# Indexing political identity through syntactic variables: Classifier specificity in pro-Taiwan and pro-China Taiwan Mandarin speakers

Po-Hsuan Huang and Stephanie Shih
University of Southern California

USC

NWAV 53 Nov. 5–7

# Political indexicality

- Linguistic variables have been found to **index political identity**:
  - Hall-Lew *et al*. (2010; 2012) found that:
    - *Ir[a:]q ~ Ir[æ]q* could index political liberalism ~ conservatism.
    - Republicans are significantly more likely than Democrats to use /æ/ in the House of Representatives.
  - Sloman *et al*. (2021) extracted words more likely to be used by Republican/Democrat politicians, and found that speakers are able to guess which word is more likely to be used by Republicans/Democrats at an above-chance rate.



Hall-Lew, L. & Coppock, E. & Starr, R.. (2010). Indexing political persuasion: Variation in the Iraq vowels. *American Speech, 85*. 91–102. Hall-Lew, L., Starr, R. & Coppock, E. 2012. Style-Shifting in the U.S. Congress: The vowels of 'Iraq(i)'. In Juan Manuel Hernandez Campoy and Juan Antonio Cutillas Espinosa, Eds., S*tyle-Shifting in Public: New Perspectives on Stylistic Variation*, pp45-63. Amsterdam: John Benjamins. Sloman SJ, Oppenheimer D. M. & DeDeo S. (2021). Can we detect conditioned variation in political speech? two kinds of discussion and types of conversation. *PLoS One, 16*(2):e0246689.

# Political indexicality

- Linguistic variables have been found to **index political identity**.
- Previous studies, however, focused on **phonetic and lexical** variables.
- We investigated whether nuanced morphosyntactic distinctions may also serve to index political identity:
  - **Classifier specificity among pro-Taiwan & pro-China Taiwan Mandarin speakers.**

# Classifier specificity

- In Mandarin, classifiers are paired w/ the noun referents (Hsieh, 2009; Her & Hsieh, 2010; Her & Lai, 2012; Yip & Rimmington, 2015).
- Nouns may only go w/ certain classifiers.

一　隻　　狗。
Yi　zhi　　gou.
one CL:animal dog
“A dog.”

一　個　　狗。
Yi　ge　　gou.
one CL:general dog
“A dog.”

*一　顆　　狗。
Yi　ke　　gou.
one CL:round　dog
Intended: “A dog.”



Hsieh, C. (2009). *A frame-based approach to classifiers: A case study of Taiwan Mandarin* (MA Thesis). National Chengchi University.  Her, O.-S., & Hsieh, C.-T. (2010). On the semantic distinction between classifiers and measure words in Chinese. *Language and Linguistics, 11*(3), 527–551. Her, O.-S., & Lai, W.-J. (2012). Classifiers: The many ways to profile ‘one’: A case study of Taiwan Mandarin. *International Journal of Computer Processing of Languages, 24*(01), 79–94. Yip, P.-C., & Rimmington, D. (2015). *Chinese: A Comprehensive Grammar*. Routledge.

# Classifier specificity

- In Mandarin, classifiers are paired w/ the noun referents (Hsieh, 2009; Her & Hsieh, 2010; Her & Lai, 2012; Yip & Rimmington, 2015).
- Nouns may only go w/ certain classifiers.
- Nouns can go w/ more than one classifier:
  - An array of classifiers to choose from.

  → The "general" classifier ge 個 vs. specific classifiers

一 隻 狗。
Yi zhi gou.
one CL:animal dog
"A dog."

一 個 狗。
Yi ge gou.
one CL:general dog
"A dog."

*一 顆 狗。
Yi ke gou.
one CL:round dog
Intended: "A dog."





Hsieh, C. (2009). *A frame-based approach to classifiers: A case study of Taiwan Mandarin* (MA Thesis). National Chengchi University. Her, O.-S., & Hsieh, C.-T. (2010). On the semantic distinction between classifiers and measure words in Chinese. *Language and Linguistics, 11*(3), 527–551. Her, O.-S., & Lai, W.-J. (2012). Classifiers: The many ways to profile 'one': A case study of Taiwan Mandarin. *International Journal of Computer Processing of Languages, 24*(01), 79–94. Yip, P.-C., & Rimmington, D. (2015). *Chinese: A Comprehensive Grammar*. Routledge.

# Classifier specificity & sociolinguistic meaning

- Zheng & Liu (2023) found that classifier specificity indexed different perceived personal traits among Mandarin speakers recruited on a social media platform:
  - The use of the specific classifiers was rated as more meticulous & steady.



Zheng, M. & Liu, J. (2023). The Mandarin Classifier Is Changing: How and Why. *Proceedings of the Linguistic Society of America, 8*(1): 5498.

# Classifier specificity as political indexicality

- Taiwanese political polarization is based less on a left-right ideology but more on the *pro-Taiwan* *vs.* *pro-China* division (Hsiao & Cheng, 2014).

- In this study, we investigate: **(Q1) Can classifier specificity likewise be used to index political identity among pro-Taiwan & pro-China Taiwan Mandarin speakers?**

**Chinese Mandarin** **Taiwan Mandarin**

**pro-China** **pro-Taiwan**



Hsiao, Y.-C. & Cheng, S.-F. (2014). Citizens' perceptions of the left-right ideology in Taiwan: Replacing left-right ideology with the unification-independence issue to measure Taiwan's party polarization. Taiwan Political Science Review, 18(2), 79–138. Hall-Lew, L., & van Eyndhoven, S. (2025). Linguistic variation and political identity. In C. Cieri et al. (Eds.), Dimensions of linguistic variation (online ed.). Oxford Academic.

# Classifier specificity as political indexicality

- Hall-Lew & van Eyndhoven (2025) propose that political indexicality is typically derived from *politicizing* an existing indexicality.

- Intuitively, the indexicality of variety (Taiwan Mandarin ~ Chinese Mandarin) is the most likely target. → **(Q2) Would the variety differences b/t Taiwan Mandarin & Chinese Mandarin show a similar directionality?**

**Chinese Mandarin** **Taiwan Mandarin**

**pro-China** **pro-Taiwan**



Hsiao, Y.-C. & Cheng, S.-F. (2014). Citizens' perceptions of the left-right ideology in Taiwan: Replacing left-right ideology with the unification-independence issue to measure Taiwan's party polarization. Taiwan Political Science Review, 18(2), 79–138. Hall-Lew, L., & van Eyndhoven, S. (2025). Linguistic variation and political identity. In C. Cieri et al. (Eds.), Dimensions of linguistic variation (online ed.). Oxford Academic.

# Data

- To answer these questions, we collected spontaneous speech data from 2,841 publicly-accessible YouTube videos created by Taiwanese & Chinese creators (2,345,967 sentences; 11,453.56 hours of speech).


A screenshot from one of the videos, HahaTai 哈哈台 (2024, Oct. 24). A person is being interviewed.



HahaTai 哈哈台 (2024, Oct. 24). 究極の訪問 - 男同志 / 女同志。下輩子想當什麼性向 / 性別？不准說女T！男同圈內超競爭？女同都不出門？《哈哈台街訪》EP164【哈哈台】 [Video]. Youtube. https://www.youtube.com/watch?v=WHqEoKiA60o

# Methods

## Classifier specificity

- Classifier-noun pairs (adjacent & nonadjacent) were extracted using Stanford CoreNLP (212,150 pairs extracted).

- We modeled classifier specificity on two levels:

  - Binary distinction: **general** (ge 個 & jian 件) **vs. specific** (others) **classifiers** (based on their PMI distribution)

  - Continuous specificity: the mean absolute **pointwise mutual information** (i.e., the degree of association) b/t a classifier & all the co-occurring nouns

$$PMI(classifier, n) = \frac{P_{corpus}(n \mid classifier)}{P_{corpus}(n)}$$

# Methods

## Social factor labeling

- Political identity: labeled based on the content creators/news media.


A pro-China legislator criticizing Trump's tariff policies (TVBS Talk, 2025, April. 22).


Three pro-Taiwan content creators discussing their views on marriage (范琪斐的美國時間, 2025, Apr. 16).

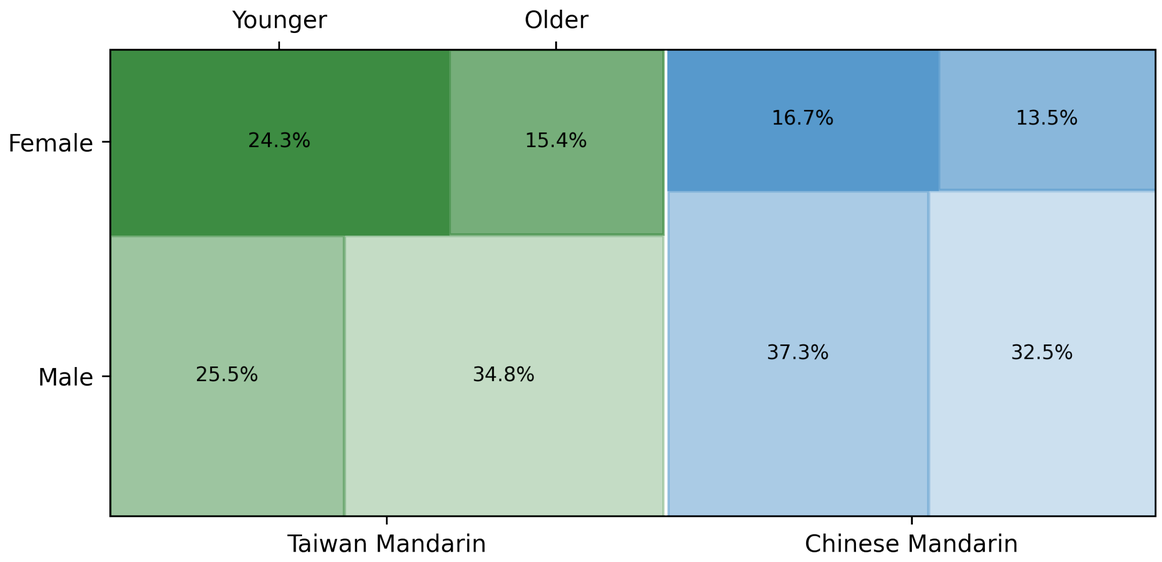


TVBS Talk (2025, Apr. 22). 中國早有佈局川普認慫了?美媒自嘲對中一折再折了!白宮被聯準會主席反殺了?泰國日本墨西哥嗆美國了!陸光刻機殺出美國血路了?【#新聞大白話】 [Video]. Youtube. https://www.youtube.com/watch?v=Dm8ieFCXeHA 范琪斐的美國時間 (2025, Apr. 16). 老公永遠不知道自己哪裡錯？呱吉現在知道了嗎？ ft.呱吉 @FroggyChiu | 陪我走一段 EP8 [Video]. Youtube. https://www.youtube.com/watch?v=IfE5x9Q9xL0

# Methods

## Social factor labeling

- Gender & age as control variables were automatically labeled through speech recognition:
  - Gender: Female vs. male
  - Age (20-year interval): 20–39, 40–59
  - A pretrained demographic speech recognition model (Burkhardt et al., 2023) based on Wav2Vec2 (Baevski et al., 2020) was used.
  - To enhance the model's accuracy, the model was further finetuned through active learning with 100 iterations, judged by the first author.






Burkhardt, F., Wagner, J., Wierstorf, H., Eyben, F., & Schuller, B. (2023). Speech-based age and gender prediction with transformers. Retrieved from https://arxiv.org/ abs/2306.16962 Baevski, A., Zhou, H., Mohamed, A., & Auli, M. (2020). wav2vec 2.0: A framework for self-supervised learning of speech representations. Retrieved from https://arxiv.org/abs/2006.11477

# Methods

## Statistical analysis

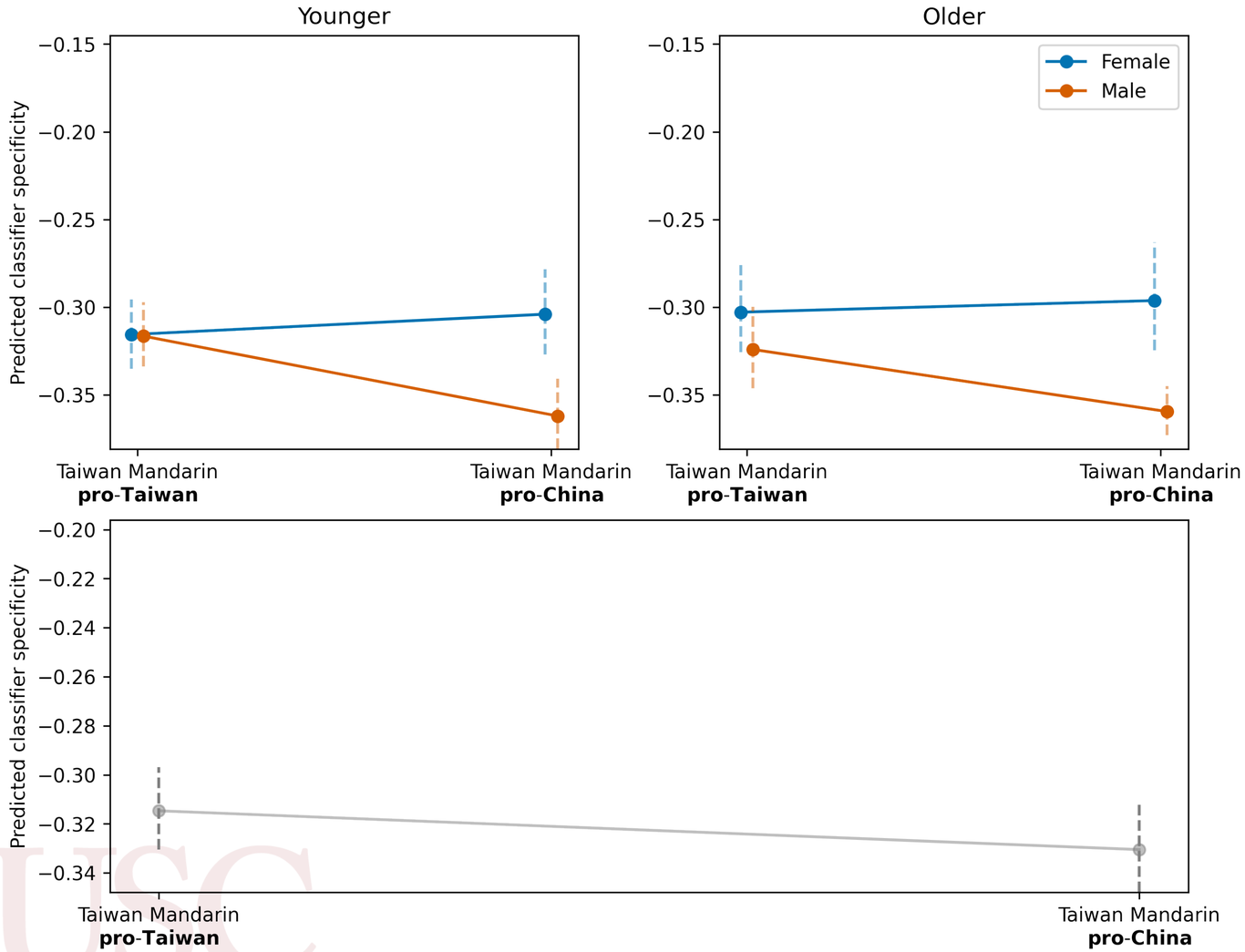
- To account for both levels of classifier specificity (i.e., general vs. specific & continuous PMI), a multivariate Bayesian hierarchical model was fitted:
  - Two linked components:
    - General vs. specific (Bernoulli distribution)
    - Continuous PMI value (Gaussian distribution)
  - Random intercepts for video identity & noun
- The marginal effects of predicted classifier specificity were examined by computing the expected PMI, weighted by each observation's model-predicted probability of using a specific (vs. general) classifier.

Predicted classifier specificity=

$$PMI_{specific} \times P(specific) + PMI_{general} \times (1 - P(specific))$$

# Results

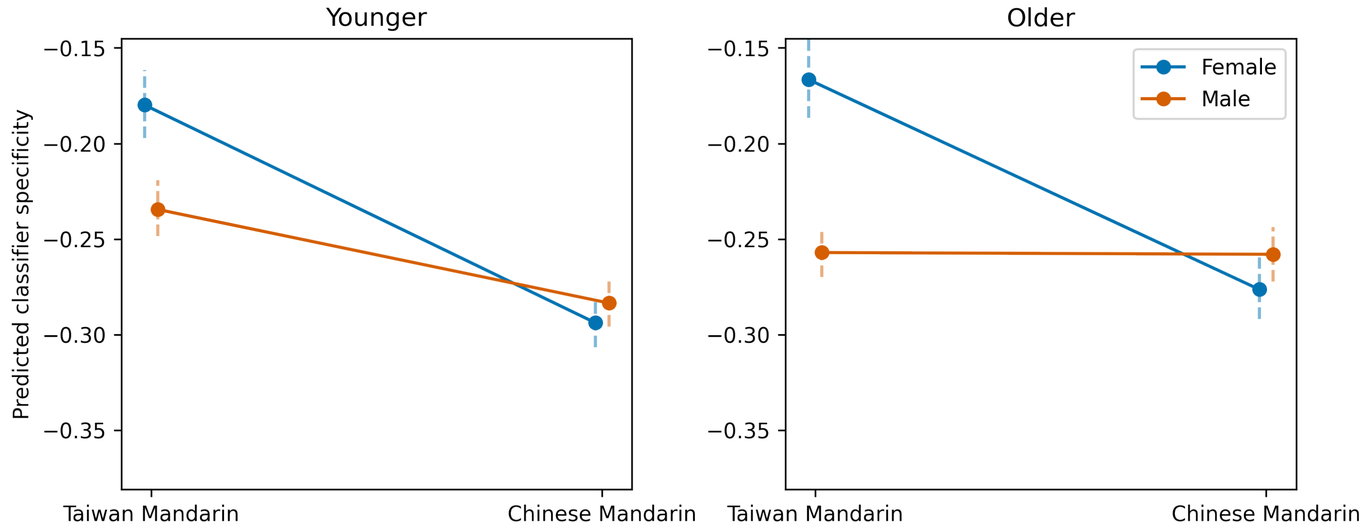
## Pro-Taiwan vs. Pro-China

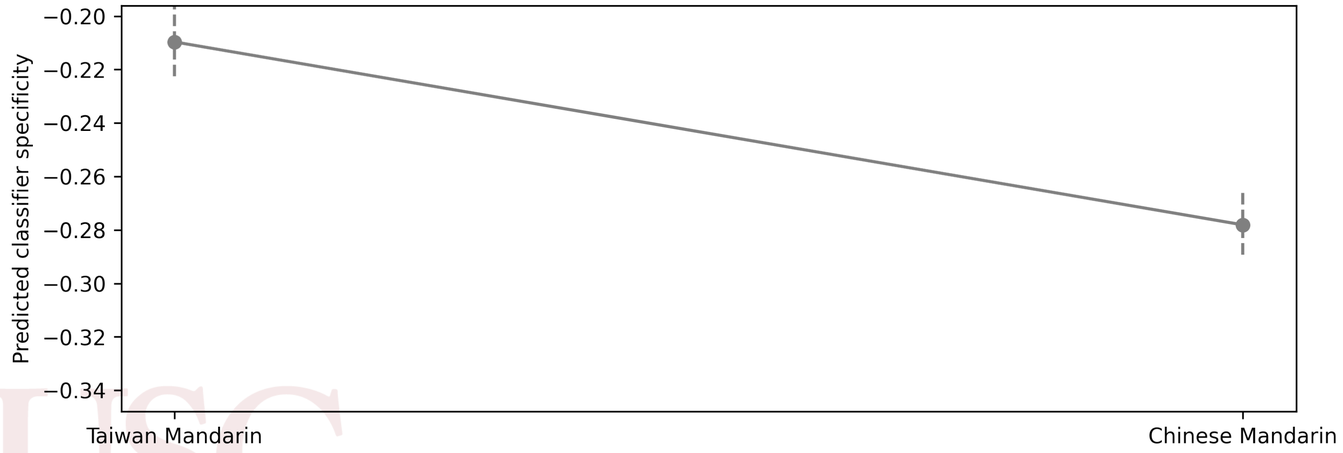



- **Women** showed **greater classifier specificity** than men.
  - This difference was greater in pro-China speakers.
- **Younger** speakers showed **greater classifier specificity**.
- **Pro-Taiwan** Taiwan Mandarin speakers showed **greater classifier specificity** in their production than their **pro-China** counterparts.

# Results

## Taiwan Mandarin vs. Chinese Mandarin

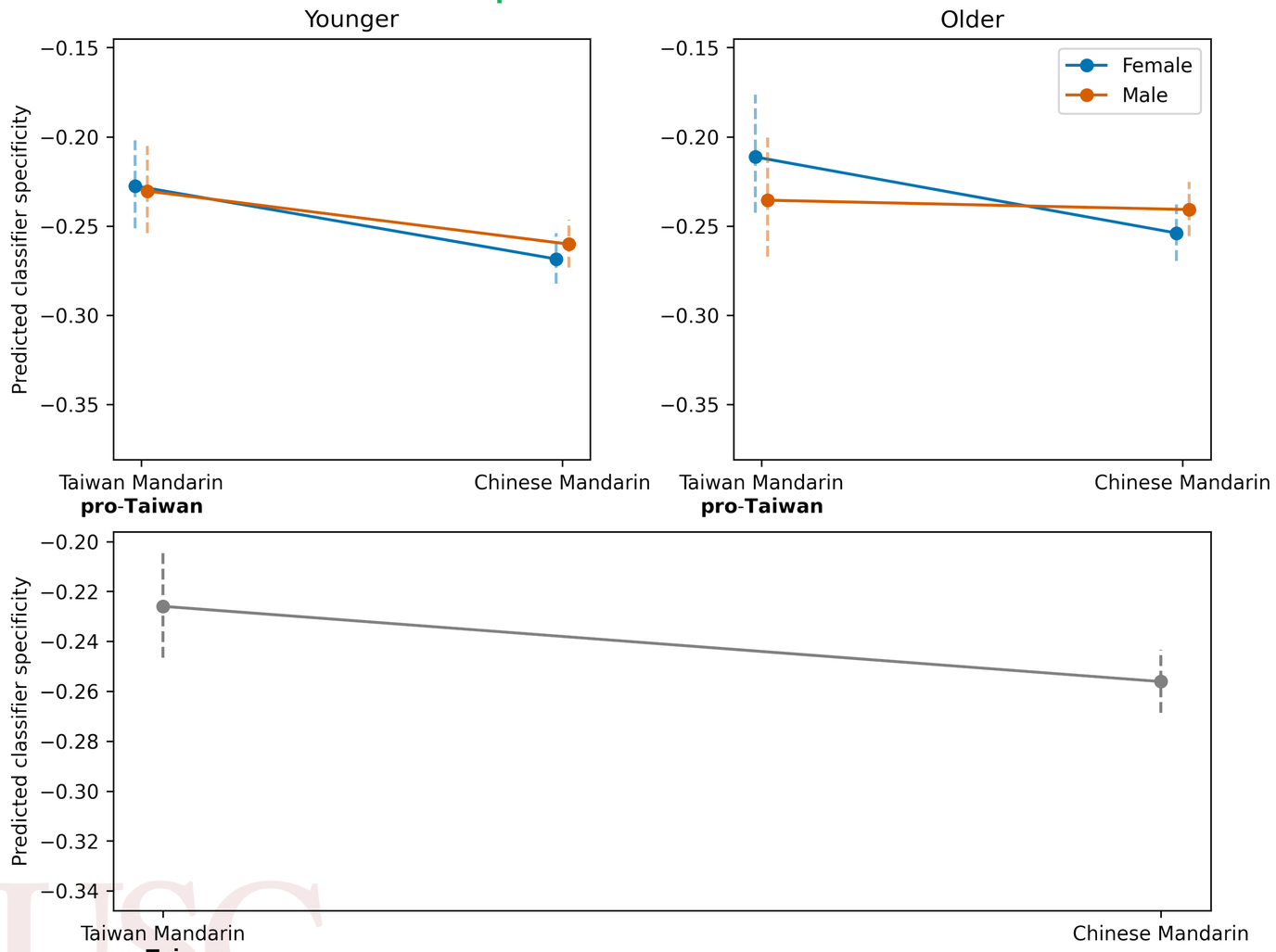



- In Chinese Mandarin,
  - **Men** showed **greater classifier specificity** than women.
  - **Older** speakers showed **greater classifier specificity**.
- **Taiwan Mandarin** speakers, in general, showed **greater classifier specificity** than **Chinese Mandarin** speakers.

# Results

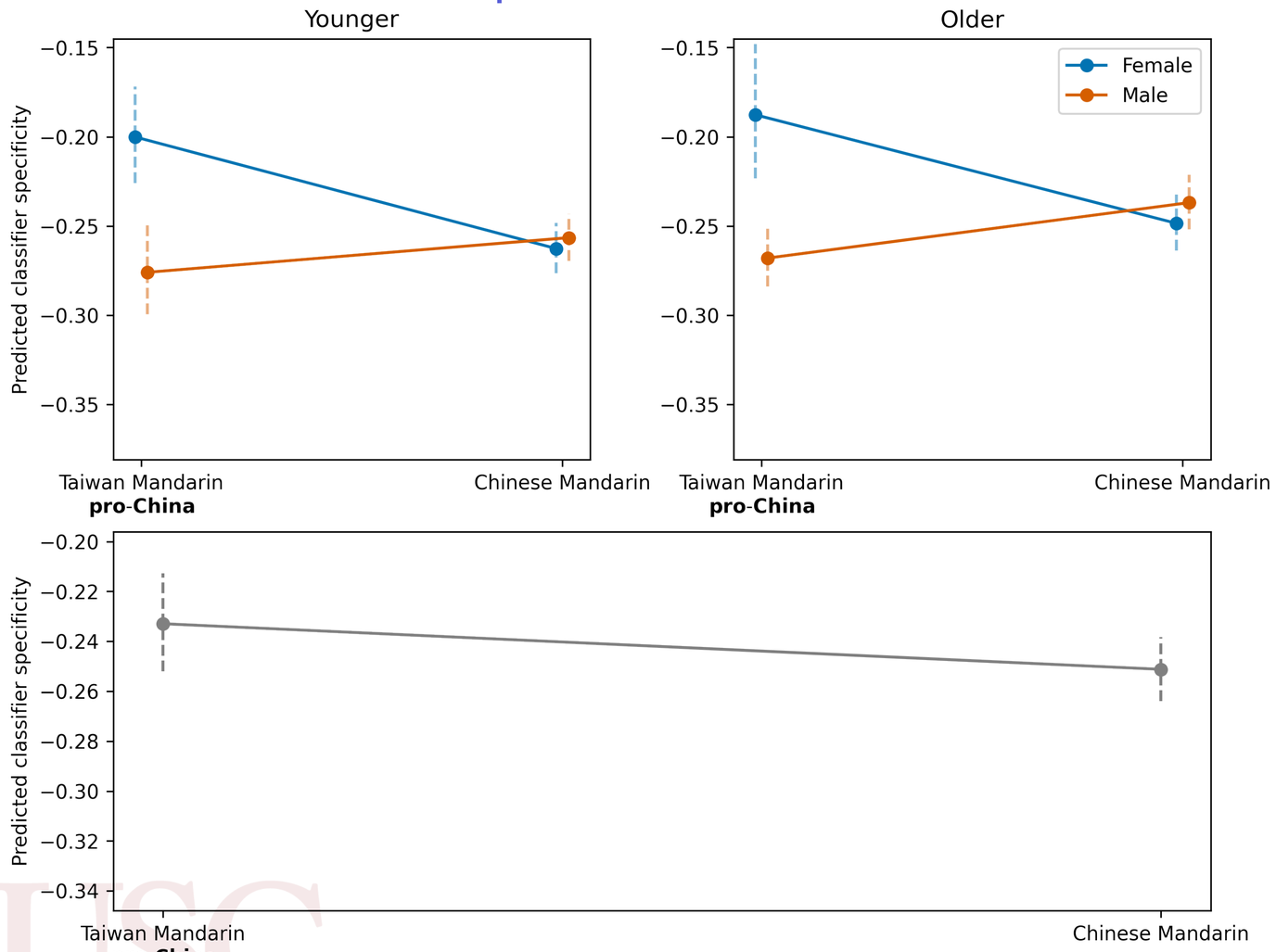
## Taiwan Mandarin (pro-Taiwan) vs. Chinese Mandarin




- When compared separately, **both pro-Taiwan & pro-China** Taiwan Mandarin speakers showed **greater classifier specificity** than **Chinese Mandarin** speakers.

# Results

## Taiwan Mandarin (pro-China) vs. Chinese Mandarin




- When compared separately, **both pro-Taiwan & pro-China** Taiwan Mandarin speakers showed **greater classifier specificity** than **Chinese Mandarin** speakers.

# Discussion

## The political indexicality of classifier specificity

- Classifier specificity:
  - Taiwan Mandarin (pro-Taiwan) > Taiwan Mandarin (pro-China) > Chinese Mandarin
- The greater classifier specificity among pro-Taiwan speakers than pro-China speakers suggests the political indexicality of classifier specificity.
- Similar directionalities were observed b/t pro-Taiwan ~ pro-China & Taiwan Mandarin ~ Chinese Mandarin speakers.

  → Variety differences are likely the target.

# Discussion

## Female & young speakers as potential change leaders

- Within both Taiwan Mandarin & Chinese Mandarin, female & young speakers were aligned (both using either the more or less specific classifiers).
- A unified account could suggest they are change leaders in both languages, w/ opposite directions.

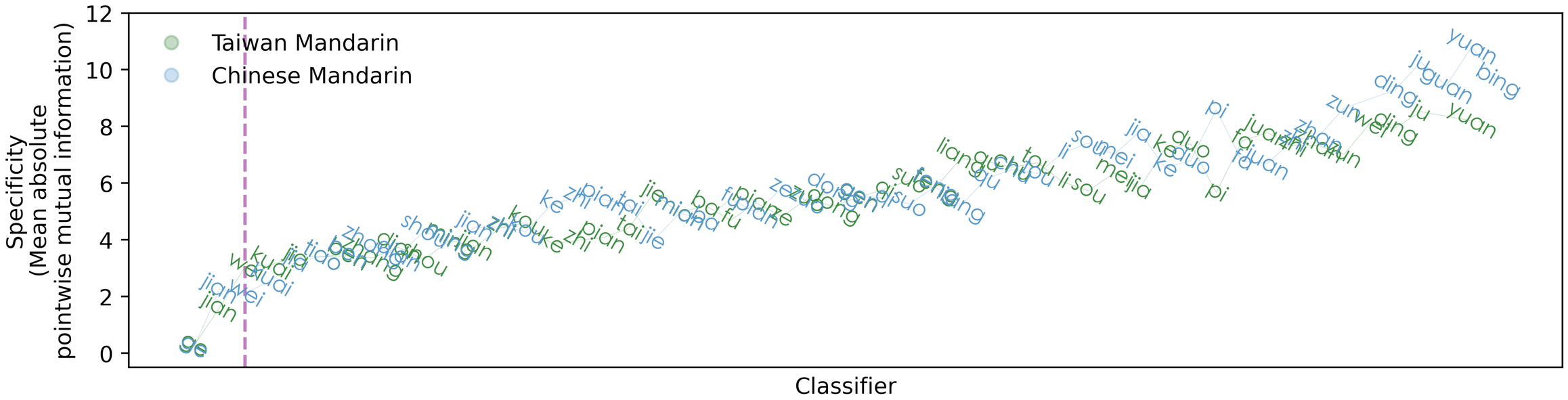


Her, O.-S. (2009). 語言與族群認同：從臺灣外省族群的母語與臺灣華語談起 [Language and group identity: On Taiwan mainlanders' mother tongues and Taiwan Mandarin]. *Language and Linguistics, 10*(2), 375–419.

# Conclusion

- This study examines the morphosyntactic aspects of political indexicality.
  - Previous studies focused on **lexical and phonetic** variables.
  - Few studies have shown the same politicizability in nuanced **morphosyntactic** variables as classifier specificity.
- We show that the political indexicality of classifier specificity likely exists across the political identity of pro-Taiwan & pro-China Taiwan Mandarin speakers.
- Such indexicality is likely targeting the variety differences b/t Taiwan Mandarin & Chinese Mandarin.

# PMI distribution



# Discussion

## Gender differences

- Assuming specific classifiers are more formal, the observed greater classifier specificity in female speakers in Taiwan Mandarin is in alignment w/ the widely attested gender effects on variation, where female speakers tend to use the more formal variants.
- The weaker gender differences in pro-Taiwan Taiwan Mandarin speakers could potentially be due to the generally stronger liberalism among pro-Taiwan Taiwanese.
- This account does not explain the reversed gender effects in Chinese Mandarin.

# Discussion

## Age differences

- The observed greater classifier specificity in older speakers in Chinese Mandarin is also in alignment w/ the widely attested age effects on variation.

- The reversed age effects (younger speakers showing greater specificity) could be due to the nature of Taiwan Mandarin:

  - Her (2009) argues that Taiwan Mandarin is a creole influenced by Beijing Mandarin (in the 1940s) & the other Chinese languages (mainly Taiwan Southern Min).

  - The older speakers in this study fall into the first generation who speak this newborn creole. → The regularization of Taiwan Mandarin may still be in progress for these speakers.



Her, O.-S. (2009). 語言與族群認同：從臺灣外省族群的母語與臺灣華語談起 [Language and group identity: On Taiwan mainlanders' mother tongues and Taiwan Mandarin]. *Language and Linguistics, 10*(2), 375–419.