

2020 年中央研究院重要研究成果

語言學研究所

西元年：2020

研究人員(中)：黃慧娟

研究人員(英)：HUANG, HUI-CHUAN

研究成果名稱(中)：泰雅語滑音強化：響度擴散及避免相似

研究成果名稱(英)：Glide strengthening in Atayal: Sonority dispersion and similarity avoidance

簡要記述(中)：泰雅語是台灣北部瀕危的南島語言，本文記錄並分析了泰雅語數個方言中，滑音與擦音的轉換現象。在新竹縣尖石鄉的賽考利克泰雅語裡，由分布空缺以及構詞音韻轉換，可以看出位於聲母的滑音不能出現在央中元音之前、也不會出現在發音部位相同的元音前面。本文認為關於聲母滑音的這個限制，導因於音節內響度形態最佳化、以及避免發音部位相同的滑音-元音音串等兩個因素。在本文所提出的優選理論分析中，響度擴散及避免相似這兩個概念，是獨立的音韻制約；由這兩組音韻制約所預測的四種可能類型，在泰雅語方言中得到驗證，因此支持了本文的分析。泰雅語滑音強化為擦音的語料，支持了理論音韻學裡央中元音的響度低於高元音的看法，而本文所採取的聯合制約分析方式，則進一步顯示關於鄰近音段響度組合的限制，並非如前人文獻認為的僅限於音節的邊緣(例如 Steriade 1988 的文章)。本文另外也觀察到(1)硬顎滑音 j 與唇軟顎滑音 w 的音韻行為在某些泰雅語方言並不對稱，w 與音節韻核的組合比 j 來得自由；(2)泰雅語中帶音位性的/w/滑音與軟顎擦音替換、而非與唇音替換，這在台灣南島語中是相當罕見的。在理論意涵上，泰雅語輔音性質的/w/滑音強化為軟顎音[ɣ]而非唇音，表示有些理論認為/w/僅帶有唇音的音韻徵性的想法並不正確(例如 Halle 等人 2000、Halle 2005、Levi 2004、2008)。

簡要記述(英)：This paper documents and analyzes the alternations between glides and fricatives in Atayal, an endangered Austronesian language spoken in northern Taiwan. Distributional gaps and morphophonological alternations suggest that onset glides in the Jianshi variety of Squiliq Atayal do not appear before a schwa or a homorganic vowel. The paper argues that the restrictions on onset glides are motivated by the needs to achieve an optimal sonority profile within a syllable and to avoid homorganic glide-vowel sequences. In the proposed OT account, sonority dispersion and similarity avoidance are formalized as separate constraints, which is supported by the attested typology across Atayal dialects. The strengthening data justify the placement of schwa lower in the sonority hierarchy than high vowels, and the adopted conjoined constraints further suggest that sonority-based co-occurrence restrictions are not necessarily restricted to syllable margins (cf. Steriade in *Language* 64:118–129, 1988a). The paper also shows that (1) the behavior of j and w is asymmetrical in some dialects, with w combining more freely with the following nucleus vowel than j does; and (2) Atayal phonemic /w/ primarily alternates with velar [ɣ], which is peculiar among Formosan languages. The fact that Atayal consonantal w strengthens to velar [ɣ] instead of a labial falsifies the feature theories in which /w/ is characterized only by the [Labial] articulator (Halle et al. in *Linguist Inq* 31:387–444, 2000; Halle in *Linguist Inq* 36: 23–41, 2005; Levi in *The representation of underlying glides: a cross-linguistic study*, 2004; *Lingua* 118:1956–1978, 2008).

主要相關著作：

Huang Hui-chuan J., 2020, “Glide strengthening in Atayal: sonority dispersion and similarity avoidance”, *Journal of East Asian Linguistics*, 29(1) 77-117. (SSCI) (IF: 0.64; SSCI ranking: 64.2%)

西元年：2020

研究人員(中)：孫天心、邱振豪

研究人員(英)：SUN, JACKSON T.-S., Chiu, Chenhao

研究成果名稱(中)：北部霍爾語咽化元音的聲學及超音波研究

研究成果名稱(英)：On pharyngealized vowels in Northern Horpa: An acoustic and ultrasound study

簡要記述(中)：四川北部的北部霍爾語裡，元音分為「正常」與「咽化」兩組，後者發音時帶有口腔較為壓縮的輔助構音。本研究依據宗科及大伊里兩個方言音點的一手材料，探索北部霍爾語元音咽化過程中呈現的聲學及構音特徵。除共振峰分析外，也藉由超音波顯影觀察元音構音時舌頭的姿勢與位置。聲學研究結果顯示，相較於正常元音，咽化元音一般第二共振峰值較低，而第一、第三共振峰值較高。第二、第三共振峰值的分歧說明元音的對立依元音的不同有別。超音波顯影部分，元音對立的區別會因元音自身舌位差異造成不同舌頭動作（包括回縮、靠後、雙點翹起）的影響。本文兩個北部霍爾語調查點在共振峰變化與舌頭移位類型上雖有差異，而共振峰的配置與超音波顯影的資料都支持這組特殊元音的性質屬於咽化。

簡要記述(英)：In the Northern Horpa (NH) language of Sichuan, vowels are divided between plain and pharyngealized sets, with the latter pronounced with auxiliary articulatory gestures involving more constriction in the vocal tract. The current study examines how the NH vocalic contrast is manifested in line with the process of pharyngealization both acoustically and articulatorily, based on freshly gathered data from two varieties of the language (i.e., Rtsangkhog and Yunasche). Along with formant analyses, ultrasound imaging was employed to capture the tongue postures and positions during vowel production. The results show that in contrast with plain vowels, pharyngealized vowels generally feature lower F2 values and higher F1 and F3 values. Mixed results for F2 and F3 suggest that the quality contrasts are vowel-dependent. Ultrasound images, on the other hand, reveal that the vocalic distinction is affected by different types of tongue movements, including retraction, backing, and double bunching, depending on the inherent tongue positions for each vowel. The two NH varieties investigated are found to display differential formant changes and different types of tongue displacements. The formant profiles along with ultrasound images support the view that the production of the NH phonologically marked vowels is characteristic of pharyngealization.

主要相關著作：

Chiu, Chenhao & Sun, Jackson T.-S, 2020, "On pharyngealized vowels in Northern Horpa: An acoustic and ultrasound study", *The Journal of the Acoustical Society of America*, 147 (4). 2928-2946. (SCIE) (IF: 1.78; SCIE ranking: 37%,37.5%)

西元年：2020

研究人員(中)：李佳穎、張亞寧

研究人員(英)：LEE, CHIA-YING, Lee, C.-Y.

研究成果名稱(中)：繁體中文唸名與詞彙判斷作業中的習得年齡效應

研究成果名稱(英)：Age of Acquisition Effects on Traditional Chinese Character Naming and Lexical Decision

簡要記述(中)：跨語言的心理語言學研究中，詞彙的習得年齡適用以反映學習經驗在詞彙處理歷程中所扮演角色的重要變數。越早習得的詞彙，處理的速度越快也越正確。而近期的理論更認為，習得年齡的效應，可歸因於詞彙表徵間的對應以及語意表徵的建構有關，並且預測此效

應在表徵間的對應較任意以及涉及較多語意處理的作業中，可以觀察到較清楚的習得年齡效應。本文旨在探討以上預測是否可類推到中文，畢竟相較於拼音文字，中文字與語意的連結較為直接。因此本文檢視詞彙習得年齡與語意變項，以及與形音對應一致性，在中文唸名以及詞彙判斷作業中的交互作用。結果發現詞彙語意變項在中文唸名作業中的效果，更甚於詞彙判斷作業。此結果與源於拼音文字的理論預測相反。此外，我們也發現在中文念名的資料中，發現習得年齡與中文形聲字形音對應一致性的交互作用。此跨語言以及跨作業形式的研究結果，證實習得年齡效應可歸因於多向度的語言表徵建構經驗。

簡要記述(英)：Across languages, age of acquisition (AoA) is a critical psycholinguistic factor in lexical processing, reflecting the influence of learning experience. Early-acquired words tend to be processed more quickly and accurately than late-acquired words. Recently, an integrated view proposed that both the mappings between representations and the construction of semantic representations contribute to AoA effects, thus, predicting larger AoA effects for words with arbitrary mappings between representations as well as for tasks requiring greater semantic processing. We investigated how these predictions generalize to the Chinese language system that differs from alphabetic languages regarding the ease of mappings and semantic involvement in lexical processing. A cross-task investigation of differential psycholinguistic effects was conducted with large character naming and lexical decision datasets to establish the extent to which semantics is involved in the two tasks. We focused on examining the effect sizes of lexical-semantic variables and AoA, and the interaction between AoA and consistency. The results demonstrated that semantics influenced Chinese character naming more than lexical decision, which is in contrast with the findings related to English language, though, critically, AoA effects were more pronounced for character naming than for lexical decision. Additionally, an interaction between AoA and consistency was found in character naming. Our findings provide cross-linguistic evidence supporting the view of multiple origins of AoA effects in the language-processing system.

主要相關著作：

Chang, Y. N., & Lee, C. Y., 2020, "Age of Acquisition Effects on Traditional Chinese Character Naming and Lexical Decision", *PSYCHONOMIC BULLETIN & REVIEW*, 27, 1317-1324. (SSCI) (IF: 3.91; SSCI ranking: 15.4%,9%)