до англійського тексту допомагає передати загальну емоційну атмосферу окремих розділів, підкреслити культурну приналежність родини головної героїні, підсилити емоційні стани персонажів, а також зробити елементи китайської культури зрозумілими для американської аудиторії. Для більш глибокого аналізу специфіки мовного та культурного кодового перемикання як у цьому творі, так і у творчості письменниці загалом, подальші дослідження потребують детального розгляду кожного випадку використання китайських висловів у поєднанні з англійською мовою.

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DECODING WOMEN'S SCRIPT: WHAT CAN NÜSHU GRAPHS PERCEPTION TELL US ABOUT PHONOLOGICAL AND SEMANTIC AWARENESS IN CHINESE READERS

Key words: *Nüshu*, *nüzi*, Chinese character, Mandarin Chinese, Jiangyong dialect, phonology, semantics, orthography.

Introduction

This study tests whether readers with different language backgrounds recruit phonological or lexical–semantic information when processing *nüshu*

graphs. We propose to implement a pre-registered, online behavioral experiment with three groups of Mandarin Chinese and Jiangyong dialect speakers literate in Chinese characters with different degree of literacy in women's script.

The study is ongoing, so we present the experiment design and predictions.

Background

Nüshu is a women's writing and formulaic folk literature historically used in Jiangyong County, Hunan, PRC. The script is phonetic, it encodes syllables of Jiangyong dialect and its vernacular variations (*Xiangnan tuhua*) [14]. One graph (*nüzi*) typically covers a same or near-same-sound set of words. Comparative paleography and corpus-based studies from original-ecology texts report that the great majority of basic *nüzi* shapes can be traced to square Chinese characters, *hanzi* [12; 13; 15; 16; 17; 18]. Scholars identified over a thousand *nüzi* with about 300 basic graphs, while individual *nüshu* transmitter used 400–600 graphs, including variants. Unicode encodes 396 most frequently used *nüshu* letters, which posses different degree of similarity to Chinese characters.

Contemporary cognitive work on Chinese characters processing indicates conjoint activation of different domains with reader's experience dependency. Perfetti et al. [9] proposed an interactive lexical constituency model for Chinese writing and word recognition, where the representation of a character or word consists of three interwoven components: orthographic, phonological, and semantic. Neurolinguistic studies suggest that sublexical constituents can elicit semantic activation [2]; orthographic expertise drives left-lateralized N170 enhancement [7] and, within Chinese, N170 strengthening appears primarily orthography-driven [8]. Developmental evidence links N400 lexicality effects to growing sensitivity to orthographic well-formedness [3], while meta-analytic results show robust but weaker-than-alphabetic correlations between phonological awareness and Chinese reading [4]. Eye-movement data suggest relatively late phonological activation in Chinese and minimal contribution of tone to error recovery [10].

These findings motivate a test of whether *nüzi* perception by different reader groups preferentially recruits lexical–semantic or phonological information. This study presents a primary stage of the research by implementing a targeted behavioral test. To our knowledge, no previous cognitive or neurolinguistics studies experiments on *nüshu* (*nüzi*) graph perception have been published.

Research Questions & Predictions

RQ1. For Mandarin Chinese speakers with no Jiangyong or *nüshu* knowledge, does *nüzi* processing preferentially trigger lexical–semantic activation via perceived similarity with *hanzi* or phonological activation?

Prediction 1. Greater semantic or orthographic than phonological priming from *nüzi* to *hanzi* for this group.

RQ2. For Jiangyong speakers unversed in *nüshu*, does *nüzi* processing preferentially trigger phonological activation via dialect sound mapping or lexical–semantic activation?

Prediction 2. Greater phonological than semantic priming for this group.

RQ3. Do Jiangyong *nüshu* practitioners show robust activation of both routes?

Prediction 3. Strong priming in both channels, with faster overall responses.

Participants

1. 50 Mandarin Chinese speakers proficient in traditional and simplified Chinese characters, unfamiliar with Jiangyong and *nüshu*.

2. 10 Jiangyong dialect speakers proficient in simplified Chinese characters unfamiliar with *nüshu*.

3. 5 *nüshu* practitioners also proficient in simplified Chinese characters (control group).

Participants for group one are recruited online among the Taiwanese and Chinese students from National Chengchi University (Taipei, Taiwan). Group two is recruited among the personal contacts in Jiangyong County (Hunan, China). Group three are officially recognized *nüshu* culture transmitters from Jiangyong.

Materials & Stimuli

The design combines cross-script priming and speeded judgments to dissociate phonological from lexical–semantic activation during *nüzi* perception.

Nüzi set: 55 items sampled from the most frequently used graphs [19] balanced by stroke count and frequency. For each *nüzi* prime, five to ten *hanzi* targets are curated. *Hanzi* include semantic-related, phonological-related, orthographic-related, and unrelated controls.

Task and Procedure

Two complementary tasks are designed with Gorilla experiment builder and administered online with the prior consent of the participants.

Task 1. Visual detection of Chinese characters and *nüshu* graphs. A rapid serial visual presentation stream mixes standard *hanzi* and *nüzi* to test the participants' ability to recognize if current item is identical to the immediately preceding one. The task captures script-general visual stability and attention.

Task 2. *Nüzi* to *hanzi* forced-choice mapping to test cross-script priming and identification. Each trial shows one *nüzi* prime with five to ten *hanzi* target choices. Participants select the *hanzi* they judge to correspond to the *nüzi* prime. Accuracy and response latency are recorded.

Conclusion

Study predictions align with interactive accounts of Chinese character recognition in which orthography, phonology, and semantics are jointly engaged, with experience-driven variations in perception. Some of the experiment participants are also Cantonese speakers, which may suggest unpredicted results.

Small number in the practitioner control group reflects current *nüshu* literacy and practice rarity. Current *nüshu* transmitters are educated in Chinese characters prior to their *nüshu* script acquisition.

The study of *hanzi* to *nüshu* mapping is also suggested, however, as our fieldwork reveals, there is only one elderly Jiangyong resident with no literacy in *hanzi* and limited literacy in nüshu, unfortunately, with nearly complete sight loss.

Future work is expected to add EEG (N170/N400) for laterality or eye-tracking to time-resolve route recruitment and expand the practitioner sample via multi-site collaboration.

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