UC Journal, e-ISSN 2774-9401, Vol. 5, No. 2, November 2024, pp. 64-83

UC Journal: ELT, Linguistics and Literature Journal
http://e-journal.usd.ac.id/index.php/UC
Sanata Dharma University, Yogyakarta, Indonesia

LANGUAGE SHIFT AMONG MIDDLE-AGE AND OLDER CHINESE DESCENDANTS IN PENANG, MALAYSIA: A BITTER SWEET TALE

Teresa Wai See Ong[1*] and Robert A. Troyer[2]
[1]Singapore University of Social Sciences, Singapore
[2]Western Oregon University, USA
ongtesa@gmail.com[1] and troyerr@wou.edu[2]
*correspondence: ongtesa@gmail.com
https://doi.org/10.24071/uc.v5i2.8628
received 24 April 2024; accepted 22 August 2024

Abstract
Chinese heritage languages play a vital role in the lives of the Chinese-Malaysian community because they act as important markers of their heritage identity. However, due to globalisation and modernisation processes taking place at present-day, the global language, Mandarin Chinese, has begun to take over the role of Chinese heritage languages, particularly among the younger generation of ethnic Chinese in Malaysia. Little is known about how this shift is affecting the middle-age and older generations who are used to communicating in Chinese heritage languages. Hence, this study examines the language practices of middle-age and older ethnic Chinese living in Penang, a state with a long-standing history of Chinese settlement. Data were collected through semi-structured interviews conducted with 43 participants. The findings show that language shift is evident among both generations as they adapt to the present trend of speaking Mandarin Chinese with family members, particularly the younger generation. However, they switch back to Chinese heritage languages during communication among their own generation. This study concludes that such language shift and accommodation is detrimental to the Chinese-Malaysian community as they face losing their heritage languages in the near future.

Keywords: Chinese community, language practice, language shift, Malaysia, middle-age and older generation

Introduction
Located in Southeast Asia, Malaysia, with a population of 32.7 million people (Department of Statistics, 2022), is home to a diversity of languages, cultures, and ethnic communities. The largest minority community, the Chinese, speaks a range of Chinese heritage languages, such as Hokkien, Hakka, Cantonese, Hainan, Teochew, Taishan, and Foochow. These heritage languages hold significant value among the Chinese-Malaysian community because they were brought by their ancestors when they emigrated from several provinces in China to Malaya (the name for Malaysia before independence) to work as labourers and later as established traders. These languages function as an important

This work is licensed under CC BY-SA.
Creative Commons Attribution-ShareAlike 4.0 International License

representation of the community's ethnolinguistic identity (Ong & Ben Said, 2022). In the last few decades, Standard Mandarin Chinese (henceforth Mandarin) has increasingly become the dominant language spoken by the Chinese-Malaysian community, particularly among the younger generation (aged 30 and below) (Ting & Teng, 2021; Ting & Ting, 2021). This language shift is largely a result of the heavy promotion of Mandarin in Chinese-medium schools (Ong & Troyer, 2022), social media (Wang, 2016), and public perceptions of the language holding more pragmatic value than Chinese heritage languages (Ong, 2021; Ong & Ben Said, 2022). Consequently, many from the younger generation frequently communicate in Mandarin at home and in public places (Ong & Ting, 2022; Wang, 2016, 2017) and regard it as their mother tongue and a representation of the Chinese community (Albury, 2017). This situation has created a sociolinguistic imbalance as many Chinese families are undergoing sociolinguistic realignment in the home domain (Ding, 2016; Wang, 2017). This situation raises the question of whether the middle-age and older generations (over age 30) are also shifting from their heritage languages to Mandarin in various contexts. It further poses questions about the future survival of Chinese heritage languages in the Chinese-Malaysian society.

This study expands the scope of language maintenance and language shift research in Malaysia by examining the language practices of 43 ethnic Chinese individuals over 30 years old and living in Penang, a multilingual state that has significant Chinese historical influences. These participants come from different social classes, but they each speak one of the earlier listed Chinese heritage languages as their first language. This study contributes to the literature of language maintenance and language shift in two main ways: (a) to understand how middle-age and older minority language users reflect on their everyday language practices in various domains, and (b) to identify how their language practices are influenced by the younger generation.

Key terminology

Language shift is broadly defined as the process of replacing one language with another as a means of communication and socialisation at both the individual and community levels. Such a situation typically manifests in increased use of a majority/dominant language, which may eventually lead to the loss of heritage language/s among individuals and within a community. Pauwels (2016) comments that language shift is both a process and an outcome. It is a process because the shift from heritage languages to a majority/dominant language gradually takes place among individuals over several generations. Consequently, it is also an outcome that results in decreased use of heritage languages in the community. After a period of time, the heritage language/s may no longer be used, resulting in language loss/death if the languages are completely abandoned by the whole community. In this study, evidence of language shift was obtained by interviewing heritage language speakers, and as we demonstrate below, can be understood in relation to the influence of external factors and language ideologies that motivated the use of Mandarin among the participants.

Language maintenance refers to the process by which a language continues to be spoken or written by individuals and a speech community when faced with competition from a language with greater ethnolinguistic vitality (cf. Landry &

Allard 1994). Ethnolinguistic vitality is a construct that combines analyses of the social status, demography, and institutional support that is afforded a linguistic group in a specific context. The degree of vitality, or strength, is a predictor of the group's continued use of their language as a marker of ethnicity (Giles et al., 1977). In certain situations, the members of a speech community enter a new linguistic environment (e.g., through immigration), but they continue to use their heritage language/s in at least some domains. This can lead to a local diglossic situation in which the speech community becomes bilingual, adopting the more dominant language/s for wider communication in the new environment but retaining the use of the heritage language/s in some domains. Despite the reduced use of heritage languages, the process of language maintenance can continue across generations when it is valued by the community. In this study, language maintenance is understood as the continuous use of Chinese heritage languages among the participants despite their use in limited domains.

A useful way to understand the processes of language maintenance and language shift is through exploring domains of language that can be identified by examining which languages people use in specific locations and for certain activities (Fishman et al., 1971). Fishman (1972, p. 82) defined a domain as:

> "A socio-cultural construct abstracted from topics of communication, relationships between communicators, and locales of communication in accord with the institutions of a society and the spheres of activities of a culture, in such a way that individual behaviour and social patterns can be distinguished from each other and yet related to each other."

Domain as a construct is used to capture the different layers of interactions among people through their activities in various contexts of their everyday lives (Fishman, 1991, 2001). In other words, a domain exists when there are behavioural interactions in particular situations that justify the existence of "a sphere of activity" (Haberland, 2005, p. 230). In this study, we employ the concept of domain, as suggested by Fishman et al. (1971), to examine the language practices of middle-age and older participants in Penang. The five domains explored in this study are family, employment, education, religion, and friendship. This range of domains includes a wide variety of contexts in which the target population interacts and engages in many social activities, which afford their choice of languages to suit their activities and relationships.

Language shift of the Chinese-Malaysian community

In this section, we review past studies of language shift in the region and factors that influence Chinese-Malaysians' language practices.

Among the Chinese-Malaysian community, language shift is concomitant with and influenced by the rise of Mandarin as a worldwide language. Research conducted in all areas of Peninsular Malaysia (northern, central, and southern regions) and East Malaysia have shown that language choice, especially among the younger members of the Chinese-Malaysian community, is in the process of changing away from Chinese heritage languages and towards Mandarin. Low et al. (2010) surveyed the language choices of young mothers in Penang (representing the northern region of Malaysia) and found that these mothers were

speaking Mandarin and English to their young children while they continued to use Chinese heritage languages with their friends and neighbours. Using quantitative methodology, Wang (2010) examined secondary school students in Kuala Lumpur (central region of Malaysia) regarding their language choice in three domains of home, social, and education. In all domains, these students preferred to use Mandarin over Chinese heritage languages. In Johor (southern region of Malaysia), Wang (2005, 2007, 2009, 2012) investigated patterns of language use of the Chinese community. Her findings highlighted the drastic decline in the use of Chinese heritage languages among the community as they preferred Mandarin while viewing it as an important marker of ethnic identity. Likewise, in East Malaysia in Sarawak on Borneo, Ting (2018) examined language choice patterns of two Hakka families, spanning over five to six generations. The author concluded that the use of Hakka had stopped at Generation X as they did not pass it onto the next generation.

Several factors play a role in motivating this language shift. A large proportion of Chinese-Malaysian parents send their children to Chinese-medium primary schools where Mandarin is used as the medium of instruction (Lee, 2012; Lee & Ting, 2016; Wang, 2014). These parents perceive Chinese-medium education as an integral part of the preservation of Chinese language and culture. They believe that the incorporation of Chinese culture and language in the school curriculum is essential for their children's upbringing to reflect their Chinese identity and heritage in a Malay-dominant country. With the rise of Mandarin as the standard language of China in the 20th century, these schools, many of which previously used heritage languages as the medium of instruction, increasingly adopted texts and curriculum in Mandarin; thus, the younger generation now strongly expresses the view that Mandarin has a higher social status due to its usage in wider functional domains (Ong & Troyer, 2022; Ting & Puah, 2017).

Additionally, undergraduate students at public and private universities across Peninsular Malaysia have been found to treat Mandarin as the language that unifies their Chinese ethnic identity (Albury, 2017) and advances their economic and individual socioeconomic mobility (Albury, 2021). Intermarriage is another factor influencing this language shift (Kow, 2003; Ong & Ben Said, 2022). In the past, a Chinese husband and wife from the same ethnolinguistic community would marry and speak the same Chinese heritage language with their children. More recently, intermarriages have begun taking place within different Chinese ethnolinguistic communities, which leads to a shift toward using a common language, usually Mandarin, in the family domain. Finally yet importantly, local political decisions play a sensitive and crucial role in contributing to this language shift (Sim, 2012). To stay united, community leaders have championed the use of Mandarin among the Chinese community, as they believe that speaking different Chinese heritage languages would divide the community.

The Malaysian context creates linguistic competition for minority language users such as Chinese-Malaysians who will need to command not only Malay and English but also a Chinese language. The factors outlined above explain why in this situation the result is shift away from heritage languages and toward Mandarin as the dominant tool of interethnic communication. In summing up, the patterns of language use among the ethnic Chinese community in Malaysia,

particularly the younger generation, have undergone many changes leading to language shift (Ding, 2016; Puah & Ting, 2015; Wang, 2016). Factors such as parents' preference for Chinese-medium education in Mandarin, their preferential attitudes towards Mandarin, along with intermarriage and political pragmatics are the primary mechanisms of the ideological standardisation of Mandarin, which result in language shift away from traditional Chinese heritage languages.

Background of research site

This section provides a brief overview of the sociolinguistic background of Penang to understand the language situation and multilingual context. Penang is made up of two parts – Penang Island and Seberang Perai (located on the Malay Peninsula opposite Penang Island). It has a population of 1.77 million (Penang Institute, 2020, 4), which consists of three main ethnic communities: Bumiputras (a term used to refer to the Malays and Indigenous people) (44%), Chinese (39%), Indian (9%), and other smaller minority ethnic communities (8%). As described later, with such diverse ethnic communities living together from the past to the present, a variety of languages have been passed down from previous generations and continue to be spoken. Accompanying this linguistic diversity, many different cultures and traditions are still practised, and Penang officially defines its identity as a "rich and colourful admixture of socio-cultural traits and traditions" (Ooi, 2015, pp. 27-28).

Modern Penang was founded in 1786 by Sir Francis Light, the British explorer, which led to the declaration of George Town as a free trading port. The port connected merchants from Europe with those from India, China, and Southeast Asia, providing them with opportunities for expansion of their commercial activities. Following the flourishing trade in Penang, Chinese merchants set up shops in George Town. The development of tin mining in Taiping, Perak attracted more Chinese migrants to work as labourers. When that industry came to an end, these labourers moved to bigger states, like Penang, for better work opportunities. After years of hardship, many Chinese merchants and labourers married and settled in Penang, with their children, grandchildren, and great-grandchildren continuing to live there to the present day.

Penang's population was also boosted by the influx of merchants and labourers from India. As early as 1770, merchants from Bombay arrived in Penang for commercial activities, followed by Indian labourers to work at the rubber and tea plantations. After spending years in Penang, they, similarly to the Chinese, settled there with some bringing their wives from India while others married local women. Additionally, during the colonial period, many migrants were attracted, such as Thais, Achenese, Arabs, Armenians, Jews, Japanese, Burmese, and Europeans. All in all, this diversity of ethnic communities formed today's Penang population.

Within Penang's multiethnic society, multilingualism is present at the societal and individual level. As ratified in the Federal Constitution of Malaysia, Bahasa Melayu (the Malay language) holds the highest linguistic status in Malaysia due to its role as the country's sole national and official language. This ratification applies to all states in Malaysia including Penang. Therefore, Bahasa Melayu acts as the language of government administration, public education, and

law, and it is used as the main medium of instruction in national schools from primary to secondary levels.

Despite the government's use of Bahasa Melayu as a symbol of national unity, the vitality of the former colonial language, English, has not been forgotten. English was the official language of government administration prior to Malaysia's independence. However, after independence the official language status of English was removed in order to elevate the status of Bahasa Melayu. Nevertheless, English retains its importance as the unofficial second language of Malaysia and of Penang. It is taught in school as a subject, while at the tertiary level, science courses at government universities and all courses at private universities/colleges are taught in English. It is also widely used in the media as the language of communication for tourism, international trading, and local businesses (Ong & Ben Said, 2022).

The National Language Acts 1963/1967 promote multilingualism through their statements allowing any languages to be used, taught, and learnt in Malaysia. Indian languages, such as Tamil, Hindi, Telugu, Punjabi, and Malayalam, together with other foreign languages, such as Vietnamese, French, German, Nepali, Tagalog, Bahasa Indonesian (Indonesian language), Korean, and Japanese, are spoken by minority groups in everyday life. For the Chinese community, they brought along Chinese heritage languages (as listed earlier) when they first arrived in Malaya. Today, their family members continue to speak those heritage languages, mainly in the friendship and family domains (Ong & Ben Said, 2020). Hokkien is the most commonly spoken Chinese heritage language in Penang and has incorporated vocabulary from Bahasa Melayu, English, and Cantonese with local pronunciation (Ong & Ben Said, 2020). As an iconic language for those living in Penang, its continuous usage indexes the Chinese community's heritage. In the education domain, Mandarin was introduced in the 1920s as the medium of instruction in Chinese-medium primary schools, also known as vernacular schools (Wang, 2014). There are also newspapers, magazines, dramas, and movies on television and in cinemas that use Mandarin as the primary medium. In the last decade, Mandarin has also become a popular language of communication among the younger generation of Chinese-Malaysians (Vollman & Soon, 2018), thus, causing Chinese heritage languages to lose their cultural status and raise questions regarding their survival (Ong, 2020).

In summary, the multilingualism exhibited in Penang is made up of layers of language diversity, which reveals a rich yet complex linguistic ecology. Such richness and complexity form the present-day multilingual identity of Penang where educational languages (Bahasa Melayu, English, and Mandarin) are used for official and educational purposes while the use of heritage languages including Chinese heritage languages are mostly confined to other, less formal domains.

Method

In this study, a semi-structured interview-based qualitative approach was employed. This method afforded in-depth discussion of how middle-aged and older generations reflect on their language choices when engaging with people in various domains and the reasons behind their choices. A total of 43 participants (30 males and 13 females) from the Penang Chinese community were recruited through close contacts of the first author and friends' recommendations. The two

criteria that participants met in order to participate in the study were: (a) the participant must be over 30 years of age, and (b) they must speak one of the Chinese heritage languages listed earlier. The 43 participants were grouped into three categories: (a) official actors (policymakers and researchers from government research institutes), (b) community-based actors (representatives of Chinese clan associations and language promoters), and (c) grassroot actors (individuals from the Chinese community who participate in the five domains of family, friendship, religion, education, and employment). Among the 30 male participants, 17 were over 50 years of age, while 13 were from between 31 and 50. For the 13 female participants, six were of over 50, while seven were between 31 and 50. The participants' names were anonymised to protect their confidentiality, and they were assigned pseudonyms for identification purposes in this study.

The main questions in the semi-structured interviews were as follows:

1. What language(s) do you use to speak to your family members at home?
2. What language(s) do you use to speak to your colleagues and customers at work?
3. What language(s) do you use to speak with your children's teachers or other parents at school?
4. What language(s) do you use to speak if you pray in the temple/church?
5. What language(s) do you use to speak when meeting up with your friends?
6. What are the reasons behind your choice of language(s)?

The interviews were held in 2016 in the office or home of the participants and lasted for approximately one hour. All participants signed a consent form at the start of the interview, and they understood that they were allowed to withdraw at any time during the interview if they were not comfortable with the questions. The language used during the interviews was mainly English, because most of the participants possessed fluent proficiency in English and perceived it as the working language of the research. However, some participants preferred to use Hokkien or Cantonese as their comfortable language to express themselves, and the researcher accommodated to their preferences.

After completion of interviews, the recordings were transcribed verbatim. For those who used Chinese heritage languages, their interviews were translated to English by the first author during transcription. Apart from a few changes for the sake of intelligibility, any non-standard lexis and syntax were not altered in order to retain their authenticity. Using Rubin and Rubin's (1995) thematic analysis, all the transcripts were read thoroughly by the first author to identify the language choices of the participants in each domain. Subsequently, the reasons that participants supplied regarding their respective language choices were grouped together into thematic categories for analysis. After completion of the grouping, the reasons were reviewed by the second author to triangulate the analysis and results.

Findings and Discussion

Findings

Summary reasons guiding participants' language choices

This section presents a summary of the reasons guiding the participants' language choices (Chinese heritage languages and Mandarin) in each domain (refer Figure 1).

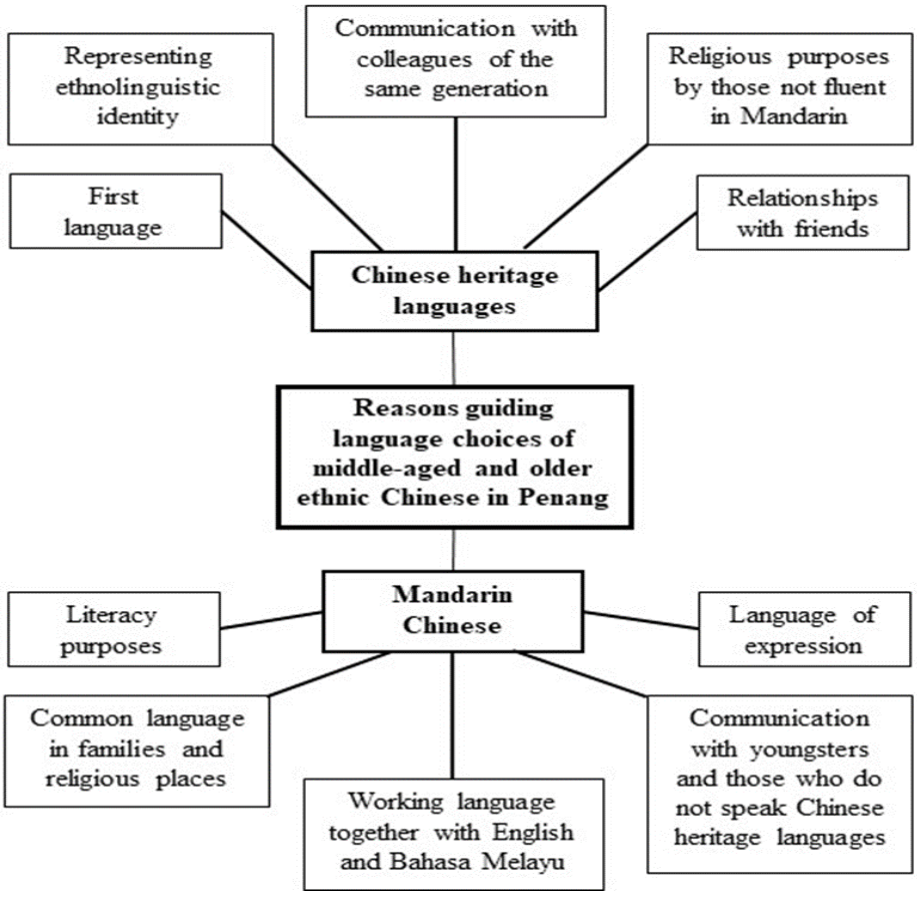

Figure 1. Summary of the reasons given for use of Chinese heritage languages and Mandarin by middle-age and older generations of ethnic Chinese in Penang

Chinese heritage languages

In the family, employment, religion, and friendship domains, Chinese heritage languages were used by the 43 participants in this study. The reasons they gave can be summarised as follows: (1) Chinese heritage languages were the languages the participants grew up with and were most familiar with and comfortable speaking, (2) the use of Chinese heritage languages represented the participants' ethnolinguistic identity, (3) Chinese heritage languages were common languages used for communication and building/maintaining relationships with friends and colleagues of the same generation, and (4) these languages were used for chanting/worshipping during religious activities by participants who were not fluent in Mandarin.

In the domain of family members living together under one roof, Chong San, an older generation traditional dessert seller in the market, reported that he used Hokkien and Mandarin interchangeably at home depending on who he spoke

to. According to Chong San, he spoke Hokkien with his wife and sons but used Mandarin with his grandchildren:

> Excerpt 1
> *I speak Hokkien with my children and wife because it is the language I grew up since living in this area [Jelutong – a suburb in Penang]. With my two grandchildren, I speak Mandarin because they are educated in Mandarin speaking schools. They only speak Mandarin and I need to communicate with them!*

Based on Chong San's statement, we can infer that there is frequent code switching in his bilingual home. Chong San's grandchildren were so used to speaking Mandarin at school that they continued to speak it when they returned home. During the interview, Chong San also commented that he had not even known Mandarin before his grandchildren had started using it at home—he had, in his words, learned it from them. Chong San's case exemplifies the use of a Chinese heritage language in the family domain within the same and the next younger generation, but with an accompanying shift to Mandarin to accommodate to the youngest generation. Hokkien is the language Chong San is most confident and fluent in and which he prefers to index his family's ethnolinguistic group identity; however, this code has not been passed on to the newest generation. Around half of the participants reported similar experiences with Chong San where they used both Chinese heritage language/s and Mandarin interchangeably with their family members due to the youngest generation being unable to speak Chinese heritage language/s.

In the employment domain, Kok Chee, a middle-aged state assemblyman, always spoke Hokkien and Cantonese with elders and traders in the markets and hawker centres so that he could be closely connected with the community. Being a Cantonese native speaker, he would also speak Cantonese when invited to clan association dinners:

> Excerpt 2
> *There is a group of Cantonese living in Penang. It's a Cantonese enclave. Whenever they invite me for dinners, societies' and associations' dinners, well…I speak Cantonese to them. I deliver my speech in Cantonese. Even during campaigning and election campaigns, I speak in Cantonese. It represents my cultural identity.*

Based on Kok Chee's statement, the use of Cantonese with members of the clan associations and the wider society is a representation of his Cantonese cultural identity and a symbol of respect to the Cantonese-speaking people and associations in Penang. He concluded that "we should adapt to the local languages in order to feel closer to the community". In Kok Chee's case, Cantonese acted as a functional and symbolic language of communication between him and his constituents. Similarly, three other participants who were assemblymen mentioned that Chinese heritage language use is beneficial when speaking to community elders because they feel more connected.

In the domain of religion, Amy, a retiree and housewife, conducts weekly prayer groups with friends from church and newly-met friends using the Hokkien

language. Although Amy is a fluent English speaker and attends the English-speaking church service, she started a Hokkien prayer group 13 years ago because she was frustrated when friends who asked her to pray for their grandparents could only understand Hokkien. She also related an incident in which she met a young teenaged girl living in a rural area of Penang with her parents who did not have much education. The girl was reportedly possessed by demons and needed spiritual help. Her parents were Buddhist believers and had asked for help at Buddhist temples to cast out the demons, but they were unsuccessful. Thereafter, Amy tried assisting the girl by praying with her parents using Hokkien. According to Amy, after many years of prayers, they succeeded in casting out the demons and consequently, the girl and her parents became Christian and were baptised. The family's neighbours, extended family members, and friends were very happy with the outcome, and thus, they joined the Hokkien service at church, which Amy had helped initiate with her pastor. Amy also learned how to sing Christian hymns in Hokkien, and during the interview she commented on the different vocabulary used for daily conversation and prayers. To learn this vocabulary, Amy borrowed a Hokkien hymn book from her friend's church and began singing with her prayer group members. She informed us that initially, they thought that they sounded like they were singing a vulgar language due to the different intonations, but they spent many months practicing to learn how to sing the Hokkien hymns accurately. Similar to Amy, Jason, a middle-aged pastor, also used Hokkien when preaching to the older generation and often conducted Hokkien bible study groups. For both Amy and Jason, Hokkien became a language for religious purposes.

In the friendship domain, Tara, a middle-aged lecturer at a university, described her learning experiences of several Chinese heritage languages in order to communicate with her friends from different ethnolinguistic groups.

> Excerpt 3
> *Well, for me, if you want to have some continuity in your family and ancestral cultures, then you should probably speak the respective language. I think it's important to keep speaking Hokkien in Penang because it's an example of a very different kind of Hokkien. It's a kind of creolised version of standard Hokkien and it reflects the history of Penang in a way that Mandarin and some of other languages can't do. I learnt Taiwanese Hakka when studying in Taiwan and I speak to people who speak Hakka. For Cantonese, I definitely speak it because some people don't like to speak Hokkien, so I try to switch to Cantonese but I'm not good at Cantonese. I switch to make them not feel so distant.*

Tara's statement shows that she is multilingual and took up the challenge of learning three different Chinese heritage languages to communicate with her friends in those languages. She highlighted the importance of speaking Chinese heritage languages as a way of representing the family's heritage and remembering ancestral culture. For Tara, being able to speak Hokkien, Hakka, and Cantonese is a way of building relationships and closing the distance between her friends and herself. Almost all 43 participants provided a similar reason like Tara's regarding building closer relationships with friends through the use of Chinese heritage languages.

Mandarin Chinese

In the family, employment, religion, and education domains, Mandarin has become a common language spoken by the 43 middle-age and older participants. The reasons were as follows: (1) participants read Chinese characters (Hanzi) in books according to Mandarin pronunciation, (2) Mandarin had become the common language in families and Buddhist temples, (3) it was a functional language alongside Chinese heritage languages, Bahasa Melayu, and English, (4) participants reported using Mandarin to express themselves as an alternative to Chinese heritage language, and (5) it acted as a communication tool between elders and youngsters, particularly youth who do not speak Chinese heritage languages.

In the home domain, Russell, a middle-aged government official, used Mandarin to communicate with his wife and children. He mentioned that although he could speak Teochew, which was his heritage language, he did not use it with his family. His reasons were as follows:

> Excerpt 4
> *Although I am a Teochew and my wife is a Teochew, I can't understand her heritage language because hers is from Nibong Tebal [a suburb in Province Wellesley]. Hers is totally different from mine. So, I cannot converse in Teochew with my wife. We can only converse in Mandarin, so when we use Mandarin, our children also communicate in Mandarin.*

In many families where intermarriage takes place, Mandarin becomes the family lingua franca as there are no similar Chinese heritage languages between husband and wife. In Russell's case, despite his wife originating from the same ethnolinguistic group, Teochew, their heritage language, differed in terms of phonology, lexis, and intonation because they grew up in different suburbs in Penang. Consequently, they could not understand one another even though they spoke the same language. Marcus, a middle-aged language activist, argued that such practices are practical because he also could not possess a common heritage language to speak with his wife. Hence, they decided to use Mandarin as the common language of communication, which subsequently became the language their children grew up with. In the family domain, Mandarin became Russell's and Marcus' primary language and their children's first language.

In the employment domain, Kok Wai, an older generation trader who operated a wholesale household products shop in George Town, the capital of Penang, mainly spoke Mandarin with his six workers of Chinese descent. He reasoned that his choice of language was because some of his workers were from the younger generation who have spoken Mandarin as their first language and, therefore, their understanding of Hokkien was not proficient enough for accurate workplace communication. In fact, one of his workers could not speak Hokkien even though he was born and grew up in Penang where Hokkien was the most common Chinese heritage language. For this particular worker, Kok Wai surmised that the worker's first language was Mandarin because the worker always spoke to his family members on the phone in Mandarin. Nevertheless, Kok Wai would still switch to Hokkien sometimes when communicating with these workers. When

meeting his customers, Kok Wai said that he accommodated his choice of language according to his customers', which is evident in his statement:

> Excerpt 5
> *When customers speak whatever language, I will speak to them back in that language. It doesn't represent anything, it's mainly for business communication. Some customers will speak Cantonese and I'll speak a bit of that. Hokkien customers usually speak Hokkien. Some customers who are from other states and don't speak Hokkien will speak Mandarin and I'll reply in Mandarin.*

Kok Wai's statement clearly shows that Mandarin acted as a vital tool for business communication, alongside Hokkien and Cantonese. In particular, his different choice of languages that accommodated to different customers demonstrates that he did so to ensure comprehensible communication between his customers and himself. In discussions regarding language choice in the employment domain 30 participants reported similar opinions to that of Kok Wai in which they acknowledged the importance of Mandarin for business communication.

In the domain of religious practices, Hai Kin, a middle-aged Buddhist monk, used Mandarin for chanting, reading religious books, and conducting dharma talks. He explained his reasons stating:

> Excerpt 6
> *The younger generation reads Hanyu pinyin according to Mandarin pronunciation because it is the language taught in schools. When we chant, we use Mandarin so that it won't confuse the devotees. Mandarin is seen as the common language now for most people. When I conduct dharma talks, I usually speak in Mandarin so that everyone will understand. Nevertheless, it still depends on the crowds and locality. If the crowd consists of mostly elders, then I will use Hokkien. Although I am a Hainan origin, my Hainan vocabulary is not deep enough for reading. Reading Buddhism books needs special religious vocabulary which I'm not sure of. Therefore, I read the Buddhism books in Mandarin.*

In Hai Kin's explanation, Mandarin had become the common language used in the temple because devotees came from all walks of life; so, he used Mandarin to ensure common understanding among devotees. It is noteworthy that Hai Kin would use a heritage language when his devotees are mostly elders. However, Mandarin was the medium of instruction in Chinese-medium schools where most youngsters attended and, therefore, most devotees were able to chant in Mandarin when reading the Hanzi printed on the prayer books. Given the sensitive nature of discussing the religion domain in Malaysia, and the challenge of recruiting participants with religious leadership positions, it is difficult to make the same kinds of generalisations about this domain as we can with the others. However, the accounts that we have from Amy and Jason (above) and from Hai Kin, provide important insights into an avenue for heritage language maintenance on one hand, but, as we see in this section, also an example of the shift toward Mandarin.

As we established earlier in the paper, in the education domain of Chinese language schools, Mandarin has supplanted heritage languages as the medium of

instruction. The linguistic decisions that must still be made in this domain are exemplified by Edward, a middle-aged principal at a Chinese-medium primary school. In the interview, he explained that Mandarin was used in his school as a functional language and communication tool alongside Bahasa Melayu and English, and he emphasised on the importance of Mandarin in today's globalised world:

> Excerpt 7
> *Nowadays, everyone speaks Mandarin. If you go to China and Taiwan or worldwide, you can speak Mandarin whereas Hokkien has limited usage. For things to handle easily in the school, I use Mandarin as the communication language with parents and teachers. I speak Mandarin to most of the teachers except those of Malay ethnicity and officers from the Ministry of Education. For some parents who are not fluent in Mandarin and prefer to speak Hakka, Hokkien, or English, I will speak those languages to them so they can express themselves. In addition, I want my students to get good results because they are tested in Mandarin, so I don't want the influences from Hokkien or Teochew or Hakka. When they are studying in school, they're not allowed to speak Chinese heritage languages.*

Edward's statement emphasises the importance of Mandarin as a language of wider communication especially with people in China and Taiwan and the limited functional scope of Hokkien. While Edward is willing to accommodate to parents who don't speak Mandarin, the most revealing detail in this excerpt is that the students were not allowed to speak Chinese heritage languages at school. Edward's contention that if his students use heritage languages at school, their Mandarin proficiency would suffer reflects standardising language ideologies that have high-stakes consequences in a test-driven curriculum. These perspectives are a contrast to pluralistic ideologies that afford code switching, translanguaging, and acceptance of a range of linguistic repertoires (c.f. Lin, 2013). If we look to Singapore for a similar precedent, the state's emphasis on their official languages has resulted in the erasure of Chinese heritage languages from the public sphere and the educational domain (Rubdy, 2005).

Discussion

The findings of the interviews show that both Chinese heritage languages and Mandarin were used by the 43 middle-aged and older Chinese-Malaysian participants in their daily lives in Penang. In the first section of the findings, we highlighted responses that demonstrated how participants found Chinese heritage languages to be vital to their lives in the domains of family, employment, religion, and friendship—all of the domains that we investigated except education. The participants used these languages because they were languages they grew up with, the everyday tongues of their local contexts, discourse communities, and social networks. These close connections between the Chinese heritage languages and culture have for generations created an indexical relationship in which use of Hokkien or Cantonese, for example, signal bonds of ethnolinguistic identity and relationships among family members and friends. Increasingly, however, this indexicality points to generational differences: heritage languages signal belonging to the middle-age and older demographics. The findings, therefore,

exhibited two important features: (1) the participants had not forgotten about their heritage languages and continue to value their use in their daily lives, and (2) the use of Chinese heritage languages is versatile, variable, and changing.

In the second section of the findings, we exemplified the degree to which participants reported that they use Mandarin in four out of the five investigated domains of family, employment, religion, and education—all of the domains except friendship. Such usage corresponds to the current global language trend in which languages of wider communication such as Mandarin are prioritised by ethnic Chinese worldwide (e.g., see Duff 2014; Duff & Li 2014; Li & Zhu 2010; Zhu & Li 2014). The literature review has shown evidence of a language shift currently occurring in the younger generation of the Chinese-Malaysian community where Mandarin has become the de facto language of communication. Our findings therefore demonstrate two significant points: (1) the influence of language shift from the younger generation is evident among the middle-age and older generations, (2) the increased learning and use of Mandarin by the participants, who are in these age groups can be interpreted as a cultural-linguistic transition. Former ways of interacting in heritage languages reflect a traditional, locally-oriented approach to language; however, participants' use of Mandarin signals change and an orientation toward much wider ethnic and national groups as they accommodate to wider discourse communities and the standardising language trends created by Mandarin's role in the younger generation's education.

Through these findings, there are four points we wish to emphasise. First, in the family domain, when Hokkien was spoken by Chong San (Excerpt 1), for example, such usage indexes his wish to continue maintaining his heritage identity with his wife and sons. In the employment domain, the continuous use of Cantonese by Kok Chee with elders and members of the Cantonese clan associations (Excerpt 2) represents his generations' strong will to maintain their cultural identity. In the friendship domain, Tara's efforts to learn three Chinese heritage languages (Excerpt 3) exemplifies the role that these languages play in building relationships with her friends. These reasons for using Chinese heritage languages align with Fishman's (1999) work proclaiming that language and ethnicity are closely connected because a language represents the community's culture, history, and kinship. Additionally, it points to Fishman's (1977) view that some ethnic communities, such as the Chinese community in Penang represented by the 43 participants, place strong emphasis on the role of languages as an expression of group membership.

Secondly, and connected to the first point, these signals of group membership extend historically as 'heritage' languages index ethnocultural and linguistic roots. While not all cultures nor all individuals are able to or interested in maintaining historical family linages and associations with cultural-specific links to the past, the tradition of passing down ethno-cultural and linguistic knowledge is a characteristic feature of the ethnic Chinese population in Malaysia. In contrast to the frequent 'three-generation' language shift experienced by many immigrant groups worldwide, Chinese-Malaysians have maintained their minority languages for many generations for more than one hundred years. Thus, when Chong San switches to speaking Mandarin with his grandchildren (Excerpt 1), the switch indicates a discontinuity of his heritage language, Hokkien. When his grandchildren do not speak Hokkien, one traditional means of passing down

cultural knowledge and history, such as where his ancestors came from in China and the ethnolinguistic group his ancestors belonged to, may be lost. Certainly, this information can be conveyed in Mandarin, but in that case, the medium is not the message. We argue that when cultural knowledge is encoded in the heritage language, and the language is part of the user's social competence and consciousness, the connection to the past is qualitatively different from cultural knowledge that is conveyed in Mandarin. Ong (2020) extended the 'mother tongue' metaphor to a family's cultural umbilical cord. Thus, like Chong San above, when Russell and his wife chose Mandarin as the medium of communication in their family (Excerpt 4), their children will have a different connection to the family's varied ethnolinguistic history and origin than if they had used one or more of the parents' heritage languages. Their family's discontinued use of heritage languages and shift to Mandarin will break long-established cultural practices that are still valued by middle-aged and older community members as described above.

As a third point, in the religion domain, we can see a moderate transition from Chinese heritage languages to Mandarin, as exhibited by the participants' statements. Amy started a Hokkien prayer group to assist her friends who needed spiritual help but were not fluent/proficient in English or Mandarin. She also helped her pastor in initiating the Hokkien church service. Amy's efforts are a reversal of the larger pattern of shift toward languages of wider communication (English and Mandarin) and a powerful demonstration of the cultural value that ethnic Chinese in Penang place on their heritage languages by extending them to religious services. However, for Hai Kin, his temple's choice of Mandarin for chanting services (Excerpt 6) is an accommodating to the younger generation and the majority population who understand and speak Mandarin. Again, these point to the increasing roles and status of Mandarin as a common language of communication among the Chinese-Malaysian community. In the employment domain, similar shifts have taken place. As seen in Kok Wai's statement (Excerpt 5), he spoke Mandarin with his workers and customers from other states or those who could not speak Hokkien as a way of communicating with them. These findings point to the fact that Mandarin is becoming the authoritative and de facto language in today's social and economic contexts within Penang (Ong, 2022; Ting & Teng, 2021).

Fourth and finally, there is no evidence to counter the observation that Mandarin is the functional language for the many students who attend Chinese schools in Penang today, as mentioned by Edward (Excerpt 7). As stated earlier, Chinese-medium primary schools must use only Mandarin as the language of instruction for all subjects except other language subjects (Wang, 2014). This policy, rooted in standard language ideologies, attempts to increase the academic and economic value of Mandarin, resulting in principals like Edward prioritising Mandarin (and the required Bahasa Melayu and English) but no other Chinese heritage languages at his institution. Furthermore, Chinese-Malaysian students and parents have perceived Mandarin as the most useful and appropriate language to use in school and in preparation for the job market (Albury, 2017, 2021; Ting & Puah, 2017). Consequently, the ethnolinguistic vitality of Chinese heritage languages decreased relative to Mandarin as parents, teachers, principals, and the

majority of Chinese-Malaysians began to believe that speaking their heritage languages is detrimental to children's educational attainment and employability.

Conclusion

Through the analysis of the interview transcripts of 43 participants and the representative excerpts provided in the present paper, we have shed light on the language shift among the middle-aged and older ethnic Chinese in Penang which is probably unavoidable in the current globalised era. As evidenced in the findings, the participants used Chinese heritage languages in their everyday lives particularly in the domains of family, employment, religion, and friendship. However, they have begun to switch to and perceive Mandarin as their tool of communication in the domains of family, employment, religion, and education. Based on this set of interviews, the only functionally different roles that these languages play are in the domains of communication with friends as well as with family members and people of the same generation or older. On the other hand, these middle-age and older generations had to speak Mandarin to those from the younger generation who could not understand/speak Chinese heritage languages, and people who originated from other states in Malaysia whom might not speak the same Chinese heritage languages. Thus, an important factor in determining the use of either Chinese heritage languages or Mandarin depended on the interlocutors, whether they were from the young, middle-age, or older generations. This language shift is not happening because middle-age and older heritage speakers prefer Mandarin, but because of the perceived pragmatic need to accommodate to the younger generation and those who do not speak Chinese heritage languages. These findings are not surprising given the many ethnic communities around the globe who experience similar language shifts in which a younger generation has been educated in a global, dominant, or majority language. If this trend toward dominant languages and away from linguistic diversity is to be reversed among Chinese-Malaysians, language maintenance and revival programs would need to be implemented from bottom-up (grassroots community organisation) and top-down (governmental, legislative) initiatives to encourage the younger generation to speak their heritage languages alongside languages of wider communication.

Just as a great deal of research and work in linguistics is devoted to endangered and indigenous language documentation and promotion, the line of inquiry in this paper applies the same perspective to long-standing, culturally entrenched ethnolinguistic practices of immigrant communities whose linguistic choices have become limited by the hegemonic forces of dominant languages. Documents such as UNESCO Universal Declaration on Cultural Diversity (2001) affirm the importance of cultural plurality and recognise that "all persons have therefore the right to express themselves and to create and disseminate their work in the language of their choice, and particularly in their mother tongue" (Article 5). It is the work of sociolinguists to examine language shift from both an etic perspective and the emic, qualitative approach used in this study so that we can understand the degree to which minority language users have agency in determining their language choices. Future work with Chinese-Malaysians should address these concerns as heritage languages that connect them to certain geographic and cultural areas in China are replaced by ties to a more global

Chinese diasporic identity that is indexed by Mandarin. Research into the linguistic and cultural development of language and culture in Penang and Malaysia provides concrete examples of the impact of language shift that can inform our understanding of immigrant and diaspora communities everywhere.

Funding

This study was supported by the Griffith University International Postgraduate Research Scholarship (GUIPRS) and the Griffith University Postgraduate Research Scholarship (GUPRS) under project number GU 2016/409.

References

Albury, N. J. (2017). Mother tongues and languaging in Malaysia: Critical linguistics under critical examination. *Language in Society, 46*(4), 567-589. https://www.jstor.org/stable/26847179

Albury, N. J. (2021). Language policy, ideological clarification and theory of mind. *Language Policy, 20,* 193-214. https://doi.org/10.1007/s10993-020-09547-z

Department of Statistics Malaysia. (2022). *Current population estimates, Malaysia, 2022.* Wilayah Persekutuan Putrajaya: Department of Statistics Malaysia.

Ding, S. L. (2016). The role of parents in heritage language maintenance in Malaysia. *Malaysian Journal of Chinese Studies, 5*(1), 15-27.

Duff, P. (2014). Language socialisation into Chinese language and 'Chineseness' in diaspora communities. In X. L. Curdt-Christiansen & A. Hancock (Eds.), *Learning Chinese in diasporic communities: Many pathways to becoming Chinese* (pp. 13-33). John Benjamins.

Duff, P., & Li, D. (2014). Rethinking heritage languages: Ideologies, practices, and priorities in Canada and China. In P. P. Trifonas & T. Aravossitas (Eds.), *Rethinking heritage language education* (pp. 45-65). Cambridge University Press.

Fishman, J. A., Cooper, R. L., & Ma, R. (1971). *Bilingualism in the Barrio.* Bloomington: Research Centre for the Language Sciences, Indiana University.

Fishman, J. A. (1972). Language maintenance and language shift as a field of inquiry: Revisited (1968). In Anwar S. D. (Ed.), *Language in sociocultural change: Essays by Joshua A. Fishman* (pp. 76-134). Stanford University Press.

Fishman, J. A. (1977). Language and ethnicity. In H. Giles (Ed.), *Language, ethnicity and intergroup relations* (pp. 15-58). Academic Press.

Fishman, J. A. (1991). *Reversing language shift: Theoretical and empirical foundations of assistance to threatened languages.* Multilingual Matters.

Fishman, J. A. (1999). Concluding comments. In J. A. Fishman (Ed.), *Handbook of language and ethnic identity* (pp. 444–454). Oxford University Press.

Fishman, J. A. (2001). *Can threatened languages be saved? Reversing language shift, revisited: A 21st century perspective.* Multilingual Matters.

Giles, H., Bourhis, R. Y., & Taylor, D. M. (1977). Towards a theory of language in ethnic group relations. In H. Giles (Ed.), *Language, ethnicity and intergroup relations* (pp. 307-348). Academic Press.

Haberland, H. (2005). Domains and domain loss. In B. Preisler, A. Fabricius, H. Haberland, S. Kjærbeck, & K. Risager (Eds.), *The consequences of mobility: Linguistic and sociocultural contact zones* (pp. 227-237). Roskilde Universitet.

Kow, K. Y. C. (2003). Language shift and language maintenance in mixed marriages: A case study of a Malaysian-Chinese family. *International Journal of the Sociology of Language, 2003*(161), 81-90. https://doi.org/10.1515/ijsl.2003.030

Landry, R., & Allard, R. (1994). Diglossia, ethnolinguistic vitality, and language behavior. *International Journal of the Sociology of Language, 1994*(108), 15-42. https://doi.org/10.1515/ijsl.1994.108.15

Lee, H. G. (2012). Education of the Chinese in Malaysia. In H. G. Lee & L. Suryadinata (Eds.), *Malaysian Chinese: Recent developments and prospects* (pp. 166-192). Institute of Southeast Asian Studies.

Lee, D. P. Y., & Ting, S. H. (2016). Tracing ethnic socialisation of Chinese in Malaysia to Chinese-medium school. *Global Chinese, 2*(2), 163-187. https://doi.org/10.1515/glochi-2016-0016

Li, W., & Zhu, H. (2010). Voices from the diaspora: Changing hierarchies and dynamics of Chinese multilingualism. *International Journal of the Sociology of Language, 205*, 155-171. https://doi.org/10.1515/ijsl.2010.043

Lin, A. (2013). Toward paradigmatic change in TESOL methodologies: Building plurilingual pedagogies from the ground up. *TESOL Quarterly, 47*(3), 521-545. https://doi.org/10.1002/tesq.113

Low, H. M., Nicholas, H., & Wales, R. (2010). A sociolinguistic profile of 100 mothers from middle to upper-middle socio-economic backgrounds in Penang-Chinese community: What languages do they speak at home with their children? *Journal of Multilingual and Multicultural Development, 31*(6), 569-584. https://doi.org/10.1080/01434632.2010.527342

Ong, T. W. S. (2020). Why bother maintaining languages? A discussion based on diminishing Chinese dialects in Malaysia. *Apples – Journal of Applied Language Studies, 14*(1), 1-5. https://doi.org/10.17011/apples/urn.202001171301

Ong, T. W. S. (2021). Family language policy, language maintenance and language shift: Perspectives from ethnic Chinese single mothers in Malaysia. *Issues in Language Studies, 10(1), 59-75.* https://doi.org/10.33736/ils.3075.2021

Ong, T. W. S. (2022). Language maintenance in Malaysia: A case study of the Chinese community in Penang. *International Journal of Speech, Language and the Law, 28*(2), 273-279. https://doi.org/10.1558/ijsll.21606

Ong, T. W. S., & Ben Said, S. (2020). Selective language maintenance in multilingual Malaysia. In T. Okamura & M. Kai (Eds.), *Indigenous language acquisition, maintenance, and loss and current language policies* (pp. 207-228). IGI Global.

Ong, T. W. S., & Ben Said, S. (2022). Language maintenance and the transmission of ideologies among Chinese-Malaysian families. In S. Makoni, A. Kaiper-Marquez, & L. Mokwena (Eds.), *The Routledge handbook of language and the global south/s* (pp. 297-308). Routledge.

Ong, T. W. S., & Ting, S. H. (2022). Intergenerational transmission of Chinese Foochow: Exploring a connection between family language policy and language-ethnicity dimensions. *Language Related Research, 13*(3), 345-374. https://doi.org/10.52547/LRR.13.3.14

Ong, T. W. S., & Troyer, R. A. (2022). The double-edged sword of Mandarin Chinese: Language shift and cultural maintenance among middle-aged Chinese Malaysians. *Manusya: Journal of Humanities, 25*, 1-20. https://doi.org/10.1163/26659077-25010005

Ooi, K. J. (2015). Disparate identities: Penang from a historical perspective, 1780-1941. *Kajian Malaysia, 33*(2), 27-52.

Pauwels, A. (2016). *Language maintenance and shift.* Cambridge University Press.

Penang Institute. (2020). *Penang statistics, quarterly 2*. Penang: Penang Institute.

Puah, Y. Y., & Ting, S. H. (2015). Malaysian Chinese speakers' attitudes towards Foochow, Hokkien and Mandarin. *Journal of Multilingual and Multicultural Development, 36*(5), 451-467. https://doi.org/10.1080/01434632.2014.936875

Rubdy, R. (2005). Remaking Singapore for the new age: Official ideologies and the realities of practice in language-in-education. In A. Lin & P. Martin (Eds.), *Decolonisation, globalisation: Language-in-education policy and practice* (pp. 55-73). Bristol, Blue Ridge Summit: Multilingual Matters. https://doi.org/10.21832/9781853598265-006

Rubin, H. J., & Rubin, I. S. (1995). *Qualitative interviewing: The art of hearing data.* Sage Publications.

Sim, T. W. (2012). Why are the native languages of the Chinese Malaysians in decline? *Journal of Taiwanese Vernacular, 4*(1), 62-95.

Ting, S. H. (2018). Intergenerational transmission of the ethnic language: Hakka stops at Gen X. *Grazer Linguistische Studien, 89*, 63-88. https://doi.org/10.25364/04.45:2018.89.4

Ting, S. H., & Puah, Y. Y. (2017). Influence of gender on language attitudes of Hokkien speakers in Sarawak. In A. Omar & N. Norahim (Eds.), *Linguistic minorities: Their existence and identity within larger communities* (pp. 209-245). Penerbit Universiti Malaysia Sarawak.

Ting, S.-H., & Teng, J. Z.-M. (2021). Chinese teenagers' perceptions of vitality of Hokkien Chinese in Penang, Malaysia. *International Journal of the Sociology of Language, 2021*(272,) 185-217. https://doi.org/10.1515/ijsl-2020-0024

Ting, S.-H., & Ting, S.-L. (2021). The foochow Chinese: Moving towards a pan-Chinese identity anchored to Mandarin. *Global Chinese, 7*(1), 1-27. https://doi.org/10.1515/glochi-2021-0001

UNESCO. (2001, November 2). Universal declaration on cultural diversity. https://www.unesco.org/en/legal-affairs/unesco-universal-declaration-cultural-diversity

Vollman, R., & Soon, T. W. (2018). Chinese identities in multilingual Malaysia. *Grazer Linguistische Studien, 89*, 35-61. https://doi.org/10.25364/04.45:2018.89.3

Wang, X. M. (2005). Mandarin spread and mass media: Focusing on Muar and Batu Pahat in the state of Johor, Malaysia. *The Journal of Chinese Sociolinguistics, 2*, 185-195.

Wang, X. M. (2007). The interaction of ethnic identification and language spread in the context of Malaysian Chinese community. *The Journal of Chinese Sociolinguistics, 1*, 40-53.

Wang, X. M. (2009). The spread of Mandarin in Malaysia: Evidence in language choice in public settings. *Journal of Modern Languages, 19*, 207-224.

Wang, X. M. (2010). The sociolinguistic realignment in the Chinese community in Kuala Lumpur: Past, present and future. *Journal of Multilingual and Multicultural Development, 31(*5), 479-489. https://doi.org/10.1080/01434632.2010.505656

Wang, X. M. (2012). *Mandarin spread in Malaysia.* University of Malaya Press.

Wang, X. M. (2014). Chinese education in Malaysia: Past and present. In L. C.-C. Xiao & A. Hancock (Eds.), *Learning Chinese in diasporic communities: Many pathways to being Chinese* (pp. 139-157). John Benjamins. https://doi.org/10.1075/aals.12.08xia

Wang, X. M. (2016). The Chinese language in the Asian diaspora: A Malaysian experience. In G. Leiner, A. Hashim & H. G. Wolf (Eds.), *Communicating with Asia: The future of English as a global language* (pp. 205-215). Cambridge University Press.

Wang, X. M. (2017). Family language policy by Hakkas in Balik Pulau, Penang. *International Journal of the Sociology of Language: Special Issue on Language Planning and Multilingual Malaysia, 2017*(224), 87-118. https://doi.org/10.1515/ijsl-2016-0058

Zhu, H., & Li, W. (2014). Geopolitics and the changing hierarchies of the Chinese language: Implications for policy and practice of Chinese language teaching in Britain. *The Modern Language Journal, 98*(1), 326-339. https://doi.org/10.1111/j.1540-4781.2014.12064.x