音障碍患者与 22 名正常人的磁共振（T1/T2 结构像及 DWI 弥散像）、行为发声、和语音数据。首先，通过基于体素的形态学测量(VBM)和病变症状映射(VLSM)分析方法量化了脑损伤的具体位置和范围。同时，针对语义流畅性、图片命

名等任务提取了有效词语数、反应时等行为学指标，以及针对语音数据建立了包括发声时长、VSA 等参数在内的声学特征集。然后，利用线性混合效应模型和皮尔逊相关分析等方法进一步揭示了基底节和丘脑对整个言语产生过程的影响。

结果：本研究发现：（1）基底节和丘脑的偏侧化影响，左侧主要影响言语的认知加工水平（例如概念准备、单词检索等），右侧主要影响发声器官的运动能力（喉、舌等）和语音质量（共振峰变异性、元音空间面积等）；（2）对言语产生功能水平的影响程度是左侧丘脑 > 左侧壳核 > 左侧尾状核 ≈ 左侧苍白球；（3）对发声器官的运动水平和语音质量的影响程度是右侧苍白球 ≈ 右侧尾状核 > 右侧壳核 ≈ 右侧丘脑；（4）对认知的影响程度是丘脑 > 尾状核 ≈ 壳核 > 苍白球。

结论：总之，以上方法和结果首次详细揭示了基底节、丘脑等皮层下核团损伤对整个言语产生过程中不同阶段的具体影响，促进了我们对构音障碍背后的病理神经机制的进一步了解。

同时，有助于识别潜在的构音障碍诊断标志物，从而实现构音障碍的精准干预和个体化治疗。

（CIEL-15 分会场 5 13 日 14:42-14:54 报告人：刘娟）

汉语普通话三声变调的加工特征及其认知神经机制

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In the past 30 years, Mandarin Tone 3 sandhi, namely Tone 3 followed by another Tone 3 pronounced as Tone 2($33 \rightarrow 23$), was one of the most widely studied sandhi patterns. Previous behavioral studies showed that in lexical decision-making tasks, only T3 prime words induced a facilitation effect on T3 sandhi target words, indicating they were stored in the underlying form of T3 plus T3 in the process of tone perception (Chien, 2016). However, a series of behavioral, neuroimaging, and electrophysiological studies have shown that the phonological representations of T2 and T3 were both activated for the production of tone sequence 33 (Chang & Kuo, 2020). This study aimed to examine the brain responses underlying the perception of Mandarin Tone 3 sandhi employing the Auditory priming lexical decision task and the Event-Related Potentials (ERP) technique.

Fourteen participants who acquired Mandarin before school age were recruited for this study.676 two-letter words were selected as target words for the experiment (467 true words and 209 false words). The true words were categorized into T3 sandhi true words and non-T3 sandhi true words. Each target word was preceded by three prime words, a T2 prime word, a T3 prime word, and a control prime word (T1 or T4). False and non-T3 sandhi true words served as controls, and T3 sandhi true words served as analytical materials. During the experiment,

participants judged whether heard words were true. They pressed 1 for true, and 2 for false after each target word, preceded by a prime word. EEG equipment recorded brain signals concurrently, while E-prime tracked reaction times and accuracy.

Only accurate judgments were included for analysis. Responses exceeding mean ± 2 standard deviations or incorrect judgments were excluded from response time analysis. Statistical analysis revealed a significant priming effect, with the reaction time for T3 priming words being significantly shorter than that for the T2 words and the Control words in the lexical decision task (See Figure 1).

Figure 1 The mean reaction times for different Conditions

We analyzed the amplitude characteristics of the N400 elicited by the participants by selecting the average ERP amplitudes from five electrodes, F3, F4, Fz, C3, Cz, and C4 错误!未找到引用源。,within the time window of 300 to 500 milliseconds for repeated measures analysis of variance (ANOVA) 错误!未找到引用源。. Results showed significant differences among the three prime types ($F_{(2,102)} = 4.289$, $p < 0.05$). Post-hoc comparisons indicated that ERP amplitudes under the T3 prime condition were significantly smaller in the negative direction compared to the T2 prime and control prime conditions ($p < 0.05$). However, no significant difference in ERP amplitudes was observed between the T2 prime and control prime conditions ($p = 1$). The significant reduction in N400 amplitude under the T3 prime condition demonstrated an improvement in processing efficiency for predictive contextual information, indicating that in Mandarin Chinese T3 sandhi, the T3 prime made it easier for participants to process semantic information 错误!未找到引用源。.
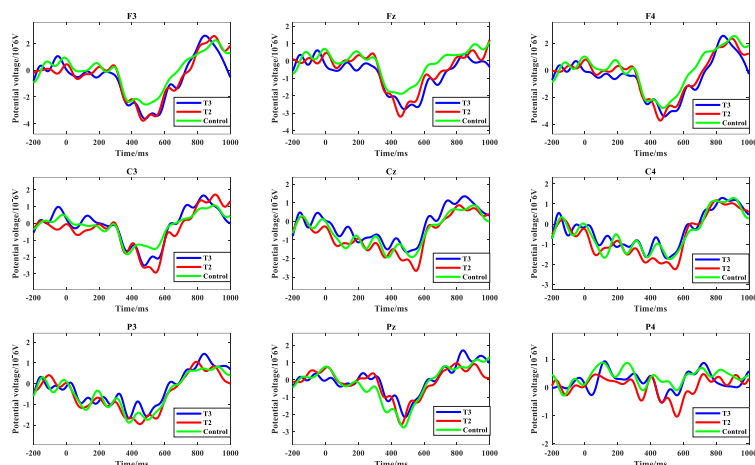
Figure 2   The ERP amplitudes for the perception of T3 sandhi words under three prime conditions

This study confirmed the behavioral results of Chien (Chien, 2016), indicating that in the perception of Mandarin tone sandhi, the facilitation effect of T3 prime was significant in both behavioral and ERP responses. This result suggested that tone sandhi words may be stored in their underlying form of T3 plus T3 during the perception process.

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（CIEL-15 分会场 5 13 日 14:54-15:06 报告人：黄旭男）

从认知语言学视角看赫梯语中的"前"和"后"

李佳娃

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"前"和"后"是一对表示位置关系的基本空间概念，在人类对客观世界的认知构建中扮演着重要的角色。通过一种事物来理解另一种事物的语言现象在认知语言学中被称为

"概念隐喻"，是人类日常生活所不可或缺的一种思维方式和认知工具。以空间范畴中的概念"前"和"后"表示其它范畴中的概念的语言现象并不只出现于现代语言中，对于已经消亡的古代语言来说，留存下来的原语文献仍然有可能证实这一语言现象的存在。

赫梯语（Hittite）是公元前两千纪生活于安纳托利亚半岛（今土耳其境内）的印欧赫梯人所使用的语言，现已消亡。该语言属于印欧语系安纳托利亚语族，是目前已知的最早有书面记录的印欧语言。赫梯语中的空间概念"前"和"后"还对应表示许多其它范畴中的概念，这些方位隐喻的存在证明距今约四千年前的赫梯人同样具有以一种事物来理解另一种事物的思维和认知方式。

本文基于认知语言学关于概念隐喻的理论与框架，分析了赫梯语中表示"前"和"后"的词的语义。在空间范畴中，parā、pēran 和 ḫantezzi(ya)-表示"前"，āppa、āppan 和 appezzi(ya)-表示"后"。本文认为，赫梯人在对空间的认知方式中不仅只有"前"和"后"两个基本概念，"面前"对他们来说似乎也是一个非常重要的参照点，这也可以解释为什么赫梯语表示"前面的"的形容词的词根是 ḫant-（正面）而非 parā/pēran（前）。在时间范畴中，赫梯人对于空间隐喻时间的基本认知模式为，将已经发生的事件视为位于自己前面的事物，将尚未发生的事件视为位于自己后面的事物。通过概念隐喻的认知机制 ḫantezzi(ya)-和 appezzi(ya)-还可以对应表示顺序的先后、年龄的长幼以及等第的高低。此外，基于赫梯人对于军事活动的认知，"前"、"面前"和"后"这三个空间范畴的概念还产生了"处于从属地位的是前、处于反对地位的是面前、处于支持/更高地位的是后"的方位隐喻。

（CIEL-15 分会场 5 13 日 15:06-15:18 报告人：李佳娃）

The Robustness of the Ganong Effect in Tonal Languages:

Exploring Perceptual Integration in Lexical Tone Perception

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香港理工大学 同济大学

Background: In daily life, the human brain exhibits an exceptional capability to map a wide range of invariant sounds onto meaningful cognitive representations. This ability arises from the simultaneous integration of diverse linguistic elements, such as phonemes and tonemes, along with contextual factors, in the formation of our final perceptual representations. Given this, it is crucial to emphasize that our perceptual decisions are not solely determined by the presence of variant acoustic cues, but rather are influenced by a comprehensive range of interacting factors. This research focuses on the Ganong effect, a lexical effect that refers to the tendency to identify ambiguous phonemes as forming real words (Ganong, 1980). While substantial evidence from non-tonal languages supports the influence of lexical knowledge on phonemic perception, especially consonants like [k] and [g] in the sub-lexical processing

(Myers & Blumstein, 2008; Noe & Fischer-Baum, 2020), findings from tonal languages present inconsistencies. Specifically, previous studies have demonstrated the Ganong effect in limited tonal pairs in Chinese, such as hei1-shei2 in Mandarin (Fox, 1985; Wiener and Liu, 2021) and ta1-na2 in Taiwan Mandarin (Yang et al., 2022). However, the reliability of the Ganong effect for lexical tone perception remains uncertain, as Politzer-Ahles et al. (2020) failed to replicate the effect for lexical tone in their study (N=100). Therefore, this study aims to investigate how to achieve a robust Ganong effect in tonal language.

Methods: In our study, we employed two resynthesis methods to create eight tonal continua, forming four Ganong pairs. The first resynthesis method involved splitting natural recording syllables into unvoiced consonants and rimes. We then selected the rimes from words and used the Tandem Straight algorithm (Kawahara et al., 2008) to create a 16-step continuum. Subsequently, we spliced the rime continuum with initial consonants to form a tone1-biased versus tone2-biased condition. This ensured that the pitch contour information remained identical across the two conditions. For the second resynthesis method, we replaced the pitch tier of the real word stimuli with non-word equivalents. This replacement was done to maintain almost identical pitch contours at the endpoints. We then resynthesized these endpoints using the Tandem Straight algorithm, resulting in different condition continua.

Preliminary Results: Preliminary results from a small sample size indicated that participants did not exhibit a Ganong effect in the spliced continua, while showing a clear Ganong effect in the whole syllable resynthesized continua. The results can be seen as follows:
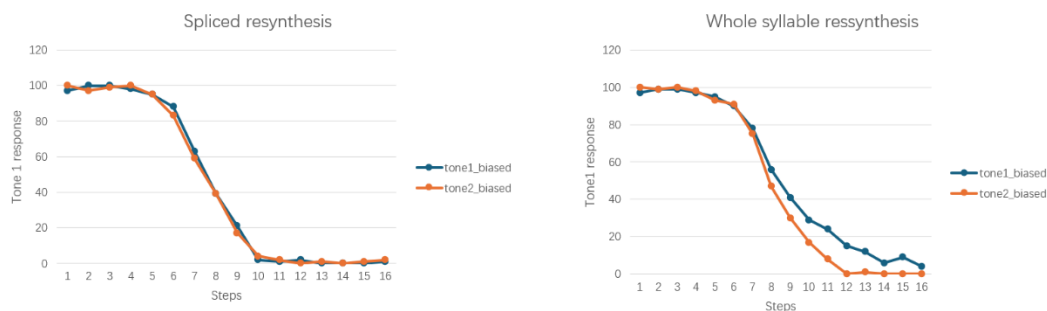
Conclusion: The preliminary results indicate that participants did not show a Ganong effect in the spliced continua. This lack of effect can be attributed to the absence of transitions between the consonant and vowel segments in the stimuli. Without these transitions, participants were unable to perceive the stimuli as a cohesive whole immediately. However, in the continua created by morphing the entire syllable for lexical tone perception, participants demonstrated a clear Ganong effect. This suggests that the holistic perception of stimuli is crucial for eliciting the Ganong effect for lexical tone.

（CIEL-15 分会场 5 13 日 15:18-15:30 报告人：李佳欣）

基于韵律与语义线索的词汇情绪感知研究

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情绪的进化意义使情绪加工具有较高的自动性，研究情绪信息在言语理解中的加工及整合方式,对情绪研究具有重要的意义。听者在理解说话者的情感时，需要整合不同通道的线索，如语义，面孔，姿态以及声音等。就从听觉感知中，韵律和语义作为重要的两个通道发挥着作用。韵律以不同的基频，振幅以及音长传达说话者不同的情绪；语义则承载着词汇层面的概念化的信息，同样能够传达情绪的语义，如"悲伤"，"高兴"等词汇。情绪韵律以及语义的线索在感知情绪时能够相互作用，但关于韵律和语义线索加工何者更自动化，更先被加工，不同的研究者得到了不同的结论，有的研究表明相对于韵律加工，语义信息更不容易被忽略，有的研究则表明韵律加工更优先。在诸多关于情绪韵律与语义的词汇感知研究中，汉语研究较少；很多研究是基于正性或负性情感的二维评价体系，对于多种基本情绪类别也缺少对比研究。因此本研究以汉语普通话中以带有情绪韵律的不同情绪化词语作为实验刺激，情绪词的语义有中性，喜悦，愤怒，悲伤，恐惧，厌恶，惊讶七种，多个词语被专业发音人以六种不同的情绪韵律（喜悦，愤怒，悲伤，恐惧，厌恶，惊讶）和中性的韵律表演，得到语音刺激。所有词语的语义和韵律情感分别经过了预实验被评测，具有较高的一致性。正式实验分别以情绪语义辨别和情绪韵律辨别为实验任务，探究普通话母语者在语义韵律一致与不一致条件下的反应时与正确率，以及不同情感类别之间的混淆模式，从而探究韵律和语义加工的关系。

关键词： 情绪加工； 情绪语义； 情绪韵律

（CIEL-15 分会场 5 13 日 15:30-15:42 报告人：祁晶）

What do Learners Attend to When Learning Lexical Tones? An Eye-Tracking Study

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Learning lexical tone is challenging to speakers of nontonal languages. For this reason, a battery of training methods was created to improve the perception of non-native tone contrasts. Among these methods, perceptual training (or learning) - a method which often presents participants with sound along with various information such as tone number, tone letter,

meaning, etc. - has been found to stably facilitate the perception of tone (Francis et al., 2008). However, little is known about whether the information that learner prefers to attend to would result in different learning outcomes at the level of individual learner. Thus, this study plans to address this issue by examining the individual variability with eye movements in the learning process of Cantonese tones.

Native Mandarin speakers who are naïve to Cantonese are recruited to learn Cantonese monosyllables. Stimuli are 18 Cantonese characters (3 monosyllables × 6 tones) recorded by two native Cantonese speakers (one female, one male). There are 4 training sessions in total, each contains 144 trials (18 characters × 2 speakers × 4 repetitions). In each trial, Participants first hear a series of 6 tones carried by one independent syllable as the context, then they hear the target sound and are required to choose from 6 choices. Feedback is provided, followed by an information interface where 4 kinds of information appear randomly in the four quadrants: 1) tone number, numbers from 1 to 6 which indicate the Cantonese tone categories, 2) tone letter, a symbol indicating the relative pitch height and contour (Zhang et al., 2018), 3) character of the target sound and 4) English meaning of the target sound. Participants are instructed to feel free to choose the information to focus on to help them learn as much as possible. Participants' eye movements are recorded throughout the experiment.

The preliminary results from one-session training showed that even after receiving a short-time (about 30 minutes) training, the participants have achieved an average cumulative accuracy of about 62%, which is much above the chance level (17%), revealing the effectiveness of training procedure. What's more, eye-tracking data showed that participants' eye dwell time for tone letter was significantly higher than that for the other three kinds of information (i.e., tone number, character and meaning). We predict that attention to tone letter may predict learning outcomes most reliably, which will be tested after collecting more data.

Keywords: Cantonese, lexical tone, Eye-tracking

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（CIEL-15 分会场 5 13 日 15:42-15:54 报告人：舒宇琴）

Exploring The Neurobiology of Merge at a Basic Level: Insights from a Novel Artificial Grammar Paradigm

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雷根斯堡大学心理学研究所

Keywords: Broca's area, Merge, syntactic processing, natural language comprehension, fMRI

Introduction: Human language allows us to generate an infinite number of linguistic expressions. It is proposed that this competence is based on a binary syntactic operation, Merge, combining two elements to form a new constituent. An increasing number of recent studies have shifted from complex syntactic structures to two-word constructions to investigate the neural representation of this operation at the most basic level.

Methods: This fMRI study aimed to develop a highly flexible artificial grammar paradigm for testing the neurobiology of human syntax at a basic level. During scanning, participants had to apply abstract syntactic rules to assess whether a given two-word artificial phrase could be further merged with a third word. To control for lower-level template-matching and working memory strategies, an additional non-mergeable word-list task was set up.

Results: Behavioral data indicated that participants complied with the experiment. Whole brain and region of interest (ROI) analyses were performed under the contrast of "structure > word-list." Whole brain analysis confirmed significant involvement of the posterior inferior frontal gyrus [pIFG, corresponding to Brodmann area (BA) 44]. Furthermore, both the signal intensity in Broca's area and the behavioral performance showed significant correlations with natural language performance in the same participants. ROI analysis within the language atlas and anatomically defined Broca's area revealed that only the pIFG was reliably activated.

Discussion: Taken together, these results support the notion that Broca's area, particularly BA 44, works as a combinatorial engine where words are merged together according to syntactic information. Furthermore, this study suggests that the present artificial grammar may serve as promising material for investigating the neurobiological basis of syntax, fostering future cross-species studies to deepen our understandings of language evolution.
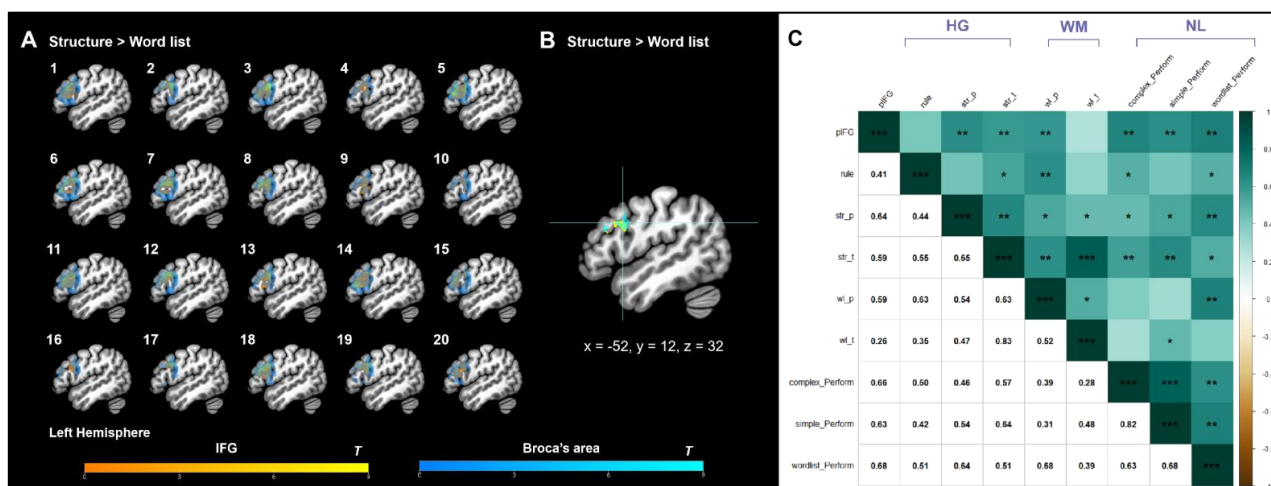
Figure1 A: Individual activation patterns via the functional localization approach. B: Group-level result. C: Correlation Matrix between signal intensity of pIFG (BA 44) and behavioral indices. * *p* < .05; ** *p* < .01; *** *p* < .001 (The p values were uncorrected).

（CIEL-15 分会场 5 13 日 15:54-16:06 报告人：陈路遥）

从实体生成论看容器量词的语义功能

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事物之间的空间关系具有以下两种可能性，一是，一种事物存在于另外一种事物的表面。比如，桌子上落了灰，灰尘存在于桌子的表面；一是，一种事物存在于另外一种事物的内部空间。比如，用碗盛了饭，饭存在于碗的内部空间。假设为事物的存在提供表面空间的事物为 A，为事物的存在提供内部空间的事物为 B。赵元任把由指称 A 类事物的量词称为"临时量词"，把指称 B 类事物的量词称为"容器量词"。邵敬敏（1993）把前者称为"可附型临时量词"，把后者称为"可容型临时量词"。本文采用赵元任（2015）和邵敬敏（1993）的办法，区分出"临时量词"（可附型量词）和"容器量词"（可容型量词）。本文所说的"容器量词"指的是指称容器的名词所充当的量词，这里的"容器"指为事物的存在提供内部空间的事物。

前人时贤对容器量词的语义功能主要有以下两种认识：

1）语义功能是量化而非分类（简称"量化说"）。（Adams & Conklin ,1973；等）；

2）为其所在的结构带来歧义解读（简称"歧义说"）。（Rothstein,2009；等）。

借鉴朱德熙（1982），本文将容器量词分为两类，一类是常规类容器量词，这类量词前可以出现任何数词的容器量词，比如"一杯水"的"杯"，"杯"之前的数词"一"可以被任何数词替代；一类是非常规类容器量词，这类量词前只能出现"一"，而且"一"表示"满"。比如，"一屋子人"。无论是量化说还是歧义说，所谈论的容器量词都是常规性容器量词，

对非常规类容器量词以及它们与常规性容器量词之间的关系缺少讨论。

本文采用怀特海（Alfred North Whitehead，1861-1947)过程哲学（Process philosophy）的实体生成理论，对这两类量词的语义功能差异进行统一分析。过程哲学的基本观点是，世界是"事件"的集合。"事件"所指乃是一种时空性的事态，所谓自然就是形成系统结构且相互规定意义的事件的生成性。（韩卓吾，2015）在这种理论的指导下，文章认为，常规类容器量词所指的容器与容物之间的关系是一种固化的事态，这类容器与容物组合为高阶个体（higher-order entities）；而非常规类容器量词所指容器与容物之间所形成的事态并未固化，因而二者无法形成高阶个体，这就造成了其所在的容器量词结构要么指称事态（某处充满某物），要么只指称容物。

文章后续所做的工作有两个部分：

1）从基于使用的理论（usage-based）讨论了造成这两类量词差异的原因。并对跨界类容器量词（即兼具这两类量词身份的量词）的指称特点进行讨论。至此，文章的结论是，容器量词内部成员不具有匀质性，有些容器量词的语义对语境的敏感度要高于其他容器量词，这造成它在语义上呈现出游移性。

2）历来学界对是否应区分"临时量词"（可附型量词）和"容器量词"（可容型量词）之间存在争议，本文的研究为区分这两类量词提供了证据支持。

（CIEL-15 分会场 5 13 日 16:30-16:42 报告人：孙竞）

Motor Involvement and Neural Basis of Phonetic Convergence: Evidence from EEG Studies

Yuchunzi Wu, Zhili Han, and Xing Tian

上海纽约大学 华东师范大学

Speech perception and production are dynamically intertwined, facilitating adaptive behaviors that are crucial for effective communication. One of the most intriguing aspects of this interplay is the tendency of listeners to imitate subtle phonetic variations in the speech they are exposed to, known as phonetic convergence. Sociolinguists propose that this convergence behavior not only regulates social distance and identity during interactions but is also potentially the vehicle for historical sound changes and the emergence of regional accents. This highlights the complex relationship between sensory input and motor responses in speech processing. Recent theoretical frameworks suggest that the speech production system supports comprehension by employing forward models to predict incoming auditory signals. Specifically, when listeners are confronted with accented speech, they modify their motor commands and forward models in a speaker-centric manner to enhance the prediction accuracy of incoming speech cues, leading to phonetic convergence.

To explore these theoretical propositions and understand the underlying cognitive and neural mechanisms, we conducted two electroencephalogram (EEG) experiments that investigated the role of motor processes in speech perception and their contribution to phonetic convergence. Experiment 1 utilized a shadowing task combined with an EEG oddball paradigm to probe the neural basis of pitch convergence. Participants were asked to mimic speech sounds that occasionally included pitch deviations, allowing us to measure neural responses to both standard and deviant tones. This design helped elucidate the extent to which participants' pitch production converges towards that of the modeled speech and the corresponding neural correlates of this convergence. In Experiment 2, we employed a delayed articulation task in conjunction with EEG recordings to examine how motor signals influence the processing of incoming speech during the production of accented nasal codas. This experiment was particularly focused on assessing the sensorimotor integration by observing how speech motor preparation affects the neural processing of speech sounds, providing insights into the temporal dynamics of motor involvement in speech perception.

Our findings suggest motor involvement in the processing of phonetic features, indicating that motor systems do not merely react to sensory stimuli but actively shape speech perception through forward modeling. These results have important implications for understanding the sensorimotor encodings involved in speech processing and the mechanisms of phonetic convergence. Furthermore, this research advances our comprehension of how implicit learning and sensorimotor adaptation influence communication behaviors and cognitive processes in everyday interactions. By detailing the cognitive and neural underpinnings of phonetic imitation within a sensory-motor framework, our studies contribute valuable insights into the integration of sensory and motor systems in speech.

（CIEL-15 分会场 5 13 日 16:42-16:54 报告人：武余春子）

(De)coding Prosocial Insincerity in Interpersonal Communication: A Cross-linguistic Approach to the Prosody-Pragmatics Interface

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In interpersonal and intercultural communication, speakers use a range of extra-linguistic and linguistic information to deliver their meaning as well as to compute interlocutor's intended meaning. As one of the means to mediate face-to-face interactions, prosodic realization of speech plays a vital role in advancing effective communication. Prosodic cues (e.g., pitch, loudness, tempo) have been shown to be crucial in speakers' delivery and interpretation of various pragmatic functions, especially non-literal and figurative meanings

of languages (see Rigoulet et al., 2014 for a review). Though the factual liaison of pragmatics and prosody in language research was raised by Levinson in as early as 1983, empirical incorporation of prosody into pragmatic analyses has not been implemented until fairly recently (Barth-Weingarten et al., 2010; Romero-Trillo, 2012).

A gap in scientific understanding exists around the role of prosody in communicating different levels of non-literalness across languages. To date, empirical studies that have been primarily designed to examine the prosody-pragmatics interface have mostly targeted non-tonal languages such as English, but tonal languages have been shown to represent more restricted use of pitch contour in conveying emotions (Ross et al., 1986). They have also primarily focused one specific type of non-literal meaning (e.g., sarcasm), ignoring the different levels of non-literalness (i.e., transparency) that can be differentiated and realized prosodically, exploration of which would contribute towards a more comprehensive understanding of the prosody-pragmatics interface. This project uses the Relevance Theory (RT; Sperber & Wilson, 1986, 1995), a cognitive pragmatics theory that considers communication in terms of cognitive relevance (i.e., to achieve the most cognitive effects with the least amount of processing efforts), as the framework to empirically test the role of prosodic cues in communicating prosocial insincerity, which is one type of non-literal language to establish rapport rather than to deceive, in (American) English and (Mandarin) Chinese.

The project innovates a hybrid approach to examine both the coding (i.e., production) and decoding (i.e., interpretation and processing) of (in)sincerity in criticism, refusals, and compliments versus their prosocially insincere counterparts, which differ in terms of level of non-literalness, with cross-linguistic evidence from English and Chinese. A series of production (roleplay and oral discourse completion tasks, acoustic analysis), perception (aural sincerity rating tasks), and processing (EEG/ERPs) tasks are conducted, thus bringing together the approaches of pragmatics, phonetics, and psychology towards a comprehensive understanding of the role of prosody in the current theoretical models of pragmatics and pragmatics processing.

（CIEL-15 分会场 5 16:54-17:06 报告人：Yunwen Su）

语言神经机制模型的演变：从 WLG 到 MUC

楚行军

广州航海学院

摘要：WLG 模型是传统语言和人脑关系研究核心成果的浓缩。MUC 模型是神经语言学理论研究最新代表性成果之一。后者对前者的继承和发展可以从语言神经机制模型视角反映对应时间段神经语言学思想的演变历程，主要体现为从大脑结构特征、语言行

为的刻画和模型的构建思路等方面对语言神经处理机制认识的整体重构。这种转换标志着语言神经机制研究进入到一个新的范式发展阶段，使得神经语言学和理论语言学发展的进一步融合逐渐成为可能。

关键词：语言神经机制，WLG，MUC，神经语言学，理论语言学

（CIEL-15 分会场 5 13 日 17:06-17:18 报告人：楚行军）

汉语双字复合词加工中的语素类别效应

夏全胜

南开大学

摘要：语素是如何加工的一直是心理语言学研究的重要问题。以往研究对汉语复合词中语素的语法类别关注不多。汉语复合词按照语素的类别可进行分类，例如：复合名词包括 NN 型(如：水杯)、VN 型(如：选票)等。本研究通过一系列实验，考察汉语双字复合词加工中的语素语法类别效应，探究语素类别效应的实质和产生影响的条件。

实验一：语素类别与频率

选取 NN、VN 偏正式复合名词。采取 2（语素语法类别：NN vs. VN）×2（频率：高频 vs. 低频）的实验设计。实验结果显示，在低频词中，NN 的反应时比 VN 的更短（$p < 0.05$）；在高频词中，NN 的反应时与 VN 的没有显著差异（$p > 0.05$）。这说明，语素的类别效应仅对低频词的加工产生显著影响。

实验二：语素类别与假词

选取 NN、VN 假词采取 2（语素语法类别：NN vs. VN）×2（首字频率：高频 vs. 低频）的实验设计。实验结果显示，无论是首字高频还是低频，NN 的反应时均比 VN 的更短（$ps < 0.05$）。这说明，语素的类别效应在假词加工中显著。

实验一和实验二的结果说明，当进行分解加工时，语素类别效应显著。

实验三：语素语法类别与组合概率

选取 NN、VN 和 AN 偏正式复合名词。根据统计，NN 与 AN 构成名词的组合概率基本一致，VN 构成名词的组合概率显著低于 NN 和 AN。采取 3（语素语法类别：NN vs. VN vs. AN）的实验设计。实验结果显示，NN 、AN 的反应时比 VN 的更短（$p < 0.05$）；NN 的反应时与 AN 的没有显著差异（$p > 0.05$）。这说明，母语者依赖于语素的组合概率进行判断，也进一步证明，语素类别要在分解加工中产生效应。

那么，语素的语法类别源于语义，还是源于语法？

实验四：语素语法类别与具体性

选取具体的 NN 、具体的 VN、抽象 NN、抽象 VN。采取 2（语素语法类别：NN vs. VN）×2（具体性：具体 vs. 抽象）的实验设计。实验结果显示，在抽象词中，NN

的反应时比 VN 的更短（$p < 0.05$）；在具体词中，NN 的反应时与 VN 的没有显著差异（$p > 0.05$）。这说明，语素类别效应受到了具体性的影响，语素的语法类别可能与语义有关。

实验五：语素语法类别与语义、语法加工

通过操纵语境和复合词首字语素的语义、语法关系，构成三种条件：首字语素与语境在语义、语法上均可搭配、首字语素与语境在语法上可搭配、语义不可搭配、首字语素与语境在语法、语义上都不可搭配。采取 3（语义、语法是否可搭配：语义、语法均可搭配、语义不可、语法可搭配、语义、语法均不可搭配）的实验设计。实验结果显示，语义、语法均可搭配的反应时快于语义不可、语法可搭配和语义、语法不可搭配的反应时（$ps < 0.05$），后两种条件没有显著差别（$p > 0.05$），说明语素的语法类别是源自于语义。

语素的类别是汉语中特有的现象，值得进一步探索。语素的类别效应对汉语名词和动词的分类问具有一定的启示和意义。

（CIEL-15 分会场 5 13 日 17:18-17:30 报告人：夏全胜）

A Probabilistic-Functionalistic Framework for Infants' Cognitive Learning: From the Perspective of the Predictive brain and Language Development

Ovid J. L. TZENG, Shinmin WANG

中国台湾"中央研究院"

Undoubtedly, the detection of regularities and quasi-regularities in the environment is a necessary prerequisite for making sense of the infinitely rich stimulation provided to the brain. It underlies categorization and segmentation of continuous information, allows prediction of upcoming events, and shapes basic mechanisms of perception and action (Siegelman & Frost, 2015). Specifically, human infants make sense of their relation to the world, detect the statistical property of the environmental information, and realize their ability to communicate with surrounding care takers through the successful acquisition of language. Such learning relies on a combination of experience-independent and experience-dependent mechanisms to extract information from the environment. Indeed, language acquisition involves both types of mechanisms. Moreover, during early development, the speed and accuracy with which infants extracts environmental information based upon a complex interplay of neurobiological and environmental factors must be extremely important for the language acquisition (e.g., Sanchez-Alonso & Aslin, 2022). In their seminal study, Saffran, Aslin, and Newport (1996), showed that

in a fundamental task of language acquisition, segmentation of words from fluent speech, can be accomplished by 8-month-old infants based solely on the statistical relationships between neighboring speech sounds. Moreover, this word segmentation was based on statistical learning from only 2 minutes of exposure, suggesting that infants have access to a powerful mechanism for the computation of statistical properties of the language input. More importantly, a series of recent experiments at the neurobiological level from our laboratory showed that the neural response associated with top-down sensory prediction is one mechanism that facilitates infants' expressive vocabulary development (Wang et al., 2022).

Top-down sensory prediction is one of the extraordinary capacities that infants exhibit to facilitate, and may be necessary for, efficient transmission of information in the brain. Using the visual-omission task designed by Emberson and her colleagues (Emberson et al., 2017; Emberson et al., 2015) as the basic experimental paradigm to measure top-down sensory prediction ability in the infant brain, our recent study (Wang et al., 2022) revealed that the occipital response present on visual-omission trials (hereafter the predictive brain signal) measured at 6 months of age was longitudinally related to infants' expressive vocabulary at 12 months and 18 months of age, thus, in line with the experience-independent learning. On the other hand, to address the issue of experience-dependent learning, a follow up visual-omission study with the parent-child shared reading as the independent environment factor was carried out. It was found that the amount of shared reading experience was correlated with the strength of the predictive brain signal as well as with infants' expressive vocabulary. A further mediation analysis showed that the effect of shared reading experience on expressive vocabulary was explained by infants' predictive brain signal. This is the first strong empirical evidence indicating that richer shared reading experience strengthens predictive signals in the infant brain and in turn facilitates expressive vocabulary acquisition.

Concluding Remarks:

From our experiments and many others on "Statistical Learning" (SL) (Saffran, Aslin, & Newport, 1996), the ability to pick up regularities in the world is taken as a domain-general central mechanism by which cognitive systems discover the underlying structural properties of any input for the purpose of generating expectations. In fact, the term SL was coined specifically in the domain of language, and the ability to extract repeated patterns of regularities and transitional probabilities from sequential and continuous auditory or visual inputs has proved useful in explaining much basic linguistic phenomena (see the review by Siegelman & Frost, 2015). It is well-established that the domain-general capacity of SL provides the cognitive system with reliable cues regarding the structural properties of printed or spoken words, thereby serving language acquisition. Recent studies have also suggested that similar neural correlates underlie sequential learning and language processing. Results from our infants' fNIRS studies with visual omission design provide detailed investigations of how the interplay of the predictive brain signals and parent-child interactions during shared reading at the age of 12 months further strengthen the importance of both experience-independent and experience-dependent learning types in language acquisition. A probabilistic-functionalistic framework based upon the lens model originally proposed by Egon Brunswik (1952), later modified by Petrinovich (1979) and Tzeng et al. (2018), is proposed as the general model for the environment-learning interaction at the neurobiological level from the perspective of the

predictive brain and language development.

阿尔茨海默病语言特征和自动识别

袁家宏
中国科学技术大学

阿尔茨海默病（AD）语言特征体现在语言的各个层面。基于 Transformer 模型和预训练-微调策略，机器学习可以有效捕捉和利用这些特征实现 AD 自动识别。我们的研究发现，通过在词转写中加入非填充停顿编码，和预训练包含非填充停顿编码的语言模型，可以显著提高利用口语识别 AD 的准确率。在此基础上，本报告以非填充和填充停顿为例，探讨利用机器学习研究 AD 语言标志物的方法。一方面，AD 病人使用填充停顿时，鼻音所占的比例比健康人低。但这一特征并非 AD 病人特有，还受性别和年龄等其它因素的影响，比如填充停顿鼻音比例随年龄增大而降低。另一方面，虽然口语中非填充停顿出现频率和年龄的相关性很小，在词转写中加入非填充停顿编码同样可以显著提高利用口语预测说话人年龄的准确度。利用基于 Transformer 模型的词向量，我们可以量化非填充和填充停顿的上下文环境，在高维空间中寻找 AD 和年老的语言标志物。

Unraveling Atypical Auditory and Speech Processing in Chinese Children with Autism Spectrum Disorder: A Multi-faceted Collaborative Approach

张扬
明尼苏达大学

This presentation provides a synthesis of our studies employing behavioral, EEG, and pupillometry measures to investigate atypical auditory and speech processing in Mandarin-speaking children with Autism Spectrum Disorder (ASD). Starting from fundamental research

on spectral and temporal processing, our multi-faceted approach addresses key issues in pitch processing, vowel formant processing, categorical speech perception, lexical tone processing, and linguistic and emotional prosody processing. We then expand our research to issues more connected with real-life settings including multisensory perception, speech in noise perception, and listening effort, with potentials for conducting translational work involving assistive listening technology and virtual reality as innovative interventions to mitigate these challenges. This interdisciplinary effort, spanning multiple centers and sites, offers a new level of understanding of ASD-related auditory differences and paves the way for targeted interventions tailored to the unique sensory needs of Chinese children with ASD.

（CIEL-15 主会场 14 日 8:30-9:00 报告人：张扬）

言语语言作为精神障碍生物社会标志物的探索研究

丁红卫

上海交通大学

精神健康是人类健康的基石与人性的核心，其重要性不容忽视。当大脑功能紊乱导致认知、情感和行为障碍时，这些精神异常状态往往在言语交流中得以显现。因此，语言成为洞察精神健康状态的重要窗口。言语数据不仅承载个体的生物特征，还蕴含丰富的社会认知信息，具备成为精神障碍生物社会标志物的巨大潜力。该报告将介绍团队在国家社科重大项目"精神障碍人群语料库建设及面向脑科学和人工智能的语言研究"中的探索与发现。重点挖掘言语作为精神障碍生物社会标志物的潜在价值，探讨言语韵律在语言学与精神医学间的桥梁作用。同时，强调文理医工交融的语言研究对精神障碍筛查、评估与康复的积极贡献，为相关领域的研究与实践提供有力支持。

（CIEL-15 主会场 14 日 10:00-10:30 报告人：丁红卫）

Towards an Understanding of Language as Lived and Cross-Species Intelligence — An Umwelt-Innenwelt-Lebenswelt Model

顾曰国

北京外国语大学

Human language is a natural phenomenon, being invented by no Man, but evolved through a long history of natural evolution, the beginning of which cannot be accurately pinned down, and the end of which is doomed to be co-extensive with mankind itself. A human individual, a life of phenotype so to speak, in contrast has a definitive beginning, i.e., zygote in the womb, and a definitive end, i.e., the death of brain, formally represented as $a \leqq x \leqq b$. The evolving life from the zygote to the dead brain may last as short as a couple of hours, or as long as over 100 years. The individual's language is doomed to be co-extensive with the lifespan, $a/0 \leqq L \leqq b/0$: A baby is born into a language (i.e., a/0), develops its own language (L), and finally extinguishes to the tomb (b/0). This paper explores the question: What makes an individual worth having a language? One answer may go like this: Life, short or long, is worth living and the meaning of life is constructed through language, hence its worthiness. This paper attempts to present a model that enables a corpus-based investigation into such age-old philosophical question of meaning of life — **language as lived experience**. The model consists of 3-welts, viz. Umwelt, Innenwelt and Lebenswelt respectively. Infants build them step by step, one on top of the other. Sexagenarians's Umwelt-Innenwelt-Lebenwelt, having been harmoniously operative up to a point, may be compromized due to diseases and be disintegrated (e.g., with AD patients). The paper also includes video-based analysis of septuagenarians, octogenarians and nonagenarians co-living as well as "talking" with their pet dogs. Pet dogs and their keepers, in spite of co-living in the same physical surroundings, build their own Umwelt-Innenwelt-Lebenswelt thanks to the species' traits of multimodality.

（CIEL-15 主会场 14 日 11:00-11:30 报告人：顾曰国）

高频致俗：语体语法的语距机制

——兼谈词汇扩散的条件与新语法学派的缺漏

冯胜利

北京语言大学

语体语法的基本原理是"语言形式具有语体属性"（如同尖状物体具有穿刺功能）、而语体则以"交际距离"为其基元属性。故此，"亲近"与"疏远"便形成"俗常 vs. 行政"或"口语 vs. 正式"的语体对立。在人类的交际活动中，原属正式体的形式（如：文明 wénmíng ＝ civilization）因于频繁使用而进入日常口语（文明 wén.ming ＝ uncivilized/uneducated）；这一"变体"通则，称之为"高频致俗律"。本文讨论"高频"所以"致俗"的语距机制及其自然属性，并据此提出语体语法的"高频致俗"庶可帮助思考 Labov（2020）对词汇扩散"词频条件"的质疑（"...no effect of word frequency."）；而人类语言**两体之必**的自然属性和运作机制，则可从"高频变体"的角度揭示词汇扩散的不同方式及其"补缺新语法学派"的当代意义。

（CIEL-15 主会场 14 日 11:30-12:00 报告人：冯胜利）

从古代预期式数词系统看南岛语内部谱系关系

贺川生

湖南大学

本文研究南岛语组合类数词（如 11、99）的早期历史，通过对不同时代语法著作和实际语料的考察，论证南岛语 Puluqish 语言组最初计数是预期式计数，随后由于语言接触或者科学计数法的影响逐渐演变为回顾式计数。鉴于只有阿眉斯语、排湾语、卑南语和南方南岛语下的马来-波利尼西亚语言（巴丹语群、菲律宾南岛语、大洋洲南岛语）存在预期式计数，侗台语（阿含语）疑似存在预期式计数，预期式数词系统支持 Sagart 基于南岛语 5-10 基本数词分析得出的南岛语谱系模型。

（CIEL-15 主会场 14 日 12:00-12:30 报告人：贺川生）

语言中的此消彼长：土家语差比句标记个案研究

鲁曼

湖南大学

文章主要为北部土家语差比句结构进行详尽介绍和说明，调查表明，土家语差比结构可以描写为[主体+基准+标记+参数+指数]（C+St+M+P+Index）。不过，主体项和基准项的句法位置不固定，基准项可以位于主体项名词前面。但是位置不同，主体项和基准项的标记也发生变化。土家语用来表示差比意义的结构列表为（1）。

（1）土家语的差比句结构

    i.   [C+St+lie+P+Index]   （lie 为离格标记）

    ii.   [St+mɛ+C+P+Index]   （mɛ 为话题标记）

    iii.   [C+ko+St+P+Index] （ko 为作格标记）

可以看出，基准可由离格标记 lie^{55}（3i）表示。但是如果基准名词左置，出现在句首，则用 mɛ^{55} 被标记为话题（3ii），其他情况下，主体被 ko^{35} 标记为作格（3iii）。基于差比结构里离格标记 lie^{55} 的用法相对少于话题标记和作格标记，以及离格和作格可以同时出现的事实，本文提出，这是因为 lie^{55} 正在逐渐消失，取而代之的是 ko^{35}（作格标记）和 mɛ^{55}（话题标记）。土家语基准标记为离格是北部土家语早期的差比句形式，但是这种结构正在发生变化：一方面，离格标记正在被话题标记或者主体项的作格标记所替代，而这主要是由于主体项的作格标记开始用作焦点标记，差比句意义经过重新分析所致。另一方面，基准项标记为话题的情形则是由于话题结构功能向差比句功能扩展所致。这种变化可能由语言接触引起。无论差比句主项标记为作格，还是比较基准项标记为话题在类型学上是一个罕见的现象。这一点来说，土家语差比句研究成果对于具有普遍意义的差比句类型研究具有贡献。

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（CIEL-15 分会场 6 14 日 14:30-14:50 报告人：鲁曼）

怒苏语 e³¹ 的演化路径

罗自群

中央民族大学 中国少数民族语言文学学院

怒苏语是中国境内云南怒江傈僳族自治州怒族怒苏支系使用的一种语言，属于汉藏语系藏缅语族彝语支。怒苏语的 e³¹ 在语言中出现的频率比较高，既可以当实词用，也可以做虚词。比如：e³¹ 可以当作数字"零"使用，这是实词，更多的是做虚词用。根据其在句中的不同位置和语义关系，e³¹ 可以做结构助词、介词和语气词等，不同语法功能的 e³¹ 也可以在一个句子中共现，因而可以看作是怒苏语的一个重要的语言现象。本文基于语言田野调查的第一手语料，分析怒苏语 e³¹ 的不同用法及其之间的内在关系，探讨其演化的路径。

一、怒苏语实词 e³¹ 的用法

二、怒苏语虚词 e³¹ 的用法

怒苏语虚词 e³¹ 可以做结构助词、介词和语气词，如：

（一）怒苏语的结构助词e³¹

（二）怒苏语的介词 e³¹

1、怒苏语 e³¹相当于普通话介词"（甲方）对（乙方）（说话）"

2、怒苏语 e³¹相当于普通话介词"用"

3、怒苏语 e³¹相当于普通话介词"从"

4、怒苏语 e³¹相当于普通话介词"由"

5、怒苏语 e³¹相当于普通话介词"被"

（三）怒苏语的语气词 e³¹

怒苏语的语气词 e³¹，可以位于句中或句尾，表示肯定语气。

三、怒苏语 e³¹ 的并用

四、有关怒苏语 e³¹ 的演化路径的思考

怒苏语的e³¹为什么会有实词、虚词（结构助词、介词、语气词）这些不同的用法，它们之间的内在关系如何，e³¹是如何演化的？

（CIEL-15 分会场 6 14 日 14:50-15:10 报告人：罗自群）

湘鄂赣"浊音走廊"的塞音格局

夏俐萍

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湖南、湖北和江西三省交界地带，在方言系属上多属赣语大通片和昌都片，但实际上这里是多方言角力的舞台，包括赣语、湘语、江淮官话、西南官话以及徽语在这里交汇，形成复杂的方言区域，董为光（1989）以湘鄂赣"三界方言"命名这一区域。该区域方言最引人注目的是具有像吴语和湘语那样的浊音声母，"一担挑两头"地将吴语和湘语连接在一起，陈立中（2004）将其称为连接湘语和吴语的"浊音走廊"。在浊音走廊地区，塞音声母呈现出复杂多样的特点。本文从区域方言学角度对该地区的塞音从音系格局与语音变异两方面进行讨论。论文主要分为以下几部分。

一、"全清—次清/全浊"

"全清—次清/全浊"的两分格局即全清声母为一类，次清和全浊声母合流，这是浊音走廊塞音声母最主要的格局，也是客赣方言的重要语言特征。在这类方言中，全清声母为不送气清塞音，但次清声母根据音值可以分为以下几类：（1）不送气清音-送气清音；（2）不送气清音-带音浊音及各类变体；（3）不送气清音-气声。

二"全清-次清-全浊"

这类音系格局主要分布在江西武宁、瑞昌田义镇等地，从音系格局来是保留老湘语的三分格局，全清、次清和全浊声母分别读不送气清音、送气清音和浊音。不过另有一类特殊情况，即湖南岳阳荣家湾方言以及平江南江方言，塞音声母虽然也是三分，但这两地方言次清声母读气声，全浊声母读弱驰声，在音值上形成气声/带音浊音与驰声的对立。这在汉语方言中十分特殊。

三、"全清/全浊-次清"

这类音系格局即第二类音系格局中，全浊声母清化的结果，在音值上全清声母与全浊声母合流读不送气清音，次清声母或读送气清音，或读气声/带音浊音变体。

四、其他特殊类型。

其他特殊类型是指全浊声母清化后，塞音声母送气不送气的特殊类型。包括全浊声母舒声不送气，入声部分送气；平声不送气，仄声送气。这些方言在地理上与江西修水、武宁等地接壤，呈现出复杂的清化类型。

浊音走廊的塞音格局，既有来自方言接触的湘语或赣语的特点，虽然音值多样，但音系格局基本上以这两种大方言为主。但是在湘赣语的音系格局之外，又发生了诸多的创性性演变，包括浊音音值的变化。以及浊音清化后，塞音声母送气不送气的多种类型。体现了区域方言接触与创新的力量。

（CIEL-15 分会场 14 日 6 15:10-15:30 报告人：夏俐萍）

语气副词"实在"的量级语义学分析

王莹莹

湖南大学外国语学院

汉语中的语气副词"实在"较为特殊，与其他确认类副词相比，它在语义性质和使用条件上均有所不同。基于量级语义学的框架，本文对"实在"的语义刻画、"实在"与（非）等级性谓语的搭配及其与强化类程度修饰词的差别三个方面进行研究发现：（1）"实在"可看作是一个全称量化算子，它操控由其毗邻命题中包含的量级性谓词的解释所触发的所有可能语境，要求该量级性命题在这些语境中都为真，从而产生强化效应；（2）"实在"句中的谓语既可以是等级性的，也可以是非等级性的，但后者要具备一定的量级性特征。此外，在等级性形容词中，"实在"多与相对形容词共现，较少与顶端封闭型的绝对形容词共现，这与它们的量级结构有关；（3）"实在"的语义解释模式表明，说话者在使用"实在"时要花费更多认知上的努力，传达了"几经努力、反复思考得出的结论"这一直观意义，区别于一般的程度修饰词。

（CIEL-15 分会场 6 14 日 15:30-15:50 报告人：王莹莹）

基于 **T5** 语言大模型的中国特色话语自动识别及特征研究

邓云华

湖南师范大学外国语学院

基于 T5 语言大模型，本研究探索了中国特色话语的自动识别及其特征。通过在大规模语料上进行预训练和微调，本研究构建了适用于中国特色话语自动识别的 T5 语言大模型，提取了语义、文化和情感等多维特征，以区分中国特色话语和其他类型的文本。实验结果表明 T5 语言大模型在中国特色话语自动识别任务上表现出较高的准确率，特征分析揭示了中国特色话语的独特表达方式和语言特征，话语理论分析阐释了中国特色话语的构建特征。本研究方法可用于中国特色话语非结构化文本挖掘，有助于构建中国特色话语数据库、知识图谱、知识问答系统等，对于跨文化语言研究和自然语言处理具有重要的理论和实际意义。

（CIEL-15 分会场 6 14 日 15:50-16:10 报告人：邓云华）

中国学习者英语动词短语省略加工的神经认知机制研究

李苗苗
中南大学

本研究采用 ERP 技术，通过 2(先行语与干扰动词的语态一致性：一致 vs 不一致) × 2(照应语语态合法性: 合法 vs 不合法)的被试内设计，考察中国学习者英语动词短语省略加工的神经认知机制。自变量为先行语与干扰动词的语态一致性和照应语语态合法性，因变量为谓语动词诱发的 ERP 平均波幅和句子可接受性判断的正确率。研究结果表明，动词性照应语的语态违反诱发了 P600 效应，但合法先行语与不合法先行语的语态一致性对动词照应语加工起调节作用：当语态一致时，语态违反诱发两阶段的早期和晚期 P600 效应；当语态不一致时，语态违反仅诱发晚期 P600 效应。本节将依据基于线索的记忆提取模型和两阶段模型，对这些结果开展讨论。研究发现：1）二语动词短语省略加工中的语态违反诱发了与母语者同质的 P600 效应，这一语态违反所诱发的 P600 效应与性一致、主谓数一致等形态句法违反所诱发的 P600 效应在本质上类似，这为语态是形态句法特征提供了 ERP 证据。2）虽然与母语者一样，本研究的中国二语学习者加工语态违反时也诱发了 P600 效应，但合法先行语与不合法先行语语态一致性的调节作用存在差异，语态相同和语态不同情况下，语态违反诱发的 ERP 模式存在些许不同：当合法先行语与不合法先行语语态相同时，动词照应语的语态违例诱发了双阶段的早-晚期 P600 效应；而当合法先行语和不合法先行语语态不同时，动词照应语的语态违例仅诱发了晚期的 P600 效应，支持两阶段加工模型。研究结果为基于线索的记忆提取模型和两阶段加工模型提供了新的二语 ERP 证据，并对二语学习者的动词短语省略习得具有教学启示，也对 L2 习得和加工理论具有启示。

（CIEL-15 分会场 7 14 日 14:30-14:42 报告人：李苗苗）

广州话母语者习得普通话辅音的代际差异研究——以擦音、塞擦音为例

杨婧
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Flege（1995）提出的"语音学习模型（SLM）"理论强调了语言经验对二语语音习得的重要作用，并且学习者对一语和二语特定音类范畴的感知相似度越小，对二语目标音越易习得，反之则相反。舌尖和舌面部位的辅音发音是粤语者学习普通话时的难点（王力，2014；李蕙心,黄卓健，2020）。我们的调查也发现了这一问题。本文基于 SLM 理论探讨不同年龄阶段广州话母语者对普通话擦音、塞擦音的习得情况，我们认为年轻一代接受了更多的普通话教育，应当有更好的普通话语音感知能力。我们同时探讨该理论在共同语习得中的适用性。本研究采用感知同化任务（PAT）考察被试一语、二语语音感

知相似度的表现，由此预测被试的辅音习得情况。感知识别测试（IT）和感知区分测试（CDT）结果可以表明被试的语音习得情况，并用于验证基于 PAT 结果的预测。以下是实验结果（HML 为低年龄组，LML 为高年龄组）：

图 1 和表 1 展示了 PAT 实验的感知同化率和相似度分数。由表 1 可知，高、低年龄组的广州话母语者具有相似的语音同化倾向，表现为：普通话两类舌尖音的感知相似度分数高于舌面音，其中舌尖前音的相似度最高。且低年龄组的相似度打分都低于高年龄组，说明更多的语言经验有助于广州话母语者区分广州话和普通话的辅音。我们基于该结果预测：不同年龄层的广州人对普通话舌面音的感知识别和区分应该都优于两类舌尖音，且对舌音后音的感知优于舌尖前音。同时，低年龄组的语音识别和区分表现应该优于高年龄组。进一步的 IT（图 2、图 3）和 CDT（图 4、图 5）实验结果都验证了我们基于 PAT 的预测。

三个感知实验结果一致表明广州话母语者对舌尖音的习得较差，但是更多的语言经验（低年龄组）有助于提升广州人对普通话语音的区分和识别能力。本文结果表明 SLM 理论适用于方言区人习得共同语的情况，根据结果，我们建议粤语区普通话学习者应该进行更多关于舌尖音的针对性训练。
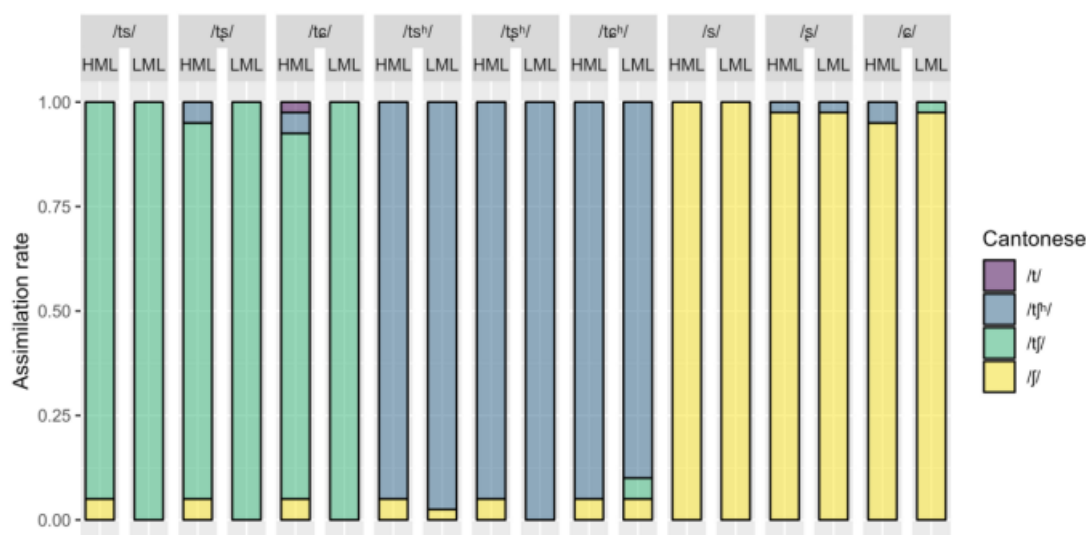
图 1 广州话母语者语音同化任务表现

表 1 感知同化任务相似度分数和同化率

	HML		LML		Overall
CONTRASTS	RATING(SD)	MATCH RATE	RATING(SD)	MATCH RATE	RATING(SD)
c-ts	4.63 (1.89)	95%	5.87 (1.44)	98%	5.26 (1.78)
ch-ts	4.50 (1.81)	95%	5.78 (1.42)	100%	5.15 (1.74)
q-ts	3.50 (1.81)	95%	4.81 (1.83)	90%	4.14 (1.93)
z-dz	4.50 (1.52)	95%	5.65 (1.75)	100%	5.09 (1.73)
zh-dz	4.47 (1.96)	90%	5.73 (1.71)	100%	5.13 (1.93)
j-dz	3.97 (1.95)	88%	4.95 (1.92)	100%	4.49 (1.98)
s-ss	5.00 (1.66)	100%	6.30 (1.30)	100%	5.65 (1.62)
sh-ss	4.59 (1.60)	98%	5.97 (1.31)	98%	5.28 (1.61)
x-ss	4.21 (1.92)	95%	5.62 (1.63)	98%	4.92 (1.90)
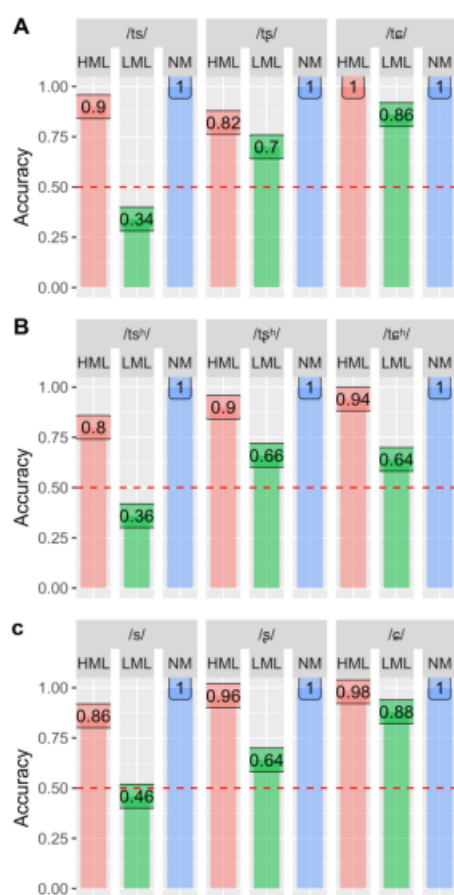
图 2 感知识别测试正确率
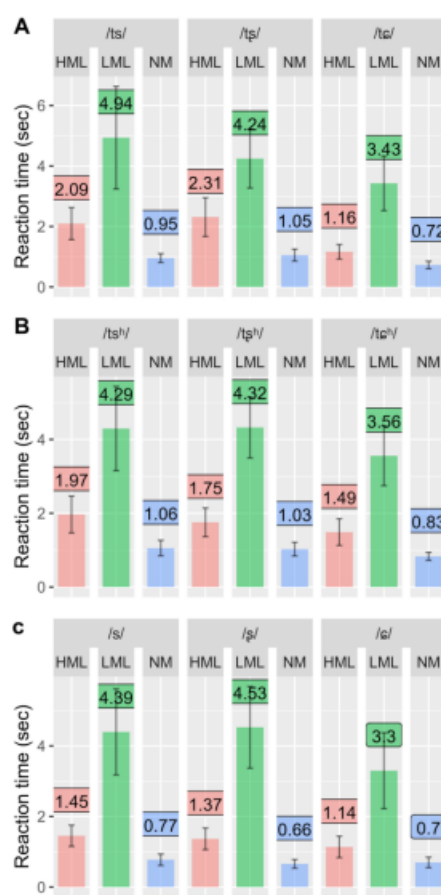
图 3 感知识别测试反应时
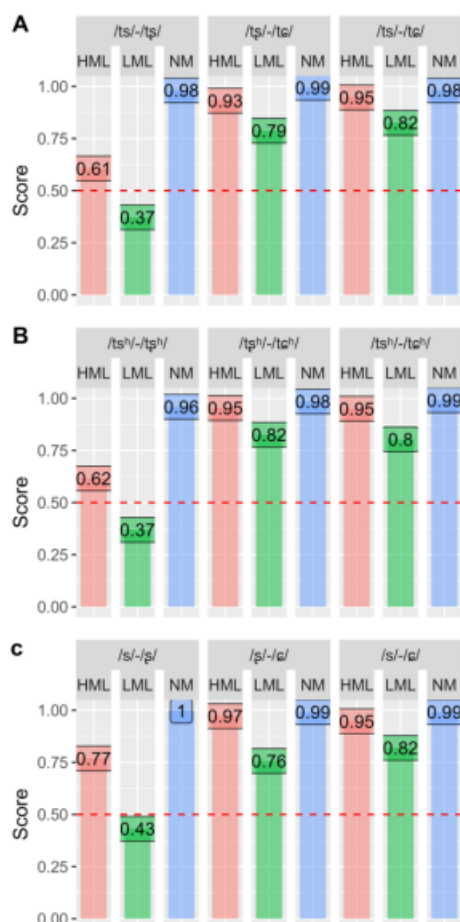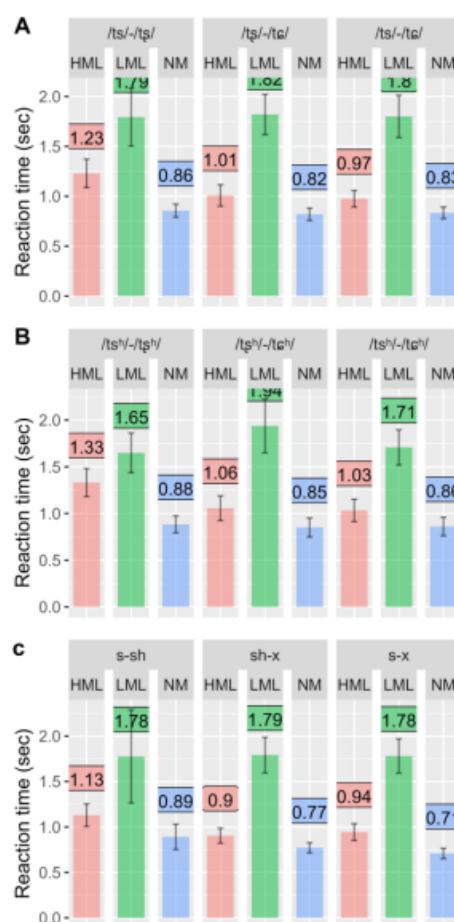
图 4 感知区分测试正确率　　　图 5 感知区分测试反应时

（CIEL-15 分会场 7 14 日 14:42-14:54　报告人：杨婧）

Effects of Cross-linguistic Similarity on Chinese Learners' Perception of Japanese Pitch Accent

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湖南大学

Pitch accent in Tokyo Japanese is a bitonal high-low accent, phonetically implemented as an F0 peak followed by a steep F0 fall (Pierrehumbert and Beckman, 1988; Sugito, 1982). Yet perceiving this phonetic information is a frequent source of difficulty for L2 learners (e.g., Burnham & Mattock, 2007; Wong & Perrachione, 2007). The similarity concept helps explain why some nonnative sound categories are learned more effectively than others, based on the

perceptual assimilation model (Best & Tyler, 2007). This model posits that listeners perceive nonnative sounds through the lens of native sound categories, using perceived similarity to predict perceptual assimilation, discrimination, and learning of nonnative sounds. Originally developed for segments, these theories are now also applied to lexical tones (Francis, Ciocca, Ma, & Fenn, 2008; Hallé, Chang, & Best, 2004; So & Best, 2010), comparing languages with similar F0 contours like Mandarin and Cantonese. However, direct assessment of how Mandarin speakers perceive and categorize Japanese pitch accents within their tone system, and how this affects their perception performance, remains unexplored.

This study investigated the role of cross-linguistic similarity in the perception of Japanese pitch accents by Chinese learners with different Japanese proficiency levels, addressing two specific research questions: (1) How similar are Japanese pitch accents to Mandarin tones for Chinese learners? (2) How can PAM-L2 be applied to account for the perception of Japanese pitch accent contrasts by Chinese learners? In experiment 1 (PAT), 25 Chinese learners of Japanese with lower proficiency level and 24 learners with higher proficiency level participated in a perceptual assimilation task that examined the cross-linguistic perceptual similarity between Mandarin tones and Japanese pitch accents. In experiment 2 (PDT), the same Chinese groups and 35 native Japanese listeners took part in a two-alternative forced-choice discrimination test of Japanese pitch accent contrasts.

The results from the PAT indicated that Japanese H*L, LH* and LH pitch accents were mapped onto Mandarin T4, T2 and T1, respectively, due to their analogous pitch contours. Thus, the three pitch accent contrasts H*L-LH*, H*L-LH and LH*-LH were assimilated as *Two Category* (TC) assimilation pair by Chinese learners, which should result in excellent discrimination performance in the three pairs as proposed by PAM-L2. Certain evidence in PDT was found supporting PAM-L2 regarding the assimilation-discrimination interplay. The Chinese groups demonstrated comparable performance to native Japanese listeners in discriminating the H*L-LH* contrast, with no significant difference observed. Interestingly, the Chinese groups performed even better than the native Japanese listeners in the H*L-LH contrast. These indicated that Chinese listeners did not find it difficult to distinguish between the Japanese H*L and LH*/LH, compared to Japanese listeners. These findings aligned with the prediction of the TC assimilation pair within the PAM-L2 framework.

However, this prediction was not completely reflected by the results of PDT, since both Chinese groups attained significantly lower *d'* scores in perceiving the LH*–LH pair than the H*L-LH* and the H*L-LH contrasts. This result manifested that even with a TC assimilation pattern, the discrimination of Japanese LH*–LH pitch accent contrast was still a challenge for Chinese learners. A plausible explanation is that the supposed good discrimination of the TC assimilation was tremendously diminished by the close acoustic distance of Japanese LH*–LH, leading to low discriminability. These results imply that the discrimination of L2 contrasts is not solely determined by L1–L2 assimilation patterns, but also influenced by the acoustic distance between the concerned L2 tones.

（CIEL-15 分会场 7 14 日 14:54-15:06 报告人：杨宇）

中国英语学习者外语学习与创造力的协同发展研究

曾涛，徐可心，李钰茜

湖南大学

外语学习与创造力之间的关联极为密切。已有大量研究证实了外语学习或创造力对另一方的单向影响，但却并未系统考察二者之间潜在的协同发展关系。此外，以往研究也缺乏涵盖不同学段外语学习者的横断面调查，未能揭示外语学习与创造力关联的动态变化。因此，本研究以小学、中学与大学三个学段的中国英语学习者为实验被试，将创造力视为聚合性思维与发散性思维的整合，并把外语水平细化为听、说、读、写四个维度，旨在探究创造力与外语学习的协同发展关系及其在不同学段的发展趋势。研究结果表明：（1）在小学、中学与大学阶段，外语学习均能促进聚合性思维的发展；（2）外语学习对发散思维的促进作用仅存在于中学与大学阶段，在小学阶段并未发现。针对上述结果，本研究提出了外语学习促进创造力发展的双重机制：外语学习首先通过提高认知控制能力来增强思维的聚合性，然后达到一定阈值后再通过拓宽语义系统的概念激活网络来强化思维的发散性。这些研究发现能为创造力的双语认知优势理论及其教学培养路径带来重要启示。

关键词：创造力；外语学习；发散性思维；聚合性思维；协同发展

（CIEL-15 分会场 7 14 日 15:06-15:18 报告人：徐可心）

中国英语学习者外语学习与推理能力协同发展研究

曾涛，李甜，陈金鹰，李梦媛，张逸婷，文璟
湖南大学

外语学习与推理能力之间的关联极为密切。已有大量研究证实了外语学习或推理能力对另一方的单向影响，但却并未系统考察二者之间潜在的协同发展关系。此外，以往研究也缺乏涵盖不同学段外语学习者的横断面调查，未能揭示外语学习与推理能力关联的动态变化。因此，本研究以小学、中学与大学三个学段的中国英语学习者为实验被试，将推理能力细分为演绎推理、归纳推理、类比推理三种类型，并把外语水平细化为听、说、读、写四个维度，旨在探究推理能力与外语学习的协同发展关系及其在不同学段的发展趋势。研究结果表明：1）外语学习或能促进学生归纳推理、类比推理能力发展，但对演绎推理能力的促进作用并不明显；2）高中学段，学生的推理能力和外语学习之间的互动关系明显。这些研究发现能为推理能力的双语认知优势理论及其教学培养路径带来重要启示。

关键词:认知能力;外语学习;归纳推理;类比推理;协同发展

主流语调理论在大学英语语音教学运用——回顾与展望

刘宇航

长春工业大学人文信息学院

语调作为语音界面与音系界面的接口，它所涵盖的语音现象可用韵律或音系规则解释。随着 GAI（Generative Artificial Intelligence）在英语专业的不断结合，大数据模型的不断应用，英语语调的教学也亟需引起足够的重视。因此，本文就同一语音案例对比主流语调理论的分析异同，归纳大学英语语音教学中存在的语调教学框架和重点。为此，文章提出三个问题：第一、主流语调理论就同一案例分析呈现哪些不同的对比异同？第二、基于理论对比结论，推测 ELF 英语语调教学框架及其重点可能从哪些方面开展？第三、展望英语语调理论在 ELF 的应用，对未来的英语语音教学有何启示？文章发现如下：

首先，文章综述英语语调理论在语言学史的发展，发现它作为语音和音系的接口需引起学界的反思，并指出通用语更符合当前英语在教学中的角色。其次，对比发现 Gussenhoven 的语调理论在教学上更具灵活性。基于此，文章构建 ELF 理念下的语调教学框架，包括调群切分、语调重音与位置、语调意识与去调型化的可能性。其教学重点从可理解性和表达性入手。前者表现集中在超音段层面，而后者涉及句法、信息分部和语用的层面。最后，文章展望基于口语语料库和 ELF 语音教学标准为语调理论在英语语音教学中的应用带来新的研究价值。文章认为，ELF 学术类口头报告的语调研究更能真实地反思当前大学英语语音教学的现状。基于 SECCL 语料库的数据驱动，综合代表音高运动的抽象意象图式（Image Schema）、形意配对的构式语法（Construction Grammar）、以及语调在语境中强弱关联的明示/推理效果（Relevance Theory），也能在 ELF 的语调教学框架中拓展英语语调研究，并为大学英语语音教学带来新的启示。

关键词：语调理论、英语语音教学、英语语调教学、英语通用语

Cognate Facilitation Effects from L2 and L3 on Bidirectional Translation Between L1 and L2: Evidence from Chinese-English-Spanish Trilinguals

石进芳

华东交通大学

Previous studies have extensively investigated cognate facilitation effects in bilingual language processing, providing evidence for the co-activation of languages and the role of cognates in facilitating word recognition and production (Costa et al., 2000; Dijkstra et al., 2010). However, fewer studies have examined cognate facilitation effects in the context of trilingualism, and even fewer have focused specifically on the role of second language (L2) and third language (L3) cognates in facilitating bidirectional translation between the first language (L1) and L2. The present study aims to address this research gap by investigating cognate facilitation effects from L2 and L3 on bidirectional translation between L1 and L2. The participants were 44 Chinese-English-Spanish trilinguals and 44 Chinese-English bilinguals (the control group). The materials included 160 pairs of Chinese and English translation equivalent words, of which half of the English words (80) had a cognate in Spanish (L3) while the other half did not. A translation priming paradigm adopted in the study included two tasks. One was an L1-L2 forward translation decision task in which the participants were asked to judge within two seconds whether the target word in L2 (English) was the translation equivalent of the prime word in L1 (Chinese), which was presented on the screen for 500ms. The other was an L2-L1 backward translation task in which the participants were asked to judge whether the target word in L1 (Chinese) was the translation equivalent of the prime word in L2 (English). The results showed that, in line with the prediction of the Revised Hierarchical Model, the target words were processed faster in the L2-L1 backward direction than in the L1-L2 forward direction. However, the target words in the cognate condition were processed faster than in the non-cognate condition, either in the L1-L2 forward direction or in the L2-L1 backward direction, suggesting that cognate facilitation effects arise from L2 and L3 on bidirectional translation between L1 and L2. The faster processing of cognate targets compared to non-cognate targets in both translation directions suggests an interaction between lexical-level co-activation and conceptual-level processing in L1-L2 translation, and an enhancement of lexical links in L2-L1 translation.

（CIEL-15 分会场 7 14 日 15:42-15:54 报告人：石进芳）

The Effects of L1 Productive Category Precision on the Perception and Production of Nonnative Vowels

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This study investigated the effect of Mandarin productive precision on the perceptual assimilation and production of nonnative vowels. The aim was to verify the validity of the age related theory of "L1 precision hypothesis" proposed by the Revised Speech Learning Model (SLM-r, Flege & Bohn, 2021). Sixty participants (thirty adults and thirty children) were recruited in a Mandarin vocalic production test (/a/, /o/, /ɤ/, /i/, /u/, /y/), a cross-language vocalic perceptual assimilation task and a nonnative vocalic production test (the Japanese /ɯ/ and /e/, the French /ø œ/ and the Russian /ɨ/). Results showed that the vowel-specific compactness score (CSv) and global compactness score (CS$_G$) of adults were smaller than those of children, suggesting that adults' L1 productive categories were significantly more precise than those of children. For the perceptual assimilation task, the *K'* dispersion values of the adults were significantly lower than those of the children, indicating that adults presented a higher assimilation consistency. Regarding the nonnative vocalic production, the adults exhibited better imitation than the children as measured through the Euclidean distance (ED) between the participants' and native speakers' production. Furthermore, the correlation analyses between the L1 CS$_G$, the *K'* dispersion values, and the ED manifested that the three parameters were all positively correlated. The results underpinned the tenets of the "L1 precision hypothesis" in that adults could indeed have more precise L1 phonetic categories than children, which would positively affect both the cross-language perception and non-native vowels production. These findings furnished much needed empirical evidence to SLM-r.

Keywords: L1 category precision; cross-language perceptual assimilation; nonnative vowels production.

（CIEL-15 分会场 7 14 日 15:54-16:06 报告人：杨雨萧）

The Influence of Tones on the Typology and Perception of Consonantal Contrasts

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An intrinsic correlation is observed in phonetic literature between segment properties and fundamental frequency (F0) (Hombert 1978; Whalen & Levitt 1995) as well as a connection between consonantal properties and the F0 of neighboring vowels (House & Fairbanks 1953; Lehiste & Peterson 1961). F0 is shown to influence segment perception (Silverman 1986; Whalen et al. 1990; Diehl & Molis 1995; Kim et al. 2002). In particular, tones are found to influence the perceived duration of vowels (Yu 2010), e.g., a vowel can be perceived as longer when the tone is high instead of low, contour instead of level, and rising instead of falling (Lu & Lee-Kim 2021).

Focusing on the relation between tones and consonantal contrasts, two studies were conducted: (i) a typological study to examine if tones influence the typology of consonantal contrasts and (ii) an experimental study to examine if tones influence the perceptual distinction of consonantal contrasts. The tones include H(igh)H, HL(ow), LH, LL. The consonantal contrasts are those between the alveolar onsets [n] and [l] in two vowel contexts [_a] and [_i].

The typological survey was conducted across 146 Chinese dialects, all of which have phonetic [n] vs. [l] as onsets and [a] and [i] as rimes. The contrasts to focus on were those of [na] vs. [la] and [ni] vs. [li] in different tonal contexts, e.g., a tone starting with H(igh) vs. L(ow). The results showed that a [n-l] contrast appears more frequently when the tone is H-initial (e.g., HH, HL) than when it is L-initial (e.g., LH, LL).

The perceptual experiment was a two-alternative forced choice (2AFC) task, recruiting 31 native Mandarin listeners. The audio stimuli were CV pairs contrasting by onset [n] vs. [l] such as [na-la] and [ni-li], in four tonal contexts, i.e., HH, HL, LH, LL. The durations and intensities of the consonants and the vowels matched their mean values in natural speech (Delattre et al. 1955; Feng 1985) and the relative intensities of the four tones corresponded to their intrinsic differences (Whalen & Xu, 1992). A listener heard two CV pairs with different tones, e.g., [na^{HH}-la^{HH}] vs. [na^{LL}-la^{LL}], and judged which pair sounds more distinct. The results, as illustrated in **Fig. 1**, indicated that the same consonantal contrast is perceived as more distinct when the tone is (i) HH instead of LL (**Fig. 1a**) and (ii) contour (e.g., HL, LH) instead of level (e.g., HH, LL) (**Fig. 1b-e**). No substantial difference was observed between HL and LH (**Fig. 1f**). These results echoed the observed influence of tones on the perceived duration of segments (Yu 2010; Lu & Lee-Kim 2021).

Overall, this study suggested that tones may influence the typology and perceptual distinction of consonantal contrasts, e.g., for the two sonorants [n] vs. [l]. It is also suggested that, for tonal languages, tone should be seriously considered when examining phonological contrasts.

Keywords: tone, typology, perceived distinction, consonantal contrast, contour, height
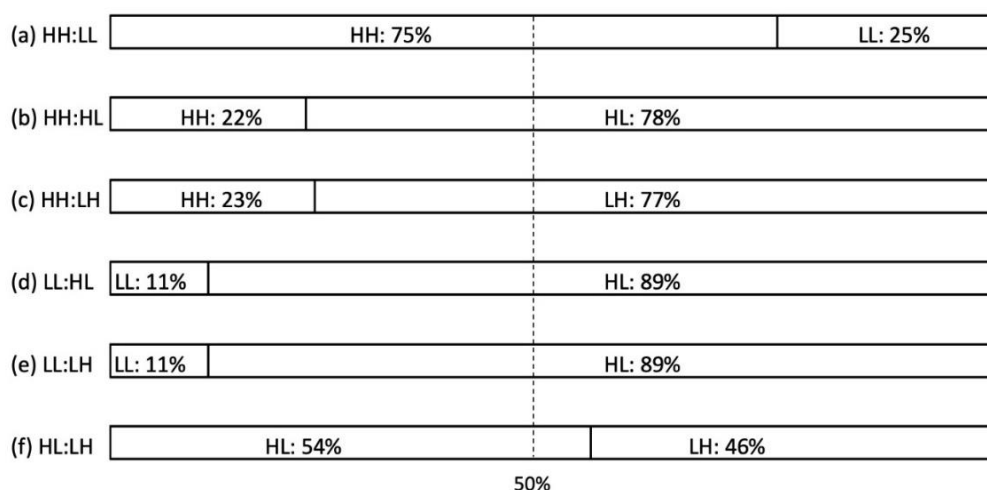
Fig 1. Percentages of choosing a tonal context (e.g., HH) as being 'more distinct' out of two (e.g., HH:LL)

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（CIEL-15 分会场 8 14 日 14:30-14:42 报告人：刘博琳、李明兴）

Manifestation of Acoustic Features in Different Speech Registers:
A Study Based on Mandarin Chinese

王瑾

湖南大学

Modification of acoustic cues are well documented in infant-directed speech (IDS) for English, but not consistently replicated in other languages or for other speech-sound contrasts. Vowels are highly discussed targets, but for consonants such as fricatives are far less discussed. The present study investigates how Chinese mothers change their corner vowels, voiceless fricatives, and pitch when speaking to their infant, their pet, an adult and an unfamiliar foreigner. This study considered several acoustic features such as F0, F0 range, duration, first three formants frequencies, central gravity of fricatives, vowel space and tonal space. Different acoustic features are related to different language or para-language functions. The larger the vowel and tonal space, the clearer the speakers' speech, and the higher the first three formants frequencies, the stronger the speakers' emotions. Therefore, we can infer the speakers' emotional or linguistic expression towards different listeners based on these acoustic parameters. In current study, 29 mandarin spoken mothers talked to an infant, a pet, an adult and a foreigner to produce infant-directed speech (IDS), pet-directed speech (PDS), adult-directed speech (ADS) and foreigner-directed speech (FDS). The results found that F0 of IDS and PDS were significant higher than ADS ($p < 0.0001$ and $P = 0.0191$ respectively). This study also found that there was no significant difference of register on vowel space ($\chi2(3) = 4.17$, $p = 0.243$) and tonal space was only observed significant larger in IDS (mean = 3.02 St2) compared with ADS (mean = 1.85 St2). Duration in IDS are significant longer than ADS, but for duration in PDS this study did not find any difference relative to ADS. These results show that enhanced positive affect is the main factor influencing Chinese mothers' realization of speech sounds in IDS. This study provides evidence that mothers' expression of emotion in IDS can influence the realization of speech sounds, and that the loss or gain of speech clarity may be secondary effects of affect.

（CIEL-15 分会场 8 14 日 14:42-14:54 报告人：王瑾）

A Dual-Challenge Condition in Speech Perception:
Accommodating Talker Variability in Noise

张凯乐

香港理工大学

Purpose: Daily communication often involves overcoming the challenges of talker variability and ambient noise, yet little is understood about listeners' capacity to manage both simultaneously. This study delves into listeners' accommodation to talker variability (i.e., speech normalization) in noise and probes the potential roles of inhibitory control and musical proficiency.

Method: We engaged 37 young Cantonese speakers to identify Cantonese level tones from different talkers in both quiet and noisy conditions. Various signal-to-noise ratios (SNR; 10, 5, 0, -5, and -10 dB) and noise types (babble noise [BN] and babble-modulated noise [BMN]) were evaluated. Inhibitory control was assessed through the Stroop Color-Word test, and music ability via the Rhythm-to-melody task.

Results: Successful speech normalization of Cantonese lexical tones was evident at SNRs of 0 dB and above, but not at -10 dB. BN posed greater challenges for speech normalization compared to BMN at 0, -5, and -10 dB SNR. Remarkably, listeners with high inhibitory control exhibited enhanced normalization in certain noise conditions, while musical capability demonstrated no influence.

Conclusion: Listeners can accommodate talker variability in Cantonese lexical tones at manageable noise levels. However, as noise intensity overtakes the signal, this becomes challenging. BN poses greater difficulty than BMN at lower SNRs, likely due to added informational masking. Importantly, inhibitory control, rather than musical ability, influences speech normalization in noise, emphasizing the crucial role of cognitive resources in challenging listening conditions.

Keywords: Talker variability; Noise; Speech normalization

（CIEL-15 分会场 8 14 日 14:54-15:06 报告人：张凯乐）

基于语料库的汉语作为第二语言是字句习得研究

曾颖

香港浸会大学

"是"为现代汉语高频动词，"是"字句是现代汉语重要句型，也是汉语作为第二语言习得的重点。本研究关注汉语作为第二语言"是"字句的习得情况，通过现代汉语研究语料库与汉语中介语语料库抽样，借鉴中介语对比分析方法，对现代汉语"是"字句及汉语第二语言学习者中介语中各类"是"字句的分布进行统计分析，归纳各类"是字句"的特点、比较其异同，探讨影响分布情况的内在原因，并在研究基础上，针对教材编纂和汉语作为第二语言教学提出合理建议。

研究认为，现代汉语"是"字句类型丰富，存在高频类型、低频类型之别。"是"字句的分布受到语料数量、语体风格、感情色彩、思维方式等因素的综合影响。学习者中介语系统中的"是"字句和现代汉语"是"字句的分布既有共性，又有差异。其整体分布向现代汉语趋近，意义表达从简单到丰富，从具体到抽象。学习者部分习得意合表达法。随着学习时间的增长，句式逐渐丰富，表意更趋准确，但和现代汉语始终存在一定差异。我们认为，中介语"是"字句和现代汉语分布的差异，主要源于思维方式的差异。中国人倾向整体感性思维，在语言使用上，倾向形合法，依靠语境、上下文理解意义，而学习者则不然。基于以上情况，我们认为习得和第二语言教学中，应注意点面结合，在教材编纂和教学中，既全面覆盖，客观反映现代汉语各类"是"字句的分布、使用频率，兼顾中介语系统的动态发展；又重点突出，关注高频类型及反映思维方式的特殊类型，有针对性的进行教学。

（CIEL-15 分会场 8 14 日 15:06-15:18 报告人：曾颖）

朝鲜语母语者普通话声调范畴感知研究——基于不同年龄段的比较

李英浩，周双，张京花

延边大学

在世界语言的语音中，声门特征（laryngeal feature）是音位对立的重要表征，例如英语塞音的清浊对立、汉语普通话以及方言中的送气/不送气的对立以及朝鲜语塞音的紧、松和送气的三分对立。在辅音和有特定发声态元音的产出过程中，声门动作姿态与舌的动作姿态存在复杂的相互影响（孔江平，2001）。然而，以往的言语发音生理研究往往把两者分开，极少把声门动作姿态和声门上动作姿态整合起来，进而考察两者的协同作用（synergy）。本文从两个方面讨论言语产出过程中声门特征与舌位的协同关系，我

们使用超声语音的方法分析了汉语的送气/不送气塞音的声门特征以及朝鲜语的三分对立阻塞音的声门特征与舌位的协同关系。汉语普通话的发音人来自北京、长春、山东、安徽以及广东；朝鲜语发音人来自延边朝鲜族自治州的年轻组和老年组发音人。初步的分析结果表明，汉语的送气特征与主发音器官的收紧程度和舌根的位置存在明显协同作用，不送气塞音的主发音器官的收紧程度略大于同部位的送气塞音，同时舌根明显前移。朝鲜语的情况则相对复杂，声门动作姿态与声门上发音动作姿态的协同作用受到阻塞音成阻部位、发音方式以及社会语言因素的调制。最后，本文讨论了发音生理研究对语言演化和社会语言学研究的一些启示。

（CIEL-15 分会场 8 14 日 15:18-15:30 报告人：李英浩）

Experimental Acoustic Study on the Tone Sandhi of Jino Language

周晓宇

云南财经大学

This paper combines community visit and phonetic experiments to study the monosyllabic tone and tone sandhi of Jino language as spoken in Baka village. The study found that the phenomenon of tone sandhi in bisyllabic words has describable rules: from a diachronic perspective, morphemes with the same historical origin exhibit the same tone alternation characteristics when constructing words. Morphemes derived from *Proto-Lolo Tone 1 reorganize the metrical relationship between morphemes in word construction, resulting in unstressed and stressed tones. From a synchronic phonological analysis perspective, the Obligatory Contour Principle restricts the possibility of tone values appearing in morphemes in bisyllabic words. In addition, this paper also proposes some new views on the historical development of tones in Jino language.

Keywords: Jino, Baka village, tone sandhi, experimental acoustic study

（CIEL-15 分会场 8 14 日 15:30-15:42 报告人：周晓宇）

Gender Differences in Acoustic Features of Cantonese Emotional Speech

Dong Han, Yike Yang

香港树仁大学

Introduction: Emotional speech is characterized by distinctive acoustic features, including fundamental frequency (F0), duration, and intensity [1]. Notably, males and females exhibit different acoustic patterns when expressing emotions through speech [2]. Based on these, this study investigates gender differences in acoustic features of Cantonese vocal emotional speech and explores the interactions between gender and emotions.

Methods: The speech samples are 3474 sentences from a dataset of Cantonese emotional speech [3], comprising ten speakers (5 males) and seven emotions (neutral, angry, disgust, fear, happy, sad, and surprise). Acoustic parameters for each sentence were extracted from the dataset, including duration, intensity, mean F0, F0 range, maximum F0, and minimum F0. F0 values were converted from Hertz to semitones (st) individually, with the mean F0 of each speaker as the reference. Linear mixed-effects models were conducted, with Emotion and Gender as fixed effects and Speaker and Sentence as random effects. Gender variations in these acoustic parameters are illustrated in Figure 1.

Results: All models indicated a significant interaction between Emotion and Gender. Table 1 presents the Tukey post hoc analysis results, which revealed no Gender differences in duration across all emotions. For intensity, a Gender difference was only significant in neutral expression ($p = 0.02$). Mean F0 exhibited Gender differences for all emotions except neutral. F0 range significantly differed between males and females across all emotions. Gender differences in maximum F0 were observed for disgust, sadness, and surprise. For minimum F0, there were Gender differences across all emotions except surprise ($p = 0.8$).

Discussion: Although there was no gender difference in duration or intensity of emotional expressions (except for the intensity of neutral), further analysis suggested that females exhibited similar duration and intensity for neutral and sad expressions, indicating a strategy of hiding sadness by expressing it in a way similar to their neutral state. Females showed greater intensity than males in neutral expression, but this difference vanished when other emotions were expressed. This pattern of intensity modulation may be attributed to individuals adjusting their intensity to conform to culturally accepted levels within their language context, thereby enhancing emotional resonance with others. Except for surprise, females had a significantly lower minimum F0 than males, possibly due to their substantially more comprehensive F0 range, supporting the view that females are attributed to greater emotional expressiveness [4]. For emotions such as anger, fear, happiness, and sadness, females showed a lower mean F0 than males, which could be interpreted as a communicative strategy that females use to elicit more support during social interactions. For instance, expressing sadness could evoke sympathy from others, while expressing happiness might focus on sharing success without appearing overly boastful. When expressing anger or fear, women may significantly lower their F0 to

demonstrate confidence and competence, as found in [5]. This may be a strategy for females to effectively communicate their stance and emotions without provoking direct confrontation. The findings provide phonetic evidence supporting the gender roles. Research in perceptual studies should be furthered to explore the link between encoding and decoding gendered emotional expressions, which can enhance our understanding of gender communication and provide support at a practical level, such as emotional speech synthesis and recognition technology.
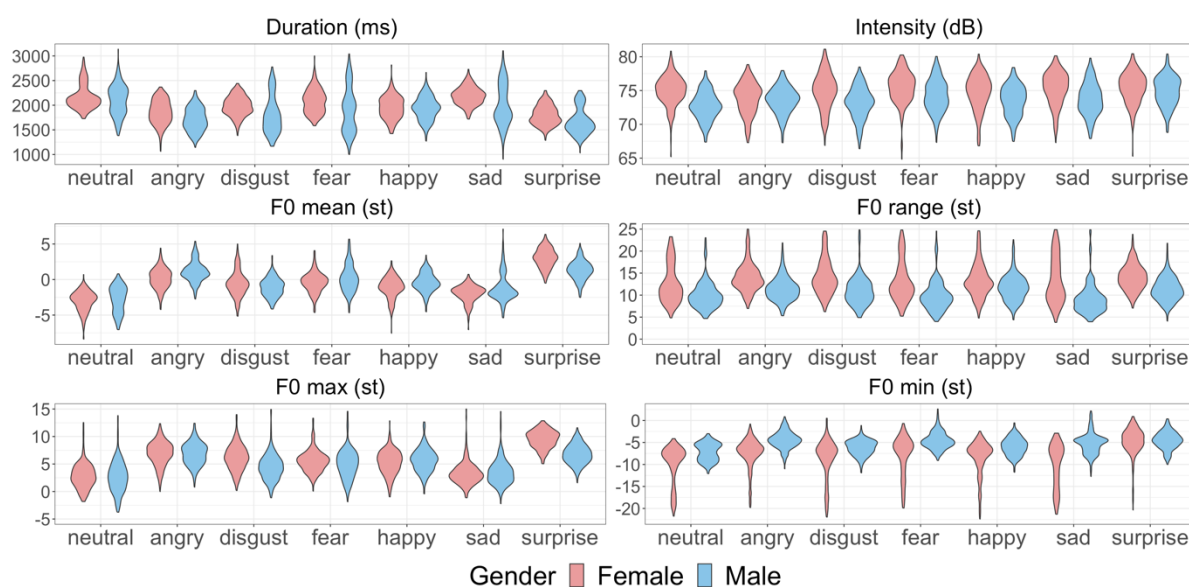
Figure 1. Gender variations in acoustic features of Cantonese emotional speech.

Table 1. Results of Tukey post hoc analysis.

Emotion	Duration (ms)	Intensity(dB)	F0 mean (st)	F0 max (st)	F0 min (st)	F0 range (st)
Neutral	67.43 ± 141.54	2.32 ± 0.84 *	-0.26 ± 0.14	-0.6 ± 0.36	-2.79 ± 0.7 ***	2.18 ± 0.76 *
Angry	146.98 ± 141.54	0.27 ± 0.84	-0.98 ± 0.14 ***	0 ± 0.36	-2.93 ± 0.7 ***	2.92 ± 0.76 ***
Disgust	177.54 ± 141.54	1.78 ± 0.84	0.5 ± 0.14 ***	0.87 ± 0.36 *	-2.47 ± 0.7 ***	3.34 ± 0.76 ***
Fear	182.78 ± 141.54	1.28 ± 0.84	-0.58 ± 0.14 ***	0.02 ± 0.36	-3.33 ± 0.7 ***	3.34 ± 0.76 ***
Happy	15.74 ± 141.54	1.24 ± 0.84	-0.72 ± 0.14 ***	-0.5 ± 0.36	-2.49 ± 0.7 ***	1.99 ± 0.76 ***
Sad	178.46 ± 141.6	1.65 ± 0.84	-0.84 ± 0.14 ***	-0.91 ± 0.37 *	-5.02 ± 0.71 ***	4.11 ± 0.77 *
Surprise	125.84 ± 141.54	0.51 ± 0.84	1.73 ± 0.14 ***	2.64 ± 0.36 ***	-0.18 ± 0.7	2.82 ± 0.76 ***

Notes: Gender_pairwise: female – male; Values under acoustic features: Estimate ± SE; * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

Keywords: gender difference, emotional speech, acoustic analysis, Cantonese

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（CIEL-15 分会场 8 14 日 15:42-15:54 报告人：韩冬）

声学考察与年龄相关语音变化时的若干方法问题

孔超 刘娟

山东大学

在从声学角度考察与年龄相关的语音变化问题时，方法使用是否得当对研究结论会有非常大的影响。我们以 109 位发音人的元音数据为例，讨论在声学考察与年龄相关语音变化的问题时几个十分重要的方法论问题。

首先，我们提倡使用 GAMM、MARS 等非线性统计模型。通常所采用的 LMM、ANOVA 以及 t 检验等线性统计工具会给出不准确甚至错误的结论，下图展示了使用线性回归模型将错误地估计男性发音人 Pillai score 随年龄的变化模式，未能发现其在 50 岁左右时存在的转折点，并错误地估计其的下降幅度。

其次，我们认为不应当假设年龄相关的变化对于不同音位、不同语音类型是相同的，因此尽量避免使用不对音位类型、音节类型进行区分的统计模型，避免使用均值、求和或 LTAS 峰值等具有加和性质的声学参数。例如，与年龄相关的元音研究中，一些研究不对不同元音音位的变化加以区分，从而得出了 F1 随年龄下降的结论，但这一结论可能是方法不当带来的伪迹(artifact)，当在统计模型中正确区分不同元音音位时，F1 下降的结论可能就不再显著了。

第三，尽可能多地在统计模型中纳入因变量潜在的影响因素，例如，在共振峰研究中纳入元音时长、基频、发音人声道长度等潜在影响因素的数值将使得结论更加可靠。

第四，尽可能覆盖更大的年龄范围，由于声学参数随年龄可能展现出非线性甚至非单调的变化，使用较小的年龄范围可能会使得结论存在偏差甚至造成错误的结论。

第五，谨慎地区分年龄相关的变化与音变和社会变异。

除此以外，由于与年龄相关语音变化的非线性统计模型的拟合存在较多实践上的难点，我们还讨论拟合年龄相关的 GAMM 时的若干实践问题，包括：（1）如何避免过拟合；（2）是否应当将自变量切分成若干 bin；（3）如何选取 knot 的数量（k 值）；（4）如何恰当地确定随机效应和固定效应等。
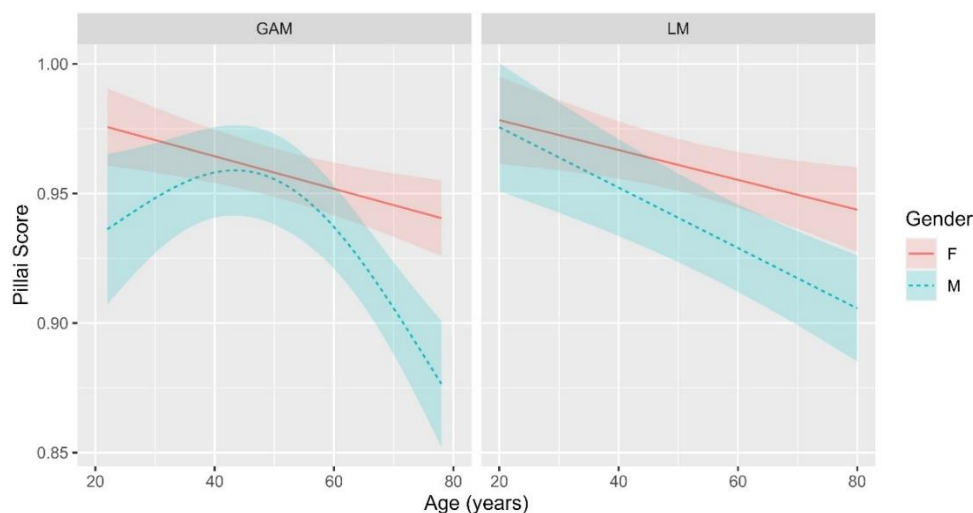
（CIEL-15 分会场 9 14 日 14:30-14:42 报告人：孔超）

Semantic Features of Chinese Older Adults With and Without MCI Across Discourse Elicitation Tasks

车伊然

同济大学

Objective: China has the world's highest number of people with cognitive impairment, but limited normative data are currently available on discourse tasks in Chinese. The lack of linguistic and cultural adaptation has been identified as a barrier to discourse assessment. Among linguistic features, semantic decline may represent one of the earliest and most consistent features of cognitive decline in MCI (mild cognitive impairment) . The main aim of this study is to document the effectiveness of different elicitation types and semantic variables on differentiating Chinese older adults with and without MCI.

Method: Subjects were 60 older adults (15 male and 45 female), ranged in age from 60 to 89 (M=72, SD=6.86). Older adults were divided into 2 groups including MCI (n=30) and NC (n=30), based on their MoCA-B score (M=21.75, SD=4.50) and years of education. All older adults were right-handed Chinese. Connected speech were collected using three elicitation tasks,

in which participants were required to tell a story in response to a single picture (Picnic Scene), a six-picture sequence (Story of San Mao), and a retelling of the "Cowherd and the Weaving Maid" story from memory after reviewing the book's pictures. Both micro- and macro-structural semantic variables were used to obtain estimates of part of speech difference, lexical diversity, conciseness, informativeness and efficiency. An univariate 2 × 3 mixed ANOVA was conducted and LSD post-hoc test was performed.

Results: The results of interaction effect showed an significant interaction between infomative word density (F=7.255, *P*=0.001, η2=0.077), pronoun density (F=4.154, *P*=0.017, η2=0.046), and information unit density (F=3.603, *P*=0.029, η2=0.040) on group and task interaction. There was a significant difference (*P*<0.05) in all micro-structural indicators except infrmation efficiency between different tasks within HC group, and a significant difference (*P*<0.05) in all indicators between different tasks within MCI group. All macro-indicators were significantly different between different tasks within the two groups. Macro-structural semantic features have general effectiveness in all three tasks on recognizing MCI. Single picture elicitation has high validity for recognizing MCI, whether micro- or macro-variables are used, whereas sequential pictures cannot differentiate the two groups on micro-variables. Efficiency in the story retelling task was a valid indicator for distinguishing between the two groups.

Conclusion: Type of elicitation and cognitive level can affect Chinese older adults' semantic performance. These findings have important implications for modelling semantic competence and selecting and interpreting results from different discourse

elicitation tasks.

Key words: Mild Cognitive Impairment, connected speech, discourse analysis, factor analysis

（CIEL-15 分会场 9 14 日 14:42-14:54 报告人：车伊然）

A Preliminary Study on the Emotional Tone in Exclamatory Sentences in Different Age Groups Based on Xi'an Dialect

王文博
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The vocal manifestation of emotion involves a deliberate and regulated conveyance of the emotional intonation in one's voice. In Xi'an dialect, the intonation characteristics of exclamatory sentences are different from declarative sentences, especially in the expression of pitch and duration. Meanwhile, the cognitive decline caused by aging is an important factor affecting both the perception and production of emotional tone in language. This study

discussed the tonal features of exclamatory sentences in Xi'an dialect, and focused on the expression of these features in different age groups. We hypothesized that there were significant age-related differences in the expression of tonal features in Xi'an dialect, and younger people showed more obvious tonal changes in the context of exclamatory sentences than older people. We designed 8 Xi'an dialect sentences in this experiment, and each group included two sentences. The first sentence in each group was a declarative sentence in Xi'an dialect, and the second one was the corresponding exclamatory version. Valid data from 8 subjects were analyzed 4 of whom were middle to late middle-aged adults between 50-60 years old (2 males and 2 females, who also had completed MMSE and MoCA tests). The other four were young people (2 males and 2 females) and all were 25 years old. Each person read each sentence three times, and a total of 8×3×8=192 sample sentences were obtained. The results of our study showed that the emotional tone of the elderly is significantly affected by (potential) MCI, and difference in focus word pitch between the old group and the young group also depended on the specific focus words in this experiment. This study not only provided new insights into the tonal characteristics of Xi'an dialect, but also provided important evidence for exploring the influence of age on dialect perception and expression.

Keywords: emotional tone; Chinese dialect; aging problem

（CIEL-15 分会场 9 14 日 14:54-15:06 报告人：王文博）

Swin-BERT: An Automatic Speech-Based Dementia Detection System

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Dementia is a global disease that currently affects more than 55 million people worldwide; and with this number predicted to nearly double every 20 years, estimations speculate a rise in positive diagnoses to some 139 million by 2050. Alzheimer's disease (AD), the most common cause of dementia, is incurable. Early detection can enable early treatment to help slow down and maintain mental functions. Both the linguistic and acoustic abilities can be affected by dementia, even in the early stages. When diagnosing a person for dementia, clinicians generally use both acoustic and linguistic information embedded in the speech to make the diagnosis more robust. The collected audio recordings in the clinical settings are used as the experimental data for being used as the input of the designed automatic dementia detection system, which have the potential to be applied as a clinical assistance tool. The audio recordings include both global and local information. To make use of the acoustic and linguistic information embedded in speech with the state-of-the-art dementia detection system, we propose a speech-based dementia detection system named Swin-BERT. The experiments are based on the two datasets

provided by the international dementia detection challenges: the ADReSS and ADReSSo datasets. Our contributions are as follows. Firstly, to leverage the global and local information embedded within recordings, a swin Transformer based acoustic-based system is proposed to extract the global and local information related to dementia embedded within the audio recordings. Secondly, both age and gender information embedded in the extracted acoustic features are demonstrated to be informative on different speech-related tasks. By including the age and gender information as the extra input, the system's performance can be improved further. Thirdly, when constructing a linguistic-based system, the character-level and word-level transcripts extracted from the ASR system are used as inputs of the BERT-related system to make up the rhythm-related information which is removed from audio recordings when generating transcripts. Finally, a fusion system named Swin-BERT is designed to take advantage of the acoustic and linguistic systems to reach state-of-the-art results on both the ADReSS datasets (released for the first international shared-task challenge) and ADReSSo (released for the second international shared-task challenge).The results show that both the proposed acoustic and linguistic systems have the potential to outperform the majority of existing acoustic and linguistic systems on the two datasets. State-of-the-art results are achieved by the proposed Swin-BERT system on the ADReSS and ADReSSo datasets. In the experiment part, ablation study is done to exam the efficiency of the proposed Swin-BERT system.

（CIEL-15 分会场 9 14 日 15:06-15:18 报告人：潘怡霖）

吉林省中老年人口语表达流利性衰退研究

王希竹

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为了应对人口老龄化带来的挑战，我们不仅需要加快建设更完善的养老机构和服务体系，加强老年人健康管理和医疗保障体系建设，同时要加强老年人的社会参与感和精神文化生活，让他们能够充分融入社会，保持积极的生活状态。而保持良好的语言表达能力则是老年人能够融入社会，并在交际过程中顺利实现交际目的的保障和基础。

老年人在口语表达过程中频繁出现找词困难、偏题言语增加、语言表达流利性下降、词汇与语法多样性下降等问题，严重影响老年人的正常沟通和心理健康。近年来，国内研究虽已开始关注到老年人的语言现象，现有研究主要集中在语音感知层面，较少涉及语用话语层面，文章多为综述性文章，实证类较少，且普遍聚焦于阿尔茨海默症（AD）引起的语言障碍，忽略正常衰老或轻度认知障碍所引发的语言衰退现象，已有研究成果尚未形成体系。口语表达的流利程度，作为口语表达能力最直观的外在表现，也是听话人最直接判断老年人是否出现语言能力衰退的主要依据。

本研究选取 50 岁及以上，共 80 位发音器官健康、无认知障碍的中老年人作为实验被试，对其口语表达流利性进行量化测评，探索口语表达流利性自然衰退的过程。并再

此基础上，使用单因素方差分析、事后检验分析等方法，探讨年龄、性别、学历、养老方式等因素与中老年人口语表达流利性衰退的关联度，为改善或延缓老年人语言能力衰退现象提供实证参考，尝试对保护与改善老年人口语表达能力提出合理化建议。

（CIEL-15 分会场 9 14 日 15:18-15:30 报告人：王希竹）

Exploring the Multifaceted Challenges of Aging: Unveiling Genetic, Neural, and Alzheimer's Insights in China and Beyond

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Almost all countries, including China, are experiencing a demographic shift towards an older population. To address the resulting challenges, this paper provided a detailed overview of three critical aspects of aging. Its objective was to enhance our understanding of aging research by exploring each topic and oMering valuable insights.

Firstly, the paper presented a summary of the evolutionary genetics of aging, which revealed the varying lifespans observed in diMerent species and uncovering the underlying genetic mechanisms. This section also discussed the programmed versus tear-and-wear theories of aging and explored hypotheses such as the mutation accumulation hypothesis, antagonistic pleiotropy hypothesis, and disposable soma hypothesis (Kirkwood et al., 1997). Additionally, the gender diMerence in lifespan was explored, with a special focus on the unguarded X chromosome hypothesis (Xirocostas et al., 2020). We then shifted to discuss the unique characteristics of human, acknowledging the dual influences of biological and cultural evolution. Specifically, the enigmatic phenomenon of the male-female mortality-morbidity paradox is highlighted.

Additionally, a comparative examination of longevity research in Chinese and WEIRD (Western, Educated, Industrialized, Rich, and Democratic) communities provided distinct perspectives and approaches. Secondly, the focus shifted to neural changes in healthy aging, focusing on exceptional cases exemplified by so-called "Super agers" (Perls, 1995). Cutting-edge research was explored to understand the intricate neural transformations that occur during aging and their implications for healthy aging. In this part, initiatives such as the China Brain Project and brain-related projects in WEIRD countries were introduced for their potential in advancing research on the neural aspects of aging. Lastly, the paper investigated Alzheimer's Disease, emphasizing the neurological and genetic mechanisms contributing to its development and progression.

It explored the pathogenesis of Alzheimer's, including the role of Aβ amyloid deposition and the APOE 4 gene (Zhou et al., 2021). The primary goal of this comprehensive review was to facilitate knowledge exchange and collaboration between researchers from China and WEIRD communities in the field of aging research. By disseminating insights and promoting cross-cultural understanding, the paper aimed to foster effective communication and collaborative efforts, ultimately contributing to the promotion of healthy aging and overall well-being on a global scale.

Reference

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（CIEL-15 分会场 9 14 日 15:30-15:42 报告人：谢郴伟）

老年人语用能力衰退研究——多模态语料库方法

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个体语用能力伴随增龄动态发展，生理衰退、病理或其他因素都可能引发个体语用能力老化甚至损伤。言外行为作为反映说话人的真实交际意图的语用学研究视角，为洞察老年人语用能力提供了有效进路。同时，由于老年期个体的语用能力是其过往人生历程积累的体现，因此，个体人生历程的重要变量对观测语用能力老化的过程具备潜在的区别性作用。

本研究以言外行为为单位，以 60-89 岁认知健康和认知损伤（轻度认知障碍和阿尔茨海默病）老年人自然交际任务中的言外行为为研究对象，自建老年人话语多模态语料库（MCGD）并以此为研究基础数据，采用横断面研究方法，分析不同认知健康老年人在交际任务中实施的言外行为与重要人生历程变量间的关联。具体来说，（1）以增龄为依据，分别统计分析认知健康组和两类认知损伤组言外行为的发展情况，及其与人生历程重要变量间的潜在关联；（2）以认知健康组言外行为的实施情况为常模，将（两类）认知损伤组实施情况加以对比，探索其中差异及其与重要人生历程变量的潜在关联；（3）对比研究两类认知损伤组的表现情况，进一步探索病程间的言外行为表现差异及其与重要人生历程变量的潜在关联。

现阶段研究发现，老年人言外行为在性别、教育、重大经历、认知健康、言语等主要人生历程变量上存在不同程度、不同类型的差异。在发现人生历程变量与老年期言外

行为实施存在密切关联的同时，丰富了全龄视阈下的语用学研究，为提升与老年人的沟通能效提供了有效借鉴，同时也丰富了老年认知健康临床筛查在语用维度的观测指标。

（CIEL-15 分会场 9 14 日 15:42-15:54 报告人：周德宇）

On the Evolution of te33 得 as a Sentence Final Particle in Huarong Dialect

向鹏辉

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This study aims to examine the semantic extension and syntactic reanalysis of the sentence final particle te^{33} 得 in Huarong dialect, a Sinitic variant spoken in the east-northern Hunan province. Through fieldwork and analysis of daily conversational data, it is observed that te^{33} 得, originally as a lexical verb meaning 'acquire' in modern Huarong dialect, encompasses at least the following functions: (a) directional particle; (b) dative marker; (c) modal marker in both preverbal and postverbal position; (d) complement marker; (e) a marker of realization; (f) causative morpheme; (g) passive morpheme; (h) sentence final particle; (i) interjection.

This paper will mainly focus on the sentence final particle te^{33} 得. First of all, it is found that in situations where we have a post-verbal dynamic modal te^{33} 得 or a marker of realization te^{33} 得, an additional optional te^{33} 得 can be found in the sentence final place with functioning to reinforce the modal interpretation or realization sense.

(1) 我看电视看**得**一天**得**。   **[V+*te³³*Mod.able+X+*te³³*SFP.emphatic]**
   ŋo²¹ kʰan¹³ tʰiŋ³³sʅ³³ kʰan¹³ **te³³** ji¹³ tʰiŋ³³ **te³³**.
   1SG watch television watch MOD one day SFP
   '(Definitely,) I can watch TV all day'

(2) 我搞**得**卫生来**得**，会迟落克。   **[V+*te³³*RELZ+X+*te³³*SFP.emphatic]**
   ŋo²¹ kau²¹ **te³³** wei³³seŋ³³ lai¹³ **te³³**, xui³³ tsʰi¹³ nuo³³ kʰe³³.
   1SG do RELZ cleaning come SFP will late TEL SFP
   'If I come after cleaning, I'll be late'

The above situation indicates that the sentence final emphatic te^{33} 得 is highly interactive with the aspectual and modal sense of te^{33} 得. Its optionality implies that it has gained independence at the utterance-final place, thus preparing its way of reanalyzing into a mature sentence final particle.

With further evolving, free from the above restrictions, sentence final te^{33} 得 has developed into a firsthand evidential marker indicating that the speaker gains firsthand knowledge through different kinds of perceiving tunnels (including seeing, hearing, smelling, touching, etc.), consider the following example:

(3) 箇鸟叫得好好听**得**。

    ke^{33} niau^{21} tɕiao^{13} te^{33} xau^{21} xau^{21} tʰiŋ^{33} **te^{33}**.

    DEM   bird   sing   COM   good   good   hear   SFP

    '(You listen!) The birds sing beautifully.'

Focusing on the sentence final *te^{33}* 得, this study has following objectives: (i) describe clearly the semantic features of sentence final *te^{33}* 得 and syntactic environments where we can use it; (ii) reconstruct the development route of sentence final *te^{33}* 得 by arguing that (inter) subjectification and metaphorical extension acting as the predominant mechanism along with syntactic reanalysis; and (iii) illustrate and verify the intimate relationship between tense-aspect-mood and evidentiality, as already proposed by many of scholars. Findings in this study will shed light on the topological study of the possible sources of sentence final evidential markers in Sinitic languages.

（CIEL-15 分会场 10 14 日 14:30-14:42 报告人：向鹏辉）

吴语宣州片方言古並定母历史演变研究

祝晨琳
南京大学

    吴语宣州片太高小片、铜泾小片、石陵小片的划分标准是古全浊並（奉）、定母的今读类型。太高小片保留或部分保留浊塞音，与"清音浊流"型吴语一致；铜泾小片弱化为擦音、闪音等，有喉擦音化趋势；石陵小片清化为清送气塞音。弱化辅音与清音浊流之间存在语言演化上的系统对应。我们将弱化和清化两条支线联系起来，总结古並定母在吴语宣州片三个小片的演变路径如下：
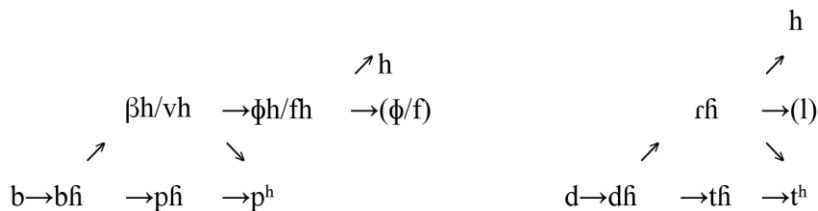
    总结各小片所处的演变阶段如下：

    太高小片尚处在[bɦ- dɦ-]向[βh- ɻh-]过渡的阶段，当涂博望方言[b- βh-]自由变读现象反映太高小片正朝着铜泾小片的方向演变。

    铜泾小片已经完成了[bɦ- dɦ-]到[βh- ɻh-]的弱化音变，定母今读[ɻh-]，並母由[βh- vh-]继续清化为[ɸh- fh-]。目前大部分铜泾小片並定母今读处于这个阶段，少数方言（泾县、石台）进一步丢失擦音成分发生[h-]化音变。

    石陵小片的[ph- th-]既有可能是从[bɦ- dɦ-]清化而来，也有可能曾经有过[βh- ɻh-]的阶段，先弱化再清化。

    若以苏皖两省的省界为中轴线，沿此轴线东西两侧毗邻而居的安徽当涂（湖阳）方

言与江苏高淳（淳溪）方言共享着同样的浊音演变模式，这些方言同属宣州吴语太高小片，並定母保留或部分保留浊塞音[b- d-]，正向着铜泾小片演变，开始出现弱化声母[fh- rh-]。值得思考的是，在距离中轴线相隔最远的东西两端，东侧的江苏如皋方言与西侧的安徽池州方言在全浊声母的今读语音表现上竟如出一辙，与当涂、高淳一起，构成了东西两侧的轴对称关系。如下图所示：
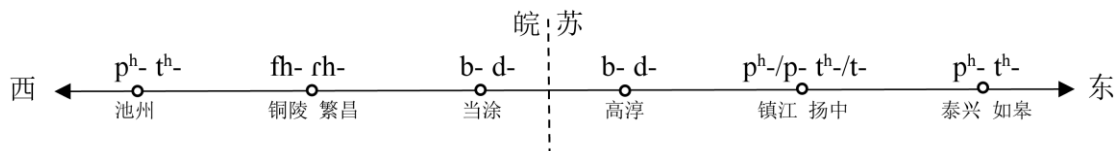
我们认为"一律送气"的主导因素并非语言接触，而是反映出古全浊声母的自然音变发展到某一特定阶段所呈现的共性特征。石陵小片的一律送气读法的成因，相比于与赣语在地缘关系上的相近，更可能的解释是，赣语全浊声母的清化在来源、路径和结果上与石陵小片是一致的，二者经历了同样的语音演变过程。

（CIEL-15 分会场 10 14 日 14:42-14:54 报告人：祝晨琳）

司礼义所记大同县南方言

郭利霞
南开大学

司礼义（Paul Serruys，1912-1999）是天主教圣母圣心会传教士，比利时裔，美国籍。1936 年到达北京，次年被派往桑干河上的西册田，对当地的方言和习俗进行了调查研究，本文的音系即根据司礼义的两篇文章整理而成：

声母（23 个）

[ȵ]白冰边笔	[ȵʰ]爬旁婆屁片	[m]毛马门	[f]房放风夫	[v]我卧瓮娃
[t]肚蛋点的	[tʰ]碳头塌痛桃	[n]牛挨安恩		[l]连绿里
[ts]走着紫知	[tsh]寸铲草踩		[s]生三虱深	
[tʂ]抓针装猪	[tʂh]吃长出唱		[ʂ]水手鼠扇树耍石十	[z]人揉肉乳日绒
[tɕ]净近见叫斤耕街	[tɕh]去七钱娶求条天铁		[ɕ]小下系兄袖婿	
[k]干狗公姑	[kʰ]看哭宽苦		[x]会黑活糊	
[□]有一圆夜				

韵母（35 个）

[ɿ]是纸日四这紫巳死	[i]地底鸡起皮细眉	[u]肚都鼠住/都	[y]绿女/鱼去榆
[ʅ]这时/迟			

[ɚ]耳二

[a]爬啦玛喳煞　　　　　[ia]下　　　　　　　　[ua]耍

[　]可扯车/遮河个和舌　　　　　　　　　　　[uo]过锅可火坐馍磨

[æ]干蛋看碳扁三汉　　[iɛ]连线边辫爹眼　　[uæ]软穿砖/端　　[yæ]圆远/拳倔
[ɑ]光黄房桑糠庄装双　[in]羊两墙亮香
[əɣ]升人城生枕/真门　[iəɣ]净斤冰银钉命　[uəɣ]寸春动痛捆棍顿　[yəɣ]用荣兄群穷
[εe]来踩盖开白妹海背　　　　　　　　　　[uεe]会水腿灰位块
[ɐo]毛包刀老道瑙　　[iɐo]咬小鸟庙尿
[əu]手狗后口走头路走　[iəu]又牛溜有
[ʔaʔ]虬塌八鸽割色把刮　[iaʔ]歇业麦百押约　[uaʔ]捉桌/脱做竹　[yaʔ]血脚/月

[ʔeʔ]吃脊黑得十/没腐　[iəʔ]一媳/毕笔　　[uəʔ]出哭唤/窟秃谷　[yəʔ]削绿蓄

声调：

调类　调值　　　　例字
平声：42　　　三高铜来墙门王衣白西
上声：45　　　两小老咬远有你九打买
去声：324　　亮树绿二盖四尿面炕烂
入声：4、2　　一七八黑吃月石北热渴

（CIEL-15 分会场 10 14 日 14:54-15:06 报告人：郭利霞）

皖北泗县方言"是了"成词功能与演化过程

王绍玉
亳州学院

皖北泗县方言"是了"由判断动词"是"虚化后，缀以语气词"了"而成，随着"是"的判断义减弱，实现词汇化，主要表达"认同""肯定（某动作）""无所谓"和"主观小量"等意义，体现出较强的主观性，结构形式主要有："是+宾+了""V+是了""V+（V+是了）"。

关键词　泗县方言；　"是了"；　动词；　语气词

一　引言

从普通话、方言和近代汉语看，汉语"是了"的成词用法及相关的固定说法，具有一定的普遍性。本文主要描写、分析皖北泗县方言"是了"的表意功能，简单论及其形成过程。泗县方言属中原官话信蚌片（中国语言地图集，2012）。

二　表示认同

"是了"用作动词，读为[ʂʅ53·lə]，表达认同语义，即表达"认定为对"的肯定评价，常用作对话的答语，所在的语句可称作"应答式"。如：

三 表示肯定态度

用在表示动作行为的词语后边，表示对该动作行为的肯定，有加强语气的强调作用，有时带有"实施该单一行为就可以解决问题"的意味，体现出说话人的主观认知。所在的语句可称为"处置式"，常见的是"V+是了"。

四 表示"无所谓"

当说话人持消极态度对待某种现象或处境时，"是了"读为[·ʂ·lɔ]，表示无所谓的语气。"是了"所在的语句可称为"拂意式"。

五 表示主观小量

主观小量，李宇明（2000：111）做了清晰的论述："……人们在对量的表述时,往往会带有对量的主观评价,或认为这个量是'大量'，或认为这个量是'小量'。带有主观评价的量是'主观量',不带有主观评价的量是'客观量'。"

六 结语

泗县方言"是了"的语气词用法，是从动词用法虚化而来的。归结如下：

<div align="center">泗县方言"是了"虚化过程一览表</div>

语法功能	做谓语（可带宾语）	成句；做谓语（不带宾语）	位于句末（动词或宾语后边）
语法性质	动词"是"+（宾语）+了	动词"是了"	语气词"是了"
表意功能	判断	认同	肯定；无所谓；主观小量
语音变化	[ʂ^{53}],[·lɔ]	[ʂ^{53}·lɔ]	[·ʂ·lɔ]

（CIEL-15 分会场 10 14 日 15:06-15:18 报告人：王绍玉）

以同音字汇计量比较模型为基础的客赣方言比较研究

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南方的几大方言区中，客赣方言在共时和历时上的特征都比较接近，因而二者从分还是从合一直有所争议。前人对于客赣方言比较大多从音韵特征的比较入手，从而试图找到客赣方言分区的依据。例如客家方言古次浊上声全部或者部分字归入阴平，而赣语几乎没有。然而，这类研究更多是定性的研究，很难处理客赣方言交界带的方言分区问题。为此，本文立足于江西省境内的客赣方言，建立了一个 20 个客赣方言点 3000 余汉字的语料库，基于同音字汇计量比较模型，从客赣方言接触和融合的视角对重新探讨客赣方言的比较问题。

相较于以往的研究，本研究在方法上采用了以同音字汇为对象的计量比较模型，通

过数学建模、统计分析和可视化等方法，综合呈现客赣方言的接触和融合情况。同音字汇是汉语方言的重要研究材料，相当于简化版的古代韵书，其实质是包含了同音字的音节表。可以认为，学界进行的任何方言语音比较研究，归纳的任何方言语音特点，都必然要从同音字汇的比较中找到根据。某在程度上，方言同音字汇的比较研究等同于方言语音的比较研究。因此，本研究以客赣方言的同音字汇作为计量比较的对象。与传统的方言计量比较方法相比，本研究在方法上具备数据完整性好、更好地与传统音韵学结合、相对规避音位处理问题等优点。研究结果表明，在同音字汇计量比较模型的基础上，我们可以从音位、音节和音类等多个层面，分析微观、中观和宏观的客赣方言声韵调音节结构接触和融合的信息，从而对客赣方言的语音特征进行定量的可视化呈现。

（CIEL-15 分会场 10 14 日 15:18-15:30 报告人：吴南开）

闽南方言"卜"从能愿动词到反问标记的语法化——兼谈语法化的动因和机制

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集美大学

闽南方言反问标记"卜"由表意愿的能愿动词"卜"语法化而来，具体经历了六个发展阶段。反问标记"卜"的语法化历程显示，语法化是语言系统外部因素和内部因素共同驱动的结果。外部因素为语用因素，内部因素为句法、语义因素。这种驱动是一种由外而内的互动式驱动。语用需要决定了语法化的方向，但只是提供一种可能，要把这种可能化为现实，必须依赖于句法结构的变异。而句法结构的变异不仅会导致语言成分的语义磨损，而且会导致语言成分的语义补偿。在语法化进程中，语义上的这种此消彼长往往不是一次性进行的，而是多次进行的。这是诱发语言成分实现语法化的最重要动因。"卜"从意愿能愿动词语法化为反问标记，是通过语境吸收、推导义固化和主观化实现的。反问标记"卜"所经历的语法化历程对我们进一步探讨语言成分语法化的动因和机制富有极大的启发和很高的理论价值。

近年来，关于语法化的动因和机制，无论是西方语言学界还是汉语学界，都做过不同程度的探讨，但都未能有清晰、统一的认识。甚至，有的学者看为动因的，其他学者则视作机制；有的学者视作机制的，其他学者则看为动因，以致于造成语法化的动因和机制难分难解。究其原因是中西方语言学界对语法化的动因和机制很难给出泾渭分明的判定标准。这也足以说明两者的复杂性。只有多多立足于具体语言事实的探讨，方能为普通语言学中的语法化理论的发展做出应有的贡献。闽南方言反问标记"卜"的语法化历程为我们进一步探讨语法化的动因和机制提供了生动的样例。

文章由"卜"的语法化延伸开来，对中西方提出的语法化动因和机制进行了深入的探讨，并就其今后的进一步研究提出了四个努力方向。

（CIEL-15 分会场 10 15:30-15:42 报告人：陈曼君）

从韵素对立论汉语声调音段起源说

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"音段起源说"表明在上古汉语中，声调以音段形式位于音节末尾。而上古汉语中存在以韵素多寡别轻重的单音节音步，不同声调的字也有不同的轻重表现。本文以指示代词"斯"和"此"为例，观察得出重音位置上只有"此"而无"斯"。同样是上声的"汝"和"尔"就没有这种对立。同样的，"不"不能单独使用，但"否"却能作句子谓语，或者单独成句。除此之外，上古汉语并列结构的两个音节也明显呈现出"平声在前，仄声在后"的分布，重音位置一般都由仄声字充当。"予"作第一人称时读为平声，但在《诗经》中却全部与上声押韵，这证明平声"予"应该是轻读的结果，作韵脚时被重读为本音的上声。这些证据说明声调在上古汉语中作为音段成分，会影响到韵素的轻重。

关键词：声调；韵素；重音；并列结构；代词；

（CIEL-15 海报展示 编号P101 展示人：刘炘壕）

The Conceptual Origins of Adjective Ordering Preferences: Evidence from Silent Gesture

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It is widely suggested that, when multiple adjectives occur within a noun phrase, there is a typological tendency in terms of how these adjectives are ordered: languages that place adjectives before the noun tend to follow the same adjective order as English (e.g., a big spotted toothbrush sounds more natural than a spotted big toothbrush), while languages that place adjectives after the noun have been claimed to have an order that mirrors the English one (Sproat & Shih, 1991). Syntactic (Cinque, 1994) and cognitive accounts (Sproat & Shih, 1991; Scontras et al., 2017, Culbertson et al., 2020) have been proposed to explain this typological tendency, but behavioral evidence supporting these accounts remains sparse. In this study, we focus on one particular cognitive account, which predicts that adjectives that are conceptually more closely related to nouns will be placed linearly closer to the noun (Culbertson et al., 2020). For example, texture adjectives are more closely associated with the nouns they modify than size adjectives (as measured by pointwise-mutual information,

Culbertson et al., 2020). We conduct two silent gesture experiments to test whether ordering preferences among multiple adjectives in a modality unfamiliar to participants conform to these predictions. In Experiment 1, we use a production task, where participants express, with gestures alone, pictures showing toothbrushes and pencils with different sizes and textures. We find the predicted preference only when size and texture adjectives are gestured pre-nominally (Figure 1). In Experiment 2, we use a perception task, where participants see the same set of pictures but must choose between pre-recorded gesture sequences that are either homomorphic or non-homomorphic. Here we fail to find any preference at all (Figure 2). Overall, the results do not provide clear support for a role of conceptual closeness in explaining cross-linguistic adjective ordering preferences. We discuss a range of confounding factors (e.g., frequency) that may contribute to our results.
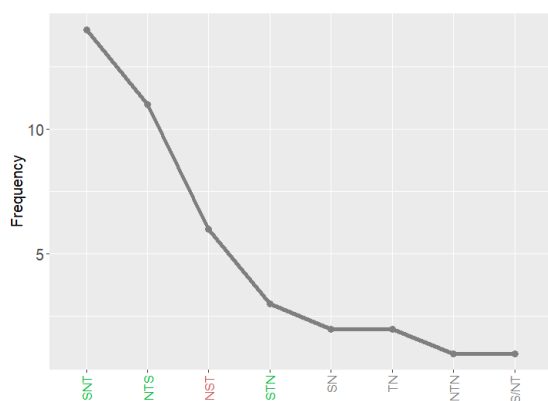
Figure 1: The orders that were used in the majority of a participant's gesture productions. The x-axis shows the orders that at least one participant used in the majority of trials, and the y-axis shows the number of participants who used each order in the majority of trials. S: size; N: noun; T: texture. When both modifiers were pre-nominal, T tended to come closer to N than S, as predicted; when they were both post-nominal no such preference was observed.
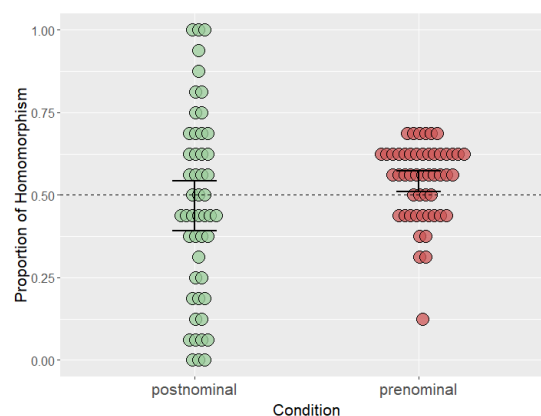
Figure 2: The proportion of homomorphic orders selected by each participant. Each point represents a participant, the x-axis shows the conditions, and the y-axis shows the proportion of homomorphic orders selected. Participants did not show a preference for homomorphism in the prenominal (shown in red on the right) or postnominal (shown in green on the left) condition.

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（CIEL-15 海报展示 编号P102 展示人：周睿哲、丁微）

迭部县诸藏语的亲缘分群及其历史地位

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迭部县位于甘肃省甘南藏族自治州最南部，与四川省阿坝州交界。迭部县的12个乡镇整体延白龙江东西向分布。前人对迭部县藏语的研究包括上迭的益哇话（Lin,2014；桑吉次力,2019）、电尕话（仁增旺姆,2013；黄布凡,2022）、卡坝话（华侃等,1982；杨士宏,1983/1995），中迭的旺藏话（仁增旺姆,2013）和下迭的桑坝话（杨士宏,1995）、洛大话（仁增旺姆,2013；杨大雪,2019；Yang,手稿）。Tournadre & Suzuki（2023）将迭部藏语划分在八大藏语方言中的东部方言，本文主要采用这一划分。东部方言是在八大藏语方言区中，向来被认为是内部丰富度高，差异性大，研究少的地区。本文通过田野调查，收集了12个乡镇中9个未被前人记录过的藏语方言，详细阐述了迭部县内部的藏语特点，并基于历史比较法对其作出新的亲缘分群，并在与外部藏语方言（白马、卓尼、热务沟、夏河、循化、玛曲、巴塘、嘎米、东旺、拉萨、宗卡和普里克）的历史比较中，确立迭部县土语的历史地位。
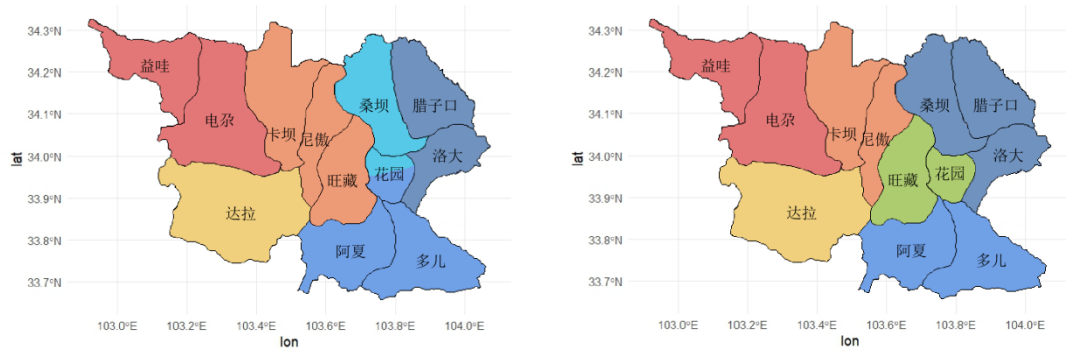
图1 迭部县藏语旧（左）新（右）亲缘分群对比

在迭部县内部以旺藏镇为界可以分为上迭和下迭两大方言，旺藏可以与上下迭方言通话，上下迭间则基本无法通话。在新分群中，桑坝与腊子口、洛大归为同一土语群，即BLR土语群，其内部在部分词中，有⟨(s)k-⟩ > /g/和⟨-u⟩ > /u/的共享创新，而其他土语群则为⟨(s)k-⟩ > /k/，并且⟨-i⟩⟨-u⟩合流为/ə/。旺藏、花园土语群享有⟨ld-⟩ > /t/的共享创新，而其他乡镇中前置辅音则保留了主要辅音[+浊]这一特征。

迭部县境内的诸藏语方言⟨-a⟩ > /ɐ/，以及⟨Cy-⟩ & ⟨Cr-⟩ 变为齿龈塞擦音/ts/类音，是其区别于外部其他藏语方言的共享创新。

热务沟话⟨khy-⟩ > /tsʰ/等音变与迭部县诸方言音变一致，有理由相信热务沟话可能与迭部县藏语有较近的亲缘关系，白马话⟨-ar⟩ > /ɑ/等音变与BLR组音变相同，据当地传说，洛大人与白马人都在吐蕃东征时期共同迁入当地，可推断其具有较近的亲缘关系。

基于以上证据，我们认为迭部话是一个独立的藏语土语，其内部可以分为六个土语群，并基于共享创新得到新的亲缘分群。

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（CIEL-15 海报展示 编号P103 展示人：杜思睿）

Quantitative Analysis of Lexical Psycholinguistic Properties in Aphasia Discourse Production

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Patients with aphasia (PWA) have varying degrees of difficulties in retrieving words during discourse production. Previous research has investigated various aspects of lexical diversity, density and sophistication with a focus on surface-level variables and could not reveal deeper-level word knowledge. The present study examined four lexical psycholinguistic properties in PWA discourse, i.e., Age of Acquisition (AOA), concreteness, imageability, familiarity, to reveal their potential word retrieval deficits. Transcripts of 78 English PWAs were retrieved from the AphasiaBank database and transcripts of 78 healthy controls matched in age and education level were selected from the same database as a baseline. To quantify lexical psycholinguistic properties, we selected four large-scale norms, one for each psycholinguistic property, i.e., age of acquisition (Kuperman et al., 2012), concreteness (Brysbaert et al., 2014), imageability (Scott et al., 2019), familiarity (Scott et al., 2019). PWA discourse showed distinctive patterns in these lexical properties compared with that of the control group. In general, the words PWA used were acquired earlier in life, easier to form mental image and with higher familiarity than those used by the control group. There were also important task-induced variations. Story narratives were more sensitive in eliciting words with varying lexical psycholinguistic properties and thus can better detect impairments relative to picture and procedural descriptions. Word classes also affected lexical psycholinguistic properties with nouns being higher in AOA, concreteness, imageability, and familiarity than verbs. Psycholinguistic norms

provided us with sought-after evidence about the deficits of deeper-level lexical knowledge in PWA and therefore should be incorporated into current aphasia discourse assessment frameworks.

（CIEL-15 海报展示 编号P201 展示人：陈居强）

阿尔茨海默症患者不同语义范畴命名能力的蚀失差异与速度——一项基于斯瓦迪士核心词表的调查与分析

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摘 要：为了探讨阿尔兹海默症（Alzheimer's disease，简称 AD)患者语义蚀失的特点，我们尝试采用以斯瓦迪士核心词表为基础的自编图片命名测试，调查了15例阿尔兹海默症患者的语义记忆在长、短时间内（长时组平均间隔时间约45天，短时组平均间隔时间约15天）的变化，并统计每一例患者在七个语义范畴（身体部位类、颜色类、数字类、天文类、地理类、亲属称谓类、空间类）中的平均错误率，进而研究核心词与非核心词以及不同语义范畴在阿尔兹海默症患者语义蚀失中的稳定性差异。研究结果显示，（1）阿尔兹海默症患者的语义蚀失程度在长时和短时之间存在显著差异。（2）对时间和语义法范畴平均错误率进行线性拟合，结果显示无法通过发病后的具体时间点来预测该时间点的语义蚀失程度，同时短时语义蚀失趋势与长时语义蚀失趋势不吻合，说明阿尔兹海默症患者语义蚀失不是匀速的。（3）斯瓦迪士核心词与非核心词在阿尔兹海默症患者语义蚀失过程中的稳定性无显著差异，提示无法用斯瓦迪士核心词来判断个体语义蚀失程度。（4）我们所研究的七个语义范畴在蚀失程度和速度上无显著差异，即患者在这七个语义范畴中不存在特异性损伤。
关键词：阿尔兹海默症；斯瓦迪士核心词；语义蚀失

（CIEL-15 海报展示 编号P202 展示人：梁慧）

Rehabilitation Treatment and Practical Effect Evaluation of Mandarin Tone Category Perception in Patients with Chinese Aphasia

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1. Background

In a Chinese linguistic context, the perception of Mandarin tone categories is crucial for effective communication. For patients with post-stroke aphasia (PWA), the loss of Mandarin tone category perception can significantly impair their ability to engage in daily conversations. While previous studies have explored tone category perception in non-tonal languages and in the Chinese language, particularly revealing a decreased sensitivity in Chinese PWA patients, effective rehabilitation strategies to improve this ability remain unexplored. This study, therefore, delves into rehabilitation methods for improving Mandarin tone category perception among PWA patients speaking Chinese.

2. Methods and Procedures

This interdisciplinary study integrates linguistics, psychology, and rehabilitation medicine to explore tone category perception and its rehabilitation in PWA patients. The experiment comprises two phases: clinical diagnosis and rehabilitation training. In the clinical diagnosis phase, 10 PWA patients, 5 with Broca's aphasia and 5 with Wernicke's aphasia, all with moderate severity, were compared with 10 healthy individuals as a control group. The Western Aphasia Battery (WAB) and the Boston Diagnostic Aphasia Examination (BDAE) were used to assess and compare the tone category perception abilities between the PWA patients and healthy individuals. Identification and discrimination tasks were also employed to contrast the tone category perception between the 10 moderate PWA patients and their healthy counterparts. Additionally, auditory comprehension, working memory, and severity tests were conducted to examine their influence on tone category perception.

In the rehabilitation training phase, melody intonation therapy was adopted to treat tone category perception deficits in PWA patients. The rehabilitation program was divided into two difficulty levels, progressing from the first to the second phase only after the patient received 10 consecutive sessions with a score of 90% or higher. The second phase was slightly more complex, and both phases followed a gradual progression from easy to difficult for patient rehabilitation. The program lasted for three months, with three sessions per week, each lasting one hour. Pre-test, mid-test,

and post-test evaluations were conducted to assess the tone category perception abilities of the PWA patients, again employing identification and discrimination tasks to evaluate the effectiveness of the rehabilitation training.

3. Results

The study revealed significant differences in categorical discrimination accuracy, inter-categorical discrimination accuracy, and reaction time between moderate PWA patients and healthy individuals, indicating a decreased sensitivity. The rehabilitation training was conducted as planned, and initial findings suggest a short-term effect.

4. Implications

The findings of this study provide valuable clinical evidence for understanding the characteristics of tone category perception in PWA patients and their rehabilitation. This research contributes to the interdisciplinary integration of linguistics, psychology, and rehabilitation medicine, facilitates clinical diagnosis and classification of aphasia, and offers insights and guidance for clinical diagnosis, classification, and rehabilitation of Chinese-speaking PWA patients. However, the study's sample size is limited and focused solely on Chinese tonal language. Future research could expand the sample size and further investigate PWA patients speaking tonal and non-tonal languages.

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Categorical Perception of Pitch Information in Mandarin-Speaking Children with Autism Spectrum Disorders

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Autism Spectrum Disorder (ASD) is a pervasive and complex neurodevelopmental condition generally characterized by atypical pitch processing in perception. Most existing conclusions come from studies of ASD populations speaking non-tonal languages, resulting in limited attention and conflicting findings regarding the processing of pitch information in individuals with ASD who speak tonal languages. To investigate the nuanced pitch processing ability and pattern in Mandarin-speaking

children with ASD, the study explored the categorical perception (CP) of the most confusing Mandarin lexical tone pair characterized by concave pitch contours (T2-T3 contrast, linguistic pitch) and the corresponding pure tones with identical pitch contours (nonlinguistic pitch).

A total of 26 Mandarin-speaking children with ASD (18 males, Meanage = 6;2, SD = 0;12) and 29 age-matched typically developing (TD) children (12 males, Meanage = 6;1, SD = 0;9) were recruited for this study. The Mandarin T2-T3 contrast and corresponding pure tones with identical pitch contours were adopted to assess the nuanced pitch processing abilities of the child participants via the CP paradigm.

Results showed that Mandarin-speaking children with ASD exhibited atypical CP for linguistic pitch in comparison with their TD peers. This discrepancy might stem from the significant individual variability among children with ASD, the influence of task demands, and the inherent complexities of the selected lexical tone contrasts used in this study. Furthermore, the categorization of linguistic pitch exceeded that of nonlinguistic pitch among the ASD participants, indicating a global over local processing pattern contrary to autistic individuals in non-tonal languages. This divergence may be attributed to the autistic participant's greater familiarity with lexical tones compared to pure tones, as well as the inherent complexities of the latter.

The implications of this study are significant for understanding pitch processing in autistic children within tonal language backgrounds. By examining the CP patterns for two challenging tones in Mandarin-speaking children with ASD, this research contributes novel insights and empirical evidence to the field. Additionally, the findings of this study serve as a foray into contesting current theories' claims (e.g., weak central coherence theory and enhanced perceptual functioning model) of local bias and/or global impairment in the autistic population, prompting further inspections on individuals with different language backgrounds and stimuli processing with various complexities. Furthermore, the results underscore the necessity for targeted training and intervention in speech rehabilitation to effectively address the perception of pitch information in Mandarin-speaking children with ASD.

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Individual Differences in Tone Perception and Production in the Process of Dialect Emerging：A Case study of Elementary School Children in Changsha

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The subtle processes involved in sound change often cannot be captured through traditional studies of group-level characteristics. As new dialects emerge, individual differences in how children adapt to these changes might not align with collective traits, which underscores the nuanced progression of sound change. This highlights the need to explore individual differences in perception and production and their links as new dialects develop. Moreover, due that sound changes often involve shifts in cues, examining how cues are utilized becomes crucial[1]. This study investigates these phenomena by exploring the perception and production of T1 and T4 tones in Changsha Plastic Mandarin (CPM) among elementary school children in Changsha.

Dialect contact in Changsha, driven by the promotion of Standard Mandarin (SM), has led to the displacement of the local Changsha Dialect (CD) and the rise of CPM. Many elementary school children now primarily use CPM and SM instead of CD. While CPM is similar to SM in segmental aspects, it differs significantly in suprasegmental features, especially in T1 and T4 tones. Existing records show that although T1 and T4 tones share similarities in CPM and CD, they are distinct from those in SM[2].

This study involved 44 participants aged 6 to 12. They are all native to Changsha but are non-speakers of CD. Three experiments were conducted: the first assessed the identification capacity of participants towards the T1-T4 contrast in monosyllables from natural speech. The second experiment examined how perceptual cues are integrated by groups with varying levels of identification abilities based on the first experiment's results. This investigation aimed to discern whether and how these abilities affect the strategies for integrating perceptual cues. The third experiment analyzed the acoustic cues of the T1-T4 contrast as produced by the participants under the direction of producing CPM.

The results reveal significant individual differences in identification abilities and cues for perception and production. The first experiment showed that while age does not significantly impact the ability to distinguish T1 and T4 tones, individual differences are prominent. The second experiment found a positive correlation between identification accuracy and the use of multiple cues—children with better skills used F0 height, F0 movement, and voice quality effectively, while those with lesser skills relied only on F0 height and movement. This suggests that higher identification skills enable the use of a broader range of cues, with secondary cues often diminishing first in perception. Participants with deficient identification abilities lacked the capacity to utilize any cues effectively. In the third experiment, no age-related differences emerged, and children's production of T1-T4 in CPM under instruction still closely mirrored SM rather than developing distinct characteristics of CPM. Additionally, identification abilities for T1-T4 in CPM were linked to specific acoustic cues, with children lacking these skills demonstrating a more pronounced descending slope in T4, aligning more with SM.

In summary, perceptually, the link between identification abilities and cue integration shows that diminished perception of phonetic contrasts is tied to the loss of perceptual cues. In production, similarities and traits among individuals enrich the comprehension of the new dialect and its intricate relationship with perception. These findings lay the groundwork for future detailed studies on emerging dialects.

Keywords: individual differences, perception and production, tone contrast. emerging dialect.

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脑卒中患者CASP认知筛查评估中的修正序列研究

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脑卒中又称中风，是大脑细胞和组织坏死的一种疾病。国家卫健委2023年统计数据显示，我国脑卒中患病总人数超过2800万，脑卒中成为威胁我国国民健康的主要疾病之一。脑卒中常导致患者认知功能障碍，我国老年脑卒中患者1年内认知障碍患病率为 42.4%（塞秋枫，2023），处于较高水平。认知障碍是脑卒中后常见的后遗症,又名中风后认知障碍(PSCI) (Leys et al., 2005; Chander et al.，2017)。美国中风协会建议，所有脑卒中患者在出院前应进行认知能力筛查。(Winstein et al.，2016)。在脑卒中急性期进行认知能力评估可以帮助医生预测和早期识别 PSCI 患者，制定有效的康复计划和治疗方案，及时干预改善预后。CASP（Cognitive Assessment for Stroke Patients）是一种认知测评工具，用于评估脑卒中患者的认知功能，量表包含9个项目，6个维度:沟通、空间/视觉构建、执行功能、短期记忆、实践和时间取向。本研究纳入了10名健康老人、10名轻中度认知障碍脑卒中患者和10名重度认知障碍脑卒中患者作为研究对象。所有参与者都接受了CASP认知测评，所有医生-患者互动都是围绕 CASP量表进行，这为对单个医生-求诊者之间进行对比研究提供了条件。研究聚焦于脑卒中患者认知能力评估中的问题，采用多模态语料库的方法对医生与求诊老人间的问与答互动中的话语修正序列进行精准研究。分析结果显示，健康老人在不同题目测试中出现的自我修正高于其他两组脑卒中认知障碍患者，不同程度的认知障碍对脑卒中患者的会话修正能力产生了显著影响。这些发现有助于动态刻画健康老年人和脑卒中认知障碍患者大脑认知退化过程中语言蚀失表现，对临床医学实践、护理和干预有重要参考价值。

（CIEL-15 海报展示 编号P206 展示人：张梦晗）

3-10岁汉语儿童"然后"多义网络的发展——基于 CHILDES 232名儿童"青蛙故事"叙事语料的研究

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作为一项复杂的言语活动，叙事综合体现儿童认知能力、逻辑能力和语言

能力。"然后"过度使用现象普遍存在于儿童叙事中，对研究儿童叙事顺序能力的发展具有典型意义。

本文综合运用语义分析、语料分析与数据统计方法。首先以原型理论为核心，结合"然后"使用范围扩大情况、历时演变过程和认知基础，将"然后"的语义功能梳理为时序先后、条件结果、原因结果3种基本逻辑关系，递进、补充、并列、转折4种泛化逻辑关系和话题衔接、话题切换、语隙填充3种话语标记功能，并建构出"然后"的多义网络。接着利用CHILDES语料库中汉语儿童"青蛙故事"叙事语料，分析232名儿童所产出"然后"使用频率的发展变化、阶段特征，各类语义功能的分布情况、变化规律。最后与前人研究进行讨论，得出结论：

(1) 先秦汉语中，"然后"在成词前表示条件结果关系，凝结成词后则表示时序先后，因此时序先后成为"然后"语义范畴中的原型。现代汉语中，"然后"的语义范畴通过顺序性、连贯性、前提性这三个属性聚合起来。

(2) 将本研究与Choi（2010）、邹立志（2018）等人的研究结合可知，不同母语儿童的承接连词使用的峰值在5岁前后到来。

(3) "然后"的基本逻辑功能频率总体占比最高，其中时序先后和因果关系的此消彼长反映了儿童理解能力的增强。

(4) 泛化逻辑关系和话语标记功能的频率，会因儿童逻辑能力，表达能力和注意力集中水平的提高而随年龄增长而逐渐降低。

(5) 不同母语的儿童在看图叙事和自然会话中使用连词的频率都相差悬殊，这说明儿童能够区别这两种语体（Laubitz 1988），本文的数据支持我们认为汉语儿童在3岁时就能区分叙事与会话语体。

(6) 本研究发现3-10岁儿童产出的表示联合关系的各类"然后"的平均词频是表示偏正关系的各类"然后"平均词频的三倍，这印证了Beaman（1984）联合关系的掌握比偏正关系更简单的观点。

(7) "然后"在儿童语言中的语义扩张与在历史上的语义演变都是以时序先后关系为原型进行延伸，这同Brochhagen（2023）的研究说明了儿童语言发展与人类语言演变之间的互证性。

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学龄前儿童"儿化"音变习得声学实验分析

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"儿化"是众多汉语方言中的一种特殊音变现象，表现为"儿"缀随语义不断融合并入前一音节，形成特殊音变，有改变词义、改变词性和增加情感色彩的作用，因其重要意义也被普通话所吸纳。在普通话中，由于不同类别的韵母发

生"儿化"音变的规律各异，习得"儿化"音变不能使用统一标准的一种发音方式，加之对于"必读儿化"和"可读儿化"的划分缺乏规律，习得"儿化"音变具有一定难度。

人从婴幼儿时期开始自然习得语音，学龄前阶段是儿童复杂语音习得的关键阶段，了解习得儿化韵的规律离不开对普通话环境下学龄前儿童自然习得"儿化"音变的分析。实验选取移民众多且普通话普及率较高的石家庄市区为调查点，从 3-6 岁的学龄前儿童的"儿化"音变入手设计实验，借助 Praat 声学分析软件进行语音分析。考虑到学段对 3-6 岁儿童认知的影响，对 18 名 3-6 岁学龄前儿童按学段分组后进行语音采集,并设置标准读音作为对照组范本，以便实验中进行对比。完成对小班、 中班、大班三组被试的"儿化"意识、卷舌程度和卷舌位置的数据化分析比较后，得出儿化韵的习得是一个循序渐进的过程，其习得顺序大致为：高元音韵母>舌尖元音>-i/-n 韵尾韵母>无韵尾/-u 韵尾韵母≈以-ŋ 为韵尾的韵母，且不同个体习得速度有差异。且这一习得速度差异与有"儿化"现象的方言点间存在一定规律性联系。

根据对儿童语音习得理论的参考，得出这一规律的形成是多种因素共同作用的结果，四个较重要因素为儿童生理与认知发展、儿童主观能动性、各类韵母"儿化"音变规律和语言环境。可以根据对规律成因推论进行针对性教学改进。

（CIEL-15 海报展示 编号 P208 展示人：葛昕怡）

Development Patterns of Morphological Awareness and Lexical Knowledge in 3-5-year-old Chinese Children

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The intricate nature of Chinese, characterized by morphosyllables and a high

prevalence of homophones, makes it imperative to analyze constituent morphemes at the lexical level to construct meaning. This underscores the distinct significance of nurturing morphological awareness and lexical knowledge in preschool children, particularly for the early recognition of Chinese characters.

In this study, we conducted a comprehensive assessment of 620 3-year-olds, 1,347 4-year-olds, and 504 5-year-olds. They are all typically developing preschoolers, with Mandarin as their native language. We employed a unique measure of morphological awareness, along with a lexical knowledge task. The morphological awareness task was designed on the basis of special properties of Chinese, reflecting that complex vocabulary words are often built from two or more previously learned morphemes. The lexical knowledge task, meanwhile, was derived from the common-sense vocabulary knowledge tasks in the Weiss test. This task allows for a broader evaluation of whether children accurately comprehend the meaning and application scope of vocabulary. After controlling for age and non-verbal intelligence, correlation analysis revealed robust positive relationships between the two tasks across all age groups. Developmentally, both language tasks exhibited significant improvement with age. Trend fitting of percentage accuracy across ages 3 to 5 revealed consistent upward trajectories, suggesting synchronous enhancement. However, when comparing accuracy alone, lexical knowledge consistently outperformed morphological awareness, with the latter being even less than 50% correct on average at age 5. This may be attributed to children's stage of language development and cognitive abilities. At this stage, children are more likely to memorize and comprehend vocabulary as a whole, rather than breaking it down into morphemic parts. When considering demographic variables, we did not find significant gender discrepancies in lexical knowledge and morphological awareness, except for better lexical knowledge in 3-year-old females and better morpheme awareness in 5-year-old males. Moreover, after controlling for non-verbal intelligence, children with higher parental education levels exhibited significantly greater proficiency in both aspects, indicating that a conducive home language environment facilitates more frequent language exposure and stimulation, thereby fostering language development in children.

The implications of these findings are discussed from the perspective of the reciprocal relationship between lexical knowledge and morphological awareness. While morphemes constitute the smallest meaningful units of words, lexical knowledge encompasses language units containing one or more morphemes. The development of lexical knowledge provides minimal contextual clues for understanding and identifying morphemes. On the other hand, mastering the internal morphological structure of words can help children to compose different words according to their expressive needs. This study provides new evidence for understanding the developmental characteristics of meaning learning in preschool children.

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基于CHILDES语料库的汉语普通话自闭症儿童疑问句习得研究

于卉

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本研究旨在探讨自闭症儿童在疑问句产出方面的表现，并与正常发展的儿童（TD）进行对比分析。通过使用 CHILDES 语料库和 CLAN 分析软件，对自闭症儿童和正常儿童的疑问句产出情况进行系统化研究。本研究聚焦于两类疑问句的产出：一般疑问句和特殊疑问句，后者又分为宾语特殊疑问句和主语特殊疑问句。

在研究方法上，选取了 CHILDES 语料库中的自闭症儿童语言样本和正常儿童语言样本，利用 CLAN 软件进行转录和分析。对比分析自闭症儿童与正常儿童在不同类型疑问句产出方面的数量、复杂性和多样性，特别关注自闭症儿童在疑问句产出过程中可能出现的偏误类型。

研究结果显示，自闭症儿童在疑问句的产出上明显落后于正常儿童。具体而言，自闭症儿童首先能够产出一般疑问句，显示出对基本疑问结构的掌握。然而，在复杂疑问句的产出上，自闭症儿童表现出显著的迟滞现象。对于特殊疑问句的习得，自闭症儿童的顺序为先掌握宾语特殊疑问句，再掌握主语特殊疑问句，这一发展轨迹与正常儿童相似，但产出量和复杂性均显不足。

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Articulation Assessment for Tongue-cancer Patients: Using Consonant Production Performance to Capture Speech Deficits

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Purpose: To thoroughly analyze postoperative consonant errors by tongue cancer (TC) patients with speech disorders. Also to investigate the correlation between the pathological factors and the speech performance using our Consonant-based Articulation Assessment Battery (CAAB).

Method: The participants were 57 monolingual Mandarin TC patients (26 females) after surgery (aged 20-80 years). All participants were literate and had normal vision and hearing, enabling them to comprehend and comply with our instructions. In order to quickly evaluate their articulation performance based on the place and manner of articulation, they were instructed to pronounce the characters in CAAB. The analysis removed speech samples impacted by speakers' dialects, while recording and documenting all other responses.

Results: The study uncovered a significant correlation between pathological factors (e.g., size of tongue resection, specific resection site, and tumor size) and the accuracy of consonant articulation. Furthermore, tongue damage predominantly impacts the place of articulation (63.85%) than the manner of articulation (20.78%). The damage in the anterior part of the tongue has the most prominent influence on consonant production.

Conclusions: CAAB can fast capture the idiosyncratic characteristics of speech production by TC patients, and the articulation deficits are quite different from other types of organic or non-organic speech disorders, e.g., cleft lip and cleft palate (CLP). Hence, CAAB can be applied to designately assess articulation disorders caused by stomatognathic damages. Our findings also shed light on the possible oral cancer surgery plan and the postoperative speech rehabilitation training.

Keywords: Tongue cancer, speech disorders, consonant-based articulation assessment battery (CAAB), articulation distortion, consonant production performance

（CIEL-15 海报展示 编号 P211 展示人：谢桐同）

高龄老年人语码转换的调查研究

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随着科技的不断进步，人口老龄化已经成为全球发展的必然趋势。 我国将60岁以上人群定义为老人，80岁以上人群定义为高龄老人，在进入老年阶段后，人们将需要应对心理和生理上的转变。

语言是人们进行社会交际的重要工具，人类社会的发展离不开语言活动。随着年龄的不断增长，老年人的语言能力也会发生相应的改变。由于生理上的变化以及社会角色的转变，使得老年人逐渐与其他年龄段群体产生相应的差异，甚至会形成语言沟通上的障碍。因此，关爱老年人的语言问题，对于老年人的身心健康具有重要的意义。语言生活不仅体现个人健康生活，更加反映社会生活。关爱老年人语言使用问题及身心健康是我们应尽的义务。

本文通过社会学中的"朋友介绍法"招募了三位生活在广东省惠州市养老院中的高龄老年志愿者，他们的年龄均在80岁以上，拥有类似的社会文化背景，且他们均是双语使用者。我将以半结构化访谈及参与式观察等方式，探讨老年人的语言选择的情况，方言使用的情况，以及普通话使用的情况，针对老年人语码转换中出现的问题提出相对应的建议，如何做到在老年人语言退化的情况下，我们仍能够与他们进行更好的沟通,结合语码转换理论及人类发展生态系统理论研究同时掌握普通话及当地方言的双语老年人语言使用的心理状况。方言具有其独特的价值，是地域文化的典型代表，掌握老年人语言使用的规律，也能够促进方言的传承，为保护语言文化的多样性做出贡献。除此之外，在普通话普及的情况下，生活在多语环境中的许多老人能够同时掌握普通话以及当地方言的使用,近年来的研究表明，多语言的掌握对于语言使用者的大脑具有积极的作用。因此，老年人在社会上所扮演的角色不应该被边缘化，推动老年人进行语言的重新学习，包括一些新兴流行语言的使用，能够维护老年人的认知及脑部功能。

本研究仍有许多不足之处，希望研究结果能够促进老年人研究领域的相关理论的发展，以及呼吁社会各界关注老年人的语言生态环境。

（CIEL-15 海报展示 编号 P301 展示人：蔡宇轩）

老年人句子加工老化及其补偿和干预路径

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句子加工是语言理解的重要环节之一，也是个体为了理解句子的意义而进行的高水平认知活动。句子的理解加工不仅包括句法结构的建构、语义和语用信息的整合加工，又包括语音和正字法解码、题元角色的配置多个环节，还受到语言学与非语言学因素的影响，因此加工过程十分复杂。而随着老龄化，老年人对于句子加工已出现明显老化现象，句法与语义加工的老化均被较多研究证明。在句法加工老化方面，老年人处理复杂句法结构的能力严重受损，阅读速度较慢，容易出现更多错误，且产生较多的回视。在语义加工老化方面，老年人句子理解的平均准确性显著低于青年人，语义 N400 效应显著更弱。而句子加工老化对老年人阅读带来的影响较为严重，句子加工老化会使其阅读效率下降，影响阅读体验；同时老年人是重大疾病和慢性疾病的高发人群，如果他们对句子加工出现失误，错误理解医疗语篇，后果也许难以估量。另一方面，大量的研究已经发现老年人句子加工老化与其认知能力退化之间的关系，这表明个体认知能力对句子加工具有较大的影响。老年人的工作记忆衰退目前被认为是导致其句子加工出现困难的主要原因；工作记忆能力的衰退又呈现出两种不同的表现形式，即工作记忆容量不足和抑制能力不足。抑制控制能力的退化会导致其句子加工过程中对无关与错误信息的抑制变得更加困难，从而导致句子加工效率的降低。而工作记忆容量降低是导致其在进行复杂句法结构和语义内容理解时出现困难的主要原因。因此如何延缓认知老化成为解决老年人句子加工困难的关键。因此，本文在梳理老年人句子加工研究现状、认知老化对老年人句子加工的影响的基础上提出双语经验对老年人认知控制及作用机制的研究构想，为今后探究延缓老年人句子加工老化提供参考。

关键词： 老年人句子加工，认知老化，双语经验

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汉语句法和韵律的认知老化研究——以汉语被动句的 ERP 实验为例

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老年人群语音加工能力的下降是语言认知老化最早的外在表现之一，而老年人群的句法加工能力则会相对保持较好。韵律与语音加工密切关联，韵律也是影响句法加工的重要因素之一。因此，研究老年人群韵律和句法加工机制对于语言老化的神经机制研究具有重要的参考价值。本研究利用韵律句法双正常、句法违反以及韵律违反三类条件作为实验语料，通过判断语言材料意义正误的实验任务，设计了两组 ERP 实验，运用事件相关电位技术获取脑电数据指标，考察年轻组和老年组被试加工相同的三类条件的脑区激活情况和神经机制，分析老年组和年轻组被试句法和韵律加工的差异，探究老年人句法和韵律加工认知老化的规律和特点，进一步研究在语言认知老化进程中韵律和句法的作用差异。

本实验选取以汉语为母语的南通地区 20 位老年人作为被试（男性 11 名，女性 9 名），年轻对照组选取以汉语为母语的 24 位在校大学生作为被试（男性 5 名，女性 19 名）。实验前使用北京版的蒙特利尔认知量表对老年群体进行了认知筛查，得分均在 24 及以上。在行为数据方面，对老年组和年轻组被试加工三类条件反应时和正确率进行描述分析和重复测量方差分析。在脑电数据方面，对诱发的脑电成分的平均波幅值进行重复测量方差分析（repeated measures analysis of variance），采用平均幅值测量法对 ERPs 成分进行测量和统计分析。

研究结果显示：第一，与年轻人相比，老年人在韵律和句法加工任务下的语言认知能力具有认知老化效应。第二，认知能力老化对老年人的句法和韵律的加工造成的影响具有差异性。认知能力老化对老年人的句法加工的影响主要集中在后期意义整合加工过程，对韵律加工的影响在早期整合加工过程中就已经产生，并且延续到句子加工后期。老年人可能借助知识积累和语言经验方面的优势来补偿句法加工认知老化的影响。第三，老年人的句法和韵律加工的认知老化程度具有不对称性，和老年人的句法加工相比，老年人的韵律加工受认知老化的影响更大，韵律可能对晚期的句法加工具有限制作用。

关键词 语言认知老化；韵律加工；句法加工；被动句；ERP

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语境下老年人语言理解与产出的神经机制研究

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已有研究表明，老年人的语言产出能力下降程度显著高于语言理解能力，然而对影响老年人语言产出能力的认知机制的研究仍显不足。以汉语倒装句等特殊句法构式作为实验材料，以语境作为实验变量，通过事件相关点位实验探讨语境对老年人语言理解和产出的影响，并分析其与句法复杂性的关系。

采用事件相关电位（EEG）技术，对老年组和年轻组被试进行了句子理解和产出实验。实验结果显示，无语境条件下，老年人语言理解的反应时和正确率与年轻人无显著差异；语境条件下，老年人语言理解的反应时显著延长，但正确率无显著差异。在语言产出任务中，老年人在无语境条件下表现与年轻人相似，但在语境条件下，老年人的语言产出反应时显著延长。脑电数据分析结果显示，老年人和年轻人在不同语境下的句法加工中有明显的脑电差异。

研究结论认为：在无语境条件下，老年人的语言理解和产出呈现认知老化效应，其神经机制表现为增强右侧额叶和前额叶活动，支持认知老化的后向前转换模型（Posterior-anterior shift in aging, PASA）；在语境条件下，老年人的语言加工模式与年轻人不同，表现为更高的认知资源调用和更广泛的脑区激活。此外，与简单句法相比，老年人在处理复杂句法结构时采取更多的补偿机制以应对认知能力下降。

关键词：语言理解；语言产出；老化；ERPs

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Effect of Mandarin Speakers' Musical Aptitude on the Perception of English Vowels: An Eye-tracking Study

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Purpose: The processing of music and language shares common mechanisms. Previous studies have demonstrated that musical aptitude is not solely correlated with a

heightened sensitivity to pitch processing, but also to detecting subtle auditory distinctions. These findings suggest that individuals' musical abilities may predict their perceptual learning outcomes. However, prior research has predominantly focused on how musical aptitude could influence nonmusicians' perception of non-native pitch-related features, neglecting its effects on the perception of non-native vowels. To bridge this research gap, we employed eye-tracking methodology to comprehensively capture participants' processing dynamics during perceptual tasks. Leveraging the visual world paradigm, this study aims to investigate how musical aptitude may impact the perception of English vowels among Mandarin speakers.

Method: Twenty-six native Mandarin-speaking adults were recruited for this study. Prior to the experiments, the musical aptitude of each participant was assessed using the Montreal Battery of Evaluation of Amusia (MBEA). According to their MBEA scores, the participants were assigned into two groups: higher aptitude (HA) and lower aptitude (LA). The stimuli employed in the eye-tracking experiment consisted of three synthesized vowel continua containing /ɛ/-/æ/ contrast and three continua containing /i/-/eɪ/ contrast, with each continuum consisting of 11 stimuli. The two vowel contrasts alternated as target-competitor stimuli and distractor stimuli; for instance, when the /ɛ/-/æ/ contrast was the target-competitor stimuli, the /i/-/eɪ/ contrast served as distractor stimuli, and vice versa. A total of 396 trials were presented to the participants within two blocks. During each experimental trial, participants heard a target word auditorily and were presented with a visual display of four words, including the target word, a phonologically competing word, and two distractor words.

Results: For statistical analysis, we computed the difference between the empirical log-transformed proportions of target and competitor fixations as dependent variable. Growth Curve Analysis was conducted, incorporating linear and quadratic time polynomials. The results revealed significant interactions between Group (HA vs. LA) and Contrast (/ɛ/-/æ/ vs. /i/-/eɪ/), not only on the linear time term [$F(1, 501885) = 6.3778$, $p = .012$] but also on the quadratic time term [$F(1, 702987) = 5.6419$, $p = .018$]. Further post hoc comparisons were conducted separately on these two time terms. On the linear time term, both groups exhibited significant differences in the perception of the two vowel contrasts. Specifically, in the HA group, the perception of the /i/-/eɪ/ contrast was significantly faster than the other contrast ($\beta = -1.99$, SE = .281, $z = -7.089$, $p < .0001$). Similar results were observed for the LA group ($\beta = -1.77$, SE = .280, $z = -6.307$, $p < .0001$). On the quadratic time term, post hoc results revealed significant differences between the two groups only in the perception of the /i/-/eɪ/ contrast. The HA group exhibited faster processing compared to the LA group ($\beta = -0.761$, SE = .317, $z = -2.399$, $p = 0.016$). These findings suggest that higher musical aptitude predicts faster processing of English vowels among the Mandarin speakers.

Conclusions: Overall, the present study examined the effect of musical aptitude on the perception of English vowels among Mandarin speakers, emphasizing the potential for cross-domain transfer effects between music and speech domains.

Keywords: Musical aptitude; Speech perception; English vowels; Eye-tracking

Effect of Rap Music Context on Lexical Tone Normalization

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Lexical tone normalization refers to the process of individuals interpreting tone information in different perceptual environments. Previous studies suggest that the process of lexical tone normalization is largely speech-specific, mainly affected by the speech context, but not by non-speech or music contexts. These findings imply that music and speech contexts trigger different cognitive mechanisms in the processing of subsequent tonal information. However, these conclusions are mainly based on the analysis of typical musical styles, ignoring special genres such as rap music, where the boundary between music and speech is blurred. "Rap" is defined as "a style of popular music (developed by New York Blacks in the 1970s) in which words (usually improvised) are spoken rhythmically and often in rhyming sentences over an instrumental backing." Rap music, as a genre of hip-hop music, has the features of strong rhythm and lack of melody.

This study examines whether the lexical tone normalization mechanism is indeed limited to the speech context in the traditional sense, by introducing the specific musical context of rap. We hypothesized that rap music, as a special class of non-speech contexts, has the potential to trigger tone normalization processes different from those in speech contexts. Additionally, rap as a vocal form may have a different contrastive context effect than that elicited by instrumental music.

We will adopt a talker-normalization paradigm using rap music as a special type of context. Thirty Mandarin and Cantonese bilinguals (15 females, age = 23±5) will be recruited to participate in a word identification task, where participants judge whether the ambiguous target is a syllable with Mandarine tone 1 or tone 2. We will introduce two kinds of music contexts, rap music and music notes, and compare them with speech context (typical speech and accelerated speech) to investigate the role of context in lexical tone normalization for Mandarin speakers. Our primary objective is to examine whether manipulation of the pitch in the rap context would shift the response when

identifying Mandarin Tones 1 and 2, that is, eliciting a contrastive context effect. The stimuli included context and target words. Speech context and rap context a context that says "下面你会听到 (Below you will hear)." The sentence was produced by four Mandarin Cantonese bilinguals (two female and two male speakers, each with a high or low pitch range). Fillers are prepared with the same procedure and the text of speech and rap is "现在我说的是 (Now what I say is)." Their neuronal activity while perceiving the stimuli will be recorded via electroencephalography (EEG).

Previous studies have shown that music notes are perceived similarly to non-speech context, as no contrastive context effect was revealed in the talker-normalization paradigm. However, the rap-music context assembles meaningful speech information and strong rhythmic patterns, making it an intermediate state between typical speech and instrumental music. We predicted that rap music would elicit tone normalization, and that it would have a stronger effect than music and possibly a weaker effect than speech, accompanied by a P2 amplitude between typical speech and non-speech context conditions. The expected contrastive context effect of the rap-music condition supports the language-specific mechanism of talker normalization.

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《白石道人歌曲》字音曲调关系初探

——基于语言音乐学视角的宋词词乐关系探微

王泰宇　喻志豪

当下的语言音乐学研究多集中在音乐学领域之中，将语音学等现代语言学知识融入音乐学研究，但是语言和音乐互动的语言学研究却相对匮乏。本文拟从词乐关系入手，探索语音与音乐之间存在着的规律性内容。

唱词与乐曲旋律达到谐和具有一定规律性。从"依曲填词"到格律定型，古人对其谐和规律的探索由繁入简，但也趋于停滞。古乐不一定合今音，把词乐置于同一时空下的词乐关系研究才具有科学性。《白石道人歌曲》是现存最早的曲谱宋词，其中留有减字谱，且多为姜夔自度曲，而非按谱填词，在词乐关系方面应该存在更具典型性与规律性。本文以《白石道人歌曲》中留有旁谱的十余篇为样本进行词乐关系的数据统计，采用双向音程分析法确定相对的高低音，并以宋代语音拟音为语音参考，探究不同的辅音、元音乃至声调在高低音和较大上下行情况下的倾向性。通过数据统计，我们初步认为：词乐配合存在一定的线性对应关系。在声母的问题上，发音部位越靠内，其所适合的旋律中的音就越高；发音方

式（除鼻音外）越促，其所适合的旋律中的音就越高。在韵母的问题上，韵腹方面舌位高的音更适合高音。这有助于揭示存在于古词曲的词乐关系规律，对我们对词乐关系的再发现具有重要意义。

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双语者语言认知与一般执行控制相关性分析：一项系统的综述研究

Correlation analysis between language cognition and general executive control in bilinguals: a systematic review study

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摘要：双语控制与认知控制的关系近年来备受学界的研究与关注。双语者根据不同的语境线索选择相应的语言进行语言的产出与理解，在这一过程中需要语言的控制转码，同时认知调控的加工机制也承担着一定作用。近年来，语言学、心理学以及神经影像学等领域的学者们对于这一现象开展了大量的研究，研究大多采用图片命名、词汇判断、图词匹配以及抑制能力监测等范式（Simon、Stroop 与 Flanker 等），并随着神经脑科学技术的不断发展，也借助了一些先进的仪器（fMRI、EEG、PET、ERP 以及 TMS)，对双语者在单一语境和混合语境的语码转换进行考查，从而进一步探究双语控制与认知加工的关系。基于国内外的大量实证研究，以抑制控制假说与适应性控制模型为构架，从知网、Web of Science、PubMed 与 Sci-hub 文献数据库中调研出 53 篇文章，通过对比分析、归纳与总结不同的研究范式和使用的科学技术，发现双语者会采用自上而下和自下而上两种调控方式对干扰因素进行抑制控制，同时二语水平、双语的相关度以及二语习得年龄等多种因素都会产生一定的影响，这为后续的双语神经加工机制的相关研究提供新的视角与建议。

关键词：双语者；双语控制；一般认知加工；语码转换

Abstract: The relationship between bilingual control and domain-general cognitive control has received much attention from the academic community in recent years. Bilinguals choose the corresponding language for language production and comprehension based on different contextual clues, and in this process, language code-

switching is required. At the same time, the processing mechanism of cognitive regulation also plays an important role. In recent years, scholars in the fields of linguistics, psychology, and neuroimaging have conducted extensive research on this phenomenon, mostly using paradigms such as picture naming, lexical decision, picture word matching, and inhibition ability monitoring tasks (Simon, Stroop, and Flanker, etc.). With the continuous development of neuroscience technology, advanced instruments such as fMRI, EEG, PET, ERP, and TMS have also been utilized to examine the code-switching of bilinguals in both single and dual contexts, in order to further explore the relationship between bilingual control and domain-general cognitive processing. Based on a large number of empirical studies at home and abroad, with the inhibition control hypothesis and adaptive control model as the framework, 53 articles were investigated from the literature databases of Web of Science, PubMed and Sci-hub. Through comparative analysis, induction and summary of different research paradigms and scientific technologies used, it was found that bilinguals would use top-down and bottom-up regulation to suppress and control interference factors. And second language proficiency, the similarity between languages and various factors such as age of second language acquisition can have a certain impact, providing new perspectives and suggestions for subsequent research on bilingual neural processing mechanisms.

Keywords: bilinguals; bilingual control; domain-general cognitive process; code-switching

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The Influence of Visual Size on Chinese Single-character Word Recognition: A Behavioral and Neurophysiological Study

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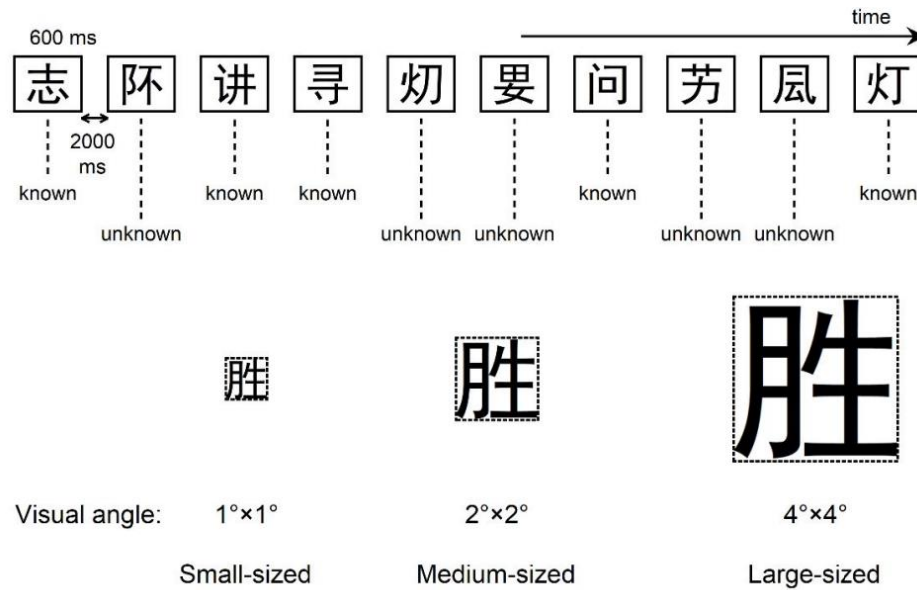
Abstract: Written materials are commonly presented across various mediums,

including books, computers, and smartphones. A fundamental inquiry regarding the legibility of written text pertains to the optimal font size for optimal readability. This study addresses this question by examining the impact of font size on the legibility of written Chinese, particularly single-character words. Adopting a neurophysiological perspective, we scrutinize how the brain responds to varying font sizes. Participants were presented with high-frequency single-character words (known words) and rare single-character words (unknown words) and tasked with identifying known words. We recorded event-related potentials (ERPs), indicative of brain activity in response to stimuli, alongside response times and accuracy. Three font sizes were employed: small (1° visual angle), medium (2° visual angle), and large (4° visual angle). Approximately 220 milliseconds post-stimulus presentation, discernible ERP differences emerged between known words and unknown words in the parieto-occipital scalp region, signifying lexical orthographic processing, likely in the ventral occipitotemporal cortex, particularly the fusiform gyrus. Notably, ERP distinctions were more pronounced for medium and large font sizes compared to the small size. Consistently, participants exhibited significantly quicker responses to medium and large characters. Our findings suggest that optimal legibility for Chinese single-character words is achieved when their visual size aligns with the human retina's fovea (2° visual angle), the area with the highest visual acuity. This optimal size facilitates the retrieval of lexical representations in the fusiform gyrus, offering valuable insights for enhancing the legibility of Chinese text design.

Keywords: Chinese words, legibility, font size, visual word recognition, event-related potentials (ERPs)

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汉语双音节动词做句子主语时的词类性质研究
——来自行为实验和脑电实验的证据

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摘要：现代汉语中，动词做句子主语时的词类性质备受关注，争论的焦点在于主语位置的动词是否发生名物化或名词化。一些研究认为主语位置的动词发生名物化或名词化，另一些研究认为主语位置的动词仍为动词。但是各家多是基于思辨式理论分析，实证性的研究证据并不多见。因此，本研究通过 3 个实验，全面考察双音节动词在句子主语位置上的词类性质，为动词在句子主语位置是否发生名物化或名词化提供客观证据。实验 1 考察名词、动词和动名兼类词在单独呈现时的加工情况。结果显示，这三类词在单独呈现时的加工都存在显著差异，说明名词、动词和动名兼类词在词库中是彼此分离的。在此基础上，实验 2 采用自定步速阅读技术，考察这三类词做句子主语时的加工情况，同时考察句子其他成分的加工情况。结果显示，当名词、动词和动名兼类词做句子主语时，它们的加工没有显著差异，同时其他句子成分的加工也均无显著差异。为了验证实验 2 的发现，实验 3 采用时间分辨率较高的脑电技术考察名词、动词和动名兼类词做主语时的加工情况。实验 3 的结果与实验 2 基本一致，当做句子主语时，当名词、动词和动名兼类词在 N1、P200 和 N400 成分上没有显著差异，同时其他句子成分在这些脑电成分上也都没有显著差异。综上，动词在单独呈现时与名词和动名兼类词的加工存在差异，而当动词单独做句子主语时，动词与名词、动名兼类词的加工均没有显著差异。这说明，动词在主语位置发生名物化和名词化。本研究为汉语名词和动词分类问题提供了客观依据。

关键词：名词；动词；动名兼类词；句子主语

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语言网络皮层结构发育对言语智力发展的支持作用

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语言是人类复杂认知活动的重要组成部分。语言能力的发展受一系列呈现左偏侧化效应、主要分布于大脑额叶和颞叶的脑区独立支持，以往研究称为语言特异性网络。越来越多的神经影像学研究发现，包括语言在内的认知能力与皮层指标在毕生发展中呈现动态变化，在不同年龄阶段表现出关联差异性。儿童青少年阶段是人类认知能力和大脑皮层结构快速发展的关键时期。有鉴于此，揭示该时期语言网络皮层结构成熟发育和语言能力发展之间的动态关联，对于理解语言这种高级认知能力的发展特点及其在发育过程中所依赖的动态脑神经网络机制具有重要科学意义。本文数据来自"彩巢计划——成长在中国"北京地区 187 名 6-16 岁儿童和青少年发育数据，该计划采用加速纵向队列设计，对儿童和青少年进行了为期 6 年的 3 次追踪脑成像扫描及认知测量，其中智力测试采用韦氏儿童智力量表第四版（中国版）。为了更好地揭示语言网络皮层结构成熟发育对语言能力发展的作用，本研究选用智力量表中测量与言语知识有关认知成分的言语理解指数及其三个分测验作为语言能力衡量的行为指标，将皮层灰质体积作为大脑形态学指标，考察额-颞叶分布语言特异性网络的 18 个 ROI 皮层形态学在儿童青少年期的发育与言语智力的动态关联。采用时变效应模型和广义相加混合模型对言语智力指数及其分测验常模分数、皮层灰质体积的发展以及言语智力和皮层发育关联在多尺度空间上进行建模。研究结果发现：1）皮层灰质体积在儿童青少年阶段随年龄下降，颞上回灰质体积随龄下降的速率更快，额下回、颞极呈倒 U 型发育轨线，在 10 岁左右开始稳定下降，皮层成熟相对较晚。2）言语智力发展所依赖的皮层结构在儿童青少年时期动态变化，早期学龄儿童言语智力发展的皮层结构基础局限于额下回，青少年言语智力发展受到更广泛分布的脑区结构支持，其中包括额下回、颞上回等。以上结果表明，儿童青少年语言能力的快速发展有赖于皮层灰质体积的成熟，二者发育过程动态相关。

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Language's Implicit Influence on Personality Expression: A Multi-Method Investigation of Neuroticism in Chinese-English Bilinguals

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Personality is a stable trait, but it may be influenced by the language in use, as bilingual speakers may internalize different experiences and values when acquiring these languages. This study investigated the influence of language on the expression of neuroticism in Chinese-English bilinguals using a multi-method approach that combined self-report questionnaires, behavioral data-based assessments, and electroencephalography (EEG) recordings.

Thirty Chinese-English bilingual students participated in this study. They completed the Big Five Inventory (BFI) in both Chinese and English versions to assess their neuroticism scores. The participants also engaged in a scenario-reading and response task, which consisted of eight trials in each language. In each trial, participants read a scenario question and provided their responses in the same language. Their responses were analyzed using an artificial intelligence (AI) model to predict neuroticism levels. The AI model employed natural language processing techniques, such as sentiment analysis and topic modeling, to extract features related to neuroticism from the participants' written responses. These features were then used to train a machine learning algorithm, which predicted neuroticism scores based on the linguistic characteristics of the responses. This approach allowed for a more objective and nuanced assessment of neuroticism levels, as it considered the implicit expression of personality traits through language use. During the task, EEG data were recorded to examine the neural activity patterns associated with neuroticism in different language contexts.

The results showed no significant differences in neuroticism scores between the Chinese and English versions of the BFI. However, the AI-based analysis of participants' responses to scenario questions revealed significantly higher neuroticism scores in Chinese than in English. This finding suggests that the AI model was able to detect subtle differences in the expression of neuroticism between the two languages, which may not have been captured by the self-report questionnaire. EEG analysis indicated differences in theta- and alpha-band power between the two languages during the writing phase of the task, suggesting an increased cognitive load and attention demands when using a second language.

These findings suggest that language may have a more pronounced effect on the implicit expression of personality traits, as reflected in language use and neural activity patterns, rather than explicit self-reports. The activation of specific cultural frameworks associated with each language may play a role in shaping implicit expressions of personality. This study highlights the complex relationship between language and personality in bilinguals and contributes to our understanding of the mechanisms underlying language-dependent personality shifts. The use of AI-based personality assessment provides a promising approach for capturing the subtle influence of language on personality expression. Future research should explore these findings with larger and more diverse samples, validate the AI model's predictions against other established personality measures, and investigate the impact of language on other dimensions of personality.

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从"绿色"看中国发展

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摘要：生态问题是全世界聚焦关注的问题。2005 年 8 月，时任浙江省委书记习近平在湖州安吉考察时提出"绿水青山就是金山银山"这一著名论断。自十八大以来，中国坚持绿水青山就是金山银山的理念、坚定不移走生态优先、绿色发展之路。2023 年，政府发布《新时代的中国绿色发展》白皮书一文，明确中国在尊重自然、保护自然、建设人与自然和谐共生等方面，创造了举世瞩目的生态奇迹和绿色发展奇迹，真正做到了让绿色成为新时代中国的鲜明底色。十二年来，"绿色出行、绿色生产、绿色转型"等等词组不仅成为了人们生活中耳熟能详更不可或缺的小常识，"绿色发展"更使得中国为地球增添了更多"中国绿"，为共建清洁美丽的世界献出了中国力量。

生态语言学作为一门学科，承担了建构和谐的生态话语、继而引导人们建设良好生态环境的重任。韩礼德认为，系统生态语言学要研究的问题是：How do our ways of meaning affect the impact we have on the environment? 语言作为一个系统，在影响人们思维方式、继而影响行为习惯、最后作用于我们赖以生存的生态环境这一方面有着重要作用。每当中国颁布生态发展政策白皮书等政府要文，其中出现的新兴生态词汇一般情况下代表着政府对于未来生态发展走向的宏观把控。对于读者而言，这些新兴生态词组将如何被他们阅读并理解、进而接受及施行的过程，以及其在哪些话语体系中具有更为深刻、更为突出的影响力，也是一

个非常值得研究的问题。本文以"Transitivity（及物性）"理论为指导，以《新时代的中国绿色发展》 白皮书为例，探究政府对外话语中" 绿色 xx"等词组的小句过程类型分布，研究发现物质过程占比最高，达 87.42%；关系过程占比其次，达 9.43%；心理过程和存在过程占比最小，各占 1.89% 、1.26% 。

本文从生态语言学角度对政策文献话语进行生态取向分析，旨在揭示新兴生态词组为人们所理解并接受的原因，进而提高人们保护环境的意识，为达成 " 人与自然和谐发展" 的目标作出努力。

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The Perception of Mandarin T3 Sandhi Based on an ERP Study

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In the past 30 years, Mandarin Tone 3 sandhi, namely Tone 3 followed by another Tone 3 pronounced as Tone 2($33 \rightarrow 23$), was one of the most widely studied sandhi patterns. Previous behavioral studies showed that in lexical decision-making tasks, only T3 prime words induced a facilitation effect on T3 sandhi target words, indicating they were stored in the underlying form of T3 plus T3 in the process of tone perception (Chien, 2016). However, a series of behavioral, neuroimaging, and electrophysiological studies have shown that the phonological representations of T2 and T3 were both activated for the production of tone sequence 33 (Chang & Kuo, 2020). This study aimed to examine the brain responses underlying the perception of Mandarin Tone 3 sandhi employing the Auditory priming lexical decision task and the Event-Related Potentials (ERP) technique.

Fourteen participants who acquired Mandarin before school age were recruited for this study.676 two-letter words were selected as target words for the experiment (467 true words and 209 false words). The true words were categorized into T3 sandhi true words and non-T3 sandhi true words. Each target word was preceded by three prime words, a T2 prime word, a T3 prime word, and a control prime word (T1 or T4). False and non-T3 sandhi true words served as controls, and T3 sandhi true words served as analytical

materials. During the experiment, participants judged whether heard words were true. They pressed 1 for true, and 2 for false after each target word, preceded by a prime word. EEG equipment recorded brain signals concurrently, while E-prime tracked reaction times and accuracy.

Only accurate judgments were included for analysis. Responses exceeding mean ± 2 standard deviations or incorrect judgments were excluded from response time analysis. Statistical analysis revealed a significant priming effect, with the reaction time for T3 priming words being significantly shorter than that for the T2 words and the Control words in the lexical decision task (See Figure 1).

Figure 3 The mean reaction times for different Conditions

We analyzed the amplitude characteristics of the N400 elicited by the participants by selecting the average ERP amplitudes from five electrodes, F3, F4, Fz, C3, Cz, and C4 错误!未找到引用源。,within the time window of 300 to 500 milliseconds for repeated measures analysis of variance (ANOVA)错误!未找到引用源。. Results showed significant differences among the three prime types (F $(2,102)$ = 4.289, $p < 0.05$). Post-hoc comparisons indicated that ERP amplitudes under the T3 prime condition were significantly smaller in the negative direction compared to the T2 prime and control prime conditions ($p < 0.05$). However, no significant difference in ERP amplitudes was observed between the T2 prime and control prime conditions ($p = 1$). The significant reduction in N400 amplitude under the T3 prime condition demonstrated an improvement in processing efficiency for predictive contextual information, indicating that in Mandarin Chinese T3 sandhi, the T3 prime made it easier for participants to process semantic information

Figure 4　The ERP amplitudes for the perception of T3 sandhi words under three prime conditions

This study confirmed the behavioral results of Chien (Chien, 2016), indicating that in the perception of Mandarin tone sandhi, the facilitation effect of T3 prime was significant in both behavioral and ERP responses. This result suggested that tone sandhi words may be stored in their underlying form of T3 plus T3 during the perception process.

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Effects of Phonetic and Semantic Appeal on the Memorability of Words

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Abstract A positive bias for aesthetically pleasing objects such as attractive faces is widely observed in life and laboratories. However, previous linguistic research either treats the concept of "aesthetic appeal" as a whole or only focuses on phonetic appeal, which limits the understanding between memory and aesthetic appeal. To explore how phonetic and semantic appeal affect the memorability of words, I designed 12 artificial words with different semantic and phonetic appeal based on Crystal's *Phonaesthetically Speaking*. Participants were asked to memorize randomized stimuli and rate their phonetic appeal. Results support Crystal's criteria, show interaction effects between semantic and phonetic appeal, and reveal potential tendencies: a better recall for words with high perceived phonetic arousal (high ratings of phonetic appeal) and words with same valence of semantic and phonetic appeal (such as pleasant-sounding and pleasant-meaning words), and a symmetrical distribution that the more extreme perceived phonetic appeal, the more memorable words. The discovery has provided a deeper insight into the relationship between memory and different linguistic dimensions of aesthetic appeal and encouraged further research on the main effects of semantic and phonetic appeal on the memorability of words.

Key words: neuroaesthetics, linguistics, memory, phonetic, semantic, appeal

（CIEL-15 海报展示 编号 P508 展示人：毛羽悦泽）

三五壮语声调音变声学研究

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演化类型学通常归纳普适性、非偶然的演化机制。在语音系统中，语言演变的结果就是造成音位变化，音变选择方向就是演化机制类型。历史语言学将音系中连锁音变现象称为链式音移（chain shift），通过演化比较法可推拟声调的链式音变演化路径。

本文以二十年代际差异的常观时间对三五壮语声调的音变演化模式进行构拟。在"音节—声调—发声态"模型理论下探讨声调的演化模式：第一步以音节为单位确定三组不同年龄段 18 位发音人的声调类型，通过对基频和时长做归一化处理得出声调格局图，辅以听辨判断声调调值和调型；第二步是运用多元回归分析、线性拟合函数和混合效应模型得出壮语八个声调音高曲线的变化情况，判断整体音变趋势；第三步是根据频谱斜率、嗓音参数（F0、Jitter、Shimmer 和 HNR）和波形语图确认造成声调音变的发声态类型，得出壮语声调具有音变现象的发声态演化路径；第四步根据"普适调型库"分类体系利用分域四度制对所有调型进行描写，找出同拱类调型对立，定义各个演化阶段，以年龄为递推顺序，总结出具有规律性的音变链移路径。最后从自然音理、音系平衡、发声态变化方面分析造成声调音变的原因。

根据声调类型学和音法演化学的理论，三五壮语八个声调具有五个音变链移规律，其中有三条音变链移路径符合前人研究总结的规律，有两条在演化中间阶段存在与"声调四大链移律"不同之处。声调音变规律结论如下：1.阴平调音变链移模式属于升调低化链，该过程主要以凸调为转化的中间调型，发声态经历了弱僵、弱僵嘎裂交融态、嘎裂声三种状态；2.阳平调是一个位于下域由升调转变为降调的音变过程，该过程的所有调型都属于"纯低调"的变体，发声态经历了弱弛和气声两种状态。阴平调和阳平调的音变链移路径与"声调四大链移律"不同之处在于它们主要以凸调为转化通道，该过程出现的不同类型凸调也未记入目前的普适调型库之中；3.阳去调属于低降调向中微降调演化的过程，该过程没有出现非常态音现象，链移过程符合前人总结的规律；4.阴入短调属于平调高化链，产生音变现象的原因是由于闭音节塞音韵尾舒化的影响，该入声调舒化经历了长化和开化两个过程，发声态出现张音和假音两种状态；5.阳入短调和阳入长调属于平调低化链的逆向，即低平调向中平调演化，音节没有出现发声态变化。入声调的两个音变现象都符合前人总结的音变链移规律。

关键词：三五壮语；声调类型；发声态；音变规律；声学实验

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南充湘方言超高去声的社会语音学变异及相关声调演变

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湘方言中常有带超高假声或张声的声调，如湖南岳阳话的阴去、次阴去和阴入声(彭建国、朱晓农 2010)。四川境内的南充胜观话属于新湘语"靖州腔"（曾晓

舸 2009，杨小平 2016），其去声也有带假声或张声的现象，同时有明显的人际差异。假声声调的特征是基频很高，往往超出常态发声的上限；张声介于常态带声和假声之间，有假声存在时可以看作是假声的变体。胜观话的超高去声男性可达到 373Hz，女性可达到 434Hz，在声调基频曲线图上别树一帜，与其他常态发声调类的音高差距完全不成比例，对传统声调描写提出了挑战。

本文采用社会语音学和实验语音学相结合的方法，基于分域四度制框架详细描写胜观话超高去声在不同发音人口中的表现，旨在揭示胜观话声调从变异到演变的过程和趋势。根据目前已完成分析的 28 位发音人的数据，暂有以下发现：

胜观话的超高去声主要表现为张声，且存在去张声化现象。胜观话的超高去声在极个别例字中能达到假声的状态，大部分例字都介于假声和常态带声之间，因此判定其为张声。张声态表现最为明显的是未外出的本地中年男性和中年女性，其次是老年男性和未成年人。青年男性和青年女性表现为去张声化的常态高升调，且外出时间越长，掌握其他方言越多，去张声化越明显。

由上可知，胜观话的超高去声在普通话和南充官话的影响下，有逐渐失去张声态的趋势。此外，胜观话的上声和阴平也存在明显的共时变异：上声有凸降调、平降调和凸调三种变异形式，阴平有前凹和直升两种变异形式。三种声调的变异是否存在关联，还有待进一步考察。

从现阶段的研究看来，社会因素如年龄、外出时间等，语言接触因素如掌握其他语言数量及程度等对声调变异的影响较大。与胜观话临近的长乐话作为新湘语靖州腔的代表，受语言接触的影响更甚，其声调格局更接近南充官话。由此推测，胜观话声调变异进一步演变结果也可能向南充官话靠拢。

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基于汉语语流基础的晋语分音词的发生学分类

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背景：晋语分音词，最初又称嵌 l 词，由赵秉璇（1979）概括特征为①双音节联绵词；②第一个音节大部分为入声，带喉塞音韵尾ʔ；③第二个音节的声母为边音 l；④大部分可推出与其同义的单音词。本文将指出该大类分音词在发生学上的三大类和若干小类演变机制，探讨其基于汉语语流特点的共同动态音变基础。

定义：符合前三条标准的复音节单纯词，下文称为形态学/广义"分音词"。符合广

义分音词的词类，依据具体发生学的演变角度，分为狭义"分音词""合音词""圪头词"三类。

结果： 狭义分音词的派生来源，分为①上古构拟音系的复辅音*Cl-/*Cr-分拆（基于与汉藏语系内其它非汉语语言的音系学对应关系，和同一词声母在汉语大类内部不同方言的进一步分化的比较证据），和②重叠加有定词框架的"韵律模块"（王洪君，1994），即基于谐声的模块式的造词规律两类。狭义合音词在发生学上与狭义分音词相反，是经后世词及语流音变过程，合并形成单音节词的原"双音节词"。狭义圪头词，则是指首音节为 kəʔ，且难以找到对应单音词的词类，实为与广义"圪头词"的重叠部分（重叠在于恰第二个音节声母为边音 l），其来源一部分为实义语素音变弱化，如"喉咙"- "圪咙"；另一部分为实前缀粘贴再虚化，可修饰名词或动词，如"圪棱""圪溜"。（如图 1）
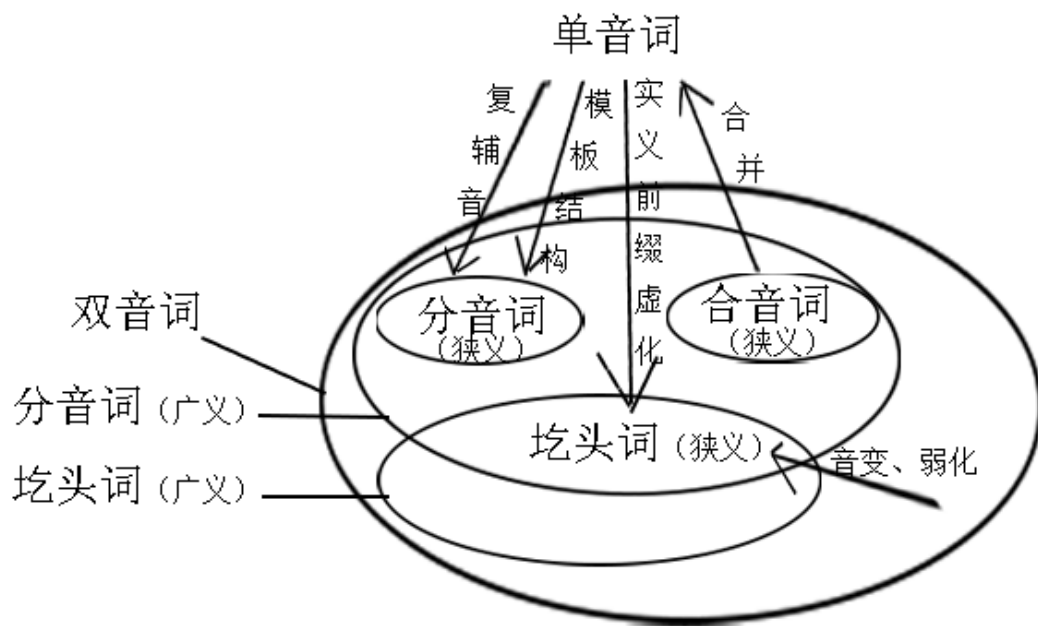
图 1 广义分音词的狭义分类及发生学机制

结论： 汉语语流特点在语音上以音节为最小独立单位，但实际音值受发音人的语速影响，且在语义层面存在大于音节的词语断句。这使得声学平面和语义平面可以在超出音节的尺度下，以更加灵活的方式影响词语，产生动态的分音与合音、实化与虚化。因此以上不同的发生学分类有共同语流基础，可在广义形态学上视为具有"分音词结构"的大类。分音词的类似现象不仅局限于晋语，也包括闽东语"切脚词"，及其它方言中有相似结构的二/四字词类，说明了这种汉语语流特征所决定的内生动力的普遍性。

（**CIEL-15** 海报展示 编号 P603 展示人：宋佳芙）

词汇来源对通语和方言语音接触的影响

——以重庆市区方言古入声字归派的变异为例

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重庆作为直辖市，其方言受到普通话的影响与日俱增，这在古入声字的归派上有所体现。重庆市区方言属于西南官话成渝片，其古入声字无论声母清浊基本都归入阳平。而普通话中则是全浊声母入声字归阳平，次浊声母入声字归去声，清声母入声字分派到阴平、阳平、上声、去声各调中去。根据我们近期对重庆市区方言的调查，发现古入声字归派出现人际变异。例如："剥"在"剥皮"一词中读归阳平（音[po³¹]），而在"剥削"一词中则出现部分发音人读归阴平（音[po⁴⁵]）的现象。又如："劈"，老年人大多读归阳平（音[pʰi³¹]），青年人则更倾向于读归阴平（音[pʰi⁴⁵]）。类似的例子还有不少，其特点是古入声字的归派与其在普通话中表现一致，所以，很可能是受普通话影响所致。曾晓渝（2004、2013）较早注意到重庆市区方言中的古入声字归派的变异现象，并指出文化词或书面语词正在朝着与普通话音类相匹配的方向演化。本文拟观察古入声字在不同来源词汇中的变异分布情况，探索词汇来源因素对通语和方言语音接触的影响。

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从产出与感知的关系看平调合并：基于两组泉州闽南语的实验研究

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长期以来语音产出与语音感知的关系存在争议。在肌动理论和直接现实主义理论的视域中，语音产出先于感知，而一般听觉理论和语音学习模型则认为语音感知先于产出。本文基于鲤城话、青阳话两组泉州闽南语，从产出与感知两个角度对平调合并现象进行考察，并进一步探究产出与感知的关系。

鲤城和青阳在地理位置上距离接近，声调格局较为一致，七个声调中阴平阴平、阴上、阳上为平调。据过去的声调描写和观察，鲤城话阴平和阳上可能正在

经历合并，青阳话阴平和阳上在产出上已经发生合并。

本文对鲤城、青阳共 36 名母语者被试进行了产出和感知实验。首先对被试进行了发音采集，采用 DTW（Dynamic Time Warping，动态时间归整）算法测量所有被试每个平调对两组基频数列的距离。结果显示，鲤城话阴平和阳上正在发生合并，合并程度低于青阳话。本文进一步对青年被试和中年被试进行了感知实验。辨认实验结果显示，青阳、鲤城两组被试阴平、阳上的感知域表现出了相互挤压的状态，存在一定感知合并倾向。区分实验中青阳、鲤城被试表现较为一致，阴上—阳上都为区分率最高的平调对，其次是阴平—阳上，阴平—阴上的区分率最低

对于产出和感知关系的讨论，本文基于上述实验将所有被试分为四组：个体区分率低且发音距离近者（定义为 LN），个体区分率低且发音距离远者（定义为 LF），个体区分率高且发音距离近者（定义为 HN），个体区分率高且发音距离远者（定义为 HF），分组发现，鲤城被试在阴平—阴上和阴平—阳上两个平调对上的产出与感知表现出较高的一致性（60%≤LN+HF≤80%），而在阴上—阳上该平调对上表现出不对称性（LF+HN=70%）。青阳被试则在阴平—阴上和阴上—阳上两个平调对上产出与感知表现出一致性（70%≤LN+HF≤80%），但在阴平—阳上该平调对上表现出不对称性（LF+HN=71%）。另外，无论是鲤城被试还是青阳被试所表现出的产出与感知不对称性，都集中在 HN 这一组上，即两个平调发音距离近而感知区分率大的情况，表明平调对的合并可能是由发音延至感知。

关键词：泉州闽南语 产出 感知 平调合并

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五莲方言擦音塞擦音声母发音及感知的代际差异研究

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山东五莲方言擦音、塞擦音声母数量多、分类细，已出现发音的新老派差异。新派发音的演变趋势有知庄章甲类字与乙类字读音相同、不分尖团、齿间音退化以及端组声母内部合并等[1]。然而，现有的研究更侧重于对演变现象进行社会语言学的考察，实验语音学的产出实验和感知实验的方法将有助于更进一步考察方言使用的代际差异与演变趋势。

本文主要研究五莲方言老派读音中的[tθ]、[tθʰ]、[θ]，[ʧ]、[ʧʰ]、[ʃ]，[tʂ]、[tʂʰ]、[ʂ]、[ɬ]、[ɬʰ]和[ɕ]12 个声母[2]在产出和感知上的代际差异以及演变趋势。在产出实验方面，衡量塞音、塞擦音发音的声学参数有谱重心（COG）和离散度（STD）。谱重心（COG）是指塞擦音或擦音在摩擦段部分频谱上能量最强的位

置，反映了能量分布集中区域；离散度（STD）是标注音段内曲线上的标准差，反映摩擦段语音的离散程度。本文通过分别计算青年组和中老年组所产出的各类声母的谱重心和离散度，绘制辅音格局图，并进行代际间的分析比较。在感知实验方面，通过设计辨认实验，分析青年组与中年组被试的正确率、好感度（goodness）、相互混淆度、反应时长（reactionTime），以比较青年组与中年组感知能力的差异。

声学分析的结果显示，青年组与中老年组发音存在显著差异。中老年组的舌叶音、舌尖后音、舌面前音谱重心（COG）数值比青年组高，青年组齿间音谱重心（COG）数值比中老年组高。其中，两组之间齿间音差异较小，舌叶音差异较明显。青年组离散度（STD）普遍低于中老年组。从声学格局图来看，送气塞擦音青年组与中老年组之间的对立比不送气塞擦音的更清晰，表明青年组送气塞擦音相较于不送气塞擦音变化更大。感知实验的结果显示，青年组对五莲方言塞音、塞擦音的感知能力明显低于中年组。青年组感知能力与产出能力的退化方向一致，均表现为齿间音退化程度较轻，知庄章甲类和乙类字的混淆以及尖团音字的混淆较明显。

关键词：五莲方言；擦音；塞擦音；产出；感知；代际差异

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汉语方言单字调五十年演变

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本研究从声调的"值"与"型"着眼，利用中国语言资源保护工程 1284 个方言点的记音语料，以汉语方言中五十年来存在声调变化的 32 万余个单字的五度标记调值数据为研究对象，采用量化统计方法进行了研究。

汉语方言共有 108 个调值发生了变化。从演变方向看，部分声调发生了单向演变，只作为变化来源存在；这些声调分化为其他声调的方向数目和所辖单字也较少，总体上较为稳定。部分声调的变化来源与去向数目差别较大，且多为平缓的、音高中等的声调。从单个调值来看，直拱调的各个调值最为活跃，且内部音高变化幅度为 2 的变化最多；其次是平调、短调；单个曲拱调的平均变化情况不如直拱调活跃。但总体来看，曲拱调的具体声调数多、变化方向数和所辖单字条

目的数目庞大，其变化多样性远高于短调和直拱调。

根据变化调值可归纳出 97 种调型演变模式。调型内部的演变占有比较重要的地位，且以短调和直拱调为主，曲拱调中的凹调大量变化为各种曲拱调；在跨调型演变中，直拱调型和凹凸拱调型之间的互相演变较为明显，角拱调总体相对稳定。升调、降调的演变去向中，平调、升调或降调几乎势均力敌，偶有较为突出的凹调。从内部音高变化幅度来看，老派声调的内部音高变化幅度不大时，几乎非常集中地变化为升幅或降幅为 2 度的升调或降调，且升调与降调未发生互相转变；当老派的内部音高变化幅度大时，新派声调的去向集中程度与其内部音高变化幅度成正相关。短调的升降变化较为复杂，总体上高音区倾向于向中低音区演变，低音区反之，中音区则升降皆有，音高变化幅度较小；平调主要演变规律为小幅度升高，升调、降调的音高则小幅降低；短调、平调以同音区内部演变为主，跨区的变化较少；曲拱调的音区总体略微上升。

从调值变化与方言区的相关性来看，曲拱调的调值演变与方言种类之间存在着显著的相关性，直拱调和短调与方言区之间不存在显著相关。

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Perceptual Cues and Tone Distances Across Stages of Tone Mergers: Evidence from Similar Tones in Cantonese

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It has been reported that tone T6 (22) in Guangzhou Cantonese (GZC) is undergoing tone merging. T6 is potentially merging towards either T2 (21) or T5 (33) [1]. In Luoding Cantonese (LDC), tone T6 has already merged with T2. Previous research has indicated that acoustic and perceptual distances reliably predict contrast discrimination [2]. However, most of these studies have focused on non-tonal languages and require further investigation in tonal languages. This extension would be beneficial in demonstrating the association between tone distances and perceptual abilities. Additionally, such research can provide insights into trends in tone mergers.

This study examines three similar tones (T2, T5, and T6) within the mid-low pitch range of GZC. It investigates the perceptual discrimination of these tones by both

Guangzhou and Luoding listeners. Fundamental frequency (F0) serves as the primary cue for tone perception. The distinctions between T6-T5 primarily involve F0 height, while those between T2-T6 focus on F0 movement. Another key objective is to explore potential differences in perceptual cues for tone merging across different stages. Furthermore, the study examines whether perceptual and acoustic distances can predict the discrimination performance of the two groups.

An AX discrimination experiment was conducted to assess discrimination performance across three tone pairs for two groups. Perceptual distances were obtained through an assimilation experiment. Acoustic distances among the stimuli in the AX discrimination experiment were calculated using the Dynamic Time Warping (DTW) methodology. All listeners simultaneously participated in the AX discrimination and assimilation experiments.

Our findings indicate that Guangzhou and Luoding listeners exhibited varying discrimination performance for the T2-T6 and T5-T6 tone pairs. Guangzhou listeners demonstrated better proficiency in distinguishing the T5-T6 tone pair, primarily differing in F0 height. Luoding listeners excelled in discriminating the T2-T6 tone pair, characterized by differences in F0 movement. This underscores how tone mergers influence perceptual cues and highlights variations in cue utilization across different stages of tone merging. Perceptual distances and acoustic distances differentially predicted discrimination performance for these tone pairs among the two groups. Acoustic distances more accurately predicted the discrimination performance of Guangzhou listeners undergoing tone merging. Perceptual distances were stronger predictors for Luoding listeners, who have experienced tone mergers. It reflects the distinct characteristics of how listeners at different stages of tone merging process tones. Finally, further research is needed to confirm whether Guangzhou Cantonese T6 is predisposed to merging with T2.

Keywords: Cantonese, tone perception, perceptual cues, perceptual distance, acoustic distance

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成都方言双字调实验研究

Experimental study on disyllabic tone in Chengdu dialect

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本文通过声学实验，在已得出成都方言单字调的基础上，分析研究成都方言不同年龄、不同性别的的双字调的音高与时长。成都方言双字调组合变调规律是：

后字 前字	阴平[35]	阳平[41]	上声[51]	去声[213]
阴平[35]	234+44	34+41	234+52	35+31
阳平[41]	33+33	33+31	33+32	33+21
上声[51]	45+44	45+41	45+52	45+21
去声[213]	22+34	22+31	22+42	23+32

通过以上组合变调规律，我们得出成都方言双字调的连读变调规律：前字：阴平保留单字的升调但微调音高，其余三调类多变平调；阳平变为中平调；上声变为高升调；去声除了在去声之前变为23，其余的都变为低平调22。后字：阴平多变平调；阳平和上声保持降调，只不过调值与单字调有细微差别；去声拱形消失，均变为降调。

成都双字调式以升降型、平降型为主。升降型有六种调式：前字阴平的T12、T13、T14，前字上声的T32、T33、T34；平降型有五种调式：前字阳平的T22、T23、T24，前字去声的T42、T43。其余五种双字调式分属升平型（T11的34+44、T31的45+44）、平升型（T41的22+34），T22的平平型33+33，T44的升降型23+32。

成都方言双字调前、后字调看，长典型值调长序列：前字时调长序列：阳平 0.32 > 上声 0.30 > 去声 0.29>阴平 0.28；后字时调长序列：去声 0.38>阴平=上声 0.33 > 阳平 0.32。

成都方言双字调性别、年龄差异：从调域上看，男性比女性的低一些。阴平做前字时，女性发音人的调值更高一些。去声的单字调拱形，男性发音人比女性发音人保留存得更略为完整，女性发音人的去声基本变为降调或升调。从调长看，男性发音人的去声最长，女性发音人阴平最长。

关键词：成都方言，声调实验，双字调

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Quantifying Language Evolution with Transcriptions Only

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Currently, extensive and prolonged fieldwork has produced rich linguistic records in many Sino-Tibetan dialect regions, primarily consisting of transcriptions. Investigators utilize a standardized word list to document the transcription of each word in the region, following conventions for initials, finals, and tones (on a 5-scale system), such as 't ai 31'.

In this study, we demonstrate that Levenshtein Distance can quantitatively capture variations between dialect regions by analyzing the proportion of phonemic evolution across different transcriptions, offering a new perspective on the study of language evolution. The core code is publicly available on Github[i], supporting potential improvement such as distinctive features and a vector database to further refine the distance. The study is conducted on the transcriptions from 117 dialect regions, encompassing Jianghuai Mandarin, Cantonese, Northeastern Mandarin, and Wu dialects. Our key findings are summarized as follows:

1. As illustrated in Figure 2, it shows that the Levenshtein Distance can quantitatively capture the variations among different dialects. Dialects within the same category, tend to be more similar to each other compared to those from different categories.

2. Levenshtein Distance can provide a quantitative perspective for studying the diffusion of languages. In Figure 2, We observed that the phoneme substitution ratio shows a linear relationship with geographical distance within a range of 500 km, regardless of whether the dialects are of the same or different categories. This suggests a gradual trend in language evolution. However, beyond a distance of 1000 km, the differences between dialect areas become significant and lack distinct patterns.

3. Relying on Levenshtein Distance based similarity features, we proposed an automatic dialect categorization method using DBSCAN. As depicted in Figure 3, our approach exhibits a high degree of overlap with the labelled categories of each language. Furthermore, in Figure 4, we conducted an ablation study and found that features in this manner are robust, demonstrating good clustering performance across four different dimensionality reduction techniques.

4. Our method can refine existing manual labels. As illustrated in Figure 5, we were surprised to find that our model's inclusion of some Wu Chinese dialect points into the Jianghuai Mandarin group was not due to a flaw in our model.

Upon consulting the corresponding dialect locations, we discovered labeling errors, which aligned well with the distances in reality.

5. In Figures 6 and Table 1, we studied the evolution speed of initials and finals. We also analyzed the correlation between tone evolution and initials, finals, and overall phoneme changes.
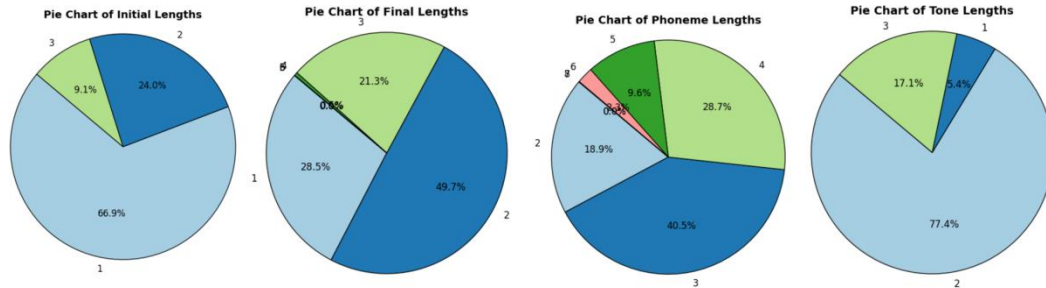
Figure 1: Distribution of Initials, Finals, Phonemes, and Tones
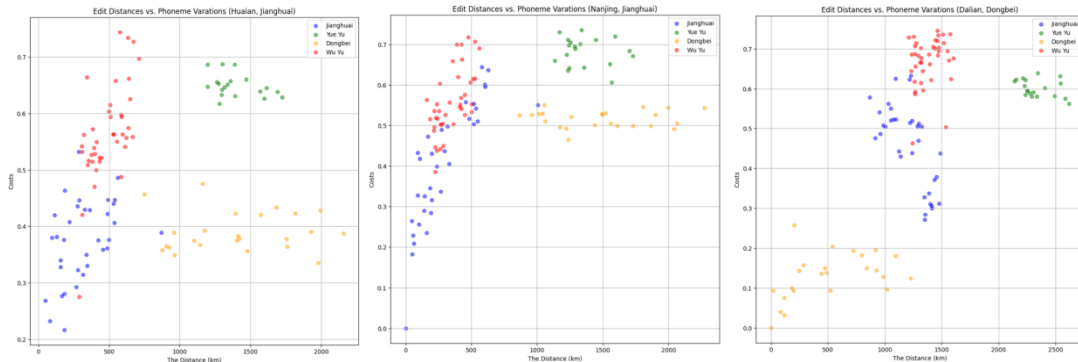
Figure 2: Relationship between Phoneme Substitution Ratios and Distances at Different Locations, Representing Four Dialect Groups.Left: Huai'an (Jianghuai Mandarin); Middle: Nanjing (Jianghuai Mandarin); Right: Dalian (Jiaoliao Mandarin).
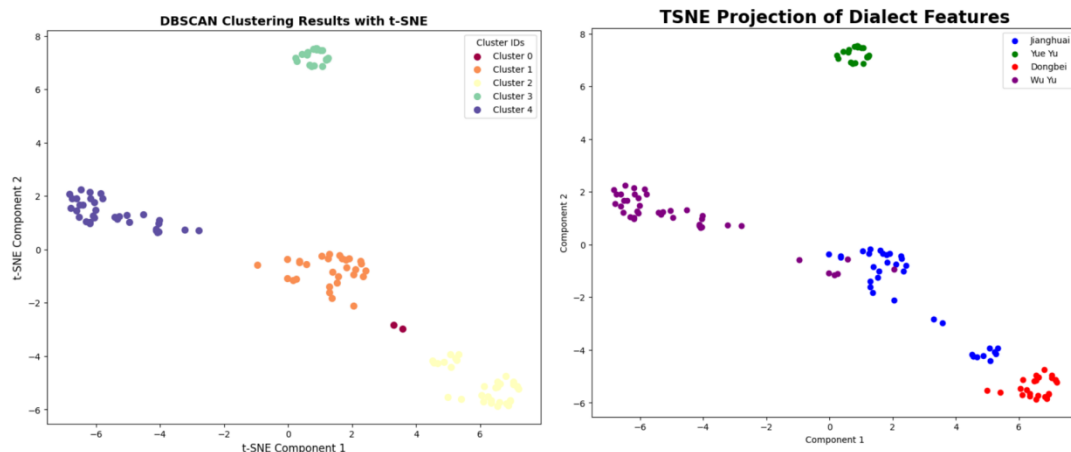
Figure 3: (Left): Automatic clustering results using DBSCAN on different dialects constructed based on Levenshtein Distance; (Right): Label categories of language areas in   the   dataset.
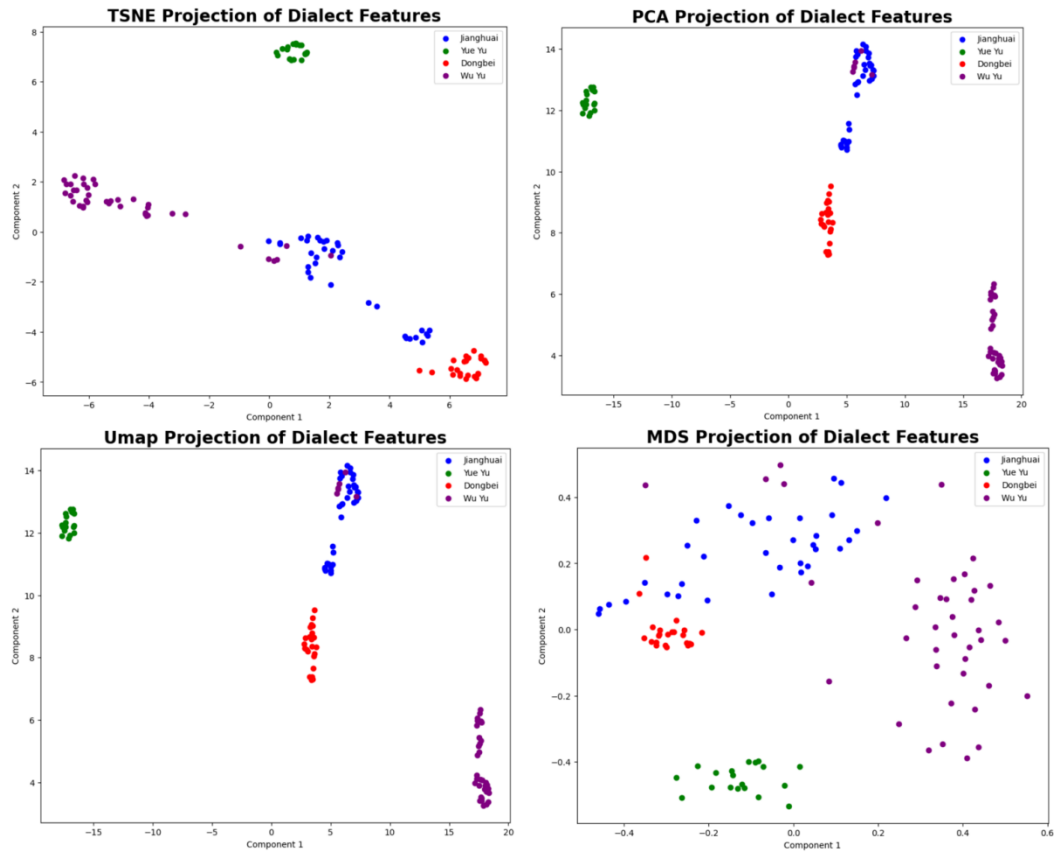
Figure 4: Ablation Study: Dimensionality Reduction Performance in Dialect Regions using Four Different Techniques: TSNE, PCA, UMAP, and MDS

77,江西,上饶市,信州区,东市街道,吴语,处衢片,龙衢小片

81,安徽,芜湖,繁昌,繁阳,吴语,宣州,铜泾
80,安徽,芜湖,南陵,籍山,吴语,宣州,铜泾
78,安徽,黄山市,黄山区,甘棠镇,吴语,宣州,太高
79,安徽,铜陵市,义安区,五松镇,吴语,宣州片,铜泾小片
83,安徽,铜陵市,义安区,五松镇,吴语,宣州片,铜泾小片

Figure 5: Clustered locations within the Jianghuai Mandarin group, labeled as real field survey sites for Wu Chinese data.

All

Comparison	Spearman Correlation Coefficient
Initials vs Finals	0.57
Initials vs Alls	0.84
Initials vs Tones	0.24
Finals vs Alls	0.91
Finals vs Tones	0.24
Alls vs Tones	0.25

Jiang Huai

Comparison	Spearman Correlation Coefficient
Initials vs Finals	0.47
Initials vs Alls	0.69
Initials vs Tones	0.28
Finals vs Alls	0.95
Finals vs Tones	0.38
Alls vs Tones	0.38

Yue Yu

Comparison	Spearman Correlation Coefficient
Initials vs Finals	0.57
Initials vs Alls	0.86
Initials vs Tones	0.68
Finals vs Alls	0.90
Finals vs Tones	0.62
Alls vs Tones	0.72

Dongbei

Comparison	Spearman Correlation Coefficient
Initials vs Finals	0.20
Initials vs Alls	0.62
Initials vs Tones	0.32
Finals vs Alls	0.84
Finals vs Tones	0.23
Alls vs Tones	0.32

Wuyu

Comparison	Spearman Correlation Coefficient
Initials vs Finals	0.64
Initials vs Alls	0.82
Initials vs Tones	0.46
Finals vs Alls	0.95
Finals vs Tones	0.22
Alls vs Tones	0.33

Figure 6: Spearman correlation coefficients among initials, finals, all phoneme variations, and tone variations. These figure quantifies the monotonic relationships between different linguistic features, illustrating how each set of features correlates with the others in a systematic manner.

All

Comparison	R Square
Initials vs Finals	0.40
Initials vs Alls	0.70
Initials vs Tones	0.12
Finals vs Alls	0.91
Finals vs Tones	0.19
Alls vs Tones	0.19

Jiang Huai

Comparison	R Square
Initials vs Finals	0.24
Initials vs Alls	0.52
Initials vs Tones	0.12
Finals vs Alls	0.92
Finals vs Tones	0.21
Alls vs Tones	0.22

Yue Yu

Comparison	R Square
Initials vs Finals	0.37
Initials vs Alls	0.76
Initials vs Tones	0.47
Finals vs Alls	0.83
Finals vs Tones	0.46
Alls vs Tones	0.57

Dongbei

Comparison	R Square
Initials vs Finals	0.03
Initials vs Alls	0.30
Initials vs Tones	0.11
Finals vs Alls	0.83
Finals vs Tones	0.05
Alls vs Tones	0.11

Wuyu

Comparison	R Square
Initials vs Finals	0.39
Initials vs Alls	0.65
Initials vs Tones	0.28
Finals vs Alls	0.93
Finals vs Tones	0.16
Alls vs Tones	0.23

Figure 6: R Square Cofficient among initials, finals, all phoneme variations, and tone variations. These figure quantifies the relationships between different linguistic features, illustrating how each set of features correlates with the others in a systematic manner.

Type	Initial Varation	Final Varation
Jiang Huai	20.10%	53.95%
Yue Yu	17.35%	53.86%
Dong Bei	16.70%	52.50%
Wu Yu	28.53%	59.79%
Overall	38.66%	66.47%

Table 1: Differences between Initials and Finals across the entire dataset and within four dialect regions, based on Levenshtein Distance.

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浙江永康吴语的内爆音

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吴语中的内爆音集中在上海郊区的部分地区、浙江南部地区和福建浦城等地（寸熙，朱晓农，2019）。朱晓农（2006）对内爆音的分布、听感和声学特征进行了介绍，并提出了清浊音变圈，认为吴语内爆音是自然音变的结果。内爆音听感上常与喉塞音、鼻音和边音相混淆，赵元任（1932）首次提出永康方言帮端母有读作鼻音的现象，这其中的演化过程值得讨论。

永康地处浙江省金华市，《中国语言地图集》（2012）将其归入吴语金衢片。声母有两个内爆音，为 ɓ 和 ɗ，分别来源于中古的帮母和端母。据《永康市志》记载，古帮端母阳声韵部分字读作[m][n]，阴声韵读作内爆音。本次调查就[ɓ>m][ɗ>n]的演化过程进行研究，共采录了 4 位发音人（F1、M1、M2、M3）的单音节和双音节样本。

永康内爆音拥有内爆音的典型声学表现：声母段有明显的周期性波形，声波振幅随时间呈渐强趋势，宽带语图上有明显的浊音横杠，辅元结合处可见冲直条，VOT 分布较广，起始基频段有高有低。永康部分内爆音在听感上与鼻音相似，为界定其是否为真正意义上的鼻音，我们使用 LPC 算法，获得相应频谱图与真正的鼻音进行比较。通过比较听感带有浓厚鼻音色彩的内爆音频谱图显示，发音人 F1、M1 和 M3 的频谱图与鼻音相似，在低频段和高频段都有共振峰；发音人 M2 存在部分在听感上带有轻微鼻音色彩的内爆音，其频谱图与鼻音相似程度较低，且在同个字两次发音的频谱图上也有所差异。如图 1 所示，M2"班"字首次发音的频谱图只在低频段有共振峰，而二次发音的频谱图则显示低频段和高频段都有共振峰；图 1 右侧"胆"字规律同上。

这些数据表明，永康内爆音正在进行[ɓ>m][ɗ>n]的演化，[ɓ/ɗ]和[m/n]在此阶段仍然共存，且这是一个无极变的系统；带有鼻音色彩的永康内爆音存在变体，部分音前浊段只有两个明显的峰值，另一部分音前浊段有多个明显的峰值。
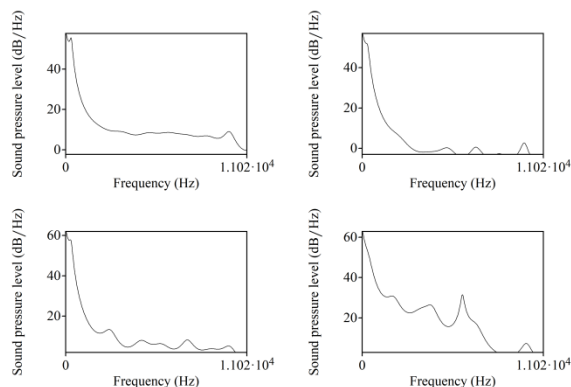
图 1 左侧上下两图为发音人 M2"班"/ɓua/字的首次发音和二次发音，右侧上下两图为发音人 M2"胆"/ɗa/字的首次发音和二次发音

（CIEL-15 海报展示 编号 P611 展示人：黄若琦）

浙江磐安吴语的内爆音

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吴语的内爆音从浙南到最北的上海市郊均有分布，大部分来源于古全清"帮端见"等声母，是一种区域性的语音现象。内爆音在听感上容易与喉塞音、鼻音、边音等混淆。为了探究处于同一个区域中不同方言的内爆音的语音性质的一致性和差异性，我们需要采取声学分析。朱晓农、寸熙（2006）提出的清浊音变圈可作为内爆音演变的参照。

磐安县地处浙江金华，《中国语言地图集》（2012）将其归入吴语金衢片。《吴语婺州方言研究》（2016）记载磐安话有声母 32 个，韵母 48 个，单字调 6 个。此外还说明"来自古阳声韵帮、端母的[m][n]或[p][t]声母有时有[ʔb][ʔd]的又读"。

2007 年初，我们对磐安内爆音进行了调查。共录制了 6 位发音人（3 男 3女），均来自安文镇。结果发现几乎所有发音人或多或少都带有内爆音 ɓ/ɗ 变体，并未发现鼻音 m/n 变体，在唇龈部可以形成浊内爆音、送气清音与浊音三分对立的格局。内爆音的具体分布见表 1。

表 1 磐安方言内爆音分布

古类	今读	实验词
帮母	ɓ	杯 编 搬 比 补 拜 布 报 变
端母	ɗ	低 刀 颠 堵 对
並母	ɓ	被
定母	ɗ	杜

磐安话内爆音主要来源于古清声母"帮、端"母，图 1 是两个发音人念帮母字"报"的波形图和语谱图，结合持阻段波形由小增大的变化可将其归入内爆音。听感上，（a）接近鼻音，记作 ɓ1 型；（b）接近清塞音，记作 ɓ2 型。二者在持阻段时长和波形增幅上有所差异，ɓ1 的声母段在时长上明显长于 ɓ2。ɓ1 前浊段基频存在降头，基频均值小于后接元音段；ɓ2 则接续了后接元音的基频。且 ɓ2 通常可又读为 p，说明磐安话的 ɓ 与 p 互为变体，无音位区别。端母字的表现类似。从浊内爆音在帮端母字中的分布来看，磐安话正处于[ɓ>p][ɗ>t]的演变之中。部分发音人在念帮母字时发音部位有所改变，主要在于发双唇音时齿的位置，有演变成 v 的倾向。

此外，一个新发现是，在磐安话中并、定母大部分发成声带不振动的清音，后接元音为气嗓音发声态，少数声母有内爆音变体，听感上两者不同。

（a）   （b）

图 1 磐安话内爆音"报"ɓo

（CIEL-15 海报展示 编号 P612 展示人：姚程栋）

论巴哼语中的鼻冠辅音

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巴哼语属汉藏语系苗瑶语族苗语支，是中国部分瑶族和越南巴天族的母语。中国境内巴哼语分为巴哼方言和唔奈方言，前者又分为南北两种土语，以广西三江文界和贵州黎平滚董为代表点，后者以湖南隆回虎形山为代表点。已有文献显示，至少从上世纪五十年代起，巴哼语各方言的鼻冠辅音系统已经产生了分化，其中虎形山唔奈语和文界巴哼语保留较完整的鼻冠辅音系统，而滚董巴哼语的鼻冠辅音已简化为对应的鼻音。当代巴哼语各方言中的鼻冠辅音是否有进一步演进缺乏系统研究，本研究旨在弥补这一空缺，回答两个问题：（1）当代巴哼语各方言中是否还存在鼻冠辅音？若存在，是分析为音位还是音位变体？（2）巴哼语各方言鼻冠辅音的演化路径是怎样的？
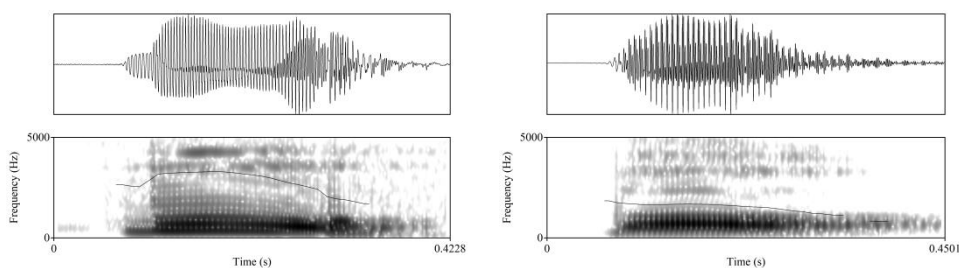
　　结合前人研究和笔者 2023 年 8 月和 10 月对当代文界巴哼语和虎形山白水洞唔奈语的田野调查数据,巴哼语各方言中的鼻冠辅音正发生以下演化进程:1）文界巴哼语和白水洞唔奈语的鼻冠辅音系统呈简化和解体状态,但速度不一,前者似已完成简化,后者在部分老年男性中尚存在少量鼻冠辅音；2）文界巴哼语鼻冠辅音简化口音保留鼻音,其简化机制与北部土语一致；3）白水洞唔奈语鼻冠辅音简化鼻音保留口音,但原清不送气 NT 和清送气鼻冠辅音 NTH 变化不同：前者变为为浊阻塞音,在词首时仍有明显的鼻音 murmur,语音上类似浊鼻冠辅音,但词中无明显鼻音 murmur,为纯粹的浊阻塞音,因此可归纳为(N)D；后者变为清送气阻塞音。白水洞唔奈语和越南潭村巴哼语鼻冠辅音简化机制一致。唔奈语的清鼻冠辅音简化机制与洞头寨苗语和小章苗语鼻冠辅音演变类型类似。

　　巴哼语方言中鼻冠辅音演化的两种路径,即保留鼻音简化口音和保留口音简化鼻音,和苗瑶语其他方言鼻冠辅音演化的典型路径一致,但采取何种演化路径的动因有待深入探讨。

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隆回白水洞唔奈语鼻冠阻塞音的声学研究

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　　唔奈语是自称"花瑶"的瑶族所说的一种苗语支方言,以湖南隆回虎形山为代表点。已有唔奈语语音研究以印象式描写为主,本研究关注虎形山乡白水洞村唔奈语鼻冠阻塞音的声学特点,并讨论其音位地位。

　　采用外置声卡（Yamaha UR22C）加头戴式耳麦（AKG C544L）对包括鼻冠阻塞音及相应的非鼻冠阻塞音声母约 100 个例词在词首和词中（/a+目标词/,表否定义"不...."）位置的读音进行录音,发音合作人为 7 男 5 女共 12 位唔奈语成人（37 岁至 73 岁）。对所有目标辅音进行切分、标注,提取,采集鼻冠辅音样品

1929 个，考察鼻冠辅音尤其是其鼻音段的浊音/鼻音特点，以及词中鼻冠阻塞音、阻塞音和鼻音时长等声学指标。

本研究数据显示，当代唔奈语鼻冠辅音系统呈解体状，但原清不送气和清送气鼻冠辅音表现不一。原清送气鼻冠阻塞音的鼻音段在词首和词中几乎完全脱落，和相应的清送气阻塞音合并。原清不送气鼻冠阻塞音的鼻音部分在词首呈鼻音 murmur 或浊音 murmur，在词中只呈浊音 murmur，有别于保留鼻冠音的其他苗语方言，如吉卫、松桃等东部苗语鼻冠辅音的鼻冠部分在词中位置和前一音节的元音形成明显鼻韵。从平均时长看，原清不送气鼻冠阻塞音在词中位置时略长于对应的阻塞音和鼻音。

从音系功能上来看，当代唔奈语中清送气和清不送气鼻冠阻塞音失去对立，而清不送气鼻冠阻塞音的鼻冠部分或保留或以浊音 murmur 形式出现，也可以说变体 ND 只出现在词首，而变体 D 可出现在词首词中位置。词首浊音或带鼻音是浊音的一种实现方式，符合 Ohala 的"气动浊音约束理论"（Aerodynamic Voicing Constraint，或 AVC）的预测。我们认为这类音可分析为对应浊阻塞音(N)D，一如 Niedere（1997）对越南潭村巴哼语该类音的处理。上述现象在法语、俄语、西班牙语等欧洲语言中都有报道。

我们认同杨再彪（2016）对于当代虎形山唔奈语中出现清不送气、清送气、浊不送气阻塞音三分对立的观察，但不认同他关于该语言音位系统中同时还存在浊鼻冠阻塞音、清不送气鼻冠阻塞音和清送气鼻冠阻塞音的结论，因为上述三类鼻冠辅音只残留于部分老年发音人的少数词中，或不具备代表性，或仅为音位变体，不宜以音位形式存在。

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Key Acoustic Cues for the Realization of Metrical Prominence Across Chinese Dialects

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Metrical structure refers to the prominence of prosodic elements (Liberman & Prince, 1977). In tone languages, the metrical prominence is related to the word-level tonal patterns in the prosodic unit (Guo, 2020; Guo & Chen, 2022; Wen et al., 2023). The metrical prominence of Chinese dialects can be generally classified into the left-dominant metrical structure and the right-dominant metrical structure (Guo & Chen, 2022; Huang & Do, 2021; Yue-Hashimoto, 1987; Zhang, 2007). Previous explorations concerning the acoustic realization of metrical prominence mainly focus on phonetic cues including duration, intensity, and pitch realization (Guo & Chen, 2022; Hayes, 1985; Liang & Shi, 2010; Wen et al., 2023; Zhang, 2007). Prior research has yet to reach a consensus regarding the key acoustic cues for the realization of metrical prominence in tone languages, and few studies have quantitatively investigated the acoustic realization of metrical prominence from a cross-language perspective. The current study addresses such an issue and aims to identify the effective acoustic cues for cross-language analysis based on the realization of metrical prominence, in the case of three metrically left-dominant dialects (Chengdu Mandarin, Chongqing Mandarin, and Suzhou Wu) and three metrically right-dominant dialects (Kunming Mandarin, Tianjin Mandarin, and Xiamen Min). In addition, to deeply investigate the pitch realization for metrical prominence, the current study proposes a novel acoustic feature, cumulative pitch dynamics, to quantitatively measure the overall dynamics of the pitch change.

A total of 48 middle-aged participants were recruited for production experiments, including eight native speakers of Chengdu Mandarin, Chongqing Mandarin, Suzhou Wu, Kunming Mandarin, Tianjin Mandarin, and Xiamen Min, respectively. The materials of tone production experiments are disyllabic prosodic words in the selected dialects. The current study includes both within-dialect analysis and cross-dialect analysis. The within-dialect analysis is to find out the dominant acoustic cues for realizing metrical prominence in metrically left- and right-dominant dialects, respectively. The cross-dialect analysis, with the machine learning algorithm eXtreme Gradient Boosting (XGBoost) (Chen & Guestrin, 2016), is to find out robust acoustic cues for the binary classification of the metrical structures across tone languages.

Findings include: (1) The within-dialect analysis reports the key acoustic cues for realizing metrically strong units in dialects with left- and right-prominence: duration, pitch height, and pitch slope for both left- and right-prominence, and intensity, pitch range, and cumulative pitch dynamics for right-dominant one; (2) The cumulative pitch dynamics proposed by the current study captures the key difference in pitch realization between the left- and right-prominent structure. The metrically right-prominent

structure relies on the overall pitch dynamics, whereas the left-prominent one does not; (3) The cross-dialect analysis conducts a classification of metrically left- and right-dominant tone languages based on all these six acoustic features. The XGBoost model shows a promising performance in classifying and predicting metrically left- and right-dominant tone languages, with an accuracy of 86.06%. Duration serves as the most important acoustic feature for the model to distinguish between metrically left- and right-prominent structures, followed by cumulative pitch dynamics.

The current study identifies the key acoustic cues effective for both within- and cross-language analyses of metrical prominence. Such cues facilitate a cross-language measurement of acoustic correlates of metrical prominence, enhancing the classification and identification of tone languages.

Key terms: Metrical prominence, Acoustic realization, Chinese dialects, XGBoost, Cumulative pitch dynamics

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中古知庄章组字声母在山西祁县方言中的演变

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中古知庄章组字声母的演变是汉语语音史中重要的一环，在汉语方言研究中受到普遍关注。在前贤的研究中，祁县方言中古知庄章声母字的读音，或归为二分型，如赵彤（2001）、王洪君（2007）等，或归为合一型，如王临惠（2001）、韩沛玲（2012）等，但根据调查祁县各乡镇（村）发现这两种读音类型同时存在。从今读情况来看，祁县知庄章组字声母读音有两种类型，合一型和二分型错落有致的分布。祁县知庄章组字声母二分型，开口知二庄读[ts、tsʰ、s],开口知三章读[tʂ、tʂʰ、ʂ]，合口字读[ts、tsʰ、s]，熊正辉将这种类型称为"昌徐型"，这一类型广泛分布在山西境内，如祁县周边的文水、平遥等。在祁县知庄章组字声母合一型的区域中，能够发现部分老派读音不同程度地保留了知三章与知二庄的对立，而且在二分型的区域里，新派读音或多或少地正在向合一型靠拢。由此可以推断，知二庄组字与知三章组字声母分立是祁县方言的早期阶段，合一型中老派读音的例外正是二分型向合一型过渡的表现。因此，将重新审视祁县方言中古知庄章组字声母的今读情况和分布特点，同时对比新老派读音差异等，力图在结合前人研究的基础上继续探索祁县方言自身中古知庄章组字声母的演变方向和过程。

（CIEL-15 海报展示 编号 P618 展示人：翟佳敏）

湖北咸宁方言的先行体标记"上"

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湖北咸宁咸安区方言中存在一个强调先行事件的后置标记——□[soŋ³³]，方言读同"上"，声调为阳去，暂记为"上"：

（1）坐倒上。

（2）你都先吃，我（先）解个手上。

"上"与官话方言中广泛存在的先行体标记"着"功能类似，目前咸宁地区的先行体还未被描写。

一 "上"的句法格式

2.1 格式1：VP+上
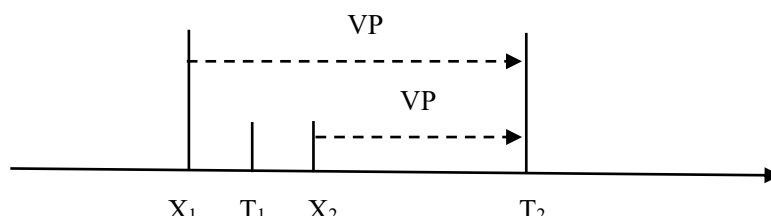
图1 "VP+上"格式中的事件与时间的关系

2.2 格式2：VP₁+上+VP₂

"上"可以关涉两个事件，并具有指明两个事件先后顺序的功能。
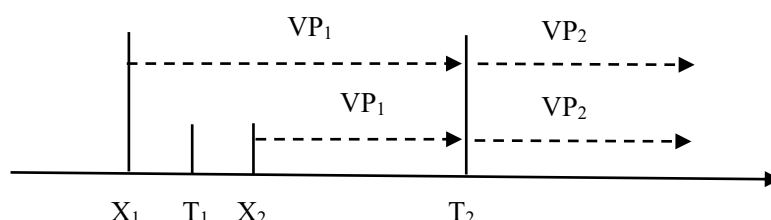
图2 "VP₁+上+VP₂"格式中的事件与时间的关系

2.3 格式3：VP₁+上+VP₂+VP₃

"上"最多可以关涉三个事件，此时"上"具有标示三个事件结束时间先后的功能。
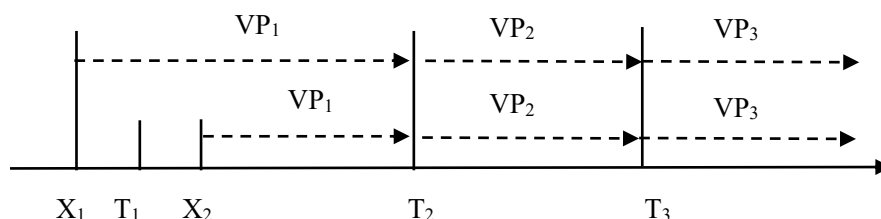
图3 "VP₁+上+VP₂+VP₃"格式中的事件与时间的关系

3.4 格式 4：AP+上

2.5 格式 5：NP+先行体标记

三 "上"字句的语境

强调说话者认定的优先事件先行完成是"上"最主要的功能，这一功能与"上"字句的语境密切相关。

"上"频繁出现在反预期语境当中。

"上"也能出现在条件语境当中。

四 "上"的语法化过程

咸宁方言中的先行体标记□[soŋ³³]本字应为"上"，与官话方言中具有相似功能的"着"是不同的成分。

第一，"上"可以做名词或修饰性成分，有两种用法：方位；时间。

第二，"上"可以做趋向动词和趋向补语，表示位移。

第三，"上"还能做动相补语，表结果或状态。

第四，"上"能做傀儡能性补语，表能性意义。

"上"的语法化经历了三个阶段：空间——时间——动作进程或状态：

（1）一个物体的空间位置（句中）

（2）一个事件的空间位置（句中）

（3）一个事件的时间进程（谓语前/谓语后）

（4）多个事件的时间次序（谓语后）

余论

高福生（1991）将非持续义句尾"着"称为"先行体"。"先行体"这一称呼的合理性在哪里？其应当放在体系统中的什么位置？

根据 Klein（1992，1994）和 Arin（2003）的研究，"上"并不关心说话时间，而与主题时间和情状时间密切相关。因此，"上"所表达的语法意义是体范畴而非时范畴，带"上"标记的事件情状时间有两个可能的起点和一个明确的终点，所以"上"应当看作完整体。

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陕西韩城方言"来"的叠置及其语法化

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普通话中，"来"作为基本词，除轻声外只有一个读音，即[lai³⁵]。而韩城方言里"来"共有[lei³⁵][lei²¹][lei⁵³][la³⁵] [la²¹][la⁵³][lai²⁴][lai²¹][lai⁴²]等九种读法，将变调整合至原调剩六个读音，即[lei³⁵][lei²¹][la³⁵][la²¹][lai²⁴][lai⁴²]，差异层次不齐。其语法功能主要是作谓语、补语、独立语、状语，偶尔也作宾语、定语，除此还有

概数助词、时间方位词等用法。从语法功能角度考察，它们可以叠置共现，其中双次、三次、多次叠置很常见，共现格式近三十种，但又具有规律。文章分析了"来"作各种语法成分的叠置使用时其读音的不同，并对其叠置情况进行了详细分析，发现：方言"来"语法叠置规律与其单字语法功能息息相关。在此基础上，文章提出了韩城方言"来"的三条语法化路径：趋向动词>趋向补语>动相补语>结果补语；趋向动词>趋向补语>动相补语>傀儡可能补语；趋向动词>时间方位词>概数助词。这对于我们清晰认识"来"的语法功能有很大帮助。在最后，文章提出了韩城方言中作为提顿词和话题标记的[nai⁴⁴]，其本字是"来"还是"呢"的问题。

（韩城位于陕西省关中平原东北隅，其方言在《中国语言地图集》（第二版）"B1-6 官话之六•中原官话 B"中归属于中原官话汾河片解州小片，是中原官话关中片与汾河片的过渡地带。）

关键词：韩城方言；"来"；读音；语法功能；叠置；语法化

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语言接触视域下的鄂温克语通古斯方言亲属称谓特征

满德日瓦

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鄂温克族是东北亚地区的民族，主要分布在俄罗斯西伯利亚以及中国内蒙古和黑龙江两省区。中国境内的鄂温克语分为索伦、通古斯和敖鲁古雅方言。通古斯方言使用者于 1917 年十月社会革命后，从俄罗斯迁入中国，迁入之后定居在呼伦贝尔的莫日格勒河一带。大规模的迁徙使通古斯鄂温克人受东北亚各民族的影响较深。在语言层面，鄂温克语通古斯方言受俄语、汉语、蒙古语的影响，形成了区别于其他方言的亲属称谓系统。本文以接触语言学为理论指导，分析通古斯方言的亲属称谓系统，探讨多语言环境下鄂温克语亲属称谓的演变过程和背后的社会文化内涵。全文共有三个部分。

首先，文章根据现代家庭结构将田野调查所得的 57 个亲属称谓划分为父系、母系、姻亲和配偶四大类。按辈分研究理论，再进一步区分为祖辈、父辈、同辈、子辈、孙辈。其次，分析通古斯方言亲属称谓的结构特点和词汇来源。最后，探讨语言接触对通古斯方言的语言演变带来的影响。突出在多语言环境下鄂温克语亲属称谓的社会文化内涵。

对通古斯方言的亲属称谓进行分析，发现血缘关系的远近程度对通古斯方言亲属称谓的分布情况和使用特点有着至关重要的影响。即通古斯方言亲属称谓的系统结构以"我"为中心，以血缘关系为基准由近至远，由内而外延展。与"我"的关系越近，专指称谓越多，辈分等级和年龄区分越明确，固有词称谓越多。反之，与"我"的关系越远，共指称谓越多，辈分等级和年龄区分越模糊，借词越多，受语言接触的影响越深。

关键词：鄂温克语；通古斯方言；亲属称谓

基于规则的藏语动词构形形式化描述

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现代书面语的藏语动词是一个具有很丰富的形态变化的词类，其动词构形特点也极为复杂。藏语动词不仅是整个句子的最核心部分，也是支撑词法分析、句法分析、语义分析等研究领域起着至关重要的作用。本文围绕藏文字组合的规则和藏文字的语法结构相结合为基础，通过钦绕威色木著的《藏文动词释难（藏文版）》、李永昌选编的《藏文动词词典》、白马翁召等编的《藏语动词对比集》、史学礼和格桑娜姆编的《藏文动词词典》和《藏文动词变化表》进行了收集、整理和统计了 1456 个藏语单音节动词。首先，本文介绍了藏语单音节动词三时一式（现在时、过去时、将来时、命令式）的基本构形形式和规则方法进行分类。其次，探讨了对藏语动词时式的四种曲折形态变化（有四种形态变化、有三种形态变化、有两种形态变化和无形态变化）的结构特征和分类进行形式化的描述。通过研究发现，藏语 30 个辅音字母中 28 个辅音字母为基字构成藏语单音节动词，及它的形态结构可分为 24 种形式。最后，通过详细的实例对基于规则的藏语动词构形形式化描述方法进行分析和验证。藏语动词的构形形式化的描述，使得读者能够更加清晰地理解藏语动词的构形。此方法不仅可以帮助更好地学习和理解藏语，还可以为机器翻译和自然语言处理等领域提供了理论支撑和参考。

关键词： 藏语动词；构词；形态描述

汉语耕耙事件动词词化类型的历时研究

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汉语耕耙事件的语义要素主要有动作、工具、时间、结果及对象等。古今汉

语对语义要素的选取不同，在表达耕耙概念时，所采用的词化模式也不尽相同。结合 L.Tamly 的词化类型理论分析耕耙事件词化模式的历时差异，发现耕耙事件的语义要素展现出从隐含到呈现的演变规律。在汉语耕耙事件的词化模式中，取得独立地位并"呈现"的语义要素主要有[对象]、[时间]和[主体]，融合性较强的语义要素有[工具]和[结果]。结合汉语方言的词化模式，可以发现人们对语义要素的编码具有不同倾向性，这种倾向性在古今对比中亦有迹可循。上古汉语倾向于选取[对象]和[主体]进行编码，中古和近代汉语倾向于选取[工具]和[结果]进行编码。在方言中，选取[工具]还是[时间]具有一定偶然性，这与词义在意识中呈现的形态的多样性具有密切关系。通过语义要素选择倾向性，可以进一步验证一个假设，即倾向于编码[对象]的语言处于早期，倾向于编码[工具]和[结果]的语言处于中晚期。此外，中古时期[动作+工具]的大量涌现除了说明人类社会的发展外，也说明了[工具]在词化模式发展中的媒介性作用。这意味着语义要素的择取并非彼此孤立，其倾向性的背后不仅是人类认知的发展，也是语义要素间相互作用的结果。

词汇与人类认知、社会变迁结合紧密，农业词汇尤是。通过归纳语义要素的方法，可以找出其古今词化模式和各方言区词化模式的异同，为词化理论和词汇的发展提供更多证据及解释。

关键词：词化模式；词化类型；历时演变；耕耙事件

（CIEL-15 海报展示 编号 P701 展示人：丁肇璇）

汉字"家"的历时语言研究：注音释义与字形演变

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本研究以汉字"家"为研究对象，采用历时语言学的方法，深入探讨其注音释义的变化和字形的演变过程。首先，通过回顾"家"字在不同历史时期的注音释义，从古代音韵学到现代汉语词典，比较分析了各个时期的观点和解释，探讨了其背后的历史演变和学派差异。其次，考察了"家"字的字形演变过程，从甲骨文到隶书，揭示了其变化趋势和形态特点，反映了社会历史、文化演进和书法艺术的变化。同时，研究了"家"字在注音释义和字形演变中的语义演化，从家庭到家国，呈现了其丰富的文化内涵。最后，总结了本研究对汉字语言学、文化研究和教育发展的启示和应用价值，为汉字研究提供了新的视角和方法，拓展了对汉字"家"字的全面理解和解读。

关键词："家"；历时语言研究；注音释义；字形演变；汉字文化

（CIEL-15 海报展示 编号 P702 展示人：高　苏）

中国股市用语的社会演变

马贝贝

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本文结合演化语言学的理论，采用文本分析、问卷调查、语料库语言学分析等研究方法，探讨股市语言演变背后的原因、考察股市用语在不同时间和环境下的演变历程，深入分析和探讨股市用语的起源、传播及变异等过程，提出股市用语的演变不仅反映了文化传统中的象征意义，还反映了其背后的社会及心理因素，以及它们在股市交流中的功能意义。

（CIEL-15 海报展示 编号 P703 展示人：马贝贝）

十年间网络小说标题的历时研究

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标题是文章的"眼睛"，不仅能反映文章的内容，还能反映时代的特色。文章从历时的角度出发，通过搜集特定小说网站 2013 到 2022 年间发表的小说标题，建立了小型的语料库，并采用量化的方法考察了从 2013 到 2022 年网络小说标题的变化，采用描写和解释相结合的方法和对比研究法对网络小说标题的新特征进行分析，最后总结出几个突出的网络小说标题变化的方向：首先，十年来网络小说标题的音节长度显著增加，长标题越来越占优势，原来最占优势的四音节标题占比逐年降低，八音节标题占比越来越高，更多音节数量的标题也呈现出增加趋势；其次，黏着结构作标题的现象逐渐凸显，语法不自足、语义不完整的粘着结构成了网络小说标题的"新欢"；还有，单句特别是陈述句作标题的现象越来越多，并且原本尽量避免出现在网络小说标题中的成分开始出现。

总的来说，通过对数据库中 2013-2022 年网络小说标题进行分析，文章发现，大体而言，这十年间的网络小说标题的非句化倾向减弱，也就是说，用句子作为标题的现象越来越多，网络小说的标题越来越能够接受复杂的报道性标题，标题的省略现象也越来越弱，即报道性增强，称名性减弱，复杂性增强，简洁性减弱。

最后，本文试图从读者和作者两个方面对标题变化的现象做出解释，一是因为快餐文化下读者快速获得高质量信息的需求，复杂的长音节的报道性标题

可以给读者提供更多的信息，帮助读者快速筛选自己想要阅读的小说；二是因为作者的避难心理和求异心理，简洁短小的称名性标题往往概括性强，考验作者的文字功底，作者无法驾驭这种标题时就倾向于选择取巧，用特殊的长标题既能规避取名难题，又能让小说显得别具一格。

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（CIEL-15 海报展示 编号 P704 展示人：江　璐）

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Influence of L1 Phonemic Merger on the Ability to Distinguish Similar L2 Phonemes: Empirical Evidence from L1 Chinese /n/-/l/ and L2 Japanese /n/-/r/

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When hearing the Chinese word "Xiao^{214} Liu^{35} (Mr. Liu)", many people from southern China may wonder whether it is "Xiao Liu" or "Xiao Niu^{35} (Mr. Niu)". This is due to the phonemic merger between /n/ and /l/ in some dialects of southern China. The phonemic merger occurs in many languages or dialects when two phonemes become indistinguishable or replaced by a single phoneme. Previous studies mainly focused on the characteristics of the merger in one language. However, the relationship between the merger in L1 (e.g., Chinese /n/-/l/) and difficulty in discriminating phonemes in L2 (e.g., Japanese /n/-/r/), and the factors that influence the strength of this association, remain unclear. We designed an auditory perception task on 40 Chinese JFL (Chinese learning Japanese as a foreign language) learners divided into "L1 phonemic merger group" and "L1 phonemic non-merger group" to test the transfer from L1 phonemic merger to difficulty in distinguishing similar L2 phonemes, and to test phonetic context (monosyllable, fast carrier sentence and slow carrier sentence) and subsequent vowel type (/a/ and /i/) as modulators on this transfer effect. Results of ANOVAs showed significantly poorer discrimination (d') and longer reaction time (RT) when phonemes were presented in L2 than in L1, and demonstrated the expected transfer of the L1 Chinese /n/-/l/ merger to problems in L2 Japanese /n/-/r/ discrimination. Phonetic context significantly affected perceptual distinction in L2: discrimination was better and RT was shorter when listening to phonemes presented in isolation than in carrier

sentences. We speculate that together, these results are due to the acoustic similarity of L1 /l/ and L2 /r/, and to the cognitive load required to process faster sentences. By contrast, there was no effect of subsequent vowel type: performance was similar for phonemes followed by /a/ and /i/, which is inconsistent with the results of a past study since the sonority scale of /a/ is higher than that of /i/, the reason why an opposite result occurred in our study perhaps because the students' relatively low proficiency in Japanese precluded the use of sonority difference as a cue for distinguishing L2 phonemes. Our results provide quantitative evidence of the influence factor of L1 phonemic merger and poorer L2 similar phoneme distinction, and the results have potential applied value for improving foreign language learners' ability to distinguish phonemes in L2.

Keywords: phonemic merger, phoneme discrimination, L1 transfer, phonetic context, vowel type, speech rate

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"争"的多义性与演变历程

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　　"争"除了表示争夺、竞争外，在许多汉语方言中均能表示相差、缺欠等含义。以李荣主编《现代汉语方言大词典》中 42 种汉语方言材料为根据，发现部分官话（西南官话、中原官话、兰银官话）、粤语、客家话、平话，及较为独特的吴语温州话存在相差、缺欠相关义项。除了较为特别的温州话外，其他方言显示出地理上的邻近性。

　　基于汉语史的材料，"争"的语义扩张路径可以做出如下构拟，即图 1 所示：
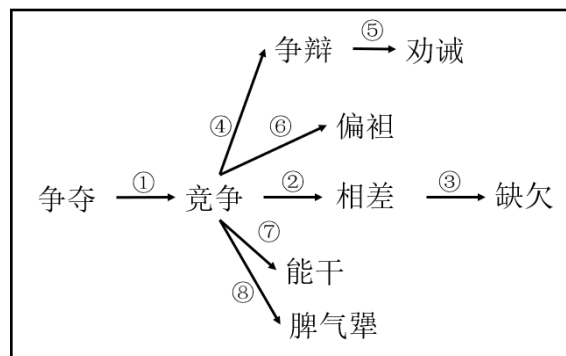
图 1 "争"的演变历程

其中，过程①涉及题元角色的抽象化，所争对象从实体扩展到虚物。过程②是语境诱发的语用推理，"争"与量化结构组配时，在同一个范畴内形成量度区间的差异比较，而后从行为推导出结果，即有争必有差。过程③是句法位置改变后与"差欠"类词相因生义。过程④是行域向言域扩展。过程⑤是语用推理导致题元角色发生了变异。过程⑥是在"相差"义产生及过程⑤基础上的整合类推。过程⑦、⑧均为并入情态，前者并入[+能力]，即"能争"，后者并入[+意愿]，即"好争"。总的来说，主观化在"争"的语义演变历程中扮演着其中重要的角色。

"争"的诸多义项存在集群现象，可以从读音、文字的分化裂变窥视一二。官话中"劝诫"义读为了去声并分化出"诤"字。温州话"争夺、竞争"义读为阳平，"相差、缺欠"义读为阳平，"相差、缺欠"读为阴平，"争辩"义读为阳去，读为阳声调的也相应地发生了清音浊流。广州话"相差、缺欠、偏袒"义仅读为白读，其他义根据使用情况有文白两读。万荣话"相差、缺欠、能干"义读为文读，"争夺、竞争"义读为白读。可见，分化大多以过程②为界限，其原因是习得者再推理该过程存在困难，需要特定的语言使用习惯。该现象也说明词项的裂变是渐进性的。

"争"演化历程的微观考察进一步确证了"每个词汇都有它自己的历史"，对演变历程的事后分析，有助于发掘语言演变的一般规律，从而更好地建立语素之间的联系，为方言、语言的分化与整合提供更多细致的证据。

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On the Loss of Light NP Shift in the History of English

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In Present-day English, Light NP Shift, in which light object NPs , in contrast to heavy object NPs, as in (1b) and (2b), move rightward over a prepositional phrase, is not available. Light NPs are preferred in the position immediately following the verb, as shown in (1c) and (2c). This is contrasted with Heavy NP Shift as in (1a) and (2a).

(1) a. John sent to his mother **the money you had wanted him to give to us**.
    b. *John sent to his mother **money**.
    c. John sent **money** to his mother.   (McCawley 1988: 511)

(2) a.　He threw into the wastebasket **the letter which he had not decoded**.

　　b. *He threw into the wastebasket **the letter**.

　　c.　He threw **the letter** into the wastebasket.　　(Ross 1986: 34)

(3) a.　Bill sang with friends **a song that was written by a famous guitar player from Texas**.

　　b. * Bill sang with friends **a song**.

　　c.　Bill sang **a song** with friends.　　(Yamashita and Chang 2001: B46)

However, this paper shows that Light NP Shift was available in the history of English until the 18th century, with its frequency being higher than 1%, which I take to be the threshold of grammaticality, following Pintzuk (1999). After EModE, the frequency becomes lower than the threshold, which would indicate that LNPS is no longer grammatical, based on empirical data from Helsinki parsed corpora of historical English.

(3) a. he brouzt wip him peple,

　　he brought with him people

　　'He brought people with him'　　(CMBRUT3,88.2667: M3)

　　b. hys Grace takyng with my herty good wyl the resydue.

(WOLSEY-E1-P1,1.2,9.40: E1)

　　c. ... not to call in to your Assistance any Confident. (STEVENS-1745,25.215: L1)

From the perspective of generative syntax, this article puts forward the following proposals as to how LNPS was lost. First, the loss of LNPS in the history of English was a result of the competition between the underlying principles of NP shift, namely *Given Before New Principle* (Wasow 2002: 03), which entails an information structure effect, and *The Principle of End Weight* (Gundel 1998: 229), which serves as a means to facilitate the phonological parsing of the sentence, with the former becoming dependent on the latter. Second, in terms of economy of derivation involved in language acquisition, LNPS, which involves two steps of movement, became less preferred over time, compared to Heavy NP Shift, which involves only one step of movement, and eventually disappeared.

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英汉接触视角下现代汉语常用词语变异研究

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摘要：汉语与英语的接触历来已久，最早可以追溯到十七世纪。目前，针对英语外来词的研究主要集中在对外来词的界定、译法和构词结构等静态研究上，而如果从英汉接触的视角来看，英语词被"借"到汉语当中并逐渐被广泛使用是一个动态的过程，我们既要关注"借"的方式，也要关注"借"后产生的效果和影响。因此，本文从英汉接触的动态过程切入，以社会语言学、现代汉语词汇学理论为指导，基于一定的英汉接触语料，对现代汉语常用词语的变异类别、特征和机制进行了描写和分析。首先，本文认为，在英汉接触的视角下，现代汉语常用词语的变异主要表现为词义变异、语素变异和词性变异三类，其中词义变异可分为以下两种情况：一是给汉语已有词植入了新义，二是增加了汉语中的同形异义词。另外，我们也对现代汉语常用词语变异的发生动机和实质作用做出探讨。我们认为，英语在推动或决定词语变异方面发挥着重要作用，而汉语自身的发展需求也是促成词语变异的重要原因。最后，本文还提出了关于引进英语外来词和汉语词典标注的建设性意见。通过对英汉接触视角下现代汉语常用词语变异的研究，本文深化了对汉语词汇演变规律的理解，为汉语词汇学和语言接触研究做出了扩展和丰富。

关键词：词语变异；英汉接触；英汉翻译；外来词；语言迁移

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基于词向量的现代汉语语义演化研究

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考察语义变化常见的方法有基于频率、基于词性和基于分布的方法（Kulkarni et al 2015）。基于频率的方法在一定程度上可以反映词在获取或失去一些意义，但会产生许多假阳性结果，即某些词的词频尽管在某个时间段发生骤变，但其语义并未改变。基于词性的方法具有假阳性率低、假阴性率高的特点，对于语言演化不敏感，无法识别某些语言变化。为了检测细微的语义变化，我们需要从词使用的上下文中推断出更深层次的线索。语言学中的分布假设（Harris 1951）认为

具有相似上下文的词倾向于具有相似的句法语义特征（Harris 1954），可以"观词伴而知词义"（Firth 1957）。鉴于此，本研究使用词嵌入将词在不同时间段的上下文映射为向量，将这些不同的向量空间对齐到一个联合向量空间，跟踪一个词在整个嵌入空间中向量表示的变化，以量化词的意义变化。

本研究基于兰卡斯特汉语语料库（LCMC）和北外 ToRCH（Texts of Recent Chinese）系列现代汉语平衡语料库，分别作为现代汉语在 1991、2009、2014、2019 这四个时间点的样本。这四个语料库规模各 100 万词次，取样方案完全一致，可用于考察现代汉语短之五年、长近三十年的语义动态变化情况。

本研究找出在这四个语料库中都出现的词，为每个词构建一个向量空间的位移以反映其语义演化。经可视化分析，研究发现许多典型实词与其上下文词在二维空间中呈线性分布，表明它们在原始高维空间中在某个特征上非常相似或者具有某种相关性。而虚词与其上下文词在降维后的可视化中呈现均匀铺散的分布，表明它们在原始高维空间中具有更多的多样性，可能在不同特征上有更大的差异。部分词汇则出现了从线性分布至离散分布的状态，说明其在这些时间段中出现了语义虚化的情况。

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从"不理解但尊重"的演化看网络流行构式的委婉修辞

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"不理解但尊重"是新兴语言形式。本文以"语法构式→修辞构式→新的语法构式"为考察思路，借助"不理解但尊重"从焦点在后的语法构式演化出焦点在前的修辞构式且进一步发展出半图式构式"不 V_1 但 V_2"的演变过程，分析网络流行构式的委婉修辞认知规律。研究发现，"不理解但尊重"在从语法构式到修辞构式的过程中，实现了"重转&轻转→逆转"的分裂，并在委婉修辞上表现出委婉动因、委婉程度和委婉情态的差异；半图式构式"不 V_1 但 V_2"核心构式义为"虽为客气和礼貌表达微弱的 V_2 态度，但在无奈中真正要表达和强调的是'不 V_1'"，呈现逆焦点特征，其中 V_1 和 V_2 均为积极意义真心理动词，重新分析、类比化和"固化－规约化"是主要形成机制。基于此，研究认为网络流行构式的委婉修辞认知规律可概括为：基于传统中和中庸文化心理，结合青年人日愈包容态度，借助构式不可完全预测性，采用象征移情手段，创造以"不理解但尊重"为代表的新兴语言形式，从而达到委婉修辞目的。

关键词：不理解但尊重；不 V_1 但 V_2；语法构式；修辞构式；委婉修辞

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语言景观是一个新的语言特区类型吗？汉语语言景观文体刍议

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语言景观研究是语言学中近年来新兴的研究领域，主要关注路牌标牌、招牌标语、语音播报等公共空间内的视听符号组合的社会意义。语言景观被视作透视地区语言生活的窗口，其研究也多被置于语言社会学范畴内展开（尚国文 2023）。随着探索的深入，学界不满足于仅对语言景观的表征意义的分析，也从符号学、社会学等多角度对其意义表征过程展开深入探讨。而对意义表征过程的研究的起点则是对语言景观本体的认识。本文立足语言本体研究视角，基于自建语言景观多模态语料库，对语言景观的文体特征与语言创新展开讨论。

研究发现，语言景观文体具有强多模态性、高语境依赖性、空间性、语法隐喻性与语体依赖性五个特征。作为自然语言在特殊场域的使用，语言景观意义实现来源于语言模态符号与非语言模态符号的共同作用，同时又极其依赖于对社会历史语境与情景语境的利用。其内容选择受到空间因素的限制，同时又在文本、话语双重层面对空间进行表征，又多采用"名词化"语法隐喻以实现内容的信息增量与再范畴化，并借此强调被标识物的特征或评价。语言景观内的语法实体从分布上看以短语为主。但以设置者类型/模态类型分析，其实体选择则明显受控于交际时空（以及对应语体），表现为词汇-复句两极差异。

基于对语言景观内容与文体的分析归纳，我们认为其应被视为"语言特区"，即"可以合理合法地突破主流常规语言规则约束的语言运用特定领域"（徐杰、覃业位 2015）。语言景观这一特殊语言使用场域存在大量而显著的语言创新。在"标新立异"这一共同创新动因外，其语言创新亦存在"增加信息量"、"与非语言模态互动以强化信息表达"、"吸引行人注意"等独立动因。语言景观与已有语言特区类型具有部分相似性：从内容与目的上看，与"标题口号"类型相似，皆以简洁内容吸引眼球；从信息生成上看，与"网络媒体"类型相似，皆受到媒介形式的强影响。同样，语言景观的语言创新涵盖词汇、句法、音系等多层面，突出例证有动词转指名词、对仗格式的非常规使用、新句式的产生、对现有词汇的重新注音等。

关键词：语言景观；语言特区；文体特征

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基于大模型的外壳名词在新闻评论语篇中的连贯功能分析

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外壳名词由于其联系名词性概念与实际信息从句的功能从而达到语篇衔接的效果，通过其论元与概念义的语用预设和概述指称功能达到语篇连贯。语篇连贯关系的研究是计算机与语言学交叉学科的重点关注领域，因为语篇分析的关键是对连贯关系进行分析。从语言学角度对语篇分析进行详尽解析，总结出语言材料的普遍规则，再将语言规则和语料转化成计算模型的特征，可用以处理大量语料，如信息筛查、批量处理或主题词提取等。最近，大语言模型的发展已表现出优越的思维链推理、指令遵循与上下文学习的涌现能力。本文则基于大模型——以 ChatGPT 为例，通过数据标注分析外壳名词在新闻评论语篇中的篇章衔接与连贯作用。本研究发现大模型可以通过思维链推理加强对外壳名词及论元概念的理解，正确抽取文本中的外壳名词并基于外壳名词概念义进行评论话语的情感分析。最后，大模型可根据多轮交互中学习到的外壳名词的衔接功能进行正确的句子逻辑推理。在此研究发现基础上，将此连贯机制形式化并初步得出对应的中文语料标注体系，进一步建立中文外壳名词语料库进行语料标注与模型训练。在大模型发展背景下，可帮助提升中文自然语言处理任务的效果，如主题提取、人机对话、智能问答系统与大模型提示词价值观的评测等。

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基于预训练语言模型的汉语典雅度自动测量研究

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现代汉语中形成了口语体、一般书面语体和典雅语体三足鼎立的格局（李宇明，2023），借助量化分析方法探究这些语体的共时表征和历时演变，有助于更好地揭示汉语语言体系的发展规律。然而，现有的语体量化研究多集中于口语体和书面语体，对典雅体的关注不足。为实现汉语文本的典雅度自动分析，本文提出了一种基于生成式语言模型 GPT 的语体特征测量方法，并以此对 1872 年至 1949 年期间报刊语料展开分析，探究白话文运动前后的语体典雅度特征演变情况。

具体来说，我们首先采用古代汉语 GPT-2 模型和现代汉语 GPT-2 模型对语段的成立概率进行估计，分别得到古代汉语和现代汉语困惑度（Perplexity）指标。困惑度反映了模型的"语感"，如模型判定该语段成立概率大，则困惑度指标低。进一步地，本文以古代汉语和现代汉语困惑度比值作为衡量文本典雅度的指标，指标数值越低，表示文本越接近古汉语文言表达，而越远离于现代汉语白话文表达。

为验证指标的有效性，本文采集了文学、新闻、相声等不同类型文本，构建了语段级语料库，并从中随机选取 300 对、共 600 条典雅程度不同的文本片段作为测试集。如果典雅度指标测量结果与文本标签相符，则认为测量正确。在测试集上，该指标取得了 95.67％的准确率，证明其对文本典雅程度的判断能较好地反映人类语感。

接下来，本文将该测量方法应用于历史语体演变研究。我们采集了 1872 年至 1949 年期间的《申报》语料，共计 116 万字符，对文本的典雅度特征展开历时分析。测量结果显示，1919 年白话文运动后语言的典雅度出现大幅下降。进一步分析发现：（1）白话文运动前，生活、商业领域的书面表达已呈现出接近现代汉语的语言特点。（2）白话文运动后，文学书面表达呈现出激进的俗白化语体转向，国际新闻、科普、商业主题的书面表达逐渐向俗白转变，而国内政论文章仍含有较多的文言成分，典雅度维持在较高水平。该组实验结果展现了语言系统内部语体演变的复杂过程，并为典雅语体研究提供了重要的数据和方法支撑。

（CIEL-15 海报展示 编号 P802 展示人：莫凯洁）

基于 PMI 方法的方言分类及特征提取

——以两广地区的粤语为例

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本文选取了中国语言资源保护工程（语保工程）中两广地区 179 个方言点的语音数据，使用 PMI 加权的距离计算方法，对两广地区的方言进行了分类与特征提取，自动化地区分了粤语和地区内的其他方言，并通过方言内和方言外的对比，系统性地报告了方言的自身特征和与其他语言之间的区别。

PMI 方法在以往基于编辑距离的 ASJP 模式的基础上，通过互信息度对编辑距离加权，进一步区分了编辑距离相同的语言间的差异，并可以在音段层面上报告语言之间的语音变异规律及其概率大小，并基于此进行方言的分类和特征提取。

通过以两广地区的方言作为样本进行分析，结果显示：179 个方言点中，无监督的机器学习报告了 52 个粤语点，其主要集中在广西东南部、广东中西部，和

语保工程的标注相比，准确率为 81 ％，和传统的方言分类基本一致。特征提取显示展示了许多具有代表性的方言区分特征，例如：两广地区粤语在音节首中系统性地使用 ʃ 音（包括 ʧ）及其送气音，而地区内其他语言使用 s（包括 ts）及其送气音；粤语中存在大量的复元音 ei/ou，而地区其他语言则通常使用单元音 i/u，此外粤语存在更多的介音 u；音节尾方面，粤语存在大量结尾塞音，如 k、t、p，而地区内其他语言则在对应位置上没有辅音。以上的自动特征提取符合以往方言学研究中的结论，并且可以定量的展示不同典型特征之间的权重排名。

文章通过研究，显示出基于 PMI 方法对于展示和发现方言的相互关系和分类，并系统性地报告方言/语言内（间）的特征变异和区别的情况有良好的效果，可能为方言的分类和特征的描写提供新的技术手段。

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Exploring Language Acquisition: A Comparative Analysis of Human and GPT-2 Mastery of Brocanto2

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Research into the neural mechanisms of language processing and how they might be mirrored in large language models (LLMs) has uncovered some compelling evidence (Karamolegkou et al., 2023; Zhou et al., 2024). Moreover, recent studies have revealed parallels in how LLMs handle linguistic features like word surprisal and syntactic parsing, as observed in neural imaging studies that link model computations with human brain responses. Subsequently, researchers have further substantiated the existence of a potential shared computational framework between humans and machines for language comprehension(Goldstein et al., 2022; Schrimpf et al., 2021) .

However, while much attention has been given to natural language learning, the study of artificial languages has been somewhat overlooked in comparison. Our study seeks to bridge this gap by comparing the learning processes of human participants and a customized GPT-2 model trained on the artificial language Brocanto2. Artificial languages have served as valuable tools in cognitive research for decades, enabling researchers to manipulate and control linguistic variables to elucidate the mechanisms underlying language acquisition (Folia et al., 2010; Reber, 1967; Weiss, 2020). For the present study, we choose language Brocanto2, designed with a structure that mirrors the complexities of natural languages(Brill & Morganshort, 2012). It allows for the generation, articulation, and comprehension of novel sentences within a meaningful

framework. Brocanto2 comprises a concise yet comprehensive lexicon that includes four nouns (pleck, neep, blom, vode), two adjectives (troise/o, neime/o), one article (li/u), four verbs (klin, nim, yab, praz), and two adverbs (noyka, zayma), amounting to a total of 13 lexical elements.

Our research methodology involves several key steps. Firstly, we train a customized version of the GPT-2 model (GPMi) on Brocanto2 and assess its proficiency by comparing its performance with that of human learners. We designed four experiments: Incremental Grammatical Judgment Experiment, Word-Prediction Experiment, another Word-Prediction Experiment, and Continuation Writing Experiment. These experiments aim to provide insights into the similarities and differences in language learning between humans and artificial intelligence systems. Secondly, we endeavor to uncover the shared computational principles underlying the processing of artificial language in both humans and GPT-2 models. By focusing on Brocanto2, we aim to identify the cognitive strategies employed by both entities in acquiring and processing this artificial language. Finally, we intend to contrast these shared principles with those involved in natural language processing, highlighting the divergences and convergences in the cognitive and computational mechanisms employed in learning artificial and natural languages. By comparing how a GPT-2 model learns an artificial language with human learning, we seek to uncover fundamental learning strategies and computational principles. These insights may enhance deep learning models (DLMs) for language processing and deepen our understanding of human cognition.

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分析甲骨文演化在汉语二语教学中的应用

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甲骨文字作为我国可考的迄今为止最早的文字，目前可以算作汉字的祖先（贾胡文明虽在器皿底部等不醒目之处发现与甲骨文中一样的字，但并未证实就是汉字的源头，故不做深究。），其成熟度高系统性强，具有丰富的研究价值。由于上个世纪受到战乱等多因素影响，甲骨损毁、流失繁多，完整保存下来的甲骨数量极少，但其反映的古人智慧与历史文化值得后辈学习和传承，因此专家学

者对殷墟甲骨的保护和研究从未间断。鉴于甲骨难得，故本文通过已有文献资料进行跨学科研究，将甲骨文字运用到汉语的二语教学中，具体为汉字教学模块，力求最大程度教授好中国文字，讲好中国历史故事，传递中国充满古人智慧的精神文明。本文分为三个模块，第一，介绍甲骨文字的概况，主要包括甲骨的历史脉络、甲骨种类、文字内容、内容划分等粗略框架；第二，按先后顺序梳理汉字"六书"并纠正一些固有认知上的误区，如：1.汉字是以"象形→指事→会意→形声"的顺序依次出现，2."形声字"的声符不是为了表音而表音，同时表义，所以汉字是表意文字而非表音文字，3."假借字"是新起字未出现时的短暂历史现象，而非错别字，与"通假字"同样是两个概念；第三，说明甲骨文字在汉字教学中的时机，汉字数量庞大，若每个汉字都用甲骨文的字形辅助教学，无疑是个大工程且影响教学速度，另外，甲骨文字数量有限、可识别的更在少数，汉字一对一教学几乎是不可能实现的，所以教师在授课时可以用少量有意思且契合课程内容的甲骨文字激发学生的学习兴趣，也可以借甲骨文字归纳汉字的部首，减少书写和理解上的错误，还可以利用甲骨文辨析易混淆的字，如"既"和"即"、"竟"和"竞"等。总之，教师因时制宜，充分利用甲骨材料，上好汉语课，弘扬中华优秀历史文化。

关键词：甲骨文；二语教学；汉字

（CIEL-15 海报展示 编号 P901 展示人：许　欣）

语法隐喻视角下的英语动词化现象

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名词化是语法隐喻的核心，将目光聚焦于名词化的研究上较为广泛，动词化也是日常交流中普遍存在的现象，英语动词化现象中不乏演化语言学的相关功能，动词化作为语法隐喻的重要表现形式，相较于名词化而言，一直是鲜受关注的类型，动词化在重新范畴化的过程中，将静态范畴转换为动态范畴，不仅为人类表达思维，认识世界开辟了一个全新的视角，还为人类丰富已有的认知经验构建了平台。本文在系统功能语法的框架下，从语法隐喻的角度出发，探究英语动词化现象的四种类型，结合实例说明相应的转化机制，从而对动词化现象予以阐释。我们将动词化的类型概括为四种：环境成分向过程的转换、连接成分向过程的转换、无人称形式向过程的转换、还有实体向过程的转换。语法隐喻视角下的动词化现象作为人类语言历史演化的产物，可以增强语言的经济性，使语言更形象生动。

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中亚留学生汉语声调习得影响因素探究

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摘要： 随着"一带一路"影响力的提升，中亚留学生对汉语学习的兴趣和需求显 著增加。学习汉语三要素之一是语音，语音作为语言的物质外壳，是汉语学习者 用于交际的必要基础。但对于母语为非声调的学习者是学习汉语的难点和重点，主要是学习者受到母语负迁移的影响，因此在习得汉语声调过程中出现偏误的情况。本文以母语为俄语背景的中亚留学生为研究对象，以汉语双字调为实验语音材料，采用实验语音学的声学实验方法，用Praat软件分析双字调的基频数据，进行归一化处理后，对中亚留学生习得汉语声调进行实验分析，并探究出现偏误的问题。研究主要通过听辨和语音实验相结合的方法寻找偏误规律，再利用对比分析方法对不同水平的中亚留学生进行测试对比，对汉语语音教学提出相关建议，以期帮助中亚留学生提高汉语声调水平。

关键词： 中亚留学生；汉语声调；语音实验

探究新时代国际中文教育培养目标-基于总书记讲话文本分析的启示

马兰

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摘要： 党的十八大以来，党和国家重视我国的国际传播能力建设，做出了一系 列的重要论述。基于总书记系列重要讲话精神的启示，探究新时代国际中文教 育传播能力的培养目标。《中华人民共和国国民经济和社会发展第十四个五年规 划和 2035 年远景目标纲要》明确提出，要提升中华文化影响力，而加强国际 中文教育是提升中华文化影响力的基本路径。本文研究收集到近十年总书记提到加强国际传播的相关重要讲话，并按年份进行分类研究。运用文本分析方法对总书记系列重要讲话蕴含的系统科学思想和系统工程方法进行分析研究，提炼高频特征词探究新时代国际中文教育传播能力的新目标。

关键词： 国际中文教育；培养方案；传播能力；习总书记重要讲话

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认知视角下莎士比亚戏剧中的"死亡"隐喻分析

陈沙君

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　　莎士比亚戏剧中蕴含了大量生命和死亡的隐喻语言，其中《哈姆雷特》中的"死亡"隐喻表达尤为丰富。基于前人的研究，本文对剧中"死亡"概念隐喻进行系统分析和总结。研究采用 Pragglejaz 团队于 2007 年提出的隐喻识别程序（Metaphor Identification Procedure，简称 MIP），以及 Steen 补充发展的 MIPVU（Metaphor Identification Procedure at Vrije University of Amsterdam）程序逐词识别《哈姆雷特》文本中有关死亡的语言表达，发现《哈姆雷特》中有关死亡的语言表达共有 164 处，其中非隐喻性表达有 77 处，隐喻性表达有 87 处。剧中"死亡"的概念隐喻丰富，在莱卡夫和特纳的概念隐喻分析基础上，本文将"死亡"概念隐喻的始源域分为十大类，分别是"财物的损失"、"旅程的终点"、"建筑的倒塌"、"灵魂的解脱"、"受到迫害"、"离开"、"睡觉"、"血液"、"死神"以及"黑暗"，总结发现始源域多为客观物质和实体。这表明，莎士比亚偏向于将具体的实体以及空间变化作为"死亡"这一抽象概念的始源域。该结论证实了本体性隐喻（ontological metaphors）对于人们进行思维认知的重要作用。通过本体隐喻，我们可以对经验做出相应的物质性描写，如指称、量化、分类等使抽象经验带有某类物质的特征，从而将其具化，便于人们理解。同时，隐喻的始源域根植于人的具身体验之中并受差异性的文化模型所制约，致使语言表达形式呈现出不同的特点，并与戏剧人物角色的身份构建和死亡态度息息相关。此外，最基本概念的隐喻结构与该语言所属的文化中最根本的价值观是一致的，概念系统展现了莎翁所处的社会风尚以及灾难和死亡背景。总之，对莎剧中概念隐喻的研究不仅能够为正确解读莎剧的文学内涵提供认知依据，还有助于深入认识概念隐喻在人类认知及文学语言中的基础作用。

　　关键词："死亡"隐喻；莎士比亚戏剧；认知语言

<div align="right">（CIEL-15 海报展示 编号 P904 展示人：陈沙君）</div>

认知具身性与人工智能语言学

张美玉

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随着时代的发展和科技的进步，人工智能领域得到了快速发展，人工智能技术的进步依托于语言学的发展。在人工智能时代，语言学是实现人机交流的重要理论基础，而准确的理解语言的含义，是实现人机交流的关键。现在的人工智能系统，已经能够识别出语音的基本含义，并且可以快速生成话语回应人类的诉求。但是人工智能对于话语更深层次的含义和说话人所富有的情感不一定能够很好地理解并做出最恰当的表达和回应。让机器识别话语更深层次的含义和说话人的真实情感及意图，这是一个需要着重研究的领域，而解决这个问题的一个重要方式就是认知语言学的具身性，人工智能语言学离不开对认知具身性理论的研究，认知具身性理论认为人的认知活动不仅仅是大脑内部的信息加工，而是与身体感知、动作以及环境互动密切相关。我们的认知能力受到身体感知、动作和环境的影响。本文以当前的人工智能语言为例进行分析，探讨了具身性理论的特点。通过学习认知具身性理论可以让人工智能系统理解说话者的心理状态和当前所具有的情感，最后实现人工智能对语言表达的精准认知和理解，判断出说话人的真正意图，来做出更准确的回应。研究认知语言学具身性的特点不仅可以促进认知语言的全面发展，还可以促进人工智能领域更好的发展。

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汉语动趋构式交替的多变量建模及心理现实性研究

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本研究在运动事件框架下，基于大规模语义角色标注数据，结合多因素分析方法，归纳汉语动趋构式"V 进/入"交替使用的原型特征。研究基于 7 亿字符现代汉语语料库，通过穷尽性检索获"V 进/入"构式用例共 155,842 条，之后借助显著共现词分析，筛选出与构式关联强度大于 6.63（即 P 值小于 0.01）的语例 146,276 条。由于筛选后的语料库体积庞大，本研究随机抽取 5000 条目标句进行人工标

注，其中包括 1 个语言外部变量（语域），以及与句法和语义相关的 8 个语言内部变量。标注完成后，本研究以时期和槽位动词为随机效应，建立广义线性混合效应模型，筛选出对动趋构式交替有显著影响的因素并观察各因素间存在的交互效应。考虑到变量间存在的多重共线性对回归模型预测力的可能影响，本研究分别建立条件推理决策树和随机森林模型，得到影响动趋构式交替的显著因素及其重要性排序，并借助多重对应分析方法，从基于样例的概念空间考察汉语动趋构式"V 进"和"V 入"用法的交替现象，最后采取强制选择任务实验，对语料库概率模型的心理现实性进行交叉验证。

研究发现：1）"V 进"和"V 入"的扫描方式分别为次第扫描和总括扫描。典型容器倾向于选择"V 进"，非典型容器倾向于选择"V 入"。相较而言，"V 进"构式多用于文学和口语语体，常表征自移事件，凸显位移终点。"V 入"构式多用于科技文献，常表征抽象位移，位移方向多为纵向。宾语长度越短，槽位动词的词频越低，越倾向于选用"V 入"构式。位移真实性、语体、词频、构型、方向以及目的地可预测性是影响两构式交替使用的显著因素。2）"V 进"与"V 入"构式对运动事件的范畴化呈现边界重叠模式：二者的概念空间相互重合，范畴边界模糊，"V 入"构式对"V 进"构式的替换性强。3）行为实验结果显示，语料库概率模型一定程度上能够反映和预测本族语者的构式选择行为。

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网红养成记：语用身份论视域下的抖音网红"人设"塑造

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新媒体时代，媒体融合进入全面发展新阶段，文化产业数字化发展势头强劲，互联网专业内容生产展现蓬勃生机，短视频经济处于战略机遇期和关键窗口期并呈现加宽态势。网络红人在社交媒体上打造"人设"博取关注度，进而实现经济效益的转化。"人设"由主体人物塑造、媒体语境展示与目标受众反馈三部分组成。

从语言学角度来看，"人设"在构建方式、构建内容以及表现说话人主观交际意图等方面与"语用身份"存在高相似性。在语言学的视角下，"人设"更像是"语用身份"在移动互联网时代的外延，是"语用身份"得以稳固化、模式化建构的产物。其建构过程由人设主体的多模态隐喻建构、媒体语境的身份"品牌"产业化建构与受众主体的多元解读三个部分组成。"人设"是明星、网红以及公众人物等在特定交际场合塑造的特定身份，具有更强的稳定性，其建构过程亦具有极强的策略性与盈利性。社交媒体拓展了语言交流的场域，云端的间接沟通使得"人设"建构的语境更为复杂。同时，虚拟语境下人数众多的受众群体的选择性解码译码也增加

了"人设"被多元解读的可能性，对受众多元解读的分析也成为"人设"建构的重要一环。

关键词
    语用身份、抖音网红、人设塑造

（CIEL-15 海报展示 编号 P907 展示人：高世宇）

外国留学生汉语致使交替动词论元结构习得研究

徐芸芸

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本研究采用可接受度判断考察外国留学生汉语致使交替动词论元结构的习得情况。SPSS 结果显示：1）论元数量显著影响外国留学生汉语致使交替动词论元结构的习得，高、低水平学习者对一元动词的习得情况均显著好于二元动词；2）论元结构的可交替性显著影响高水平外国留学生习得汉语致使交替动词，致使交替动词习得情况显著差于论元非交替动词，而论元结构的可交替性对低水平学习者无显著影响；3）汉语水平显著影响外国留学生汉语致使动词的习得，高水平留学生汉语致使交替动词的习得情况显著好于低水平留学生。文章将从母语类型、句法语义接口、语言标记性等方面多对研究结果进行分析与解释。本研究结果可在一定程度上验证"论元结构复杂度假说"在多语加工中的适用性，加深对汉语致使交替动词论元结构的句法语义特征的理解。此外，本研究可为汉语二语和多语习得理论提供经验实证，并对对外汉语教学具有一定启示意义。

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频率对偏正结构"N+V"中"V"词类性质的影响

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汉语"N+V"结构中 V 的词类性质一直被学术界讨论，争论的焦点在于"N+V"中的 V 的词类性质如何，V 是否在进入结构后发生变化。一些研究认为 V 发生了名物化或名词化，另一些研究认为 V 仍然是动词。但这些以往的研究多是基

于典型案例或特定理论进行逻辑推演式的探讨，实证研究还不是很多；并且已有研究表明词频会对名词和动词的加工产生影响。对此，本研究采用行为实验方法，从心理加工视角探究偏正结构"N+V"中 V 的词类性质以及中心语词频对性质判定的影响。实验 1 采用词类判断实验，考察不同频率的双音节名词和动词在单独呈现条件下的加工机制。结果表明，无论是高频词还是低频词，名词和动词的加工在反应时和正确率上都存在显著差异，说明名词和动词在词库中是分离的。实验 2 采用词语搭配实验，考察名词和动词作为偏正结构"N+X"中心语时的加工情况。结果显示，在低频条件下，作为中心语的 V 与 N 的加工不存在差异；在高频条件下，作为中心语的 V 与 N 的加工存在显著差异。这表明，V 在进入偏正结构"N+X"后会发生变化，这一变化与中心语的频率有关。当动词中心语为高频词时，"N+V"中的 V 仍保留一定的动词性，与名词存在显著差异；当动词中心语为低频词时，V 发生了名物化或名词化，"N+V"变成了"N+N"。本研究为汉语偏正结构"N+V"中 V 词类性质的判断问题提供了客观依据。

关键词：偏正结构"N+V"；频率；名词；动词

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探究网络语言中语义漂白的原因与影响

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语义漂白(Semantic bleaching)指词汇中意义的丧失或减少，也被称为语义损失、语义减少和语义弱化，例如，英语单词中 horrible 或 terrible 等词汇原本意味着"引起敬畏"或"充满奇迹"，但人们常常夸大其词，会在没有达到恐怖或令人惊叹的情况下使用这些词汇，导致这些词失去或被弱化其原有的严肃意义。

本研究以语义漂白为理论基础，来探究网络语言中语义漂白的原因与影响。之所以选择以网络语言为研究对象，是因为网络交际方式也不断丰富和多样化，在网络交际活动中，越来越多的人逐渐形成了较为独特的交际方式，众所周知的就是网络用语的使用。然而，随着各类自媒体和网民在网络上的活跃程度越来越高，各类夸张用语层出不穷，使得部分词汇和表达偏离原意，加速了语义贬值和弱化的速度，也弱化了信息的真实性和权威性。不仅如此，人们过度使用甚至滥用某些词汇，创造出了许多晦涩难懂且生命周期极短的新词汇。例如，近年来人们常用"绝绝子"来表达对于某物的赞叹，后又出现"百年一遇"、"千年一遇"等词汇。

本研究首先列举出有关于语义漂白的案例并加以分析。其次，就各类案例从语言发展历程、说话者的心理等角度分析该类现象产生的原因，论述该变化背后

的语言学理论基础。最后，本文通过举例，分析语义漂白对于人们日常交流交往的影响，阐述语义漂白对于人们日常交往交流的利与弊，并结合时代发展尝试预测今后语义漂白的发展变化。本研究探究当前流行用语变化的原因，深入分析并用举例加以说明，基于网络用语更新迭代较快的特点，证明夸张的网络用语对于人们的实际交往弊大于利。

关键词：语义漂白；言语交际；网络语言；影响；原因

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祈使句式"给我 VP"研究及祈使标记"给我"的形成

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祈使标记是一种特殊的符号标记，该标记只在祈使句中出现，出现时会改变原祈使句的句法、语义、语用方面的特点，从而使得句子表达出说话人的言者态度、情绪、倾向的特殊成分。如"你把东西拿给我。""你给我坐下！"这两个祈使句的"给我"分别是表达引介功能的介宾短语和表达言者情感态度的祈使标记。"给我"在句中存在多种语义理解可能性，从而"给我 VP"句式也具备了多种理解。通过在共时状态下对"给我 VP"文本例证的排比，我们得出了该"给我"的共时表现状况，结合下文例证，我们认为"给我"可以分为三类，分别是动宾短语（a）、介宾短语（b）、祈使标记（c）。

（a）"你给我看看！"—（b）"你给我说说！"\"你给我做饭！"—（c）"你给我坐下！"

鉴定"我"和 VP 的相关性程度有以下三个标准：一是"给"的词性；二是"给我"的移位情况；三是 VP 的客观结果和"我"之间是否能建立客观事理逻辑联系，即要考虑 VP 和"我"的语义特征和全句的语境因素。我们据上述三个标准建立了"给我"+VP 的分析示意图。
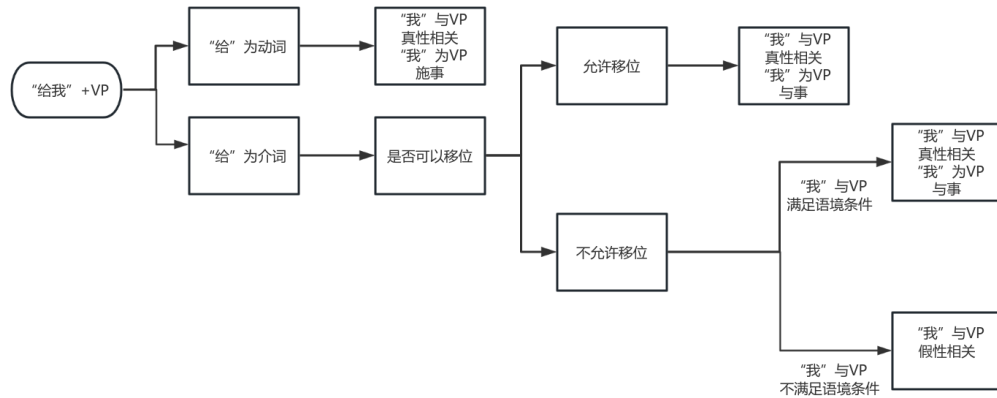
"给我 VP"中的"给我"发生语义变化的原因，一是该句式多出现在口语语体中，多被理解为祈使句，表达祈使功能。而"给我"的语义和祈使句语境本身带有的"给说话人做一件事"的语义产生了羡余，这是"给我"语法化、标记化的句类条件，是"给我"的情态意义的来源，也是"给我"的引介功能弱化的原因；二是"给我"高频出现在谓语动词前，这个句法位置相比起"VP 给我"而言，出现在 VP 前时"我"的论元角色便不被 VP 严格限制，具备了不与 VP 发生实际关系的可能性，这也为"给我"的引介义弱化、情态义增加提供了语义层面的条件；三是特殊话语意义反复出现时会被规约化并进一步语义化、词汇化；四是"给我"作为祈使标记时，"我"在语流中的语音长度的缩减所带来的弱化具体对象，强化言者态度的影响被固化。"给我"正是在上述四个原因的驱使下，从动宾短语表达引介功能发展为了表达言者态度的祈使标记。

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A Unified Treatment of the Scalar and Non-scalar Use of Mandarin Additive Particle *ye* 'also'

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This paper provides a unified treatment of the scalar and non-scalar use of the Mandarin additive particle *ye* 'also' syntactically and semantically. We begin by presenting empirical data about additive and scalar *ye*: (i) the focus-sensitive property

and the basic additive meaning; (ii) movements in *ye* sentences; and (iii) presuppositions of *ye* sentences. Then, following Quek & Hirsch (2017) and Sun (2021), we propose a new version of the bipartite structure without the [EPP] feature to represent the syntactic construction of *ye* sentences. Specifically, *ye* is an AdvFoc head which is adjoined somewhere to the syntactic spine, and the distinction between additive and scalar readings comes from the fact that the focus-selecting head Q (see Cable 2010) carries different uninterpretable features, [uF: ALSO] for the additive reading and [uF: EVEN] for the scalar reading. The scalar Q can also be phonologically realized as *lian* 'even' in Mandarin. In the whole scenario (1), there is only one syntactic position for additive and scalar *ye*, and thus we argue against the two-position proposal mainly proposed by Hole (2017) and Yang (2019). Semantically, *ye* triggers different kinds of presupposition, which can be formally described in a higher-order unification framework (2) following Winterstein (2009). The scalar reading is derived by combining the semantic contributions of *ye* and the extremity-introducing marker *lian*. This treatment solves the puzzle of obligatoriness of scalar *ye* in a non-Gricean way.

(1) The syntax of *ye*:

$[_{FocP} Foc_{[iF:\_]}\ [_{vP}\ ye\ [_{vP}\ \ldots\ [_{QP}\ Q_{[uF:\ ALSO/EVEN]}\ [FP]_F\ ]\ ]\ ]\ ]$

(2) The semantics of *ye*:

Additive *ye* serves as an operator with two arguments: its host S and its associated focus F, and the meaning of an utterance U in the form *ye* (F, S) is a combination of the following: (i) Shared (F) = S; (ii) Context (C); (iii) Shared (A) = C; and (iv) A ≈ F.

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Acquisition of Cantonese Sentence-Final Particles by Cantonese-English Bilingual Children

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In the field of bilingual language acquisition, it remains debatable whether the bilinguals' acquisition of each language is comparable to the monolinguals' acquisition of the corresponding language. This study explored this issue with a focus on the production of Cantonese sentence-final particles (SFPs) by Cantonese-English bilingual children and Cantonese monolingual children. As a unique feature of Cantonese, SFPs serve various pragmatic functions, such as indication of type of speech act and expression of attitudes and feelings (Luke, 1990).

This study adopted a corpus-based approach and used longitudinal data to test the acquisition sequence of bilingual and monolingual children. Two bilingual children and two monolingual children were selected from the Child Language Data Exchange System (CHILDES; MacWhinney, 2000). The bilingual data and monolingual data were collected from the CHILDES Cantonese-English Yip/Matthews Corpus (Yip & Matthews, 2007) and the Cantonese Lee/Wong/Leung Corpus (Lee et al., 1996), respectively, and the data covered the period from two years and four months (2;04) to three years old (3;00). The extracted Cantonese SFPs were coded according to their functions: "Questions", "Assertions", "Imperative and persuasive", "Epistemic", "Exclamation", and "Others". To facilitate the analysis and to determine the development trend, the data were divided into three stages. Number of occurrence of SFPs, number of occurrence of forms and functions, and erroneous and unusual SFP forms were counted and compared between the two speaker groups.

It has been shown that the occurrence of SFPs was higher in the monolingual children's production. Also, the SFP forms used by monolingual children were more abundant than those of bilingual children. Another observation is that the SFPs of the "Question" function appeared frequently in the period of investigation. According to the results, the relationship between family language environment and SFP acquisition was not conducive for children to acquire Cantonese SFPs from 2;04 to 3;00; rather, there seemed to be a language bias that delayed the development of Cantonese SFPs.

Compared with the bilingual children, the monolingual children uttered more SFPs in their spontaneous speech, which may be explained by the more uniform linguistic input they had been exposed to. However, both groups demonstrated similar patterns in their acquisition of SFPs. For example, for both groups, "aa3" is the earliest acquired SFP, and "Assertion" is the earliest acquired function. In addition, both groups started to produce "Questions" at 2;07.

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汉语无争议信息标记小词研究

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　　"共识（shared knowledge）"存在于任何一个人类社群内部，随社群历史文化资源的积累发展不断产生和更新，并深刻影响着社群活动（joint activities）中参与者们的行为。作为社群活动的一种，"谈话互动"中会话人的话语行为也受相关共识制约。在同一个知识社群（epistemic communities）内部，会话参与者们往往默认彼此已取得相关知识领域的共同认识（Sidell，2011），即相关信息被认为是"无争议的"。这些话语中的无争议信息既包括文化积淀形成的习语、谚语等"典型共识"，也包括可供说话人回溯的先前谈话互动过程中积累的信息或知识。受到语言的主观性（subjectivity）本质影响（Benveniste，1958/1977:230），信息的"无争议性"也不可避免地烙上说话人的主观印记，"无争议信息"实为"说话人认为无争议的信息"。

　　世界上许多语言为信息的无争议性质提供了标记手段，Panov（2020）将此类标记归于语言的"无争议信息范畴"（enimitive），并将汉语官话中的"嘛"列为无争议信息标记。当前学界对"嘛"的研究主要可以分作两类：第一类为"显而易见说"，围绕"嘛"标示说话人视角下信息的"显而易见"（吕叔湘，1980/2002:279；Chappell，1991；房玉清，2008:410;郭红，2012 等）和"所涉命题具有真实性"（Li，2004:21；赵春利、杨才英，2016；崔希亮，2019 等）展开研究；第二类为"预设说"，探讨"嘛"表明的说话人对听话人存在"应该知道某事"的预设（赵元任，1968/1979:357；朱德熙，1982:213；胡明扬，1987:90；强星娜，2008；徐晶凝，2008:177；赵春利、杨才英，2016；王珏，2021 等）。本文认为，这两类观点的前提均为说话人将"嘛字句"所涉及的知识和信息视作"无争议信息"，因此，"嘛"的根本性质为"无争议信息标记小词"。

　　本文运用语义地图研究方法，结合汉语官话和方言的相关研究成果，力图对汉语官话和方言中的无争议信息标记小词进行更微观、细致的研究。共时层面，本文参考 Panov（2020）提出的适用于跨语言考察"无争议信息标记"的典型语境进行问卷设计，以问卷调查的形式考察了汉语官话中的"嘛"在晋语、湘语、赣语、客家话、吴语、闽语和粤语七种方言中的对应情况，探寻各样本语言中无争议信息标记小词的功能差异及引申与扩展现象，并构拟各样本语言的语义地图。历时层面，本文主要针对汉语官话的无争议信息标记历时演变过程进行考察。

　　本文的主要结论为：共时层面，各样本语言的"无争议信息标记小词"均具备

"单纯标记无争议信息"和"对比标记无争议信息"功能,因此这两种功能处于无争议信息标记概念空间中较核心的位置,是此类标记的核心功能,"预期内容"和"不耐烦命令/请求"则可能是引申和扩展功能。历时层面,汉语官话中,疑问语气词"麼"扩展出"标记无争议信息"的功能,加之"me"和"a"合音的音变趋势影响,两种功能分别由音"ma"的"吗"和"嘛"承担。本研究成果能够为"无争议信息标记"的演化语言学和类型学研究提供更丰富的语料和更微观的视角。

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汉英时间方向认知对比

包容

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汉语和英语各自的时间方向，以及汉英时间方向相同和相反是学界争论不休的议题。基于时空隐喻，学者们对汉语和英语水平轴的时间方向"前"、"后"的指向展开诸多研究。汉语和英语的时间方向词"前"和"forward"既可以表示过去也可以表示未来，而"后"和 "back" 也既可以表示过去也可以表示未来（Clark, 1973; Lakoff and Johnson, 1980）。此外，汉英的前后时间方向有时是一致的，有时是不一致的。

学界关于时间前后方向的单语、双语或多语的对比研究，以及双语者在第一语言和第二语言中对前后时间方向便好差异的研究，大多是基于自我在动和时间在动的两种时空隐喻视角的偏好进行讨论。

基于时空隐喻理论的时间在动和自我在动两种视角是影响时间方向认知的重要组成部分，但是不足以涵盖所有的时间方向参照模式和认知模式。但是仅仅将语言的时间方向认知视为自我在动和时间在动的二元对立是有一定局限性的，这种观点忽略了参照模式在时空认知系统总的选择和转换策略的重要性（陈忠，2021）。

自我在动和时间在动都是以观察者自我为参照，自我在动视角下未来在前，过去在后，时间在动视角下，过去在前，未来在后。英语"a few days back"中 back 的方向是过去，但是自我并未移动。汉语"几天前"中，前的方向是过去，时间也并未移动和改变，而是从现在的时间点向先前时间段延长。此时，时间是向过去移动还是向未来移动似乎都无法完美的解释。

因为除此之外还有以时间序列的先后顺序作为参照的时间参照模式，表征时间的早和晚。英语中更容易激活自我的视角作为参照，时间序列参照模式并非英语的优势参照模式，在汉语和英语时间方向的研究中往往忽视该参照模式。汉语中时间序列的参照模式是优势参照模式（陈忠），所以汉英时间方向对比研究应该重视以客体时间作为参照的认知模式。

本研究基于时序参照模式和自我参照模式，对汉英的前后时间方向一致与否的条件和动因进行研究发现，汉英优势参照模式的不同是汉英时间方向不一致的根本动因。

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构式语法理论视域下中国《政府工作报告》（2014-2023）英译本句法复杂度研究

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认知科学日渐兴起，认知翻译学也越来越受到学界重视，但是基于构式语法的翻译研究仍不多见。中国《政府工作报告》及其外译是我国向国际社会塑造国家形象的重要途径，现有研究多从词汇与语篇层面进行分析，鲜少从构式语法的视角下对其英译本的句法复杂度进行认知分析。因此，本文在基于构式观的翻译过程认知模式下，自建中国《政府工作报告》（2014-2023）汉英平行语料库和美国《国情咨文》（2014-2023）对比语料库，利用陆小飞（2010）设计的二语句法复杂度分析器（L2 Syntactic Complexity Analyzer）测量计算中国《政府工作报告》（2014-2023）5 个维度下的 14 个句法复杂度指标，并利用 SPSS 26.0 分析其与美国《国情咨文》的句法复杂度差异，从而对中国《政府工作报告》（2014-2023）英译过程中的句法处理做出系统描写。最后分析构式语法在《政府工作报告》英译过程中发挥的作用，运用魏在江（2020）提出的整体原则、凸显原则、互动原则、多义性原则四项翻译原则阐释中国《政府工作报告》英译过程中的句法复杂度差异，由此论证构式语法对中国《政府工作报告》英译的理论指导作用，以期为我国政治文献外译的理论与实践研究提供新的启示。
关键词：构式语法；中国政府工作报告英译；翻译原则；句法复杂度；翻译构式观

（CIEL-15 海报展示 编号 P916 展示人：温家育）

"X 不了一点"的构式化研究

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"X 不了一点"构式兴起于网络，并在日常口语中被高频使用，本研究拟对"X 不了一点"的形式、意义和来源做详细讨论。"X 不了一点"构式源自能性述补结构"V 不了(O)"，但构式义更丰富，呈现出高度主观化的特征。在形式上，"X"多为 V（P）或 A（P），同时也有少量 VO 和 VC。"X"的选择一是动作性很强的词，

二是表心理活动或状态的动词或形容词，三是具有明显褒义与贬义的形容词。"X不了一点"前常出现"真（的）""真（的）是"等状语，兼具表确认和表强调的功能。在意义上，"X不了一点"的构式义可以归纳为：说话人认为X这件事的实现可能为最少，对X的不可实现性进行强调，从而传达出自己鲜明的褒贬情感态度。该构式可以用力动态模型来解释，主力体是说话人，抗力体是说话人自身感受到外界的要求而产生的心理状态。当抗力体促使主力体运动，主力体自身固有的力远大于抗力体的力，因此相互作用的结果是保持静止，且有主力体向抗力体施加力的倾向。从历时角度上看，"不了"最早出现于西汉时期，意为不了解、不明白，做句子的谓语；六朝开始，"了"具有结束、完成的意思，"不了"意为未完、没完，可以做谓语的补语，该用法一直持续到南宋，但这一时期"不了"主流用法仍是表不明白；元朝因元曲艺术的兴盛，"不了"表完成的用法骤增，且出现"不了"直接表否定的用法，进入了"V不了（O）"结构，V基本为及物动词，该用法一直持续到现在；"V不了（O）"结构中O可以用数量短语"一点"修饰，表小量与低程度，能强调"V"的实现可能性为最小。在语言的使用中，因"V不了（O）"的否定焦点可以放在量度补语"一点"上来凸显出言者强烈的主观性，受语言经济性原则、修辞功能及韵律的影响，V的宾语O可以省略而不影响语义，"一点"逐渐凸显，O进行脱落，演化为"X不了一点"，至此构式化过程完成。

关键词：构式语法；构式化；主观化；力动态理论

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布拉格学派与新布拉格学派的音系中和：马丁内音系学思想再思考

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新时代背景下，语言学界对布拉格学派的研究不断推进，钱军（2016）出版了对布拉格学派历史贡献的全新阐释。此后，关于马泰修斯（2018，2020）、特鲁别茨柯依（2015， 2022，2024）等布拉格学派核心人物的译著相继出版。法国语言学家本维尼斯特（2019，2020，2023）的著作近年也陆续译出。然而，学派在法国的最重要成员之一马丁内在音系学领域的思想始终未得到深入论述。在布拉格学派的影响和启示下，马丁内形成了以功能性、相关性和经济性为中心的新布拉格学派，对语言的一切现象皆基于上述思想指导进行研究。在音系对立中和领域，马丁内并未像特鲁别茨柯依般对中和类型进行详细刻画，他对于中和的态度始终基于功能性、相关性及经济性，将中和类型分为理想性中和和非理想性中和，后续提出部分互补中和（Martinet，1980），并认为对于中和的分类还需要

考虑拼写方法和词形变化的影响（Martinet, 1936）。此外，马丁内还提出"专有关系"这一术语（Akamatsu，1988），补足了特鲁别茨柯依对可中和对立项仅可为双边对立和可中和音位数量仅为两项的缺陷。本文聚焦音系对立中和现象，对比以特鲁别茨柯依为代表的布拉格学派和以马丁内为代表的新布拉格学派在中和理论构建上有何异同，并揭示马丁内核心思想对其理论发展的影响和指导作用。

关键词：布拉格学派；新布拉格学派；马丁内；语言学史

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The Influence of the Hypothetical Context and Epistemic Modality on Inference Processing in Sentence Comprehension

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Hypothetical thinking and the use of a linguistic-symbolic system to communicate experiences that depart from the here and now have been recognized as the most important manifestations of human intelligence. According to Construal Level Theory, compared with factual events, hypothetical events are psychologically distal due to a lack of embodied experiences. In terms of hypothetical inferences, Hypothetical Inferential Theory claims that hypothetical inference-making involves an analytic and effortful process of pragmatic reasoning, which requires more world knowledge and consumes more attentional resources. On the other hand, previous research has found epistemic modality modulates inference processing within different contextual constraints. However, the interaction between epistemic modality and a hypothetical context in inference processing has not received any attention from language-processing research. With this background, this paper aims to shed preliminary light on the neurocognitive mechanisms of inference processing in a factual and a hypothetical context and of epistemic modulation in inference processing in factual and hypothetical contexts, by combining the behavioral and ERP experiments.

To manipulate factuality of the context and certainty of epistemic modality (EM), sentence type (Chinese causal sentence: factual context vs. Chinese hypothetical conditional: hypothetical context) and adverb type ("jiangyao": high certainty of EM vs. "jianghui": low certainty of EM) were selected as independent variables, forming a 2×2 design. In the behavioral experiment, the reaction times of sentences under the high EM certainty condition have been shown to be significantly longer than those under the low EM certainty condition. In the ERP experiment, (1) compared with hypothetical conditionals, causal sentences have been found to elicit larger N400 responses, while hypothetical conditionals have been found to elicit larger P600 responses than causal sentences, but both of the two effects were significant only under the condition of low

certainty of EM. (2) Under the low EM certainty condition, hypothetical conditionals evoked an extra emotional P600 with a frontal-central distribution. These findings indicate that (1) in sentence processing, factual, causal inference is associated with early semantic integration while hypothetical inference is associated with a later stage of syntactic integration and reanalysis, related to pragmatic processing. (2) Epistemic Modality with varying certainties modulates the probability of the inferred consequent as well as the amount of emotional resources in inference processing. In general, this study supports Construal Level Theory and Hypothetical Inferential Theory.

Keywords: Hypothetical context; Epistemic modality; Inference; ERPs

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Sequence makes a difference? Effects of Differential Blended Instructions on English Word Stress Perception by Chinese Teenager Learners

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Previous studies highlighted the challenges faced by non-native learners in acquiring native-like word stress of English. If an L2 learner failed to perceive speech accurately, it was likely to worsen his/her L2 comprehensibility and intelligibility. This study delved into the impact of two blended instructions with differential sequences (explicit and then implicit instruction, EI; implicit and then explicit instruction, IE) on English word stress perception by Chinese teenager learners of English, aiming to identify the possibly better blended instruction sequence. It also explored whether there is potential correlation between the instructional effects and memory systems.

The present study develops three related research questions: 1) What are the differences of instruction effects of EI and IE on the perception of English word stress? 2) What are the differences of persistence (retention) effects of EI and IE on the perception of English word stress? 3) What are the reasons of the possibly varying effects of EI and IE in this learning process? A longitudinal experiment, lasting around 5 weeks in total, was designed to seek the answers, with pre- and post-tests separated by the training/instruction phase. The test materials consisted of 15 English noun-verb word pairs in which 10 pairs served as the trained items and 5 pairs were the untrained items.

Eighty Chinese high school students were recruited as participants, with forty

receiving EI and an equal number receiving IE. All participants showed no significant differences in age, the cumulative years of learning English, vocabulary size, and L2 proficiency. Their perceptual accuracy and reaction time were measured and analyzed using the mixed-effects models across the pre-test and the immediate and delayed post-tests. The multiple regression models were conducted to examine the relationship between teenager learners' perceptual performance and their declarative/procedural memory capacities.

Results showed that there were significant improvements in word stress perception through blended instruction, with the group of IE displaying better persistence effects. Besides, word stress perception improvements by EI were positively correlated with declarative memory, while perceptual improvements by IE exhibited a positive correlation with procedural memory. This study exhibited that the sequence of blended instruction led to differential learning and generalization effects, and suggested that IE could be more suitable for the improvements of word stress perception by Chinese teenager learners. Our findings lent support to the effectiveness of blended instruction, and provided the empirical evidence for the prediction of Declarative/Procedural Model on non-native language learning. Both pedagogical implications for typical and atypical populations were discussed.

Keywords: blended instruction; English word stress; perception; teenagers; development

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The Effects of Explicit and Implicit Instruction on English Diphthongs Acquisition by Chinese Junior-high School Students

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The accurate recognition and production of different vowels are crucial for acquiring authentic English pronunciation. Due to typological differences in languages, English diphthongs have long been a challenge for Chinese English learners. In recent years, explicit and implicit instruction have become hot topics in foreign language education research, with studies primarily focusing on teaching grammar, writing,

reading, and the like. There has been little exploration, however, of the effects of explicit and implicit instruction on phonetic acquisition, particularly in segmental features. Numerous studies have found that Chinese learners encounter significant difficulties in the pronunciation of English vowels, especially diphthongs. This article, based on the Speech Learning Model and the Declarative/Procedural Model, investigates the impact of explicit and implicit instruction on the acquisition of English diphthongs among Chinese junior high school students. The study aims to address three research questions:

(1) What effects do EI and II have on English diphthong production by Chinese junior-high school students ?

(2) Do Chinese junior-high school students generalize the phonetic cues of the trained English diphthongs to non-trained ones of the same category ?

(3) What are the underlying reasons for the effects of explicit and implicit instruction?

The present study selected two naturally occurring classes at the first-grade level in a junior high school in Panzhou City, Guizhou Province, China, with similar language proficiency. These classes were randomly assigned, with one being designated as the explicit instruction group and the other as the implicit instruction group. The experiment spanned eight weeks: in the first week, a survey questionnaire was administered to identify 30 participants from each class for statistical analysis; in the second week, declarative and procedural memory tasks were conducted; the speech production pretest was administered in the third week; from the fourth to the seventh week, three instructional interventions were conducted each week; the production posttest was administered in the eighth week.

This study employed Praat to extract relevant phonetic parameters from pretest and posttest recordings, including the total duration and transitional duration of diphthong pronunciations, the average intensity of the onset and offset phrases, the mean values of F1 and F2 in the onset phrase, and the mean values of F1 and F2 in the offset phrase. Statistical analysis was conducted using RStudio 4.3.2, which derived three target parameters: transitional duration ratio, intensity ratio, and mean values of F1 and F2 in the onset and offset phrase. Subsequently, descriptive statistical analysis, linear mixed-effects models, and multiple linear regression analysis were performed. Visual presentations were created using RStudio 4.3.2 and Origin 2021. Through data analysis and graphical observation, the following conclusions were drawn:

1) Explicit instruction and implicit instruction effectively enhance students' diphthong pronunciation. Explicit instruction outperforms implicit instruction in improving the transitional duration ratio and the intensity ratio. Conversely, implicit instruction is superior to explicit instruction in improving the mean values of F1 and F2 in onset and offset segments of diphthong pronunciation.

2) Both explicit and implicit instruction have generalization effects on improving transitional duration ratio and formants, with explicit instruction having a superior generalization effect. Explicit instruction also has a generalization effect on improving intensity patterns, which is not observed in implicit instruction.

3) The effectiveness of explicit instruction relies mainly on students' declarative memory, while the effectiveness of implicit instruction relies on students' procedural memory.

Based on these findings, this paper amalgamates theoretical and practical foundations to provide a comprehensive range of pedagogical implications for English classroom instruction in China. Moreover, it specifically addresses the needs of Chinese junior high school English teachers by offering theoretical and practical bases for effective phonetic instruction.

Key Words: Explicit instruction; implicit instruction; junior-high school students; English diphthongs; Declarative/Procedural memory

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延迟回答是不愿意吗？——话轮转换时间对会话者意愿推断的影响

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在涉及请求言语行为的会话中，会话延迟是非常常见的现象。基于会话分析和会话含义理论，普遍认为会话延迟意味着被请求者对于接受请求的意愿较低或抗拒的想法。但理论分析无法回答以下问题：（1）是否随着会话延迟程度的增加，所感知到的真实意愿也随之改变；（2）在不同极性（积极、消极和中性）回答下，延迟程度对意愿感知的影响有何区别。本研究通过三个行为学实验回答以上问题，以偷听范式为实验任务，设计了 3 种话轮转换（快速转换，正常转换和延迟转换）情况，要求被试在听完会话后对会话者的真实意愿进行评分。结果发现，会话延迟在影响真实意愿的感知过程中，表现出普遍性和特异性相结合的特点。前者表现为在三种极性回答下，均显著地影响了被试的判断；后者表现为在积极回答下，延迟效应更强、更早，而在消极和中性回答下，延迟效应更弱、更晚。我们认为，会话延迟效应的普遍性体现了跨语言、跨材料的一致性；差异性则和优先回答、非优先回答在会话中的时间分布以及社会赞许性有关。本研究首次揭示了在请求

言语行为中，会话延迟对会话者真实意愿影响的特点，一方面为语用学理论和观点提供了实证证据，另一方面有助于思考会话者真实意图和语言形式选择之间的关系。

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汉语 VV 型复杂谓语类型和结果构式浮现过程研究

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从广泛的认知语义层面上看，动词是表示事件的。在语言学中，事件在很大程度上被认为是一个真正的本体论范畴，当代语义学中对事件的特殊兴趣来自于事件和动词之间的密切联系。其中由两个以上动词成分构成的复杂谓语(complex predicate)的语义组合关系、语法地位和事件结构类型是相关。VV 结构（例如"打死、考砸、吃光、织大了"）是汉语中一种常见的复杂谓语形式，其内部并不是同质的，而是具有着不同的语义组合和指向关系、语法功能、时间序列和事件结构。从语义组合上看，不同的 VV 构式可以分别表达目的、结果或者过度结果等，例如"阿姨洗干净了衣服"和"奶奶织大了毛衣"，前者表示谓词的客观结果，后者表示结果偏离预期的过度义；从语法功能上看，不同类型的复杂谓语构式具有不同程度的及物性，同时内部两个动词的语法地位也通常存在差异；在事件结构中，不同类型的 VV 复杂谓语构式处在从复合事件到单一事件的连续统之中。本文首先以 VV 型复杂谓语为研究切入点，系统地探索汉语复杂谓语动词语义融合的句法、语义机制和内部的类型特征。

其中 VV 结果构式(resultative constructions)是一种包含核心动词和结果次要谓词的典型复杂谓语构式。本文以个案"V 砸"为研究对象，基于大规模的历时语料标注，借助事件融合机制讨论"V 砸"结果构式的浮现过程和此过程中动词"砸"有界性情状的编码和词汇化。本文随机标注了语料库中包含"砸"的 2000 条例句，对"砸"所处的句法框架进行了统计分析以考察"V 砸"构式的浮现过程；并采用构式搭配分析法考察 "V 砸"结构中"砸"的强搭配词，以探究"V 砸"的语义特征。研究发现， "V 砸"构式的浮现过程是在连动构式中两个动词事件融合的机制下发生的，伴随着句法上"砸"的独立语法地位的弱化，而"砸"的直接宾语和结果补语以及完成体标记"了"是"砸"的重要有界化手段，使得"砸"的有界性和结果义编码进词义中，促进句法结构层次的更替。

关键词：VV 复杂谓语 语义融合 事件融合 结果构式 浮现过程

（CIEL-15 海报展示 编号 P923 展示人：高佩璐）

批评话语分析视角下英美两家媒体关于日本核污水排放报道的及物性对比分析

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本文以美国有线电视新闻网 CNN 和英国路透社（Reuters）对日本排放核污水入海后中国禁止进口日本海鲜的报道为分析对象，基于韩礼德的及物性系统理论对新闻报道的话语表征进行批评话语分析，旨在揭露不同报道背后隐含的意识形态问题和政治立场。研究发现，与路透社相比，CNN 的报道看似客观真实，实则代表着美国统治阶级的利益，并通过话语建构对大众形成意识导向。标题作为对语篇内容的概述和引领，在两篇报道中表达着相似的信息，但呈现出不同的报道倾向。研究发现，路透社报道核污水排放和中国禁止进口日本海鲜等信息时，采用了丰富而全面的消息来源，秉持着相对客观的新闻报道立场。相反，CNN 的报道则更多地反映了美国政府的观点。在着重传达核污水排放是安全的这一信息的同时，它也将中国政府和公众对此事件的愤怒和抨击解读为中日两国之间的民族主义冲突。显而易见，新闻语篇虽然遵循着客观、公正的原则，但是媒体具有选择或者忽略信息的权力，因此不同的媒体在及物性过程上不同的选择体现了不同的政治立场和意识形态。日本排放核污水入海的影响是深远的，不仅与全人类的健康和海洋环境保护息息相关，还涉及深刻的地缘政治经济问题。日本预计需要长达四十年的时间才能完成全部将核污水排入大海的工作。所以我国的读者在阅读后续相关国外报道的时候，不能盲目地被媒体牵引着走，要以批判的眼光审视其报道的客观性和真实性，挖掘背后隐藏的意识形态和立场，形成自己的见解。

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汉简草书中"丷丿"的构字功能和扩散历程

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共时研究：草书符号"丷丿"是最常见的草书符号之一，在草书成熟阶段的汉简材料中"丷丿"的运用十分丰富，本文测查了"丷丿"汉代中后期汉简材料中（主要是居延汉简、敦煌汉简等）与隶书正体的对应关系，并在书写层面进行分类描写。分类描写了"丷丿"对"ㄩ"的替代；替代对称笔画组、部件的情况；替代"口"类部件的

情况；替代"门"类部件的情况；在"止"类部件中的运用；在部件"日""月"中的运用；在特殊字形中的运用。在此基础上，对比了《急就章》等传世章草材料中"丷"的运用情况，通过单个草书符号在汉简材料和传世章草材料中的运用差异概括章草规范原则。

历时研究：本文分四个阶段描写了"丷"的扩散情况。第一，秦末汉初（萌芽时期），主要是睡虎地秦简、张家山汉简中的运用情况；第二，西汉中后期（成熟时期），主要是居延汉简、敦煌汉简中的运用情况；第三，通过传世章草材料中"丷"的运用；第四，"丷"在今草中的继承和扩散情况。在此基础上，本文将"丷"与主流字体的对应重新按照相似程度（两个维度：笔画复杂程度、构件与草化符号的相似程度）分为 A、B、C、D 四类，发现"丷"存在 A→B→C→D 的扩散顺序，而此顺序与"丷"和主流字体笔画、笔画组、部件的相似程度有关。证明了汉字演变中的扩散不仅存在于正体字的演变中，在草书这种依附于正体字存在的辅助字体中也同样存在。并在此基础上探讨了草变的渐进性和复杂性。

最后，本文通过"丷"和主流字体中"口"在不同字组中对应关系的性质不同论述了草书符号和主流字体的对应关系是错综复杂的，汉代草书已经是独立于隶书的一个自足的系统了。

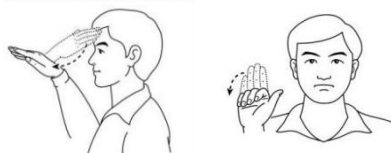（CIEL-15 海报展示 编号 P925 展示人：年　悦）

中国手语情态动词语法化：以"会"和"可以"为例

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本文基于 Bybee（1994）提出的情态动词语法化路径和国内学者关于汉语情态动词的研究，以"会"和"可以"为例（见图 1）探讨了两个问题：1）CSL 中的情态动词是否经历了类似的语法化；2）CSL 中不同情态会对词的分布产生什么影响。

图 1：

"会"　　　　"可以"

本文数据来源于自建中国手语语料库（上海），总词条超十万，不重复词目为 8000 多，是目前已知基本自然对话的中国手语语

料库。我们采用了 Palmer（1986）的框架，对这两个词的所有语料按照"能力、意愿、道义和认识"进行了分类，还统计了每个语料与动词之间的位置关系。通过 CSL 与汉语的对比，我们发现在两门语言中，这两个词不仅分类基本一致，还有着高度相似的语法化路径，且 CSL 情态动词的句法分布逐渐向汉语靠拢。

"会"：
在语法化路径上，CSL 中的"会"与汉语一样，经历了由表能力的实词演变为表能力的情态动词的过程，其情态意义的变化为动力情态（能力、意愿）→认识情态，与汉语"能力→条件必然→认识必然"的路径在总体上是一致的（陈振宇 2020，陈甜 2020）。唯一的不同是 CSL 的"会"缺少道义情态，不过陈振宇提出，汉语"会"的道义义是在"会当、会应"等中获得，不应是语法化的一环。

"可以"：
该词目前存在三种词性，分别是动词、形容词和情态动词。作为情态动词，它和汉语一样具有上述四种情态。贾成南（2020）认为在汉语中该词的语法化路径为"动力情态→认识和道义情态"，对数据进行的统计分析显示，该词的动力、道义、认识情态的语料数量有一个显著的递减趋势，因此在 CSL 中，道义可能是情态动词语法化的中间阶段，语料数据也说明，"可以"的语法化程度还很低，其原本的动词义仍大量保留着。

从情态动词分布的角度看，本文的统计分析显示，当意义更接近 CSL 实词本义时，两个情态动词更显著地倾向于后置，而在表达更抽象的道义或认识义时，二者的位置会倾向于和汉语情态动词一样前置，如

后置：表能力
耳朵 听 一点 "可以"
（我）耳朵可以听到一点

前置：表道义
现在 "可以" 介绍 你 身状
你现在可以介绍你的身体状况了

综上所述，以"会"和"可以"为例，我们发现 CSL 情态动词的语法化与汉语基本一致，手语和口语一样会经历从实词到虚词的语法化过程，并且随着意义的抽象化，如"能力→道义→认识"其前置于动词的用法也逐渐变多。

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从喜好/意愿范畴到惯常范畴——汉语"喜好/意愿"义心理动词的语法化路径

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句子除了传达主要的命题意义外，还可表达某些规律性、习惯性或属性等意义。从很多具体的片断或事实中总结出带有一定习惯性，或者经常发生的行为或规律的情况被统称为"惯常"（habtiual）。"惯常"（habitual）是一个具有跨语言普遍性的语义范畴，以汉语方言为例，心理动词的惯常义表达方式如下：

(1) 这两口子**好**耍钱这对夫妻爱赌博。《北京话词典》

(2) 腊月天儿里**爱**上冻腊月的时候容易结冰。（河南濮阳）

(3) 这孩子**乐意**骗人这孩子爱骗人。（黑龙江讷河）

(4) 咯隻伢子**喜欢**生病这个小孩儿容易生病。《长沙方言词典》

(5) 益把刀蛮蛮**欢喜**生锈这把刀挺容易生锈。（浙江绍兴）

(6) 和仙人球比，这花儿**愿意**死和仙人球比，这个花容易死。（辽宁大连）

(7) 近来**中意**来台风最近爱来台风。（广西北海）

以上例句均传达出"有生主语常常发生某种行为"或"无生主语容易产生某种变化"义。汉语方言中，"喜好/意愿"义心理动词不仅表达心理层面的情感或态度，在特定语境中也可传达出一种具有习惯性或规律性行为义。

这一现象引起国内外诸多学者关注，柯理思（2002，2007，2009）最早考察了普通话中惯常标记"爱"的语义演化路径。孙克敏（2011）关注惯常的词汇表达，从历时演变角度分析了惯常义与其他概念的语义关联，即"喜爱/意愿—惯常—能力"。

在前人研究基础上，本文通过考察比较中国境内十大方言区（共 71 个方言点）中"喜好"与"意愿"义心理动词"好 hào""爱""喜欢""欢喜""愿意""乐意""中意"的使用情况，从动词的发达程度、区域使用情况、所带论元特征三方面入手，讨论这类具有惯常义的心理动词在各方言的分布类型、等级序列、所带论元的语义特征类型等。

通过考察，本文发现，（1）从动词的发达程度看，汉语方言中惯常义心理动词可细分为三种类型：发达型、次发达型和不发达型；（2）从区域使用情况看，汉语方言中惯常义心理动词可初步确定四个主导词："好""爱""喜欢""欢喜"；（3）从所带论元的基本特征看，汉语方言中惯常义心理动词所带论元情况也可分为四种类型六种次类型。

最后，本文进一步构拟了"喜好/意愿"义心理动词向"惯常"义发展的语法化路径，其中大致经历了五个阶段，即完全心理动词阶段→双重分析阶段→准惯常标记阶段→惯常标记阶段→扩展阶段。

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噪音背景下普通话单元音的

司法话者比对研究

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随着电信网络、互联网语音业务和数字录音技术的飞速发展，电信诈骗、绑架、敲诈勒索等涉及语音的案件呈现快速上升趋势，声纹鉴定的需求越来越多，但在检验鉴定中发现，检材和样本普遍存在噪声，并对部分声学参量产生一定的影响。同时，语音存在较大的变异性已是不争的事实。这种变异可以分为话者之间的差异和话者自身变异，即不同人在发相同音节时可能会有一定的差异，而话者由于身体条件、心理状态、谈话环境、信道改变等各种主客观条件的变化，发音时自身也会产生一定的变化。从哲学的角度讲，语音变异是绝对的，其稳定性是相对的。没有哪两个语音样本是完全一样的，即使是同一个人前后几秒重复相同的词语(张翠玲、Rose，P 2008)。因此本文采用似然率方法，对粉红噪音和汉语双人嘈杂音的噪音背景下，普通话单元音 a、o、e、i、u、ü、er 共 7 个元音共振峰的动态性及其在话者鉴别中的作用进行了综合评价。研究混合噪音背景下的语音是否与纯净语音对判断一个人的声音有差别，以期为带噪语音的声纹鉴定提供参考。

关键词：噪音；普通话单元音；司法话者比对；似然率

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多元法律文化背景下的话语共同体传播——以一个国际扣船案件为例

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国际诉讼案件中存在大量的信息跨文化人际传播的现象。以国际扣船案件为例，因利益相关方众多并且分属不同法域，经常涉及跨法律文化传播问题甚至跨文化的误解和冲突。本文选取一起复杂的跨国扣船案件为研究个案，应用法律跨

文化传播的话语共同体理论，梳理案件推进过程中遇到的跨法律文化传播问题。

本文首先介绍了国际扣船案件中各个法域特有的不同法律文化背景，指出各国法律强烈的"地方性知识"属性及各国法律文化多元化的鲜明特点。接着，　提出国际扣船公约对多元法律文化传统下的法律制度起到了技术协调和语言折中的作用，从而经由"互文性"的机制推动不同法域多元文化之间形成了相对统一的法律话语共同体。这在深层次上，从话语形成机制的源头找到了国际案件中跨越法律文化得以实现高效人际传播的真正动因。

本文反思和总结了中国企业走出去过程涉外案件处理中的跨文化人际沟通策略，即应当在确立各国法律文化存在差异的认识基础上，充分发挥和应用法律话语共同体理论，主动使用能够有效传播的共同体话语，掌握话语主动权，从而最大限度提高人际传播有效性并避免跨法律文化沟通中的误解和冲突。提高国际传播能力的路径具有多元性和多主体性，提高国际传播能力的传播主体理应包括各类话语共同体的成员。

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日语与格主语句的谓语语义类型限制研究

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通过现代日语均衡语料库（BCCWJ）调查，可对与格主语句的谓语语义类型进行描写和分析，并以此为基础总结日语与格主语句的谓语语义类型。研究得出以下结论：日语与格主语句的谓语在语义上多表达能力、知觉或表达状态等非意志情状，能力、知觉类动词谓语动作性不强，此类动词谓语的动作主体与状态动词或形容词谓语的主体具有共同的语义特征，因此，与格提示动作主体是与格提示状态主体的延伸，与格主语句是其原型存在句的扩展。

关键词 主语标记　与格主语　动作主体　语义类型　句式扩展

（CIEL-15 海报展示 编号 P930 展示人：庞大瑜）

Positive Discourse Analysis from the Perspective of Attitude System in Appraisal Theory——A Case Study of CGTN News Reports on the China-Central Asia Summit

基于评价理论态度系统的积极话语分析
——以 CGTN 对"中国-中亚峰会"的新闻报道为例

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Taking the attitude subsystem of Appraisal Theory as the theoretical framework and combining positive discourse analysis, this study built a corpus of CGTN news reports on the China-Central Asia Summit and employed tools such as WordSmith 8.0 and UAM Corpus Tool 6.2 to explore the distribution of attitude resources and the significance of discourse in the news reports on the China-Central Asia Summit. The findings revealed that CGTN news reports on the China-Central Asia Summit predominantly made use of positive expressions, with the highest proportion of appreciation resources in the attitude system, which manifested the substantial value and social significance of the first China-Central Asia Summit and is conducive to constructing a positive discourse system for international communication.

Keywords: Appraisal Theory; Attitude; China-Central Asia Summit; Positive Discourse Analysis

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A PRAAT-based Experimental Study on English Sentence-Final Intonation Used by China's English Learners：a case study on the English Learners of Shizuishan dialect speakers of Ningxia

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Intonation is vital to Chinese English learners (CEL) due to significant differences between Chinese and English phonological systems since Chinese is a tonal language whereas English is an intonational language. Thus, CEL have to struggle to fully comprehend and accurately imitate English intonation like native English speakers (NES) , particularly sentence-final intonation. However, previous studies on sentence-final intonation among CEL with a tonal language background were quite scarce which highlighted the significance of this study. This study anticipates uncovering homogeneity and heterogeneity in sentence-final intonation between CEL and NES through in-depth acoustic analysis.

To achieve the above goal, a production experiment was conducted via Praat. Two groups of subjects, NES and CEL from Ningxia Shizuishan, were selected. And the data was analyzed in Excel and analysis plots were drafted by using Origin.

The results indicated that NES exhibited broader pitch ranges and higher intensity across all sentence types compared to CEL. This means that NES showed more dynamic intonation patterns than CEL. More specifically, in declarative sentences, NES showed more pitch variations and higher intensity. In contrast, CEL displayed narrower pitch ranges and lower intensity. In exclamatory sentences, male CEL, whose pitch range was almost equal to NES's, may likely adopt relatively more emotional flows or relatively more dramatic expression. Female pitch changes were minimal, both when compared with the same CEL learners and when compared with NES females of the same gender group. In imperative sentences, NES demonstrated more richness and diversity in pitch variation and intensity levels in imperative, while CEL exhibited similar patterns but with less overall variation, reflecting a more restrained vocal delivery. Interrogative sentences revealed higher pitches for both groups than any other sentence types, with CEL showing larger variations, especially in choice and tag questions, while NES demonstrated more stable pitch patterns. This shows CEL's awareness of the distinction between interrogative and declarative sentences, suggesting that interrogative sentences inherently require higher pitch levels. Moreover, gender differences are notable, with male NES having wider pitch ranges and female NES showing greater intensity variations. Additionally, female CEL showed the least

variation in their utterances, regardless of whether compared with other CEL learners or NES females.

These findings highlight the need for targeted intonation training for CEL to improve their speech prosody. The study may help English learners gain a clearer understanding of the characteristics of English intonation patterns, contributing to the promotion of communication across different languages and cultures.

KEYWORDS: Tone, Intonation, Sentence-final Intonation, CEL, NES

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元音环境对第二语言语音习得的影响：中国学习者对英语齿龈-软腭鼻尾音的感知

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摘要：本研究考察了中国学习者对于英语齿龈鼻尾音/n/和软腭鼻尾音/ŋ/的感知，重点聚焦于元音环境对第二语言（L2）感知同化和区分的影响。受试者在本研究中先后完成了两项任务：一项是感知同化任务，即把二语的元音-鼻音对映射到母语（L1）语音中，并对这种映射进行相似度评分；另一项是感知区分任务，即在相同的元音语境中辨别鼻音/n/和鼻音/ŋ/。感知同化任务结果显示，与母语相似的元音环境/ɒ/和/ʌ/相比，母语相远元音语境/æ/和/ɜ/的模态同化率和同化模式不同。在感知区分任务中，受试者在/æ/和/ɜ/元音环境中表现出更高的准确性，而在/ɒ/和/ʌ/元音环境中则表现出中等准确性。同化任务和区分任务结果的一致性强调了跨语言元音语境相似性在二语语音感知中的作用。本研究为 Flege（1995）提出的语音学习模型（SLM）提供了实证支持，并证明了元音环境效应对中国学习者学习英语齿龈鼻音及软腭鼻音具有理论意义。

关键词：二语语音习得；同化；区分；鼻尾音；元音环境

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会议议题：

1. 汉语及其他语言的祖先；
2. 典型和非典型人群的语言发展；
3. 老龄化与语言退化；
4. 音乐与语言演化；
5. 语言、认知与大脑；
6. 方言的形成与演化；
7. 语言的共时与历时研究；
8. 大语言模型的发展与演化；
9. 其他语言相关的议题。

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协办单位：深圳市神经科学研究院