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Phonological Variation and Gender Performance: A Sociolinguistic Study of the "Nü Guoyin" Phenomenon in Beijing Youth Speech

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Abstract: The phenomenon known as "Nu Guoyin" or "female national pronunciation" involves the fronting of palatal sounds /j/, /q/, and /x/ to alveolar [ts], [tsʰ], and [s]. Documented in Beijing since the 1920s, it was traditionally associated with educated young women and explained through aesthetic, dialectal, or intimacy-related accounts. However, little research has explored its contemporary status under changing gender norms and digital media influences. This study examines Nu Guoyin among 44 Beijing middle and high school students using speech samples, surveys, and interviews. Results show that 40.9% of participants used fronted variants, including 26.1% of male speakers, a sharp contrast to earlier findings of exclusively female use. Most users were unaware of their pronunciations, highlighting its unconscious nature. Although statistical differences were modest, fronting users tended to favor lifestyle-oriented platforms such as Xiaohongshu and Weibo, while standard users were more active on gaming and subcultural platforms like Bilibili and Douyin. Interviews revealed imitation, parody, and performative identity, suggesting that the variant now functions as a mediated style rather than a residual dialect feature. These findings indicate that Nu Guoyin persists but with shifting social meanings, serving as a resource for both genders in youth identity performance and raising questions about an emerging "male national pronunciation."

Keywords: language variation; phonetic change; digital media; youth identity; gender

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1. Introduction

The phenomenon known as "Nu Guoyin" or "female national pronunciation," which involves the fronting of palatal initials /tɕ/, /tɕʰ/, and /ɕ/ to alveolar [ts], [tsʰ], and [s], has been documented in Beijing for nearly a century. Its earliest record dates back to the 1920s, when Li observed that female students at the Girls' Middle School in Beijing consistently shifted palatal initials forward [1]. Later accounts, including Zhao Yuanren's commentary on Karlgren's *Grammata Serica*, confirmed its prevalence among young women. By the mid-twentieth century, scholars such as Xu Shirong recognized it as part of urban vernacular speech. Systematic studies appeared in the 1980s: Chen described it as characteristic of educated young women, while Cao and Hu conducted empirical investigations outlining its phonetic profile, distribution, and motivations. Hu concluded that Nu Guoyin clustered among adolescent females in informal settings and that most speakers were unaware of their non-standard articulation [2].

Phonetically, the variant involves forward tongue movement, producing weaker aspiration and a sharper timbre. Although reminiscent of historical distinctions, it collapses

contrasts, yielding consistent alveolar realizations. Social surveys reported high prevalence among educated young women, near absence among men, and decline with age, suggesting both age-graded and stylistic functions [3].

Interpretations of Nu Guoyin have varied. Hu emphasized an "aesthetic psychology" account, linking the delicate timbre to female preferences for beauty. Cao speculated about residual influence from southern dialects or the "Old National Pronunciation." Zhu proposed an "intimacy hypothesis," framing the feature as an extension of infant-directed speech. Despite these differences, all views treated Nu Guoyin as peripheral and strongly gendered [4].

After the early 2000s, however, research largely ceased. Chinese sociolinguistics increasingly focused on policy, dialect preservation, and Mandarin promotion, while minor urban variants were sidelined [5]. Internationally, the "third wave" of variationist studies highlighted the role of style, identity, and gender performance, but within China, the "gender turn" remained underdeveloped. Consequently, Nu Guoyin was often dismissed as a passing fad, despite its continued use among youth.

Against this backdrop, the present study revisits Nu Guoyin by situating it at the intersection of sociophonetics, gender linguistics, and media studies [6]. Two central questions guide the analysis. First, does Nu Guoyin still display the strong gender bias documented by Hu and Cao, or has it been adopted, mimicked, or parodied by male speakers in today's more fluid social environment? Second, do traditional frameworks—beautification psychology, dialectal residue, and intimacy signaling—retain explanatory value, or have new mechanisms, particularly those linked to digital media, become more salient?

The rapid rise of platforms such as Douyin, Xiaohongshu, and Bilibili has transformed linguistic practice among Chinese youth [7]. Short videos and livestreams amplify stylized features, enabling rapid circulation and imitation. Once-localized traits now spread widely, framed as markers of cuteness, humor, or authenticity. Within this ecology, Nu Guoyin may function less as an unconscious variant and more as a deliberate performance of gendered identity [8]. Butler's theory of performativity provides a useful lens: fronted palatal initials can serve as resources for "doing femininity" or challenging gender norms.

Accordingly, this study treats Nu Guoyin not merely as a phonetic curiosity but as a nexus of language, gender, and media. Using speech samples, questionnaires, and interviews with Beijing adolescents, it investigates the distribution of the variant, speakers' awareness, and the role of media exposure in its spread [9]. It also considers whether male adoption signals a reconfiguration of the phenomenon and whether a complementary "male national pronunciation" characterized by backing may be emerging. By addressing these questions, the study contributes to documenting an evolving urban speech style and to broader debates on how youth, media, and identity intersect in shaping contemporary linguistic practice [10].

2. Methodology

This study adopts a mixed-methods design that integrates quantitative and qualitative approaches to investigate the Nu Guoyin phenomenon among Beijing adolescents [11]. To ensure both breadth and depth, the research combined speech sample collection, survey questionnaires, and structured interviews [12]. Triangulating these methods not only strengthens the reliability of the findings but also provides a multi-layered understanding of the social and linguistic dynamics underlying this phonetic variation.

2.1. Participants

The participants consisted of 44 students recruited from two schools in Beijing: 17 students from the junior division of Chaoyang Foreign Language School (Grades 7-8) and 27 students from the Wangjing campus of Beijing No. 80 Middle School (Grades 9-12). Recruitment followed a random selection process in multiple campus locations, including

school gates, courtyards, and cafeterias, to ensure a diverse and representative sample. All students were informed of the study's aims and voluntarily agreed to participate. The gender distribution was balanced, with 21 female and 23 male students, enabling analysis of possible gender-based variation.

2.2. Data Collection Instruments and Procedures

Three complementary instruments were employed:

Speech Samples

Participants read a short story and a word list containing a high frequency of the target palatal initials. The story was adapted from *The North Wind and the Sun*, and the word list followed Hu's design. This combination tested whether speakers showed fronting in continuous discourse, isolated items, or both. All readings were recorded under controlled conditions.

Questionnaire Survey

A structured questionnaire captured sociolinguistic background, attitudes, and media use. Items covered:

- Dialect background, including birthplace, parental origins, and exposure to relevant dialect regions.
- Evaluations of Standard Mandarin and Nu Guoyin on a five-point scale, including judgments of gender appropriateness.
- Social media practices, such as platform use frequency (e.g., Douyin, Xiaohongshu, Bilibili, WeChat), preferred content types, and perceived influence of online speech styles.

Structured Interviews

Ten semi-structured interviews were conducted with nine students and one teacher, balanced by gender and variant usage. Without explicitly naming Nu Guoyin, the researcher demonstrated the feature and asked whether participants noticed it, how they evaluated it, and what functions they attributed to it. Questions probed perceptions of cuteness, authenticity, and male usage, allowing spontaneous responses while minimizing bias.

2.3. Data Analysis

The analysis combined perceptual phonetic judgments, descriptive statistics, and thematic content analysis.

Quantitative Analysis

Speech samples were categorized into three groups: standard pronunciation (unaltered), partial fronting (slight advancement), and full fronting [13]. Classification relied on perceptual auditory analysis by trained linguists rather than acoustic measurements. While this approach introduces some subjectivity, inter-listener reliability was high and consistent with established sociophonetic practice. Questionnaire data were analyzed using descriptive statistics, chi-square tests of independence, and t-tests to compare platform use, content preferences, and perceived stylistic influence between fronting and non-fronting groups. Mann-Whitney U tests were used for ordinal scale data to assess significance of attitudinal differences.

Qualitative Analysis

Interview transcripts were coded thematically using content analysis. Categories included sources of imitation, motivations for use, gender associations, media influence, and social evaluation. This method allowed identification of recurring patterns in how participants interpreted and justified the phenomenon. Special attention was given to how speakers negotiated between self-expression, peer influence, and wider gender norms. Triangulating survey statistics with qualitative insights enabled the study to capture both prevalence and social meaning.

2.4. Ethical Considerations

Given that all participants were minors, the study followed strict ethical safeguards. Participation was voluntary and mediated through teachers, who explained the project's purpose. Students provided verbal assent and could withdraw at any time. No personal identifiers, such as names, ages, or parental origins, were disclosed in the final dataset. Recordings were anonymized and stored securely, with transcripts used solely for research purposes. Survey items avoided sensitive or potentially stigmatizing language, and interviews employed neutral phrasing to prevent discomfort or suggestive bias. The study adhered to the principle of minimal risk, ensuring participants' privacy, dignity, and autonomy were fully respected.

2.5. Summary of Design

In sum, the methodological framework was designed to capture both structural and performative dimensions of Nu Guoyin [14]. Speech samples allowed objective assessment of phonetic realization; surveys quantified background variables and attitudes; interviews illuminated subjective perceptions and social meanings [15]. Together, these methods provided a robust dataset capable of addressing the study's guiding questions: whether Nu Guoyin continues to exhibit gender asymmetry, and whether traditional explanations remain valid or have been supplemented by media-driven mechanisms.

3. Results

This section presents the empirical findings of the study, integrating quantitative survey data, speech sample analysis, and qualitative interview insights. The results are organized into five parts: (1) the distribution of Nu Guoyin among participants, (2) speakers' awareness of their own pronunciations, (3) statistical associations with social media use, (4) qualitative interpretations within a gender performativity framework, and (5) preliminary observations of a complementary "male national pronunciation."

3.1. Distribution of Nǚ Guóyīn

Among the 44 participants, 21 were female (Grades 7-12) and 23 were male (Grades 7-11). In the story passage reading, seven female students and one male student displayed partial fronting, representing 33.3% and 4.3% of their respective groups. No participants exhibited full fronting in this task. In the word list reading, however, 11 females (57.1%) and six males (26.1%) showed some degree of fronting. Of these, three females and one male demonstrated full fronting, while the remaining participants exhibited partial fronting. These results are summarized in Table 1.

Table 1. Distribution of Nǚ Guóyīn by Grade and Gender.

Grade	Male (n)	Female (n)	Passage fronting (M/F)	Word list fronting (M/F)
7	5	4	0 / 1	0 / 3 (1 full)
8	6	4	1 / 3	2 (1 full) / 3 (1 full)
9	2	4	0 / 1	0 / 2
10	6	2	0 / 1	3 / 1
11	4	5	0 / 1	1 / 2 (1 full)
12	0	2	0 / 0	0 / 0

Overall, 18 participants (40.9%) used fronted variants, either partial or full. Although females remained the majority, the proportion of male users (26.1%) was notable, particularly in contrast to Hu's finding of no male usage. These results indicate a weakening of strict gender boundaries, suggesting that Nu Guoyin can no longer be considered exclusively female.

3.2. Awareness of Fronting Variants

Previous studies suggested that variant speakers were often unaware of their own usage, and our findings support this. In the questionnaire, participants were asked whether they perceived themselves as using standard pronunciations or fronted variants. The results are presented in Table 2.

Table 2. Self-Perception of Pronunciation.

Group	"No difference"	"Standard more frequent"	"Fronting more frequent"
Fronting users (n=17)	9 (53%)	6 (35%)	2 (12%)
Standard users (n=27)*	9 (33%)	12 (44%)	5 (19%)

Over half (53%) of fronting users reported perceiving no difference between standard and fronted variants. Another 35% mistakenly believed they used the standard pronunciation more frequently, despite evidence of fronting in their speech samples. In total, 88% of fronting speakers misjudged their own pronunciation. Among standard speakers, 33% were unable to distinguish the two variants, and 19% incorrectly thought they used fronting. This widespread lack of self-awareness suggests that Nu Guoyin functions largely as an unconscious style, shaped by social interaction rather than deliberate choice.

3.3. Social Media Usage and Statistical Associations

Survey data indicated modest differences in media practices between fronting and non-fronting participants. Table 3 presents a comparison of platform usage across the two groups.

Table 3. Platform Usage by Group.

Platform	Fronting group (%)	Standard group (%)	z-stat	p-value	Sig.
WeChat	94.1	96.3	-0.34	0.74	No
Douyin	41.2	44.4	-0.21	0.83	No
Xiaohongshu	47.1	37.0	0.66	0.51	No
Bilibili	35.3	51.9	-1.07	0.28	No
QQ	11.8	25.9	-1.13	0.26	No
Weibo	23.5	22.2	0.10	0.92	No

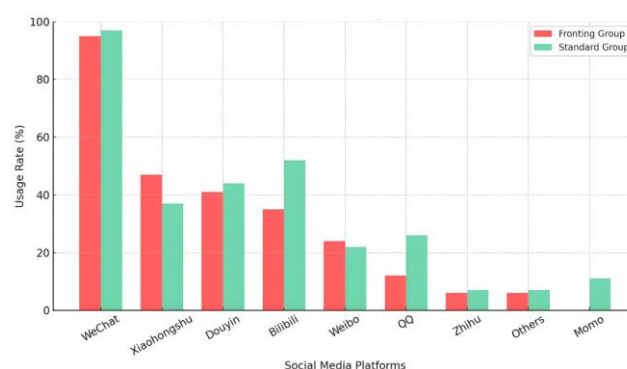


Figure 1. Comparison of Platform Usage.

As shown in Figure 1, WeChat was almost universally used by both groups, while more distinct differences emerged on secondary platforms. Participants in the fronting group reported higher usage of Xiaohongshu and Weibo, platforms typically associated with lifestyle sharing and self-presentation. In contrast, the standard group engaged more with Bilibili, Douyin, and QQ, which are strongly linked to gaming, anime, and youth subcultural communities. Although these patterns were not statistically significant, they suggest a subtle alignment between phonetic style and preferred digital environments:

fronting users gravitated toward socially expressive and aesthetic platforms, whereas standard users were concentrated in entertainment- and gaming-oriented spaces.

Content preferences reinforced this tendency. Table 4 presents participants' reported consumption by content type.

Table 4. Content Preferences by Group.

Content type	Fronting group (%)	Standard group (%)	z-stat	p-value	Sig.
Gaming	41.2	70.4	-1.92	0.055	Marg.
Beauty/fashion	47.1	29.6	1.17	0.24	No
Daily	64.7	48.1	1.07	0.28	No
Vlog/emotion	47.1	33.3	0.91	0.36	No
Music/dance	35.3	22.2	0.95	0.34	No

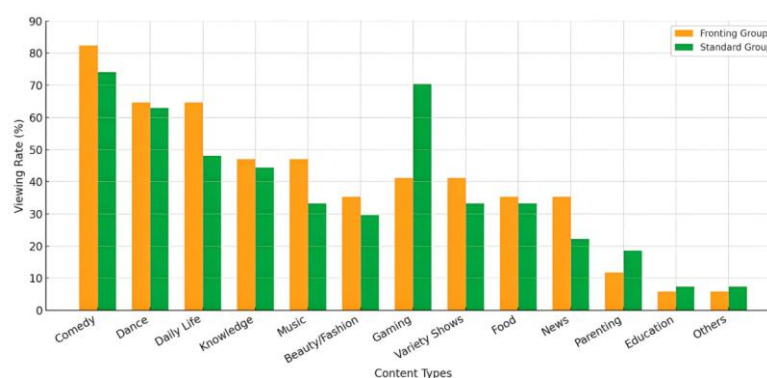


Figure 2. Comparison of Content Preferences.

As shown in Figure 2, gaming content, typically associated with male-dominated, competitive, and aggressive interactional styles, was substantially more common among standard users, approaching statistical significance ($p \approx 0.055$). In contrast, fronting users reported higher engagement with beauty, lifestyle, and emotional content, domains symbolically linked to affective display and self-presentation. Although most differences did not reach statistical significance, the directional trends are meaningful: they align with the symbolic associations of Nu Guoyin as a "cute" or softened speech style, suggesting that digital media environments may reinforce and normalize the social meanings of phonetic variation.

3.4. Qualitative Insights: Gender Performativity

Interviews revealed recurring themes consistent with Judith Butler's theory of gender performativity.

Imitation and Citationality. Several students attributed fronting to imitation of influencers or Taiwanese celebrities. For example, one remarked, "Some internet personalities speak that way, so others copy them." Another explicitly linked fronting to "sounding cute," illustrating citationality and the performance of gender through repetition of recognizable cultural styles.

From Online to Offline. Respondents noted that speech patterns spread from digital contexts into face-to-face interactions, serving as tools for social bonding. One participant explained, "We imitate it to get closer to friends." This demonstrates how online media normalize stylistic practices that later become embodied routines.

Male Appropriation. Notably, some male students reported using fronting, often humorously or in parody. These practices challenge the assumption that phonetic style aligns strictly with gender identity. Butler's framework highlights the subversive potential

of such "misaligned" performances: when men adopt a feminized variant, they reveal the contingency of the gender-speech link.

Alternative Functional Pathways. A female teacher, herself a consistent user of full fronting, argued that [s] was acoustically clearer and less prone to distortion in noisy environments than [ʃ]. This functional explanation shows that not all usage is gender-driven; pragmatic communicative needs may also motivate variant adoption.

Together, these accounts confirm that Nu Guoyin is neither uniform nor exclusively gendered. It functions simultaneously as a stylistic performance, a mediated cultural trend, and, in some cases, a practical acoustic strategy.

3.5. Preliminary Observation of "Male National Pronunciation"

During data collection, researchers observed a contrasting variant: the backing of palatal initials toward the palatal-velar region, approximating [cç], [cʰç], or [ç]. This emerging feature, tentatively labeled "male national pronunciation," was observed exclusively among male speakers. Although it was not systematically studied in this project, its presence suggests the possibility of complementary gendered sound shifts. Further research is needed to determine its prevalence, social meanings, and interaction with Nu Guoyin.

3.6. Summary

The results reveal three key findings. First, Nu Guoyin is no longer exclusively female; although still more common among women, a substantial proportion of men also use it. Second, users are often unaware of their own pronunciations, highlighting its unconscious and socially conditioned nature. Third, social media platforms and content preferences are associated with usage patterns, supporting the view that digital environments facilitate the spread of stylistic phonetic variants. Finally, qualitative interviews indicate that Nu Guoyin functions simultaneously as a performance of gender, a media-driven style, and, in some cases, a pragmatic speech strategy.

4. Discussion

The findings of this study provide new insights into the sociolinguistic dynamics of Nu Guoyin in contemporary Beijing. Building on earlier descriptive research, the present analysis revisits this longstanding phenomenon with updated empirical data, showing that its social meanings, distribution patterns, and explanatory frameworks are undergoing significant transformation.

4.1. Gender Boundaries and Shifting Distributions

Perhaps the most striking finding concerns the weakening of the sharp gender asymmetry highlighted in earlier studies. In the 1980s, Nu Guoyin was described as an almost exclusive marker of educated young women, with male adoption virtually absent. In contrast, this study found that more than one quarter of male participants employed fronted variants, particularly in the word-list task. Once tightly associated with femininity, the phenomenon now appears more fluid, accessible to both genders as a resource for social performance.

This development reflects broader societal changes in China. Over the past three decades, shifting gender ideologies have reconfigured expectations of masculinity and femininity. Whereas earlier norms strictly policed gendered behavior, contemporary youth culture tolerates and even embraces boundary-crossing practices. The appropriation of Nu Guoyin by male speakers, sometimes serious and sometimes parodic, illustrates how linguistic variants become sites where social categories are contested and redefined. Rather than serving as a fixed emblem of femininity, Nu Guoyin has become a flexible stylistic option available to speakers across the gender spectrum.

4.2. Beyond Traditional Explanations

Previous scholarship proposed three main explanations for the persistence of Nu Guoyin: beautification psychology, dialectal residue, and intimacy signaling. While each account captures certain aspects of the phenomenon, our findings suggest that they are insufficient to explain its contemporary trajectory.

The "beautification" hypothesis assumes that female speakers adopt delicate phonetic forms to align with aesthetic ideals. However, in our dataset, many users—particularly male speakers—were not motivated by aesthetic considerations. Similarly, the "dialectal residue" explanation is less persuasive in an era of widespread linguistic homogenization, where Beijing adolescents have limited exposure to Jiangnan dialects that once preserved the *jian-tuan* distinction. Finally, while "intimacy signaling" may account for the affective quality of fronting in private contexts, it does not explain its adoption on public digital platforms.

Instead, the evidence points to new explanatory frameworks. Interviews highlighted the roles of imitation, parody, and stylization, particularly in relation to online influencers. Digital media amplify and normalize distinctive features, transforming local variants into recognizable markers of identity. Thus, the persistence of Nu Guoyin today is less a matter of residual dialectal influence or subconscious affect, and more a product of stylistic practice within mediated interaction.

4.3. The Role of Digital Media

One of the most original contributions of this study is its demonstration of how digital media reshape the conditions of phonetic variation. Platforms such as Douyin, Xiaohongshu, and Bilibili act as "accelerators of style," enabling linguistic traits to spread rapidly and acquire new symbolic significance.

Our statistical analysis showed that fronting users disproportionately favored platforms oriented toward lifestyle and self-presentation, whereas standard users were concentrated in gaming- and subculture-focused environments. Although these differences were not statistically significant, the directional patterns support the idea that platform ecologies cultivate distinct linguistic orientations. Interview data further confirmed that adolescents frequently noticed, imitated, and circulated Nu Guoyin through digital interactions.

These findings align with Butler's theory of gender performativity, which emphasizes that identities are enacted through repeated practices. In this context, fronted palatal initials function as performative resources: speakers reproduce them to "do" femininity, to parody gender norms, or to align with a mediated style. The performative dimension accounts not only for female adoption but also for male appropriation, showing that linguistic variants do not merely reflect gender but actively participate in its construction.

The performative nature of Nu Guoyin resonates with broader forms of gendered expression in other disciplines. For example, in ballet pedagogy, traditional and contemporary practices negotiate femininity and authenticity, illustrating how repeated embodied actions construct and signal gendered identities [16]. Similarly, Beijing adolescents employ Nu Guoyin to enact, parody, or explore femininity through speech, demonstrating that language, like dance, can function as a medium for negotiating social norms and identity.

4.4. Functional Motivations and Alternative Pathways

While much of the analysis emphasizes symbolic and stylistic functions, interviews also revealed pragmatic motivations. A female teacher noted that [s] realizations were acoustically clearer and less prone to distortion than [ʃ], particularly in noisy environments. Such functional considerations suggest that Nu Guoyin may persist not only as a style marker but also as a communicative strategy, enhancing intelligibility in specific contexts.

This observation challenges the assumption that all instances of Nu Guoyin are purely socially motivated. Instead, the phenomenon may operate on multiple levels simultaneously: as an unconscious articulatory preference, as a stylistic performance, and as a functional adaptation. Future research should investigate the acoustic dimensions of clarity and intelligibility to determine whether these practical factors significantly contribute to the variant's persistence.

4.5. Emergence of "Male National Pronunciation"

An unexpected observation was the emergence of what we tentatively term the "male national pronunciation," characterized by backing of palatal initials toward the velar region. Although not systematically measured, this variant was observed exclusively among male speakers. Its presence raises intriguing possibilities: just as Nu Guoyin once indexed femininity, a complementary "male" style may be developing in parallel. Whether this pattern is widespread, stable, or socially meaningful requires further empirical investigation.

If confirmed, the coexistence of fronting and backing variants would provide a compelling example of how sound changes can operate along gendered lines within a single speech community. Such complementary shifts challenge traditional models of variation that assume a single trajectory, highlighting instead the potential for multiple, intersecting pathways driven by identity performance.

5. Conclusion

This study contributes to sociolinguistic theory by showing how phonetic variants evolve in response to changing gender ideologies and media environments. It emphasizes that youth speech should be analyzed not merely as a passing fashion but as a significant site of identity work. By integrating sociophonetic analysis with theories of performativity and media circulation, the research highlights the multi-layered dynamics of variation in contemporary urban contexts.

Practically, the findings have implications for language education and pedagogy. Teachers and institutions often treat non-standard variants as "errors" or "deficiencies." Understanding Nu Guoyin as a socially meaningful practice challenges such deficit perspectives. Rather than stigmatizing the variant, educators might approach it as an index of evolving cultural practices, while still ensuring that students understand the expectations of standard Mandarin in formal settings.

Several limitations should be acknowledged. First, the sample of 44 students, while sufficient for exploratory analysis, limits the generalizability of the findings. Future research should include larger and more diverse samples, encompassing multiple schools and a range of socioeconomic backgrounds. Second, the reliance on perceptual coding rather than acoustic measurement introduces potential subjectivity; incorporating acoustic analysis would provide more precise evidence of phonetic shifts. Third, although this study highlighted the role of digital media, it did not directly analyze online discourse. Ethnographic research on digital communities could offer deeper insights into how Nu Guoyin circulates and acquires meaning online.

Despite these limitations, the study provides a timely re-examination of a historically significant yet understudied phenomenon.

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