

* This paper has been accepted by *Asia-Pacific Language Variation*.

Topic-based variation as both cognitive and agentive: Identity politics, deaf speakers, and hearing researcher

Tsung-Lun Alan Wan

(tsunglun.wan@ed.ac.uk)

Abstract:

Topic-based style-shifting refers to the variation pattern that, when people talk about a topic, they shift to a linguistic style which is associated with the topic. Most of the research on topic-based variation in read speech have not taken stance-taking into consideration. This study argues that stance-taking needs to be included in the analysis of topic-based variation, for reading something aloud is a practice where individuals also engage with the message communicated in any reading passage. This study looks at the socially salient variable /ʂ/ in Taiwan Mandarin, and how deaf speakers exploit this variable to perform their stances towards a passage concerned with the political relationship between hearing people and deaf signers. The findings show that participants who demonstrate a stance of deaf solidarity diverge from standard speech styles in their repertoires when reading the deaf passage.

Keywords: stance-taking; cognitive sociolinguistics; read speech; retroflex fricative; deaf identity

1. Introduction

This study explores how oral deaf speakers of Taiwan Mandarin utilise linguistic style-shifting to negotiate their relationship with a passage which represents the relationship between hearing people and deaf signers as structural oppression.

By ‘oral deaf people’, I mean deaf people who are orally educated. The term ‘oral’ is ideologically loaded. It emphasises how oralism deems spoken language as a superior modality to signed/written language, and how a shift to oral education has been framed as a move to “inclusive education” or “mainstreaming” since the 1980s in Taiwan, where efforts were seen to ban signed language in regular (hearing) schools in the 1980s (Liu et al., 2014).

Most of the participants in this study identify as 聽障者 *tīngzhàngzhě* (lit. ‘hearing disabled people’) or 聽損者 *tīngsǔnzhě* (lit. ‘hearing loss people’). In contrast, people who attend deaf schools and receive education in Taiwan Sign Language (TSL) usually identify as 聾人 *lóng rén* (lit. ‘deaf people’). It is rare to see oral deaf people identify as *lóng rén*, for this label has a strong connection with signed language use. Some oral deaf adults who learn TSL as a second language¹ and do not use it as their dominant language also identify as *lóng rén*. In this article, unless I look at how my participants specifically identify themselves, I follow Kusters, O’Brien, and De Meulder’s (2017, p. 15) proposal to “define ‘deaf’ as a term describing all kinds of deaf persons, including those who are hard of hearing”.

I explore how oral deaf people shift speech styles when reading a passage concerned with the dominance over deaf signers by hearing people. Theoretically, this article contributes to topic-based style-shifting research (§2). At a

macrosocial level, the topic itself is not stereotypically associated with any speech styles. At an individual level, it is expected that when an oral deaf person shows solidarity with deaf signers, this topic is associated with their own casual speech styles (usually known as ‘deaf accent’, §4.2). In the present study, the oral deaf participants demonstrate different patterns of topic-based linguistic variation when shifting to the topic of identity politics about deaf signers. This study is a part of the ‘deaf speech’ project (see Wan 2021a) which explores agentic linguistic practices among oral deaf people. This paper analyses the inter-speaker difference in terms of whether a person demonstrates ‘deaf solidarity’.

This article is structured as follows: first, I review mainstreamed perspectives on topic-based style-shifting. Then, I provide descriptions of how the participants of this study were recruited, what task they were invited to participate in, and my positionality. Then, I focus on the linguistic variable used in this study and present findings. Finally, I review how the cognitive model of topic-based linguistic variation can be revised to explain the empirical phenomenon.

2. Topic-based style-shifting

Topic-based style-shifting refers to a phenomenon where individuals travel between different linguistic styles under different topics. In terms of phonetic/phonological variation, most topic-based style-shifting research is on conversational or interview speech (Becker, 2009; Boyd, 2018; Hall-Lew, Cardoso, et al., 2021; Hay & Foulkes, 2016; Lee & Idemaru, 2021; Levon, 2009; Moore & Carter, 2015); some work is on read speech (e.g., Hashimoto, 2019; Lin, 2018; Love & Walker, 2013; Walker, 2019).

The topic effect has been approached from different theoretical perspectives. In a broad sense, there are two major perspectives – *agency theory* and *cognition theory*. In agency theory, emphasis is put on how people perform their relationship with the topic. For example, speakers shift to speech styles associated with specific topics (e.g., ethnicity, place, sexuality) to perform their identities associated with those topics (Becker, 2009; Boyd, 2018; Hall-Lew, Cardoso, et al., 2021). At a microsocial level, Kiesling (2011) argues that topic-based style-shifting should be considered a product of *stance-taking*. For instance, Moore and Carter (2015) point out that a Scillonian person educated in mainland Britain shifts to different English speech styles when talking about different employees under a “company” topic; this speaker uses more mainland-oriented vowel variants when talking about certain captains who achieved “authority, discipline, ambition and institutional status”, and shifts to Scilly-oriented variants to distance himself from other employees who don’t achieve this kind of status. Kiesling (2011) argues that topic-based style-shifting is not driven by the conversational topic per se; instead, it is the stance taken by people that drives the topic effect.

In cognition theory, the emphasis is instead put on how social information and linguistic information are cognitively associated, thereby enabling topic-based linguistic variation. Walker (2019) points out that stereotypical sociolinguistic representations drive topic-based variation. As agentive factors do not always show a significant influence on the topic effect, researchers question whether agency is a necessary condition for topic-based linguistic variation (Devlin et al., 2019; Love & Walker, 2013). Especially for read speech, individual agency has been reported to play no effect in such ‘non-interactional’ settings. For

instance, in Hashimoto's (2019) research on Pākehā New Zealand English speakers, when reading a passage on Māori culture, Pākehā speakers realise Māori loanwords with the Māori-imported variant [ɾ] rather than the adapted variant [ɹ]; the topic effect has no statistical interaction with a person's attitude towards Māori language and culture. In contrast, Lin (2018) reports no significant topic effect among Xiamen Mandarin speakers who study in Beijing when they read two promotional materials introducing Xiamen and Beijing. In other words, cognitive association is necessary for topic-based variation, but some other agentive factors may also be necessary.

Even when the present interlocutor (i.e., the researcher) remains the same person, individuals engage with expectations of different social groups in their style design. Levon (2009) notices that in terms of intra-speaker variation, Israeli gay men do not stick to the same speech style when talking about gay topics. Instead, it depends on whether the conversational frame is an opinion or a narrative. When framing one's speech as an opinion, speakers shift to speech styles (e.g., a higher pitch) which cater to positive Israeli stereotypes of feminine gay men; when framing one's speech as a narrative, they shift to speech styles (e.g., a lower pitch) which embody masculinity, catering to the expectations of other gay men. This observation has theoretical implications for topic-based style-shifting in read speech.

Reading tasks are not really 'non-interactional' settings, and experiments are not context-free (Montgomery & Moore, 2018). Self-conscious read speech is highly performative. Previous work on topic-based variation in read speech do not invite speakers to comment on the passages. In the *stance triangle* framework proposed by Du Bois (2007), individuals not only take a stance to objects; they

also take a stance to the stance of their interlocutors, which contributes to mutual stance-taking between interlocutors. Specifically, speakers take a stance towards the act of performing a reading task as well as to the researcher's presence (Gaftner, 2016; Stuart-Smith et al., 2013).

Texts are not neutral materials. The author of a text takes a stance towards what's communicated, and people who read the text also take a stance towards its content. Reading a text aloud is a discursive activity where speakers inevitably interact with how others in society respond to this text and their act of reading it out loud. Based on previous experiences, individuals are socialised to take a certain stance towards a certain type of text. In this study, I show how stance-taking is a factor which should be considered in research on topic-based style-shifting in read speech.

3. Research design

3.1 Reading tasks

Two passages were used in this study. The first passage was on a royal story that took place during the Qing dynasty of China and had a total of 26 characters (syllables) with the target linguistic variable (see §4). The second passage was relevant to deaf people and had a total of 21 tokens with the target variable. The two stories were comparable in terms of affective valence; both stories were unhappy stories.

The first passage (henceforth, NON-DEAF passage) was concerned with how an empress broke up with the emperor by cutting her own hair to put a curse on the emperor, a taboo in Manchurian culture. No participant knew this story before the reading task. This story was chosen because for the participants it was distant

in space and time, in contrast to the second passage, close to the participants' life experiences.

The second passage (henceforth, DEAF passage) was a fictional story based on a story written by Hsin-yi Lu (2012), a deaf artist who published this story in a news outlet. In the story, there was a kingdom where “Wei people” and “Bi people” were the two major ethnic groups (see the Appendix). Wei people were the dominant group and royalty (this setting serves to create a colonial situation), forcing Bi people to abandon the signed language because Wei people thought signed language was not real language (this setting served to represent the language ideology of signed language in real world). All the participants were aware of the allegorical nature of this story, pointing to the relationship between hearing people and deaf signers in real life.

All participants were required to read the two passages before the recording to see whether the pronunciation of any of the Chinese characters was unknown to them. That is, before the recording, the participants knew what the two passages were about. After the reading tasks, the participants were invited to comment on the DEAF passage. All the data used were from the recording by Zoom H5 (sampling rate = 44.1 kHz), with built-in microphone.

Before the reading tasks, I interviewed them about their comments on TSL, how they identified themselves, and how they understood the relationship between TSL and themselves. I compared the interview speech to the read speech to know how each participant engaged with the investigated linguistic variable to perform standard speech (§4.2). This is crucial, as not every participant engaged with the investigated linguistic variable in the same way as how hearing people

did. They may invoke different articulatory gestures to index the same social meaning.

This study does not focus on any topic effect of the NON-DEAF passage. As the NON-DEAF passage is the first passage to be read, we expect to see the topic effect of the DEAF passage elicit style-shifting from speakers. If the results show there is no variation in the target linguistic variable between the two passages, we will take it to mean there is no topic effect from the DEAF topic (c.f. Hashimoto, 2019).

3.2 Participants and the researcher

A total of 14 deaf participants were recruited from Greater Taipei, through posting recruitment advertisements in the public Facebook group “公「聽」並觀，「障」義執言－聽障者權益論壇 Deaf and HOH forum Taiwan” between December 2018 and January 2019. All participants voluntarily contacted me on Facebook. The average age is 25.9 (max=44; min=18). All the participants used Mandarin as their dominant language and never attended a deaf school.

Among all the participants, 5 of them sign Taiwan Sign Language (TSL). One participant – Sandy – learned TSL in early childhood from her parents, who are both deaf signers and received education in TSL. Sandy learned spoken Mandarin from her (hearing) grandparents. However, she could only communicate specific topics which she would discuss with her parents in TSL. At the time of interview, she did not identify as *lóngrén*.

The other four persons learned TSL in adulthood – Zuo-Zuo, A-Wei, Huei, and Xiao-Lu. All four persons were born to hearing parents and speak Mandarin as their first language. They learned TSL from classes offered by deaf non-profit organizations. Their experiences with TSL are different from deaf people who

acquire TSL as a late first language. At the time of interview, A-Wei and Huei also identified as *lónggrén*. A total of 9 participants did not sign, none of whom identified as *lónggrén*.

I am a hearing man from New Taipei, aged 25 at the time of interview. In the recruitment text, my descriptive stance towards deaf speech is specified. To differentiate myself from speech-language pathologists, who are often the ones recruiting oral deaf people to participate in research projects, it is written that the researcher has no intention to measure the correctness of the participant's speech by the standard of hearing speech. In the consent form, it is again emphasised that "the mainstreamed society has many misunderstandings about deaf people [...] this study does not test whether your pronunciation meets the standard of hearing people". There are deaf persons who do not favor an identity politics emphasising the dominance of hearing people. To avoid discouraging them from participating in the study, apart from what's described above, the recruitment text does not mention anything which might be considered 'radical'. That is, for the participants, it is not explicit whether I take a positive or negative stance towards the perspective that deaf people are dominated by hearing people.

Campbell-Kibler (2021) reports that white people perceive a social danger of displaying racial bias, and this perceived social danger has an effect on how they deliberately avoid relying on facial information to evaluate accentedness of recordings. In this research, instead, oral deaf people are invited to read a passage on how hearing people dominate deaf signers and to comment on it to a hearing researcher. Specifically, some of the participants may perceive a social danger of displaying negative attitudes towards hearing people. As there is no other deaf person present, they may perceive little social danger of displaying negative

attitudes towards deaf signers. This may lead the participants to perform “hearingness” (Henner & Robinson, 2021a) by distancing themselves from the passage. In the context of US academia, Henner and Robinson (2021a, p. 102) observe that deaf scholars are pressured to perform they are like hearing scholars through various linguistic practices such as showing superior writing skills or signing in an English-like way. In this study, due to the researcher’s hearing privilege, some of the participants perform affiliating themselves with hearing people and avoiding aligning themselves with the DEAF passage. I am aware that their discourse in the interview is an example of “performative hearingness” rather than a socially neutral medium which mirrors what they internally think.

4. Linguistic variable: /ʂ/, to retroflex or not

4.1 Hearing people and /ʂ/

In Taiwan Mandarin, the alveolar-retroflex contrast (including the /s/-/ʂ/, /ts/-/tʂ/, and /tʂ^h/-/tʂ^h/ contrast) is undergoing a merging process, in the direction of the alveolar (Tso, 2017). This study looks at the socially salient variable – ‘retroflexion’ – in the retroflex sibilant /ʂ/.

The retroflexion of /ʂ/ is achieved by a bunched tongue; Taiwan Mandarin speakers who demonstrate a clear alveolar-retroflex distinction produce /ʂ/ by elevating the tongue tip and blade (Chiu et al., 2020). The articulatory difference is acoustically reflected in the measurement of the spectral centre of gravity (CoG) of the sibilant: alveolar sibilants receive higher CoG values than retroflex sibilants. As there is a general trend of de-retroflexion among hearing speakers of Taiwan Mandarin, the full retroflexion of /ʂ/ is a marked variant, associated with Mandarin speakers from People’s Republic of China (Brubaker, 2012; Tso, 2017).

It is also perceived as a standard variant used in read speech (Starr, 2016). Women are more likely to realise retroflexion in read speech than men (Fon, 2018; Kuo, 2018). When hearing people shift from spontaneous speech to read speech, a higher retroflexion is usually observed – a decline of 200 to 300 Hz in the CoG of /ʃ/ (Tso, 2017). Thereby, it is locally appropriated to perform an academic persona (Baran, 2014) or educator persona (Starr, 2016).

4.2 ‘Deaf accents’ and /ʃ/

As hearing people are the majority in society, spoken Mandarin is developed based on hearing people’s auditory status. Hearing people do not express referential or indexical meanings via acoustic signals they have no auditory access to (e.g., ultrasound). There are acoustic signals which hearing people have auditory access to, but some deaf people don’t. For the participants of this study, most of them report having no access to the fricative sibilants or the acoustic differences between them, for most of their acoustic energy occurs at higher frequencies.

As fricative sibilants are difficult for deaf speakers who have limited access to higher sound frequencies to acquire, deaf speakers adopt different strategies to realise the fricative sibilants. The inter-speaker variability of ‘deaf accents’ is very high. Some deaf speakers stick to fricative sibilants but do not necessarily make use of the same sounds as used by hearing people; some deaf speakers utilise sounds other than fricative sibilants.

Among the 14 participants, 4 of them demonstrate variants of /ʃ/ which are considered “substitution errors” by speech-language pathologists (Li & Munson, 2016). Specifically, speakers may drop the sibilant or use sounds which exist in

Mandarin to pronounce the sibilant, including stopping ([k], [p], [k^h], and [p^h]), affrication ([ts], [tʂ], [ts^h], and [tʂ^h]), or glottalization ([h]). These are processes identified from the current data; other deaf speakers might have other ways to realise the sibilant. I refer to these speakers as ‘pathologised speakers’.

The other 10 participants do not demonstrate the above phonological processes. I refer to them as ‘non-pathologised speakers’ in this paper. They instead realise /ʃ/ as other fricative sibilants, for example, [ʃ] and [s]. /ʃ/ is in complementary distribution with /ʂ/; /s/ and /ʃ/ are in merging process. Travelling between these three variants does not really influence speech intelligibility. The style-shifting between these sibilants can be studied as an acoustic continuum.

Generally, deaf speakers who engage in the medicalization of their speech (e.g., speech therapy or training) may tend to consider retroflexion as a strategy to perform a standard speech; others who do not receive a speech therapy or training instead tend to see de-retroflexion as a strategy to perform standard speech. Note that standard language ideology is entangled with multiple structural oppressions such as racism, sexism, and ableism (Henner & Robinson, 2021b; Phuong & Cioè-Peña, 2022). When deaf speakers perform standard speech, they are performing hearingness (or abled-bodiedness in general) (Henner & Robinson, 2021a).

To compare interview speech and read speech, a linear mixed effects model was fit into the CoG data of the 10 non-pathologised speakers by the *lme4* package (Bates et al., 2015) in R (R Core Team, 2019). Temporal-midpoint CoG values were automatically extracted on Praat (Boersma & Weenink, 2019), using a 25 ms Gaussian window, by a script (Reetz, 2020). A high-pass filter was set at 1,000 Hz to eliminate low frequency noise and co-articulatory voicing from the

surrounding segments (Chang & Shih, 2015). Data points whose CoG was not within two standard deviations from the mean were excluded from the dataset, so were those with duration less than 30 ms.

The model considered vowel height (high/mid/low), vowel roundedness (yes/no), log-transformed sibilant duration, and register (read/interview) as fixed effects. Register-by-speaker random slope was also included in the model. There was no main effect of register. As there was no community pattern, the coefficient of by-speaker random slope was extracted (see Forrest, 2015).

Figure 1 shows how individual speakers engage with the effect of register on CoG. 4 speakers (Sandy, QPM, McCrispy, Huei) raise CoG of the retroflex sibilant in read speech; the other 6 speakers instead lower CoG of the retroflex sibilant like hearing people. The standard speech style is processed as a categorical variable (retroflexion/de-retroflexion) in later analysis.

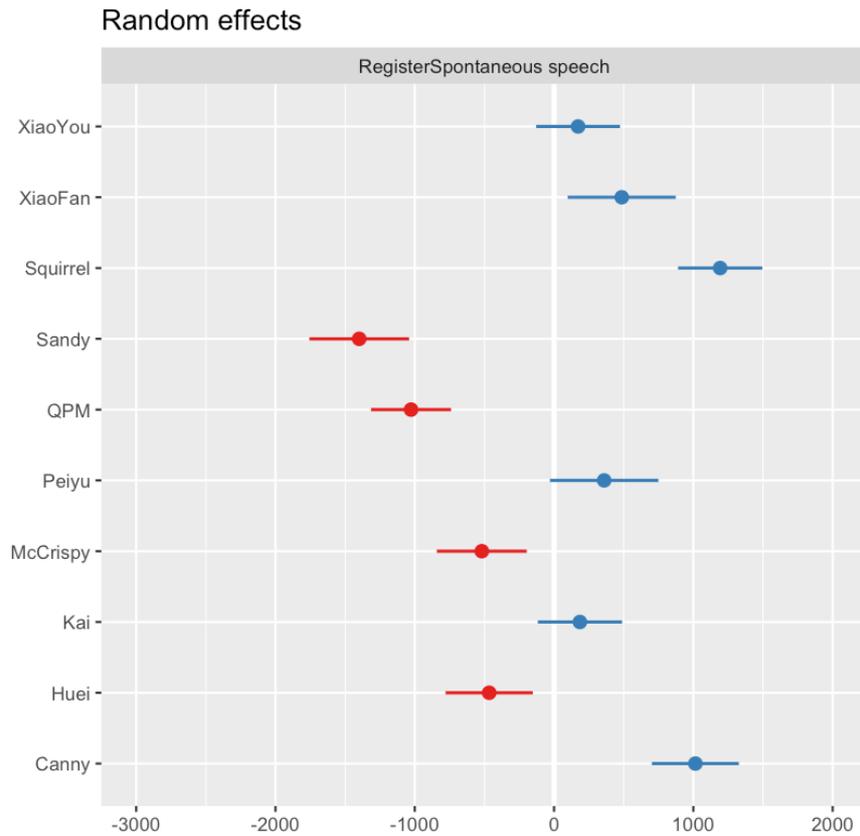


Figure 1. By-speaker random slope of register (x-axis: CoG (Hz))

The absolute values of individual random slopes are extracted by the *coef* function in the *stats* R package. It is a continuous variable, termed as ‘register difference’, used as a proxy for the amount of symbolic work individuals do “to affirm their membership in groups or communities” (Eckert, 1989, p. 259). This factor is included in order to consider individual speakers’ tendency to respond to the register demand of standard speech, as not every speaker from the same community is equally sensitive to the social meanings indexed by linguistic variants or demonstrates the same amount of linguistic difference for style-shifting (Hall-Lew, Honeybone, et al., 2021; Hall-Lew & Boyd, 2020).

When recruiting participants, I did not balance the number of participants allocated to each of the groups of other social factors, such as gender, age, and

social class. These factors may affect the tendency to shift the place of articulation of /ɛ/ (Fon, 2018; Tso, 2017). Practically it is hard to achieve a balance in participant allocation when working with marginalised and stigmatised speakers. Deaf people are a small population. It is estimated that around 1.16% of newborn Taiwanese children do not pass the newborn hearing screening, and less than 85% of them follow up the screening results (Chen & Lim, 2021). Without controlling for macrosocial factors, this study uses ‘register difference’ as a proxy to prevent assuming every person has equal access to the semiotic landscape.

5. Stance-taking analysis

The framework of *stance triangle* (Du Bois, 2007) is applied to highlight how interlocutors take stances towards a stance object, and the stances taken by interlocutors further contribute to the alignment between stance-takers. The stance object in this study is the DEAF passage. Among the 14 participants (including the 4 pathologised speakers and 10 non-pathologised speakers), two broad stances towards the DEAF passage can be identified – a stance of solidarity and a stance of distance. All the pseudonyms are offered by the participants.

5.1 A stance of solidarity

After reading the passage, the participants comment on the DEAF passage: 8 participants (Table 1) think of their own experiences negotiating with hearing people after reading the DEAF passage.

Table 1: Participants who take a stance of solidarity

Participant	TSL proficiency	Speech therapy	‘Pathologised’ speakers
-------------	-----------------	----------------	-------------------------

Hua	non-signer	No	Yes
A-Wei	signer	Yes	Yes
Zuo-Zuo	signer	Yes	Yes
Xiao-Lu	signer	Yes	Yes
Sandy	signer	No	No
Huei	signer	Yes	No
QPM	non-signer	No	No
McCrispy	non-signer	No	No

The comments are focused on one's own negative experience of audism (Hua, QPM, McCrispy), one's experience in signing communities (A-Wei, Zuo-Zuo, Xiao-Lu, Huei), or both (Sandy). Audism, as part of ableism, refers to hearing ways of dominating, restructuring, and exercising authority over deaf people (Lane, 1992).

People do not necessarily have the same definition of a situation (Wang, 2018). Some of the current participants frame the discussion of the DEAF passage as one of hearing people's oppression. For example, QPM talks about how hearing employers refuse to make reasonable adjustments for her in the workplace. The other participants instead interpret the DEAF passage as one about what's going on within the signing community. For instance, Huei mentions Gallaudet University in the United States and expresses her desire for a unified signing community in Taiwan. While at face value the two types of comments are oriented to different topics, the 8 participants all take a positive stance towards the message communicated in the passage, demonstrating 'deaf solidarity'.

In terms of cognitive schema (Bourdieu, 1977; Dodsworth, 2008), there seems a shared socio-autobiographical background among these participants, against which they are habituated to take a positive stance towards the claim that hearing people are oppressing deaf people. They do not perceive a social danger of explicitly criticizing hearing people in the presence of a hearing researcher.

Half of the 8 participants did not receive speech therapy, and the other half did. Speech therapy is not only about working with deaf people on how to be intelligible to hearing people; speech therapy, as an institutionalised medical practice, also imposes upon deaf people the ableist ideologies that disabled ways of languaging are framed as inferior and less human-like (Henner & Robinson, 2021b; St. Pierre & St. Pierre, 2018). Medicalization does not necessarily entail ableism; disabled people also engage with medicalization to secure equal rights (Grue, 2015). I use the term ableist medicalization to refer to medicalization which involves institutionalised ableist ideologies. Major early intervention institutes in Taipei are sometimes ableist in their practices – disabled ways of languaging, such as signed language (and sometimes lip-reading), are discouraged under “auditory-verbal therapy” (see a critique by Friedner, 2022).

The participants receiving speech therapy during childhood all decided to learn Taiwan Sign Language (TSL) from deaf signers when they became adults. With the language learning experiences, they are connected to deaf signers, and develop an insider perspective about the relationship between hearing people and deaf signers. Among the five TSL signers, only A-Wei and Huei also identify as *lónggrén*; nevertheless, all the five signers demonstrate a stance of solidarity. That

is, compared to ‘identity’, stance-taking may be a better site where we can see how the difference lying in speaker agency can influence style-shifting here.

As mentioned, Sandy is the only participant who is an L1 TSL signer. Sandy is aligned with the DEAF passage in that her family and she have experienced much discrimination against TSL from hearing people:

“When I was at junior high school, my cousin came to me with tears. She is hearing, but her parents are both signers. She told me she was bullied by her classmates because they found she communicates with her parents in signed language. I said, ‘what’s wrong with those people?’ I told her she should tell her teacher, but she said she didn’t have the courage [...] If some guy looks down upon signed language, they won’t want to date me. But I was told it can be a good opportunity to know whether someone will be a good boyfriend.”

For Sandy, the message communicated in the DEAF passage is very relatable. We can also see how Sandy takes a resistant approach to audism, rather than accommodate to hearing people: for example, reporting audist classmates to the teacher, and excluding ableist hearing guys from “good boyfriend” list.

For some participants, they might perform their *lóngrén* identity when commenting on the passage. However, what matters to this paper is the fact that one does not need to identify as *lóngrén*, but they can still perform ‘deaf solidarity’. In a broad sense, the stance of solidarity contributes to a “performative deafness” (cf. Henner & Robinson, 2021a).

5.2 Stance of distance

When commenting on the passage, 6 participants take a stance of distance towards the DEAF passage (Table 2). In this group, comments are quite varied. Broadly speaking, they might define the situation described in the passage as about negative experience with hearing people (Canny, Kai), or conflicts between hearing people and deaf signers (Squirrel, Peiyu, XiaoYou, XiaoFan).

Table 2: Participants who take a distant stance

Participant	TSL proficiency	Speech therapy	‘Pathologised’ speakers
XiaoYou	non-signer	Yes	No
XiaoFan	non-signer	Yes	No
Peiyu	non-signer	Yes	No
Kai	non-signer	No	No
Squirrel	non-signer	Yes	No
Canny	non-signer	Yes	No

When orienting her stance towards negative experience with hearing people, Canny frames the discussion of audism as an issue of individual personality rather than structural violence, as described in the passage. This is a stance divergent from the passage. Kai states that he is fluent in spoken language, and he does not sign, so he does not have relatable experience to what’s described in the passage; here, he also distances himself from the passage.

The other participants frame this passage as one about conflicts between hearing people and deaf **signers**. XiaoYou and XiaoFan explicitly point out that this passage is not about them. For instance, when invited to comment on the

passage, XiaoYou immediately said “I think this piece is from the perspective of *lónggrén*”. She further points out that this passage is biased:

“In real life, yes, there are people who don’t like *lónggrén*, but we should not have a blanket statement, because there are people willing to accept these people. And, from my own experiences, **I don’t sign**, but I’ve seen many people enjoy conversation by writing, no matter whether they are hearing or *lónggrén*.” [emphasis my own]

XiaoYou emphasises that she doesn’t sign, so this passage is not very relatable for her. She also points out that there are also nice hearing people, and argues the perspective expressed in the passage is a “blanket statement”, which demonstrates a divergent stance from the passage.

The other participants focusing on the conflicts adopt discursive strategies to ‘objectively’ analyse why the conflicts may happen. For example, Squirrel compares the oppression described in the passage to the ethnic conflicts in Africa:

“The part where hearing people and *lónggrén* have conflicts is very like the ethnic conflicts in African countries. [...] I think *lónggrén* is a group and normal people is another group. When *lónggrén* live in the mainstream society, they find they are the minority as a group.”

By comparing the oppression of hearing people to conflicts between African ethnic groups without any group explicitly being an oppressor in the discourse, Squirrel takes a distant stance from the passage, and approaches the passage from a third-person viewpoint. Then, he speaks from his own experience:

“We, *tīngzhàngzhě* [hearing disabled people], are in the grey area between the two groups [...] We incorporate ourselves to the mainstream

society as individuals, like minorities. Sometimes when there is only one *tīngzhàngzhě*, and I have something that I need hearing people to do for me [...] I feel sorry. To appreciate their help, I used to help them with their coursework”

In this follow-up comment, it becomes clear that Squirrel does not see himself as part of the dominated group as described in the passage. Instead, he does not belong to either hearing people or *lónggrén*, strengthening his distant stance towards the passage. He also foregrounds how he feels sorry for asking hearing people for help, possibly due to the presence of the hearing researcher. That is, Squirrel takes a very different stance towards the passage from those who demonstrated ‘deaf solidarity’ in the previous group.

Most of the participants in this group (Table 2) received speech therapy during childhood. No experience learning TSL may be one of the reasons why they do not align themselves with the deaf signers described in the passage. They may be sensitive to the potential social danger of criticising hearing people in front of a hearing person (the researcher).

Under ableist medicalization, if one fails to comply with the ableist norm, the disabled person is the one to be blamed, instead of abled people. The argument for this, from an ableist perspective, is that they are not working hard enough to ‘overcome’ their disabilities when there is a neoliberal free market of medical assistance (Mitchell & Snyder, 2015). The perspective is reflected in many inspirational narratives admiring some disabled people’s achievement in ‘overcoming’ their disabilities. Disabled people can be critical of ableism while having inspirational experiences (Chrisman, 2011); yet, the regime of ableist medicalization usually does not authorise such a possibility. In fact, neoliberal

ideologies (individual responsibility, free choice, etc.) have been experimentally observed to undermine socio-political solidarity and collective action (Girerd & Bonnot, 2020).

It is important to emphasise that deaf individuals engage with deaf identity politics from a different perspective because of socio-autobiographic experiences. What is important to the current study is the displayed stance in the presence of the hearing researcher. What underlies the stance-taking here is “performative hearingness” (Henner & Robinson, 2021a), by which deaf people perform accommodating to hearing people’s ways of living under the huge pressure of audism. In the remainder of this article, I will show how stance-taking mobilises the emergence of the topic-based linguistic variation in the passage reading task.

6. Data analysis

As mentioned above, among the 14 participants of this study, 10 do not demonstrate pathologised variants (substitution or dropping) of the target variable, and the other four participants do. For the four pathologised speakers, the variants of /ʒ/ vary, including stops, affricates, the glottal fricative [h], and deletion. Therefore, the focus is not on whether they invoke retroflexion. Instead, the focus is on how they shift between the categorical variants. Therefore, I frame the data analysis as two small studies: one on the pathologised speakers, and one on the others.

6.1 Pathologised speakers

There are four pathologised speakers – Hua, Zuo-Zuo, A-Wei, and Xiao-Lu. All demonstrate a stance of solidarity to the DEAF passage. We expect them to invoke

the same direction of style-shifting in topic-based variation – shifting to variants indexing deafness (non-standardness) when reading aloud the DEAF passage.

Each speaker has a different set of variants that are used to realise the retroflex sibilant. There are five categories of variants observed in this study which they adopt to realise the retroflex fricative: deletion, the glottal fricative [h], plosives (e.g., [k], [p]), affricates (e.g., [ts], [ts^h]), and fricative sibilants (i.e., [s], [ʂ]). Five main categories are used to code the variants.

The main idea of the coding scheme is to represent how hearing-like (how standard) a variant is, in relation to other variants in personal stylistic repertoires. The coding is based on both phonetic similarity to the hearing variant, and how difficult it is for deaf speakers to produce that sound. To capture the individual difference in terms of stylistic space, each variant is coded with a ‘relative rank’ for each speaker (Table 3). That is, the same phone does not always receive the same rank across participants. The most dissimilar variant from the hearing variant is coded as 1; the most similar variant to the hearing variant is coded as 2. Variants that do not exist in a speaker’s repertoire for realising /ʂ/ do not receive a rank. When phones are more phonetically similar to the hearing variant [ʂ], they are also more difficult for deaf speakers to acquire. That is, the coding scheme takes care of both aspects.

Table 3: The coding of variants in each speaker’s stylistic repertoire

participant	deletion	plosives	[h]	affricates	sibilants
A-Wei	–	–	–	1	2
Hua	–	–	–	1	2
Xiao-Lu	1	1.25	1.5	1.75	2

Zuo-Zuo	–	1	–	1.5	2
----------------	---	---	---	-----	---

For instance, A-Wei and Hua only travel between affricates and fricative sibilants; in contrast, Xiao-Lu switches between all the five categories. Namely, even if the three speakers all realise a particular /ʃ/ token as [tʃ], this phone is not equally weighted in their repertoires. For A-Wei and Hua, it is the least standard (hearing-like) variant, but for Xiao-Lu, it is the second most standard variant. For Xiao-Lu, the manner of articulation of [h] is phonetically more similar to the fricative sibilant than plosives are, and [h] is more difficult for deaf speakers to acquire than plosives are (Peng et al., 2004). Thereby, [h] receives a higher rank than plosives do. The relative rank is operationalised as a continuous variable later to measure ‘hearing-like-ness’ of tokens. In terms of statistical modelling, I am interested in how the speakers shift the degree of hearing-like-ness between the two topics. The dependent variable is the relative rank of hearingness of each token.

Linear mixed effect models were fit to the data in R (R Core Team, 2019), using *lme4* package (Bates et al., 2015). Models were expanded incrementally from the null model. The two passages differ in terms of the words that contain an initial fricative. We need to exclude the possibility that a topic effect results from different phonological environments in the two passages. Thus, during model expansion, the following linguistic factors were considered: lexical tone (level/contour), whether the following vowel is rounded (yes/no) (Chang & Shih, 2015; Chiu et al., 2020) and the height of the following vowel (high/mid/low) (Chiu et al., 2020), and log-transformed Chinese character frequency (Chui et al., 2017).

By-speaker and by-Chinese character intercepts were included as random effects². Topic-by-speaker random slope was also included. Likelihood ratio tests were run to determine whether the model fit of an expanded model was improved. Fixed effects and interaction terms were only retained in the model if the model fit was improved. Model expansion continued until incorporating another independent variable did not improve the model fit.

The best-fitting linear mixed effect model is $Rank \sim Topic + (1 | Chinese Character) + (1 + Topic | Speaker)$. Topic is the only fixed effect and shows a significant effect on CoG (Estimate = -0.12, SE = 0.05, t -value = -2.35, $p = 0.019^*$). In other words, the four speakers take a stance of solidarity towards the DEAF passage and shift to less hearing-like variants when reading aloud the DEAF passage (Figure 2).

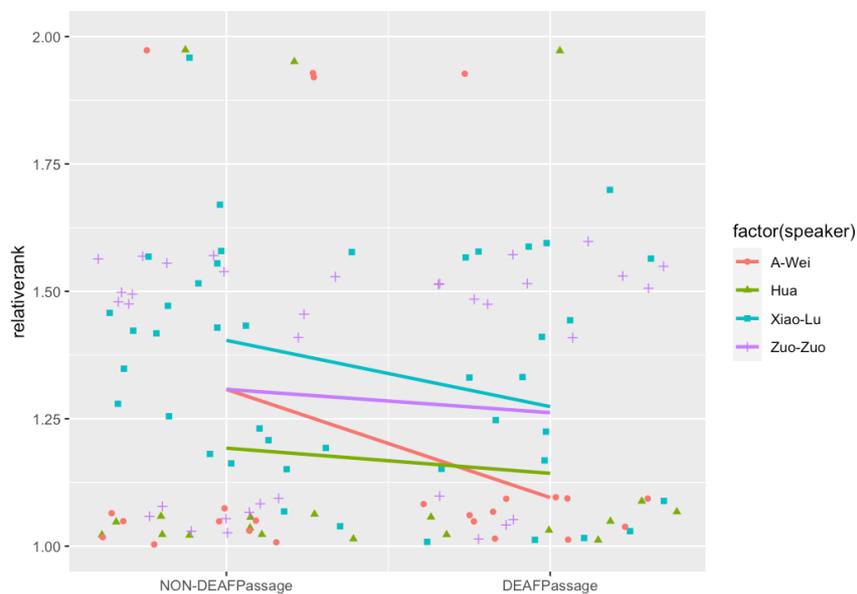


Figure 2. Individual pathologised speakers' topic-based style-shifts

6.2 Non-pathologised speakers

In the second study, I explore how speakers of non-pathologised speech engage with the target linguistic variable between topics. The dependent variable is the temporal-midpoint CoG of the syllable-initial /ʃ/ (the same extraction method as in §4.2).

For modelling the topic-based variation, linear mixed effects models were fit into the data. The model expansion proceeded in the same way as mentioned earlier. In addition to topic, other factors which were considered included lexical tone (level/contour), vowel roundedness (yes/no)³, vowel height (high/mid/low), log-transformed character frequency, and log-transformed frication duration. The preceding segment of the sibilant has little influence on the CoG of fricative sibilants in Taiwan Mandarin (Chiu et al., 2020), so it was not considered. The effect of prosodic prominence was already considered in the factor of frication duration (Chang & Shih, 2015).

As shown in Table 4, the 10 participants included in this study have two kinds of standard speech styles (which were identified in §4.2). It is parallel to their stance to the DEAF passage. It might not be coincidental, as the participants who perform the standard accent in the same way as hearing people do are also more immersed in ableist medicalization of deafness, thereby distancing themselves from the DEAF passage.

Table 4: Performed standard /ʃ/ and stance-taking are parallel

Participant	Standard speech style	Stance to the DEAF passage
Squirrel	retroflexion	distance
Canny	retroflexion	distance
XiaoFan	retroflexion	distance

Peiyu	retroflexion	distance
XiaoYou	retroflexion	distance
Kai	retroflexion	distance
Huei	de-retroflexion	solidarity
McCrispy	de-retroflexion	solidarity
QPM	de-retroflexion	solidarity
Sandy	de-retroflexion	solidarity

As the two social factors are parallel, we only need to include one of them in the statistical modelling. Standard speech style is considered. If the DEAF passage elicits a topic effect due to any automatic cognitive activation of one's own deaf accent, it should elicit the same indexical shift from the 10 participants, regardless of stance-taking. In this case, we expect to see an interaction between standard speech style and topic, as the two groups of stance-takers have opposite ways of performing standard speech. If speaker agency does play a role in the current topic effect, we expect to see a lack of interaction between standard speech style and topic, for the two groups should invoke the same phonetic shift which indexes different social meanings for the two groups.

Register difference (continuous, mean-centred; §4.2) is also considered, to represent the inter-speaker variability in the amount of symbolic work in performing standard (hearing) speech.

The best-fitting model is as follows: $CoG \sim topic * register\ difference + standard\ speech\ style + (1 | Chinese\ character) + (1 + topic | speaker)$. No linguistic factor is retained in the model. The factor of standard speech style alone shows a significant effect. It is not surprising that speakers who utilise retroflexion to perform standard speech demonstrate a lower CoG than those who utilise de-retroflexion.

The interaction between standard speech style and topic was not significant, nor did it improve the model fit; thus, it was not retained in the model. That is, no matter how a speaker performs standard speech, they shift to a lower CoG under DEAF topic (Table 5). Recall that the speakers index **different** social meanings by the same direction of phonetic shift.

Table 5: Summary of the linear modelling of CoG value of /ʒ/ demonstrated by ‘non-pathologised’ speakers

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	7077.06	480.14	14.73	<0.001 ***
standard speech style = retroflexion	-1985.69	611.1	-3.24	0.014 *
topic = DEAF	-284.7	83.39	-3.41	<0.001 ***
topic = DEAF x register difference	0.43	0.17	2.45	0.015 *

We see a group-level effect of the topic that CoG of /ʒ/ decreases significantly under the DEAF topic. By extracting individual slopes of the topic effect, it is confirmed that every single participant lowers the CoG under the DEAF topic.

The speakers who perform standard speech via de-retroflexion (hereafter, ‘de-retroflexing’ speakers) invoke more retroflexion under the DEAF topic, compared to the other topic. That is, these speakers perform deafness when reading the DEAF passage. Sociolinguistically, it is the same indexical shift as shown in the results of the first study, where the pathologised speakers shifted to less hearing-like variants under the DEAF topic.

In contrast, the speakers who perform standard speech via retroflexion (hereafter, ‘retroflexing’ speakers) invoke more retroflexion under the DEAF topic, compared to the other topic. That is, they diverge from deaf speech styles, consistent with their stance towards the DEAF passage. The two groups of participants demonstrate different indexical shifts.

Register difference alone is not a significant factor. However, the significant interaction between topic and register difference indicates that speakers who demonstrate a larger CoG difference between registers show a smaller topic effect (Figure 3). Each speaker’s standard speech style has been considered in the model. Thus, the interaction here is not driven by whether one has articulatory space to further retroflex the sibilant after having retroflexed the sibilant when shifting from interview to read speech.

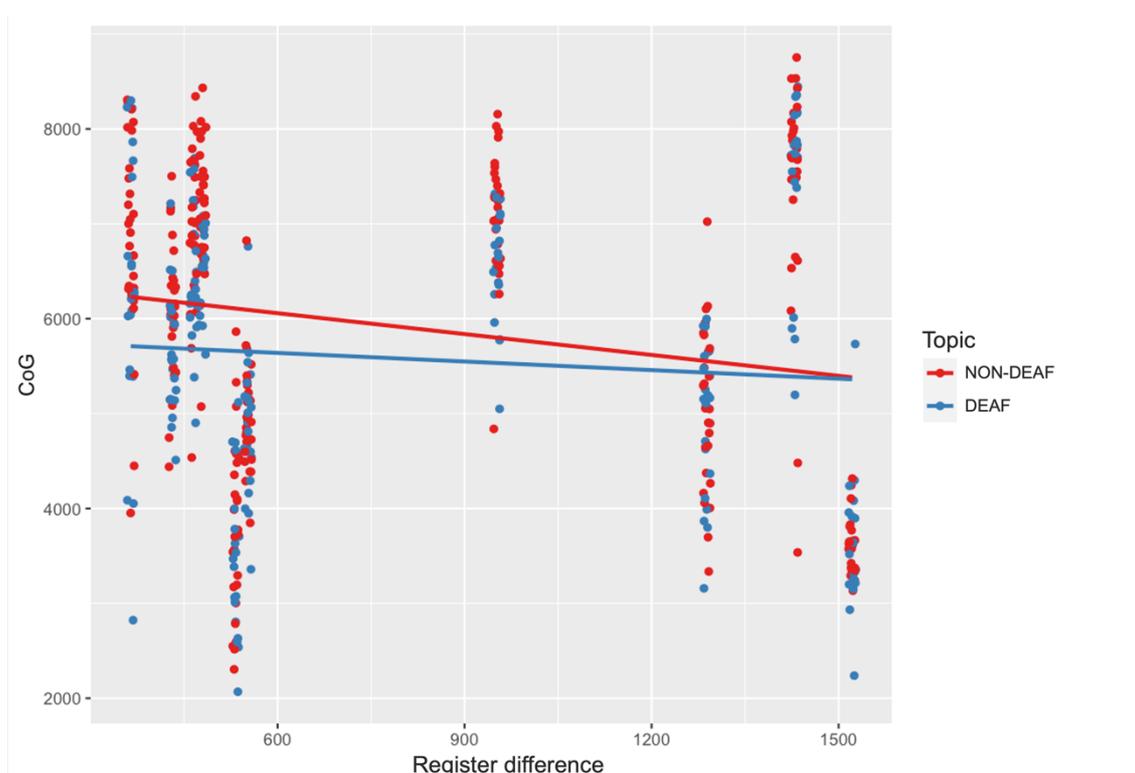


Figure 3. The topic effect is reduced among speakers who demonstrate larger changes in CoG (Hz) when shifting to read speech

The interaction indicates that when a speaker does greater symbolic work to perform standard speech in read speech, they are less inclined to show semiotic engagement with the DEAF topic through /s/. We can see a speaker's tendency to perform standard speech as a tendency to engage with performative hearingness (Henner & Robinson 2021a). Then, it is not surprising that among individuals who make greater symbolic work to perform hearingness, there is a weaker trend to style-shift to embody their relationship with deaf identity politics. However, as there are only 10 speakers included in this model, this claim awaits validation in future research.

7. Discussion

In this paper, I have demonstrated how stance-taking also contributes to different style-shifting in terms of indexical meanings in topic-based variation in read speech. However, it does not indicate that the framework of cognitive activation does not matter here. What the results show is we need a cognitive model of topic-based variation which always considers speaker agency.

As mentioned in the introduction, read speech does not occur in social vacuum, and the practice of reading aloud per se is a site where speakers take stance on the content of the passage to negotiate their relationship with potential audiences. I argue that passage reading should be analysed as a social practice where people engage with not only the passage but also the social values which

are linked to such an activity. The reading practice is not different from other social practices where there is no real-person interaction, such as a viewing practice. For instance, in Park's (2021) analysis of a video advertisement where South Koreans dramatically become physically paralysed when they are approached by native English speakers, he points out that South Korean viewers can immediately recognise the paralysed Korean persons as representing Korean people as incompetent English speakers and be aligned to the negative affective orientation towards the inability to communicate with native English speakers. A practice-based explanation can shift our focus to how instances of similar practices are cognitively conceptualised as an exemplar of that practice, where contextual information recurring in this kind of practices retains.

As in the current research, the DEAF passage is concerned with condemning audism, which demonstrates interdiscursivity with other discourses in society (Silverstein, 2005) addressing the relationship between deaf people and hearing people. For some of the participants, in those discursive practices, deaf people may face social danger when they condemn hearing people; for example, they may be accused of having a "blank statement", i.e., being biased (as seen in XiaoYou's case).

In fact, a cognitive framework and a framework of speaker/signer agency are not mutually exclusive (Drager & Kirtley, 2016; Hay & Foulkes, 2016). When researchers emphasise how stance-taking mobilises a topic-based style-shifting, they do not negate the fact that the invoked linguistic style is cognitively linked to the invoked "stance indexicality" (Kiesling, 2009). Surely the social indexicality of a linguistic variant is only widely recognised in a community when people have experienced adequate events where the social meaning co-occurs with linguistic

variants. Furthermore, agentic processes do not stem from nowhere but from speakers' cognitive schemas where they have been habituated to take a particular stance towards a certain topic (Bourdieu, 1977). Again, what we lack is a cognitive framework which acknowledges the fact that speaker agency is also rooted in cognitive schema (Dodsworth, 2008).

In the current research, we can see a potential relationship between whether one is highly aligned with medicalization and the stance that one takes towards the DEAF passage. While it is not a one-to-one mapping, it is speculated that when DEAF people are more involved in medicalization, they are also more likely to be immersed in ableist ideologies, and therefore cognitively tend to distance themselves from criticising audism in the presence of a hearing person. It is also true that in the neoliberal ableist society, a positive social persona of disabled people has never included being critical of ableism but is concerned with how disabled people work hard and 'overcome' physical impairments without complaining about others (i.e., abled people). Thus, it is not strange that a large portion of deaf participants in the current research hesitate to align themselves with the DEAF passage.

In the cognitive framework, a cognitive activation of a linguistic feature by the priming of a social exemplar is argued to be inhibited or reinforced by the subject's attitudinal orientation to that social exemplar (Drager & Kirtley, 2016). However, when events are stored as episodic memories in cognition, information like stances reoccurring in the similar events are also stored in the memories; they are not external to the memories. For instance, psychologists point out that certain emotions are elicited by particular people or things because emotional experiences are stored with the people or things which arouse those emotions and

get weighted in cognition (Lebois et al., 2020); if engaging in some activities leads to an uncomfortable feeling many times, then the link between this activity and an uncomfortable feeling gets reinforced.

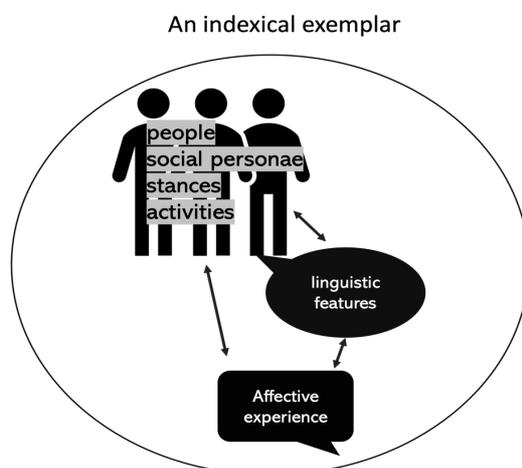


Figure 4: A practice-based indexical exemplar stores the contingency among elements which recurs in this kind of social practice. The arrows indicate how the contextual information are co-indexed.

I argue that we should situate our analysis of topic-based linguistic variation in how the brain activates a practice-based indexical exemplar (Figure 4) where the contingency among a social type of people, their linguistic features, the subject’s stance towards the social group is stored as a single conceptual unit. Note that the subject’s stance toward the social group may be mediated by their interlocutors – talking about the same topic to different interlocutors may be cognitively stored with different stances (see Rickford & McNair-Knox, 1994). This model can account for situations where individuals do not demonstrate topic-based style-shifting when they seem to take ‘neutral’ stances towards those topics (e.g., Devlin et al., 2019; Lee & Idemaru, 2021).

It may not be the case that, when talking about a certain topic, its associated linguistic style is activated in the first place, and then because the

subject has negative affective orientation towards the topic, the linguistic activation is inhibited. Instead, I propose that when one engages in/with a social practice, the stance cognitively stored with the social practice in cognition is activated, and this activation leads to whether other information like, for example, sociolinguistic representation can be activated. It is rare to talk about a certain topic without any stance included, if the topic is something which the speaker has often experienced in everyday life. When the speaker engages with a new situation, the brain does not always look for the most weighted exemplar where minimal information is present; the brain can look for other less weighted exemplars where similar contextual information with the new situation is present; for instance, time frames (Hay & Foulkes, 2016).

The current finding is comparable to Drager, Hay, and Walker's (2010) study on New Zealand English speakers, where they found that after reading good facts about Australia, the participants who were sport fans shifted to New Zealand speech style in wordlist reading, whereas those who were not sport fans shifted to Australian speech style. If reading good facts about Australia firstly activates the link between Australia and Australian English, it is not clear why sport fans end up with producing New Zealand English variants. If we foreground the role of the speaker agency (i.e., stance) here, the practice-based exemplar model predicts that the act of stating good facts about their opponent, for sport fans, activates a rivalrous stance, and then this stance invites further practices to embody it – for instance, shifting to one's national variety.

Some deaf participants perceive a stance of affective or political solidarity towards the act of resisting audism (cf. Dumas, 2016). The positive stance towards this act may also be habitualised from a person's previous lived

experience in society. For instance, QPM mentioned how hearing employers refuse to adjust things for her, after she made a request.

In contrast, some deaf participants may perceive social danger (i.e., not being accepted by the dominant group) from not distancing themselves from what's being discussed to a hearing researcher. This negative stance is stored in cognition from past events where they encountered similar events before. For example, in my own experience navigating online public deaf spaces, there are instances where deaf persons complained about hearing people, and they are however the ones who are blamed by others for not working hard enough and 'playing the blame game'. That is, a negative stance to the practice of condemning hearing people can be experienced and stored in cognition, even to an onlooker. For the subject, the intuitive response to a situation which activates a perception of social danger is to distance oneself from the practice which causes negative feelings. In everyday conversation, people can change topics or just leave the conversation. Yet, in an interview where the speakers are asked to respond to such topics, speech divergence from the topics becomes a cognitive strategy to distance themselves from the practice.

8. Conclusion

This article demonstrates how individual agency is important in modelling topic-based linguistic variation in read speech and proposes that we should not miss the fact that passage reading is a social practice where people engage with the message conveyed in the passage. In this study, deaf speakers invoke different directions of shift in indexical meanings when reading aloud the same passage about hearing people's oppression towards deaf signers.

Future research can explore how the topic-based variation may appear different when the interviewer is deaf speaker, or deaf signer. In addition, given that assistive technologies such as cochlear implants have been reported to affect how deaf individuals position themselves in relation to disability (see Wan 2021b; Wan et. al, in press), one reviewer suggests future research to investigate how the interviewer's and the interviewee's use of assistive technologies may influence the connection between stance-taking and topic-based variation. When a deaf interviewer encounters a topic-based style-shifting different from what's observed in the current research, we have evidence to support the proposal that we should always include stance-taking in a cognitive account of topic-based variation.

Acknowledgements

I would like to thank Christian Ilbury, Claire Cowie, Jane Stuart-Smith, Lauren Hall-Lew, Michael Ramsammy, and Scott Kiesling for their suggestions on an early draft of this article. I also appreciate the helpful comments from the two anonymous reviewers. An early version of this study was presented at UKLVC 13. Special thanks to Squirrel, one of my participants, for giving me feedback about my perspective. All errors remain my own.

Notes

1. After the "Development of National Languages Act" was passed in 2018, Taiwan is trying to introduce mandatory national language classes to at all stages of compulsory education (elementary and junior high education). Students can take any of the national languages as their target language, including Taiwan Sign Language (TSL). Therefore, it is likely that there

will a trend among oral deaf students to learn TSL at an early age if they choose TSL as their target language.

2. Mandarin uses a writing system that does not denote word boundaries. Some words share the same Chinese character which conveys the same meaning. For example, three words – 失傳 ([a tradition] is lost'), 失去 ('to lose [something]'), and 失寵 ('to fall out of [someone's] favour') – share the character 失, which means 'to lose'. A model which included word as a random effect was compared to another model which included Chinese character as a random effect through a likelihood ratio test, and the latter improved the model fit significantly ($p < .001$).
3. Previous research pointed out that Mandarin speakers sometimes invoke extra lip rounding when making a retroflex fricative (Chiu et al., 2020). Among the 465 observations in the original dataset, there are 415 observations of unrounded vowel. To know whether the observed topic effect on the CoG of the retroflex fricative is from lip rounding on unrounded vowels, tokens of unrounded vowels that follow the retroflex fricative were segmented, and midpoint F2 values were automatically extracted on Praat. A linear mixed effects model was run: $F2 \sim Topic + Vowel Class + (1 | Chinese Character) + (1 + Topic | Speaker)$. No topic effect on F2 values was found.

Reference

- Baran, Dominika. (2014). Linguistic practice and identity work: Variation in Taiwan Mandarin at a Taipei County high school. *Journal of Sociolinguistics*, 18(1), 32–59.

- Bates, Douglas, Mächler, Martin, Bolker, Ben, & Walker, Steve (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, 67(1), 1–48.
- Becker, Kara (2009). /r/ and the construction of place identity on New York City's Lower East Side. *Journal of Sociolinguistics*, 13(5), 634–658.
- Boersma, Paul, & Weenink, David (2019). *Praat: Doing phonetics by computer. Version 6.1.08*. praat.org
- Bourdieu, Pierre (1977). *Outline of a Theory of Practice*. Cambridge University Press.
- Boyd, Zac (2018). *Cross-linguistic Variation of /s/ as an Index of Non-normative Sexual Orientation and Masculinity in French and German Men* [PhD dissertation]. University of Edinburgh.
- Brubaker, Brian Lee (2012). *The Normative Standard of Mandarin in Taiwan: An Analysis of Variation in Metapragmatic Discourse*. Pittsburgh: University of Pittsburgh PhD dissertation.
- Campbell-Kibler, Kathryn (2021). Deliberative control in audiovisual sociolinguistic perception. *Journal of Sociolinguistics*, 25(2), 253–271.
- Chang, Yung-Hsiang Shawn, & Shih, Chilin (2015). Place contrast enhancement: The case of the alveolar and retroflex sibilant production in two dialects of Mandarin. *Journal of Phonetics*, 50, 52–66.
- Chen, Pei-Hua, & Lim, Tang-Zhi (2021). Newborn hearing screening and early auditory-based treatment in Taiwan. *International Journal of Audiology*, 60(7), 514–520.
- Chiu, Chenhao, Wei, Po-Chun, Noguchi, Masaki, & Yamane, Noriko (2020). Sibilant fricative merging in Taiwan Mandarin: An investigation of tongue

- postures using ultrasound imaging. *Language and Speech*, 63(4), 877–897.
- Chrisman, Wendy L. (2011). A reflection on inspiration: A recuperative call for emotion in disability studies. *Journal of Literary & Cultural Disability Studies*, 5(2), 173–184.
- Chui, Kawai, Lai, Huei-Ling, & Chan, Huei-Chen (2017). Taiwan spoken Chinese corpus. In R. Sybesma (Ed.), *Encyclopedia of Chinese Language and Linguistics* (pp. 257–259). Brill.
- Devlin, Thomas, French, Peter, & Llamas, Carmen (2019). Vowel change across time, space, and conversational topic: The use of localized features in former mining communities. *Language Variation and Change*, 31(3), 303–328.
- Dodsworth, Robin (2008). Sociological consciousness as a component of linguistic variation. *Journal of Sociolinguistics*, 12(1), 34–57.
- Drager, Katie, Hay, Jennifer, & Walker, Abby (2010). Pronounced rivalries: Attitudes and speech production. *Te Reo: Journal of the Linguistic Society of New Zealand*, 53, 27–53.
- Drager, Katie, & Kirtley, M. Joelle (2016). Awareness, salience, and stereotypes in exemplar-based models of speech production and perception. In Anna M. Babel (Ed.), *Awareness and Control in Sociolinguistic Research* (pp. 1–24). Cambridge University Press.
- Du Bois, John W. (2007). The stance triangle. In Robert Englebretson (Ed.), *Stancetaking in Discourse: Subjectivity, Evaluation, Interaction* (pp. 139–182). John Benjamins Publishing.

- Dumas, Nathaniel W. (2016). "This guy says I should talk like that all the time": Challenging intersecting ideologies of language and gender in an American Stuttering English comedienne's stand-up routine. *Language in Society*, 45(3), 353–374.
- Eckert, Penelope (1989). The whole woman: Sex and gender differences in variation. *Language Variation and Change*, 1(3), 245–267.
- Fon, Janice (2018). The effect of Min dialect and speech genre on the realization of retroflex fricatives in Taiwan Mandarin. Paper presented at *The 20th International Congress of Linguists*, Cape Town, South Africa.
- Forrest, Jon (2015). Community rules and speaker behavior: Individual adherence to group constraints on (ING). *Language Variation and Change*, 27(3), 377–406.
- Friedner, Michele Ilana. (2022). From hoping to expecting: Cochlear implantation and habilitation in India. *Cultural Anthropology*, 37(1), 125–149.
- Gafter, Roey J. (2016). What's a stigmatized variant doing in the word list? Authenticity in reading styles and Hebrew pharyngeals. *Journal of Sociolinguistics*, 20(1), 31–58.
- Girerd, Lola, & Bonnot, Virginie (2020). Neoliberalism: An ideological barrier to feminist identification and collective action. *Social Justice Research*, 33(1), 81–109.
- Grue, Jan (2015). *Disability and Discourse Analysis*. Routledge.
- Hall-Lew, Lauren, & Boyd, Zac (2020). Sociophonetic perspectives on stylistic diversity in speech research. *Linguistics Vanguard*, 6(s1).

- Hall-Lew, Lauren, Cardoso, Amanda, & Davies, Emma (2021). Social meaning and sound change. In Lauren Hall-Lew, Emma Moore, & Robert J. Podesva (Eds.), *Social Meaning and Linguistic Variation: Theorizing the Third Wave*. Cambridge University Press.
- Hall-Lew, Lauren, Honeybone, Patrick, & Kirby, James (2021). Individuals, communities, and sound change: An introduction. *Glossa: A Journal of General Linguistics*, 6(1), 67.
- Hashimoto, Daiki (2019). Sociolinguistic effects on loanword phonology: Topic in speech and cultural image. *Laboratory Phonology*, 10(1), 11.
- Hay, Jennifer, & Foulkes, Paul (2016). The evolution of medial /t/ over real and remembered time. *Language*, 92(2), 298–330.
- Henner, Jon, & Robinson, Octavian (2021a). Signs of oppression in the academy: The case of signed languages. In Gaillynn Clements & Marnie Jo Petray (Eds.), *Linguistic Discrimination in US Higher Education: Power, Prejudice, Impacts, and Remedies* (pp. 73–86). Routledge.
- Henner, Jon, & Robinson, Octavian (2021b). *Unsettling languages, unruly bodyminds: Imaging a crip linguistics* [Preprint]. PsyArXiv. <https://doi.org/10.31234/osf.io/7bzaw>
- Kiesling, Scott F. (2009). Style as stance: Stance as the explanation for patterns of sociolinguistic variation. In *Stance: Sociolinguistic Perspective*. Oxford University Press.
- Kiesling, Scott F. (2011). *Linguistic Variation and Change*. Edinburgh University Press.
- Kuo, Jennifer (2018). A large-scale smartphone-based sociophonetic study of Taiwan Mandarin. *Asia-Pacific Language Variation*, 4(2), 197–230.

- Kusters, Annelies, O'Brien, Dai, & De Meulder, Maartje (2017). Innovations in Deaf studies: Critically mapping the field. In Annelies Kusters, Maartje De Meulder, & Dai O'Brien (Eds.), *Innovations in Deaf Studies: The Role of Deaf Scholars* (pp. 1–53). Oxford University Press.
- Lane, Harlan (1992). *The Mask of Benevolence: Disabling the Deaf Community*. Knopf.
- Lebois, Lauren A. M., Wilson-Mendenhall, Christine D., Simmons, W. Kyle, Barrett, Lisa Feldman, & Barsalou, Lawrence W. (2020). Learning situated emotions. *Neuropsychologia*, *145*, 106637.
- Lee, Jungah, & Idemaru, Kaori (2021). Stop production and language attitudes among North Korean refugees living in South Korea. Paper presented at *New Ways of Analyzing Variation* 49.
- Levon, Erez (2009). Dimensions of style: Context, politics and motivation in gay Israeli speech. *Journal of Sociolinguistics*, *13*(1), 29–58.
- Li, Fangfang, & Munson, Benjamin (2016). The development of voiceless sibilant fricatives in Putonghua-speaking children. *Journal of Speech, Language, and Hearing Research*, *59*(4), 699–712.
- Lin, Yuhan (2018). *Stylistic Variation and Social Perception in Second Dialect Acquisition* [PhD dissertation]. The Ohio State University.
- Liu, Hsiu Tan, Liu, Chun Jung, & Andrews, Jean F. (2014). Literacy and deaf students in Taiwan: Issues, practices and directions for future research: Part I. *Deafness & Education International*, *16*(1), 2–22.
- Love, Jessica, & Walker, Abby (2013). Football versus football: Effect of topic on /r/ realization in American and English sports fans. *Language and Speech*, *56*(4), 443–460.

- Lu, Hsin-Yi (2012). 我們不是外國人 系列一 [We are not foreigners (I)]. *PeoPo: Citizen Journalism*. <https://www.peopo.org/news/99568>
- Mitchell, David T., & Snyder, Sharon L. (2015). *The Biopolitics of Disability: Neoliberalism, Ablenationalism, and Peripheral Embodiment*. University of Michigan Press.
- Montgomery, Chris, & Moore, Emma (2018). Evaluating S(c)illy voices: The effects of salience, stereotypes, and co-present language variables on real-time reactions to regional speech. *Language*, 94(3), 629–661. <https://doi.org/10.1353/lan.2018.0038>
- Moore, Emma, & Carter, Paul (2015). Dialect contact and distinctiveness: The social meaning of language variation in an island community. *Journal of Sociolinguistics*, 19(1), 3–36.
- Park, Joseph Sung-Yul (2021). Figures of personhood: Time, space, and affect as heuristics for metapragmatic analysis. *International Journal of the Sociology of Language*, 272(1), 47–73.
- Peng, Shu-Chen, Weiss, Amy L., Cheung, Hintat, & Lin, Yung-Song (2004). Consonant production and language skills in Mandarin-speaking children With cochlear implants. *Archives of Otolaryngology–Head & Neck Surgery*, 130(5), 592–597.
- Phuong, Jennifer, & Cioè-Peña, María (2022). Perfect or Mocha: Language policing and pathologization. In Subini A. Annamma, Beth A. Ferri, & David J. Connor (Eds.), *DisCrit Expanded: Reverberations, Ruptures, and Inquiries* (pp. 129–146). Teachers College Press.

- R Core Team. (2019). *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing. <https://www.R-project.org>
- Reetz, Henning (2020). *Praat-scripts/Spectru/Spectrum_2_0.praat* (2.0) [Praat]. <https://github.com/HenningReetz/Praat-scripts>
- Rickford, John R. & Faye McNair-Knox (1994). Addressee- and topic-influenced style shift: A quantitative sociolinguistic study. In Douglas Biber & Edward Finegan (eds.), *Sociolinguistic Perspectives on Register*, 235–276. New York and Oxford: Oxford University Press.
- Silverstein, Michael (2005). Axes of evals. *Journal of Linguistic Anthropology*, 15(1), 6–22.
- St. Pierre, Joshua, & St. Pierre, Charis (2018). Governing the voice: A critical history of speech-language pathology. *Foucault Studies*, 151–184.
- Starr, Rebecca Lurie. (2016). *Sociolinguistic Variation and Acquisition in Two-Way Language Immersion: Negotiating the Standard*. Multilingual Matters.
- Stuart-Smith, Jane, Pryce, Gwilym, Timmins, Claire, & Gunter, Barrie (2013). Television can also be a factor in language change: Evidence from an urban dialect. *Language*, 89(3), 501–536.
- Tso, Ru-Ping Ruby (2017). *The Effect of Chinese Characters on the Speech Perception and Production of Retroflex Sibilants in Taiwan Mandarin* [PhD dissertation]. Rice University.
- Walker, Abby J. (2019). The role of dialect experience in topic-based shifts in speech production. *Language Variation and Change*, 31(2), 135–163.

- Wan, Tsung-Lun Alan. (2021a). Sociolinguistics of pathologized speech: A case of deaf and hard-of-hearing speakers of Taiwan Mandarin. *Journal of Sociolinguistics*, 25(3), 438–452.
- Wan, Tsung-Lun Alan. (2021b). Formulating (dis)ability: Discursive construction of cochlear implant satisfaction. In Jessica Nina Lester (ed.), *Discursive Psychology and Disability*, 169–197. Springer International Publishing.
- Wan, Tsung-Lun Alan, Lauren Hall-Lew & Claire Cowie. (in press). Feeling disabled: Vowel quality and assistive hearing devices in embodying affect. *Language in Society*.
- Wang, Ping-Hsuan (2018). Co-constructing simple and complex frames using repetition and evaluation in Taiwanese family dinner talk. *Working Papers of the Linguistics Circle*, 28(1), 26–46.

Appendix: the DEAF passage

[Original text]

聽損朋友曾跟我說過一個故事：在很久很久以前，「阿帕王國」中並存著兩大民族，主要差異在於使用語言的不同。其中占多數的是「偉族」，他們的語言以口語為主，王族、政府中的官員，皆是偉族出身，偉族文化四處可見，另一族叫「比族」，由於聽力障礙的問題，肢體語言是他們所發展出來的溝通手段，雖然語言不同，這兩大民族的文字相近，因此藉由筆談交流，不過偉族的人常常嫌筆談麻煩，老是拿筆談來開刀，鬧得兩個民族間出現文化代溝，事實上，偉族有相當強烈的排他意識，對他們來說，比族的肢體語言溝通方式簡直怪異，無法忍耐，甚至將比族的語言納為一種異端，認為肢體語言是邪惡的象徵，會敗壞國家。就連王族、政府官員和耆老也持一樣的意見，他們認為，偉族的口語表達方式，才是真正的主流，因此，比族的母語遭到壓制，隨著偉族靠攏，如此特別的肢體語言逐漸失傳，愈來愈不快樂，最終兩個民族爆發嚴重衝突。

[English translation]

A friend of mine once told me a story: a long time ago, there were two major ethnic groups in the "Apa Kingdom", and the main difference was the language used. The majority of them are "Wei people", whose language is mainly spoken. The royal family and government officials are all Wei People, whose culture can be seen everywhere. The other ethnicity is called "Bi people". Because of deafness, gestural language is the means of communication that they have developed. Although the languages are different, the two ethnic groups have similar written languages, so they communicate through written texts.

However, Wei people often find it troublesome to communicate through writing. There is a cultural gap between the two ethnic groups. In fact, the Wei people have a strong sense of exclusivity. For them, the gestural language of the Bi people is simply weird and unbearable, and even the language of the Bi people is regarded as a heresy. They think gestural language is a symbol of evil and can corrupt a country. Even the royal family, government officials and the elderly hold the same opinion. They believe that the oral language of the Wei people should be the real mainstream. Therefore, the native language of the Bi people is suppressed. As the Bi people accommodate to Wei people, the gestural language was gradually lost, and Bi people became increasingly unhappy, and eventually a serious conflict broke out between the two peoples.