LANGUAGE USE OF JAPANESE-ENGLISH BILINGUAL FAMILIES AND ASSOCIATION WITH CHILDREN'S ORAL PROFICIENCY IN HERITAGE JAPANESE

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ABSTRACT

The maintenance and development of heritage language (HL) has been influenced by various factors surrounding heritage speakers; however, it is unclear what factors could closely impact children's oral proficiency. In this exploratory study, I examined the relationships between proximal and distal input factors, and children's oral lexical proficiency in the heritage and community language, among Japanese-English speaking bicultural families in the U.S. Twenty-one children from bilingual families in Hawai'i and Washington completed an oral picture naming task in both Japanese and English (HALA, adapted from O'Grady et al., 2009) and a semi-structured interview about their family language use. Mothers and fathers separately completed an online survey containing questions about the language use and other potential language-related factors. The analysis of the collected data explored their language use consistency among the family members, the association between the language use and the children's vocabulary proficiency, and the potential differences in factors between the two regions. The results from the children's and parents' reports indicated consistency in reciprocal language use among parents and children, found positive correlations between the quantity of parental language outputs to their child and children's oral lexical proficiency. Additionally, no notable differences were found between the two regions in the U.S. besides non-native Japanese parents' HL use that was promoted with the heritage community's support.

Keywords: heritage language, heritage speakers, language use, oral proficiency

BACKGROUND

The world is now more connected than ever, and globalization has become normalized in modern society. As social and economic ties have increased across the globe, families have also become much more diverse. Consequently, transcultural, multiethnic families have emerged where multiple languages are consistently used within the family domain. For young children, their family is the first social unit where they naturally learn languages being used by the parents and other family members (including their siblings), and the degree to which these languages are spoken in frequency may vary. As the children grow older, their surrounding influences and environment become more complicated as they expand beyond their immediate and familial surroundings to encompass their schools and local communities. Due to expanding opportunities for social interaction, the chances that bilingual children hear languages more commonly used in the wider social context would gradually increase. The language commonly heard and used in daily social interactions is likely to become the dominant language, while the other language, mainly used within the family domain, will assume the role of a heritage language, regardless of whether it it is the individual's first or second language (Sun et al., 2020). Among the school-aged children in multicultural families, the quantity of home language input can be a potential predictor of how well children can maintain and develop their heritage language (Dixon et al., 2012; Sun et al., 2020).

Heritage languages are seen as minority languages that the young children acquire naturally at home and are different from the primary language used in their core social environment (Montrul & Polinsky, 2021). In the United States, the term Heritage Language (HL) first began to appear in fields of research, policy, and practice in the 1990s. During the same period, pedagogical implications for HL learners were also analyzed (Hornberger & Wang, 2008). Since then, HL research has gained popularity in various fields such as bilingual language acquisition, sociolinguistics, psycholinguistics, as well as HL teaching and pedagogy with studies highlighting more individualized perspectives.

There are different conceptualizations of HL speakers; however, HL speakers are arguably different from HL learners, who are explicit learners in educational settings. HL speakers, whether native or foreign-born, refer to the individuals who are raised in a bilingual home and naturally obtain a certain degree of knowledge and proficiency in their HL (Montrul & Polinsky,

2021). HL speakers have a family or ancestral connection to a particular language other than the societal language, which is a dominant language used in society [A3] [A4] (Hornberger & Wang, 2008). The HL speakers are often regarded as the bilinguals raised by one or both immigrant parents in multilingual environments where they can naturally be immersed in the minority language, which differs from the one prevalent in society (Gharibi & Boers, 2019). The HL speakers are neither monolingual nor second language learners, and often categorized as a special group among native speakers (Montrul & Polinsky, 2021). Research on HL speakers has covered a wide range in various viewpoints. They can be children's HL learning, development and maintenance. Dixon et al. (2012) investigated socioeconomical and political factors of HL children's HL learning. Other studies explored family's HL use from parents' perspectives. Farr et al. (2018) investigated immigrant mothers' ethnic identity transitions through struggles using Spanish as a HL with their children. This was a reflection of the mother's language ideology, with which mothers wanted to pass on the traditional and cultural values situated in HL to their children, while sustaining conversations with their children in English as a societal language. Although the linguistic and cultural values of HL are generally acknowledged today, HL speakers are at risk of language attrition [A5] [A6] and even the possibility of language loss due to the limited availability of the HL in their everyday environments and the limited opportunities for their usage. In the psycholinguistic framework, O'Grady et al. (2009) assessed the loss of heritage Korean language among the English-Korean bilingual college students residing in Hawai'i. The study measured the reaction time of lexical retrieval for HL speakers in both languages, using the Hawai'i Assessment of Language Access (HALA), a lexical access test that used words of body parts, categorized into three levels of frequency of use. The task measures dominance, which is the relative language proficiency between two languages. The authors reported a high correlation between frequency of word use and reaction time of lexical retrieval.

Studies related to children's HL vocabulary knowledge and possible predictors have also gained its popularity in the HL literature (Dixon et al., 2012;Unsworth et al., 2019; Sun et al., 2020; Verhagen et al., 2022). In the United States, there are international couples with Japanese and American spouses that are raising bilingual children. Since English is the official language, Japanese is perceived and used differently in regions and local societies. These regional differences may be a distal factor of language input for bilingual children's HL maintenance and development (Noro, 2008). In regions where Japanese language is socially regarded as a

minority language, heritage Japanese children often do not have many opportunities to use their HL outside of the home. Therefore, the family's HL use at home could be a proximal factor for HL maintenance and development.

Considering these potential distal and proximal language [A7] [A8] input factors, the present study examines how Japanese and English languages were used by parents and children within the family contexts, and the extent to which overt regional differences were observed in Japanese-English bilingual families. The primary goal of this study is to identify factors that affect the HL lexical proficiency, in order to gain more insight on the children's HL learning and development in multilingual societies.

Family's Language Use and Family Language Policy (FLP)

Parents in bilingual families have diverse language ideologies about their children's bilingualism, the languages they should speak to facilitate learning, or the most effective ways to teach their children two languages (Said, 2021). These language patterns may emerge naturally or be intentionally created as a language rule, known as Family Language Policy (FLP) (King & Fogle, 2013). FLP is a set of language rules, typically defined by parents to implicitly or explicitly allow for the practice patterns of family members' language choices and language use when at home.(King & Fogle, 2013; Said, 2021). FLP examines a child's language learning and use at home, which may reflect parental decisions that convey their language ideology and the social and cultural values underlying the language (King & Fogle, 2013; Said, 2021).

Recent research has focused on links between FLP and family members' emotions. Using an ethnographic approach, Curdt-Christiansen and Iwaniec (2022) explored how home language was used in the digital and non-digital daily conversations exchanged within Chinese families and Polish families in the UK. The study found a link between family members' emotional expressions (such as emojis in HL) with family bonding and affective relationships. Moreover, the authors claimed that the verbal and non-verbal emotional repertoires contributed to the establishment of implicit FLP.

FLP has been deemed a manifestation of parent's language ideology and language practices that children should adhere to; however, it is not unidirectional. Both parents and children are decision-makers, and play an active role in approving, negotiating and adhering to the rules (Said 2021). Moreover, considering Schermerhorn and Cummings' (2008) Transactional Family

Dynamics theory, FLP is not spatiotemporally fixed, but rather, is reciprocally fluid in accordance with parental language ideologies and expectations, as well as a reflection of these children's responses.

The use of FLP in the present study is defined not as a unidirectional parent-to-child language rule, but as a manifestation of language use that is reciprocally agreed upon by both parents and children. In other words, each family member's language use is treated as the language input and output that is governed by the mutually agreed FLP. [A9] It is crucial to investigate how language use at home is understood by each family member. If they all mutually agree on the rules, it indicates that the FLP is valid and functions successfully. Conversely, if inconsistencies are found, it suggests that the language rule may not be well established.

This study, thus, examines language use at home from the perspectives of mothers, fathers, and children respectively. A study was conducted to examine language use of each family member and investigate any association in between them. In prior literature, survey questions to guardians were commonly used as a method to learn more about the language being used at home within bilingual families with young children (Lauwereyns, 2011; Dixon et al., 2012; Unsworth et al., 2019; Sun et al., 2020; Verhagen et al., 2022). However, no examples were found in which both fathers and mothers provided separate responses on the language use at home. In most cases, mothers were treated as the child's primary caregiver and only their responses were meant to represent both parents' perceptions (Scheele et al., 2010). This may leave the question whether fathers' opinions were accurately reflected in regard to survey responses. The present research addresses the potential issue by asking mothers and fathers to respond to the survey separately.

Children's Vocabulary Proficiency

Bilingual children's language maintenance and development have been extensively studied; however, the focus has been more on the societal language proficiency rather than on the HL proficiency (Unsworth et al., 2019). Among the research focusing on the HL language development, there are many factors which could affect bilingual children's HL proficiency including the quantity of each parent's HL use, socioeconomic status (SES), HL community, and HL resources from television (Dixon et al., 2012). Additionally, the factors for the HL children's proficiency can also vary based on the type of HL speakers they are. For example, Gharibi and

Boers (2017) conducted a study among the Persian-English bilingual children aged 6 to 18 living in New Zealand, as well as a counterpart group of Persian monolinguals to examine their Persian lexical richness from demographic and sociolinguistic factors by using vocabulary tests. The bilingual group consisted of simultaneous heritage Persian children (born in New Zealand or emigrated before age 3) and sequential heritage Persian children (emigrated to New Zealand after age 3). The study found that the bilingual group did not have as much vocabulary as the monolingual group. The key factor for the lexical richness depended on the family language use and parents' attitude toward HL (a sociolinguistic factor) for the simultaneous bilinguals, while for the sequential children, it depended on the age at arrival (AoA) (a demographic factor). In a more recent study, Gharibi and Boers (2019) further investigated the richness in linguistic expression of HL speakers among the same population by examining children's narratives to find out whether the family language use and the parental attitude could be primary factors. The study did not find any notable association between the children's lexical proficiency and the sociolinguistic factors. However, it concluded that their ages at the time of interview, for both simultaneous and sequential children, and AoA (for the sequential children) are the key factors for their lexical richness. Although a statistical correlation was not found in family language use and parental attitude toward children's language development with bilingual children's HL proficiency, the study implied that there was an indirect effect of the parental input on the heritage children's lexical development.

More studies about HL development were conducted among younger children. Verhagen et al. (2022) conducted a study focusing on preschool children's HL proficiency with 136 Dutch-English bilingual families in the Netherlands. A language background questionnaire and a Peabody Picture Vocabulary Test (PPVT) were administered to the parents and their children respectively, in addition to the parent's rating of English language outcomes of their children. Based on the parents' survey, they categorized three language use patterns: One Parent One Language (OPOL), mixed languages, and minority language only. Contrary to previous studies, they did not find clear evidence of a correlation between the particular patterns and the children's oral language proficiency when the input properties (input quantity, parental proficiency, and parental language mixing) were controlled. The study concluded that the input from parents was the true factor, instead of the broadly defined language use patterns. Similar results were found in Sun et al. (2020); the study participants were 457 bilingual families in Singapore, speaking a

combination of English and either Mandarin, Malay or Tamil as a HL. The study analyzed the responses from parents' and preschool teachers' questionnaires, evaluated the children's non-verbal skills with Raven's Colored Progressive Metrics, assessed children's working memory with the Backward Digit Recall test, and tested children's receptive vocabulary proficiency by using the Bilingual Language Assessment Battery (BLAB). Sun et al. (2020) concluded that, among potential factors (including age, gender, cognitive abilities, input quality and SES), the significant factor for the preschool children's vocabulary development was the input quantity from family and preschool teachers.

As previously mentioned, there are a variety of bilingual families with HL children. Lauwereyns (2011) conducted a parental survey among two types of families with bilingual children aged between 3 and 19 in New Zealand: 31 families with both Japanese parents vs. 57 families with one native and one non-native Japanese parents. The study explored parental attitude towards their children's bilingual development between these family types and found that families with both Japanese parents were more satisfied with their children's heritage Japanese skills than the couples with one native and one non-native Japanese parents.[A10] [A11] The study also revealed that acquisition of the societal language (English) was easier than that of HL (Japanese), indicating that HL input at home was crucial for the children's HL development. In this respect, the study concluded that non-native fathers' HL proficiency played an important role as well.

Considering this, it is commonly accepted that language input can play an important role in bilingual children's language development; however, some literature has suggested that HL input could negatively affect a child's language development interacting in the greater society. Scheele et al. (2010) compared three groups of 3-year-old children living in the Netherlands, including the Dutch monolingual, Moroccan-Dutch and Turkish-Dutch bilinguals from immigrant families. This study investigated the potential influence of their SES, their cognitive skills, and the family language input in regard to the children's overall language development. Their results found no differences in the children's non-verbal intelligence. Instead, they found that the family language input was the crucial factor along with the SES as a secondary factor that affected bilingual children's language proficiency. In other words, they concluded if more HL was used at home, the children's HL proficiency improved, while their Dutch development deteriorated. The researchers found that the immigrant bilingual children's L2 Dutch proficiency was not as high

as the monolingual Dutch children. They claimed that the bilingual children's low SES deprived the opportunity for Dutch language input, resulting in a negative impact on their L2 development.

Dixon (2011) provided a slightly different stance on the role that language input plays with a project that took place in Singapore using kindergartners from bilingual families as subjects. While Singapore English is considered to be the societal language, the families of children in this study had Chinese, Malay, and Tamil as HLs. Multiple regression analyses were conducted between the parents' language background reports as independent variable and children's scores from a translated version of the PPVT-III as the dependent variable. The results showed that HL parents' language input was significantly correlated with children's vocabulary in not only their HL, but also, English as the societal language if the mother's education (which originally had a positive correlation with children's language proficiency) was controlled. Furthermore, Dixon et al. (2012) conducted a study more focused on the association between the home factors and the community factors[A12] [A13] and the bilingual children's language development (community factors will be discussed in the next section). The study was conducted among the same population and instruments as in Dixon (2011). They found a highly significant positive correlation in children's HL vocabulary scores and the parent's HL use to children when the condition of children's age was controlled. They also detected a positive effect of the heritage community support regarding the children's HL proficiency, although the degree of effect varies across different heritage communities in size and SES.

Heritage Community and Regional Differences

Heritage Community. As for other factors which could have an influence on children's language lexical proficiency, one would be the heritage community. Heritage communities provide heritage children with opportunities in HL learning by reinforcing heritage culture and ethnicity, and assisting in increasing HL vocabulary through language practices (Dixon et al., 2012). As a heritage community is the adjacent outer layer of family as a unit, it could indirectly, yet significantly contribute to children's HL maintenance and development. Noro (2009) examined the two groups of Japanese heritage school children aged 3 to 15 from Vancouver and Victoria in Vancouver B.C., Canada in order to examine any association between the family environment, children's ethnic identity and their oral HL proficiency. The results from the

parental interview and the children's HL narratives indicated that the bilingual children living in Vancouver, which offers a larger Japanese heritage community, had a higher Japanese oral proficiency and stronger heritage Japanese identity. Furthermore, this study indicated the importance of non-native Japanese fathers' active involvement in HL, as it contributed to children's HL development and their heritage identity establishment. In detail, the non-native Japanese fathers' experiences in living in Japan before their child's birth, as well as the fathers' Japanese language use affected their children's HL development and formation of ethnic identity. Dixon et al. (2012) also found evidence of a heritage community providing a positive effect on the children's heritage vocabulary proficiency.

Based on these findings, I became interested in investigating whether variations in the perception of the Japanese language in different regions could affect a child's language use at home, as well as on parental language ideology, expectations, and satisfaction with their children's HL proficiency.

Two Contrasting Regions. In the present study, I explore Japanese-English speaking multicultural families living in two regions in the United States where Japanese language as HL is generally perceived differently. The selected two regions are Greater Honolulu (GH) in the state of Hawai‘i and Greater Seattle (GS) in Washington State. The Hawaiian islands have a long history of Japanese immigration for plantation labor since the late 1800s, over time, Japanese culture and traditions practiced by the immigrants were adapted into Hawaiian and local customs. Many Japanese words were implemented as-is, or merged with other words, into the Pidgin language used by Hawai‘i locals today. Additionally, Hawai‘i is a very popular resort destination for Japanese tourists from Japan, as reflected in the numerous signs and displays in downtown Waikiki and other tourism sites where Japanese language is commonly spoken and heard.

Table 1 shows data from the 2021 United States Census' American Community Survey Demographic and Housing Estimates on the Japanese population in the United States, reported at 0.2%, or 760,412 people that year. The population of Japanese in the state of Hawai‘i was 11.9% (173,351), which was much higher than the national average. In contrast, the Japanese population in Washington State was only 0.5% (36,248), slightly above the national average.

Therefore, it is worth comparing these two distinctive regions: GH where Japanese language is more common vs. GS where Japanese is less common.

Table 1

Japanese Population from United States Census 2021

	Estimate	Margin of Error	Percent	Percent Margin of Error
U.S.	760,412	±11,065	0.2%	±0.1
Hawai‘i	173,351	±3,778	11.9%	±0.3
Washington	36,248	±1,695	0.5%	±0.1

To date, there has been little literature exploring regional differences in children's HL proficiency, parental ideologies, and their HL expectations and satisfaction with their children’s language development. The regional differences can provide indirect evidence of value placed on heritage community, which could be a potential factor in the bilingual children’s HL development.

RESEARCH QUESTIONS

The present study addresses the following three research questions:

1. To what extent do the language use reports from mothers, fathers, and their children align with one another?
2. To what extent does family language use at home correlate with lexical proficiency in Japanese, and English, as well as contribute to language dominance?
3. Between two distinctive regions, are there any notable differences in each family’s language use, their language proficiency, and their ideology about language?

In regard to RQ1, I hypothesize if each of the reports from the family members about their language use at home are consistent, then there is evidence of FLP being mutually established (regardless of being implicit or explicit) and practiced successfully in the family context. As for RQ2, HL use from both mothers and fathers may contribute to HL input for bilingual school

aged children at home, and that may assist them improve their vocabulary in both languages synergistically. Regarding RQ3, regions where HL is accepted as a major community language will likely have many more heritage communities where they are more likely to be socially accepted; whereas regions where HL is regarded as a minority language will have fewer heritage communities, and few opportunities may be available to use HLs. In this respect, I hypothesize that the regional variabilities would show a significant degree of difference in the language use at home and family members' HL proficiency, as well as parental HL ideology.

METHOD

Participants

The inclusion criteria for the target families were, heterogamous married couples consisting of a native Japanese speaker and a native English speaker, residing in the U.S. with at least one child, and the child's age range is between 6 and 12 years old.

The target families were recruited by flyer distribution and word of mouth through local Japanese community networks in two different locations: GH and GS. Families were informed that they would participate in the present study as a family unit, which indicates both parents and their children were expected to participate in individual tasks separately. Ten families from GH and eight families from GS were invited to the study on a first-come-first-serve basis. Among the participating families, five families nominated two children who were later interviewed separately. After the nomination, one family in GH decided not to participate in the entire study. One GS family canceled the child's interview due to their schedule conflict. As a result, the data which was collected from 17 pairs of parents for the survey and 21 children for the individual interview were used for analysis. Regarding the parent participants, although it was neither conditional nor intentional, all the mothers were native Japanese speakers, while all the fathers were native English speakers across the two location groups.

Table 2 shows the child participants' demographic information. The mean age was 9.2 years (*SD* = 2.19, *min-max* = 6-12). All but one child participant had at least one sibling (*N* = 20 95.2%).

Table 2

Children's Descriptive Statistics - Parent's Survey

	All Participants *(N = 21)*
Children's age, mean	9.2 (*SD* = 2.19)
No. of children born in Japan	2
No. of first-born children	9
No. of boys (vs. girls)	14 (7)
No. of children with siblings	20

Table 3 and Table 4 show the parent participants' demographic information. The average ages for mothers and fathers were 44.1 (*SD* = 4.8) and 46.6 (*SD* = 7.6) respectively. All of the mothers were born and raised in Japan, while 14 out of 17 fathers were born and raised in the United States. Additionally, 91% of the parents received higher education.

Table 3

Mother's Descriptive Statistics, Self-evaluation

	Total Participants *(N=17)*
Birth country:	
Japan	17
Highest Education:	
High school	1
Community college	5
Undergraduate	9
Graduate	2
	All Participants, *M (SD)*
Age	44.1 (4.8)
Living years in Japan	25.2 (6.1)
Living years in the US	17.6 (5.4)
Japanese Proficiency 1=Not at all, 7=Perfectly	6.9 (.24)
English Proficiency 1=Not at all, 7=Perfectly	5.3 (.96)

Table 4
Father's Descriptive Statistics, Self-evaluation

	Total Participants *(N=17)*
Birth country:	
The US	14
Other	3
Highest Education:	
High school	2
Community college	1
Undergraduate	8
Graduate	6
	All Participants, *M (SD)*
Age	46.6 (7.6)
Living years in Japan	1.7 (3.1)
Living years in the US	44.5 (8.3)
Japanese Proficiency 1=Not at all, 7=Perfectly	2.3 (1.64)
English Proficiency 1=Not at all, 7=Perfectly	6.8 (.38)

All the participating families were encouraged to participate in both the online survey and interview. After completion, each family received a 20-dollar Amazon gift card via email. For the single family that participated in the survey only, a 10-dollar gift card was provided.

MATERIALS

Language Background Questionnaires

The questionnaire was adapted from Lauwereyns (2011), which explored the association of parental attitudes toward children's bilingualism in both English and Japanese, and regarding children's oral and literacy proficiency. The questionnaire was designed for parents to reflect on their children's language background. It was comprised of questions about their perceptions on their children's bilingual development in both Japanese and English using a combination of 3- and 4-point Likert scales and open-ended question constructions. I chose the questionnaire as the basis for the present study because the content was relevant to the objectives of the study in

terms of quantitatively collecting bilingual children's language background based on parents' perceptions. By modifying the questionnaire for the present study, I developed an online survey using Google Forms for fathers and mothers to complete separately in order to keep them from affecting each other's response. It also included additional items asking about each family member's language use, a standardized the Likert scale in 7 points to make the comparison easier and more precise. The intent of the modifications was to better understand family members' thoughts on language choice and language use at home for Japanese-American intercultural families. The survey consisted of 33 items and 13 subitems (see Appendix A for the English version, and Appendix B for the Japanese version). There were four sections that were categorized as the following: (1) basic information about the child, (2) basic information about the parent, (3) language use and policy at home, and (4) links to Japan. Sections 1 and 2 covered the parent's demographic information, education level, self-evaluation of Japanese and English language proficiency, language uses within family, parents' language ideology and expectations toward their child's heritage language use, as well as their perceptions of competence. In Section 3, regarding the mother and father's perspectives, the language use patterns (between the parents themselves, mother and child, father and child, and among the child's siblings) were explored respectively using a 7-point Likert scale (1=*Always Japanese*, 7=*Always English*). Additionally, a few items asked whether the parents had ever discussed language rules or had a disagreement about those rules. Additional items asked about parent's bilingualism awareness, expectations and satisfaction toward their child's heritage language skill, and some challenges regarding language maintenance. Section 4 investigated the parents' possible connections to Japan including the non-native Japanese parent's Japanese learning experiences, affiliation with a local heritage community, frequency of visits to Japan, and interest in news about Japan. As a whole, the survey consisted of 13 questions using Likert scales, multiple choices, including Yes/No questions and open-ended questions. Open-ended questions were included in the questionnaire as an opportunity for participants to expand upon their answers to the Likert scale questions.

After the English version of survey was completed, it was translated in Japanese by the native Japanese author. The two versions were made available for the participants, allowing them to select their preferred version and potentially reducing the language pressure of non-native language fluency. As anticipated, the majority of the participants (aside from one father) selected their first language versions. The particular father, who was a native speaker of English,

responded to the Japanese version of the questionnaire in Japanese. The parents who nominated two children were asked to fill out the survey twice, one for each child.

Online Assessment Sessions

The assessment sessions for child participants were administered online to minimize the potential exposure of COVID-19 risk. This remote method also allowed the participants easier access to the session. The session consisted of two parts: an oral interview and a picture naming task.

Oral Interview. Eleven questions were orally asked to the child participants in Japanese (see Table 5 for English translation, see Appendix C for the original version). These questions were similar to their parents' questionnaire. Considering the child participants' age and different levels of Japanese language proficiency, the oral interview in Japanese began with simple items, such as asking their name, age, and Yes/No alternative questions, ending with one open-ended question for older or more advanced speakers. The open-ended question not only allowed the participants to freely express their thoughts on speaking Japanese as a heritage Japanese speaker, but also provided an opportunity to observe the child's lexical diversity and sophistication.

Overall, the child's interview had two main purposes. First, it was to give the child an opportunity to warm-up by conversing in Japanese with the author-researcher. The second purpose was to provide an approximation of how much the child could understand and respond in Japanese. It was efficient to explore the child's personality and Japanese fluency in advance through conversation, so that I could estimate how many supplemental aids would be needed in the scripted instructions for the next HALA task. In this study, responses from the items 4, 5, and 6 in Table 5 were coded using a 7-point Likert scale (1=*Always Japanese*, 7=*Always English*), which was consistent with the items in the parental survey on the language use at home.

Table 5

Questions orally asked for children in Japanese

Question Items
1. What is your name?
2. How old are you?
3. Do you have any siblings?
4. Which language do you speak to your mother, Japanese or English?
5. Which language do you speak to your father, Japanese or English?
6. Which language do you speak to your sibling(s), Japanese or English?
7. Do you have a chance to speak in Japanese with someone besides your family?
8. Is it difficult to speak in Japanese?
9. Do you study Japanese?
10. Do you want to continue to speak Japanese?
11. Why do you want to speak Japanese?

Picture Naming Task. The second half of the meeting focused on the child's language development, or more precisely, their vocabulary proficiency. The present study adapted the HALA task, which was a picture naming task of human's body parts and was originally developed by O'Grady et al. (2009) for the purpose of analyzing English-Korean bilingual college students' language loss and language dominance. The HALA task was later modified in Kim and Kim (2022) to investigate L1 attrition of the heritage Chinese or Russian children who immigrated to Korea by assessing their reaction time in word retrieval. The authors recognized that the body parts naming task was appropriate for a bilingual experiment, as they were universally recognized items without concerns regarding cultural differences or abstract interpretations. The present study used the same picture files as Kim and Kim (2022) to explore the lexical proficiency of Japanese heritage children in Japanese and English. It should be noted that the present study focused solely on the child's vocabulary knowledge and did not consider their word retrieval time, as observed in O'Grady et al. (2009) and Kim and Kim (2022).

Two ShockWave Format (SWF) files comprising 31 colored pictures of body parts were used for this study. These two files contained identical pictures of practice and experiment trials, with the exception of the experiment pictures in the first file which were programmed to appear in a different order in the second file. The sample pictures for practice trials were not body parts, but rather, items that could be commonly found at home. During the practice trials, the child participants were instructed that a red circle would appear on each picture as a target pointer for

several seconds until the picture would automatically switch to the next one. Both files were run on the Elmedia Video player on the researcher's laptop, and the display was shared with the child participant via the Zoom share screen function. At the beginning of each practice trial and experiment trial, a green solid triangle appeared as a starting point. Each of the 31 pictures appeared sequentially on screen, and the child participant was prompted to say the name of the marked body part aloud. Each picture was displayed for eight seconds (the red circle disappeared on the seventh second) and was automatically switched to the next picture until the end where a red-squared stop sign appeared.

Data Collection Procedure

Data was collected during July and August 2022. Email was the primary correspondence tool with the parent participants. Each email was written in both Japanese and English text for the participants' convenience. Each child and a supervising parent attended the online assessment session together. Although no specifications for parental attendance were previously provided, all of the participants who accompanied their children were mothers. At the meeting, the mother was asked to sit wherever the child would feel most comfortable to assist them for their needs. Some mothers sat right next to the child, appearing on screen together. Others stayed in the same or the adjacent room by keeping a certain distance from the child. After a brief greeting was exchanged in Japanese, the assent form was displayed on the shared screen and verbally explained thoroughly to the child by the experimenter. The assent content was explained in either Japanese or English depending on the child's preference. The instructions of the meeting activities and oral interview were performed in Japanese with supplemental English for the children who displayed a lack of comprehension. At the end of the assent content walkthrough, the child was officially asked whether they would join the online session. All the child participants agreed to proceed with the online tasks.

As forementioned, most of the interviews were conducted in Japanese; however, a few children showed difficulty in understanding questions in Japanese. In this case, English questions were added after the Japanese questions, and the responses were noted on the As for the procedure of the HALA tasks, the Japanese naming task was always performed first followed by English one. The ordering of this task had been considered significantly. Since all of the child participants currently attend local schools[A14] [A15] in the U.S., it was theorized that English

was more dominant than Japanese. Therefore, the children who performed poorly in the Japanese naming task were also able to finish the task session confidently by ending with the English naming task, which resulted in the overall satisfaction of the participants by the end of the meeting.

Data Analysis

After the raw data were appropriately organized, the data analyses were performed with Microsoft Excel and IBM SPSS statistical tools in order to address the three research questions. RQ1 seeks to address to what extent family members' claims about language use were aligned with each other. As shown in Table 6, the parent's survey included the following questions regarding the language use at home using a 7-point Likert scale. The scale 1 indicates *Always Japanese*, scale 7 means *Always English*, and the midpoint 4 is *Japanese* 50% & *English* 50%.

Table 6

Survey question item No. 19 regarding the language use

19 (a).	Which language do you speak to your partner, and if mixed, how much of each respective language do you speak?	Self's language use with partner
19 (b).	Which language do you speak to the child, and if mixed, how much of each respective language do you?	Self's language use with child
19 (c).	Which language does your partner speak to the child, and if mixed, how much of each respective language does your partner speak?	Partner's language use with child
19 (d).	Which language does the child speak to you, and if mixed, how much of each respective language does the child speak?	Child's language use with self
19 (e).	If the child has any siblings, which language do you hear your children speak to each other, and if mixed, how much of each respective language do you hear?	Language use between siblings

As for the language use from child's perspective, their responses in the oral interview were coded using a 7-point Likert scale (1=*Always Japanese*, 2.5=*More Japanese*, 4=*Japanese* 50% & *English* 50%, 5.5=*More English*, 7=*Always English*) for the following three patterns of language use: the child's language use with their mother, the child's language use with their father, and the child's language use with their siblings. Due to the small sample size (in which normal distribution cannot be assumed), the Spearman rank correlation coefficient (ρ) (= rho) was used

for the analysis of RQ1 correlations between the participants (including children's reports vs. mothers' reports, children's reports vs. fathers' reports, mothers' reports vs. fathers' reports) were individually calculated with the measure using the IBM SPSS. Two-tailed tests were used to determine significance at the .05 level. Then, the scatterplots for each pair were generated.

In addition, the survey asked parents about their FLP decision-making, policy agreements, and language ideologies (see Table 7). The responses may reflect where parental decisions about language use at home had originated from. The FLP relevant items offered a *Yes* or *No* dichotomous answer. The items for the parental language ideology were asked in 7-point Likert scales and used in the RQ3 analysis.

Table 7

Survey question items about the FLP and language ideology

21	Have you ever discussed the decision of family language use with your partner?	FLP
22 (a)	Are you raising the child bilingually?	FLP
23	What level of oral Japanese fluency do you expect of the child?	Language ideology
24 (a)	Are you satisfied with the child's bilingual development?	Language ideology
25	Do you and your partner have a different opinion about the family language use?	FLP

With regard to RQ2, correlations between the family member's respective language use reports and child's HALA scores were computed using Spearman's rank correlation. The HALA scores measured children's lexical proficiency in both Japanese and English. The HALA scores were coded using the dichotomous scoring method. One point was added if the name of the focal body part was expressed correctly while the picture was on screen. If the child gave an incorrect answer, or could not express the answer within the time limit, or did not respond, 0 points were given. Plural or singular errors in the English nominal words were ignored. Both Japanese and English tasks were calculated with a total score of 31 points. Each score was marked using a

prepared score sheet (see Appendix D). The scores were reviewed in the recordings later to confirm the accuracy. In order to control for the child participants' age effect, dominance (or the comparable measure of language ability in both languages) was calculated by subtracting the HALA-Japanese score from the HALA-English score.

RQ3 was purposed to examine whether the two different regions presented any differences in family language use, child and parent language proficiency, and language ideology. As a measuring tool, first, independent t tests were performed to compare the collected data on language use, FLP, and language ideology between families in Hawai'i (N = 9) and Washington (N = 8). I recognized that the independent t test was not the best measurement tool when the sample sizes were small. Therefore, the Mann-Whitney U test was used to compare differences between two GH and GS. One concern was that there were duplicated responses in parental survey from five families, as their siblings participated in the online sessions. The present study originally intended to include the question on whether different patterns of parents' language use to siblings might occur. I hope to explore this in my future research.

FINDINGS/RESULTS

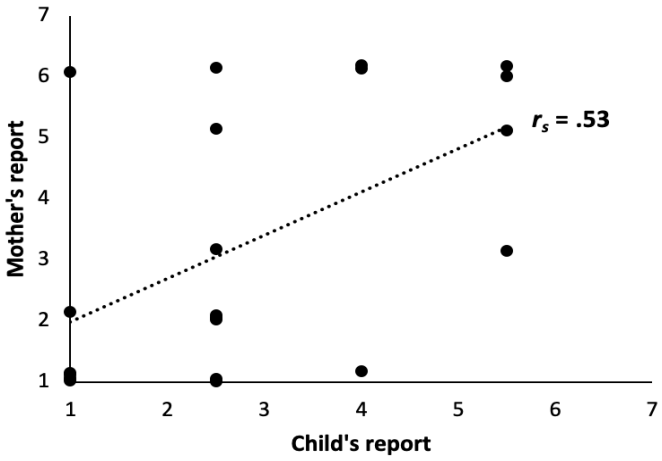
This study investigated language use reported by mothers, fathers, and children to determine whether perceptions of language use at home were congruent to one another under the mutual agreement of FLP. Additionally, it examined the potential association of language use by different family members in regard to children's oral vocabulary fluency in their home language.

Family Language Use and FLP (RQ1)

Focusing on RQ1, language use reports from mothers, fathers, and children were compared respectively. Spearman's rank correlation was computed to assess the relationship between the children's reports and the mothers' reports about the child's language use to mother, as illustrated in Figure 1. There was a positive correlation between the two variables, r_s = .53, p = .013. This result suggests that there was some agreement between the child and mother regarding what languages the child uses with their mother.

Figure 1

Child's report vs. mother's report about child's language use with mother

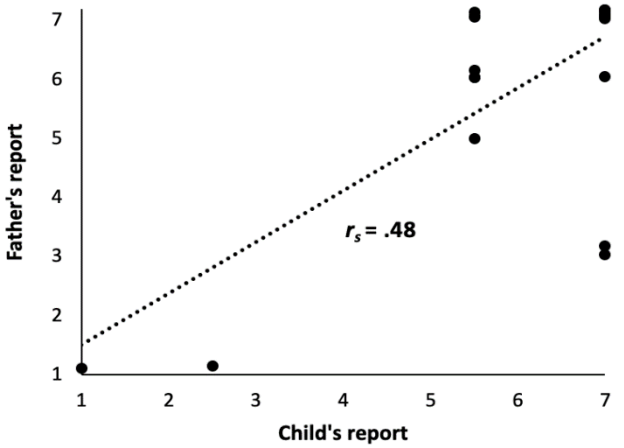


Note. The *x*-axis and *y*-axis labels indicate 7-point Likert scales of language use. 1 is always Japanese. As the number increases, the frequency of English use increases. 7 is always English.

Likewise, the relationship between children's and fathers' reports was computed and a positive correlation of r_s = .48, p = .027 was found, as shown in Figure 2. It suggests that both children and fathers also agreed on which languages the children use when they spoke to their fathers. In summary, there is evidence that the children's and parents' reports about the child's language use with parents were moderately correlated (.4 < r_s < .6). This suggests some evidence that all the family members had the same perception of what languages the children use with their parents.

Figure 2

Child's report vs. father's report about child's language use with father



Furthermore, the mothers' and fathers' reports about mother's language use with the child had a strong correlation of $r_s = .72$, $p < .001$ as illustrated in Figure 3. Likewise, Figure 4 shows a strong correlation the mothers' and fathers' reports about father's language use with the child had a strong correlation of $r_s = .84$, $p < .001$. These results showed that both parents shared common perceptions about the languages they use with their children.

Figure 3

Mother's report vs. father's report about mother's language use with child

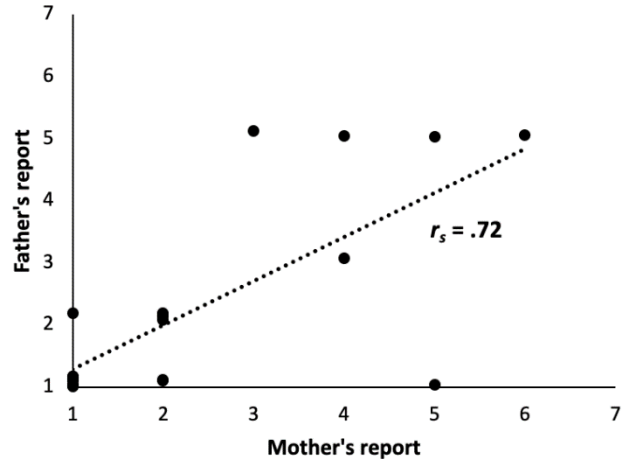


Figure 4

Mother's report vs. father's report about father's language use with child

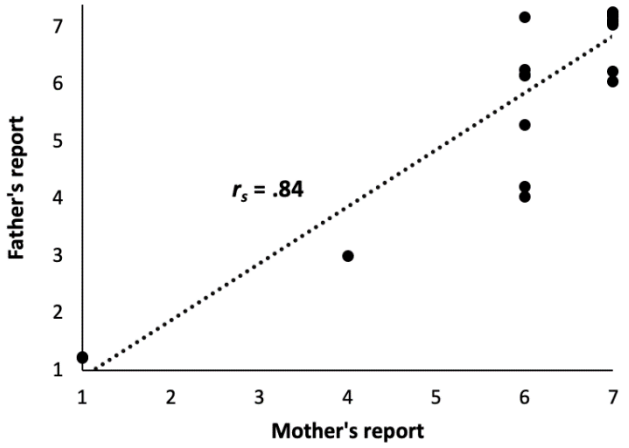


Table 8

Parents' responses about FLP decision making

	Parents' Responses *N*=34	
	Yes / Somewhat	No
Have you ever discussed FLP with spouse?	26	8
Do you have a different opinion from your partner about family language use ?	2	32

These results were consistent with the parents' survey responses regarding establishing FLP among themselves (see Table 8). Seventy-six percent (26/34) of parents responded that they had discussed the FLP with their spouses, and 94% (32/34) of them reached an agreement regarding their decision making. In Table 8, there were a father and a mother, from different families, who had differing opinions than their spouses about their family's language use. The father reasoned that his spouse was more dedicated to their child being bilingual. The other mother disagreed with her spouse's idea of not forcing the child when they started to dislike learning Japanese. However, the majority of agreements were attested to by the results of the language uses responded by the mothers, fathers and children. Consequently, there is evidence to suggest that the FLP was carried out in accordance with the family's language use patterns claimed by the mothers, fathers, and their children.

Family Language Use and Children's Vocabulary Knowledge (RQ2)

RQ2 investigated to what extent family language use affected children's lexical proficiency in both languages. Additionally, the correlation was examined between the family language use and language dominance to rule out any influence from the children's age differences. The language dominance was computed by subtracting the HALA Japanese score from HALA English score. Since the RQ1 results confirmed that the reports from mothers and fathers were consistent, the data was consolidated by adding Likert scale ratings from mothers' and fathers' reports in RQ2 to increase the accuracy, which produced 2 to 14 points from the original 1 to 7 Likert Scale. Figures 5 and 6 present parents' reports about the native Japanese-speaking mothers' language use with their children in relation to their scores on the Japanese and the English version of the HALA task, respectively. The x-axis shows the combined 7-point Likert scale from the father's and mother's reports about language use to their child as the parents' reported. The lowest scale of 2 point indicates that Japanese was always used. As the numbers increase, the frequency of English use increases. The highest scale of 14 point indicates English was used all the time. As seen in Figure 5, the 2-tailed test showed a significant correlation of rs = .77, $p < .001$ between the mother's Japanese use and the child's HALA-Japanese score, indicating that the more the mother used Japanese with the child, the higher the child's Japanese score became.

Figure 5

Mothers' language use to their children (from parents' reports) and HALA-Japanese scores

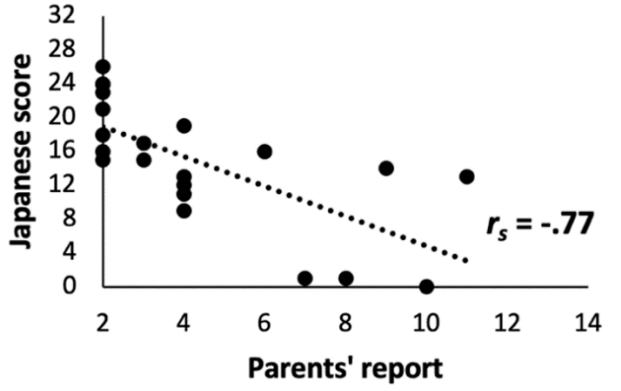


Figure 6

Mothers' language use to children (from parents' reports) and the HALA-English scores

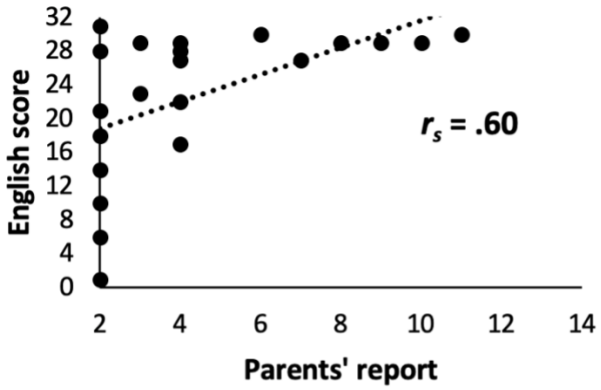
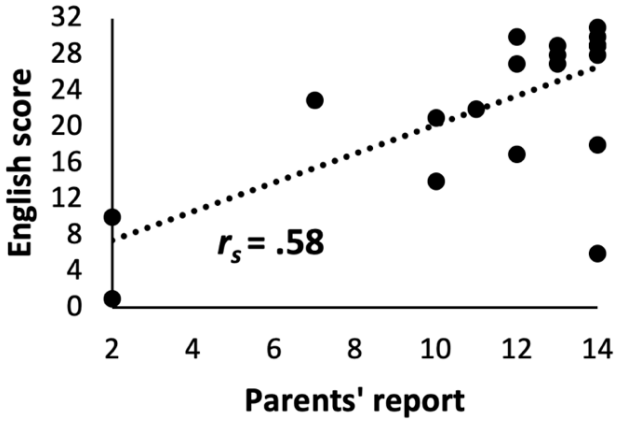


Figure 6 shows a significant correlation of r_s = .60, p = .004 between mother's language use and child's HALA-English score, indicating that the more mother used English, the higher the child's English score became.

In contrast, the native English-speaking father's language use correlated significantly only with HALA-English but not HALA-Japanese scores. Figure 7 displays a positive correlation between father's language use and child's HALA-English score (r_s = .58, p = .006), which was interpreted as the more the father used English, the higher the child's English score became.

Figure 7

Fathers' language use to children (from parents' reports) and the HALA-English scores

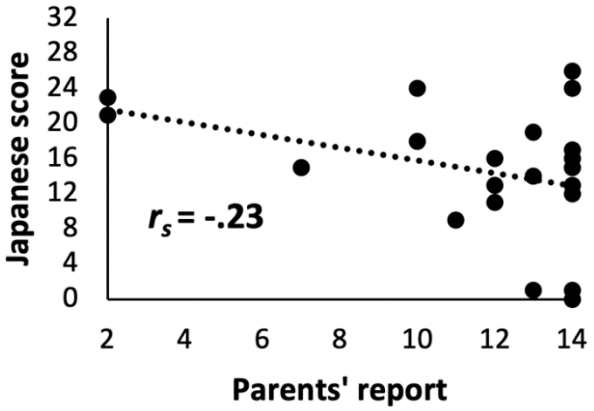


Note. The *x*-axis and *y*-axis show parental Likert scale (2-14) and HALA-English score (0-31) respectively.

In the Figure 8, a small but non-significant correlation is seen between father's Japanese use and the child's HALA-Japanese score, r_s = -.23, p = .32. This result suggests that father's language use did not contribute significantly to the child's Japanese vocabulary proficiency.

Figure 8

Fathers' language use to children (from parents' reports) and the HALA-Japanese scores



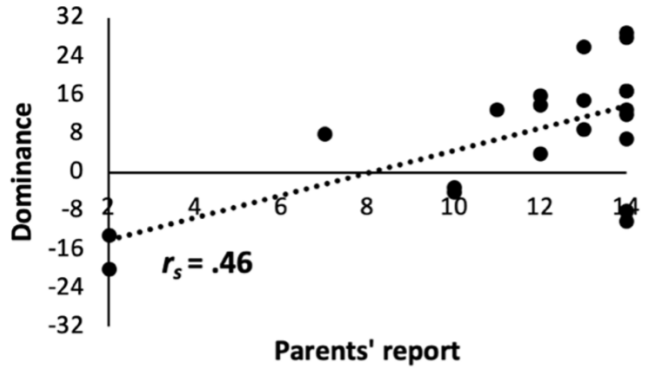
Note. The *x*-axis and *y*-axis show parental Likert scale (2-14) and HALA-Japanese score (0-32) respectively.

These results refer to only the quantity of Japanese used by the mother, not by the father, and suggest that fathers' Japanese input to children did not contribute to their Japanese score. However, one limitation of just looking at Japanese or English score, is that the children's age was not taken into consideration. Participants' age in this study ranged from 6 to 12. There is a strong possibility that older children have more opportunities in gaining vocabulary in both languages due to their social lives, which could reflect in the HALA scores. By looking at their dominance, which was calculated by subtracting HALA-Japanese score from HALA-English score, the age factor can be eliminated because their dominance indicates relative vocabulary skills between the two languages for each individual child. Although there was no correlation for the father's language use to their children with HALA-Japanese scores, it had a moderate correlation with the dominance, r_s = .46, p = .03 (see Figure 9). Likewise, the mother's language use with their children had a significant correlation with the dominance (r_s = .85, p < .001, see Figure 10), which indicated that both the quantity of Japanese used by both mothers and fathers contributed to the strength of children's dominance. More specifically, families in which both

mothers and fathers regularly used Japanese with the children were more likely to have children who had higher relative vocabulary knowledge in Japanese vs. English, yet this relation was more prominent with mothers than fathers.

Figure 9

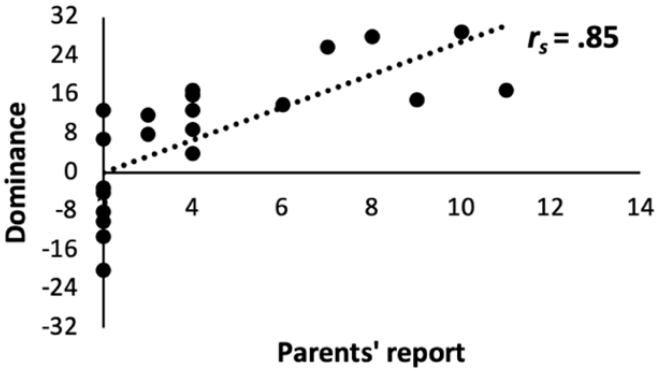
Fathers' language use to children (from parents' reports) and dominance



Note. The *x*-axis and *y*-axis show parental Likert scale (2-14) and the language dominance respectively. The dominance was computed as HALA-English score minus HALA-Japanese score.

Figure 10

Mothers' language use to children (from parents' reports) and dominance



Additionally, the children's output to their parents, as reported by the children, was examined. Figure 11 presents a moderate negative correlation between the child's language output to their mothers and the HALA-Japanese score r_s = .45, p = .04. This indicates that

children who used more English when speaking to their mothers were less lexically proficient in Japanese. In other words, the children using more Japanese to their mothers had higher Japanese lexical proficiency.

Figure 11

Children's language use to their mothers (from children's reports) and Japanese scores

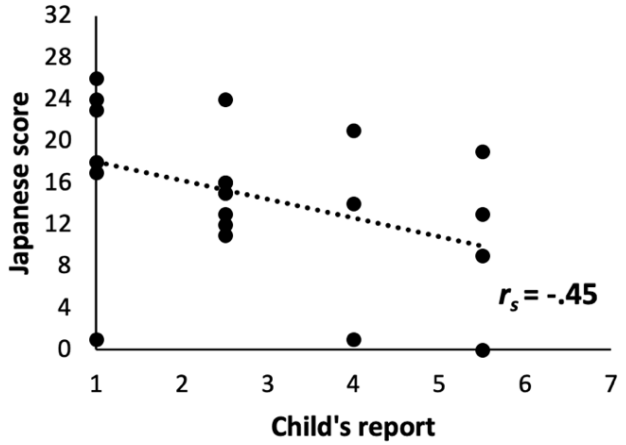
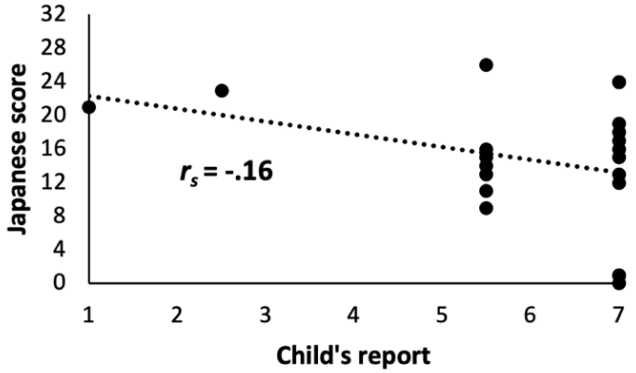


Figure 12

Children's language use to their fathers (from children's reports) and Japanese scores



On the contrary, Figure 12 shows no association between the children's language output to their fathers and the HALA-Japanese score, r_s = .16, p = .48. This means that the children's Japanese language use to father did not provide any influence on their Japanese lexical proficiency.

Regional Differences (RQ3)

The child participants (see Table 9) had a mean age of 9.7 years (*SD* = 2.14, min-max = 6-12) in GH, and 8.3 (*SD* = 1.98, min-max = 6-12) in GS.

Table 9

Children's Descriptive Statistics – GH vs. GS

	Greater Honolulu *(N=11)*	Greater Seattle *(N=10)*
Children's age, mean	9.7 (*SD* = 2.14)	8.3 (*SD* = 1.98)
No. of children born in Japan	1	1
No. of first-born children	4	5
No. of boys (vs. girls)	8 (3)	6 (4)
No. of children with siblings	10	10

Table 10 and Table 11 report the demographic information of the parent participants in GS and GH. The averages ages for the mothers and fathers were 46.9 (*SD* = 4.4) and 51.6 (*SD* = 6.8) in GH, 41.0 (*SD* = 2.9) and 41.1 (*SD* = 3.5) in GS respectively. Most of them obtained higher education: 94% in GH and 88 % in GS, in which an inference can be made that both groups fall within the same socioeconomic category.

Table 10

Mothers' Descriptive Statistics, GH vs. GS

	No. of GH Participants *(N=9)*	No. of GS Participants *(N=8)*
Birth country:		
Japan	9	8
Highest Education:		
High school	0	1
Community college	3	2
Undergraduate	4	5
Graduate	2	0
	GH Participants, *M (SD)*	GS Participants, *M (SD)*
Age	46.9 (4.4)	41.0 (2.9)
Years living in Japan	27.9 (5.6)	22.3 (5.0)
Years living in the US	17.4 (5.5)	17.7 (5.2)
Japanese Proficiency 1=Not at all, 7=Perfectly	6.9 (.31)	7.0 (.00)
English Proficiency 1=Not at all, 7=Perfectly	5.2 (.92)	5.4 (.99)

Table 11

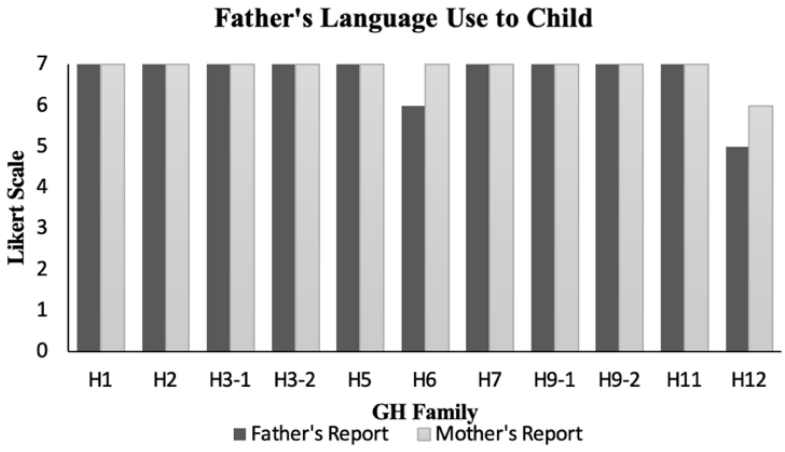
Fathers' Descriptive Statistics, GH vs. GS

	No. of GH Participants *(N=9)*	No. of GS Participants *(N=8)*
Birth country:		
The US	7	7
Other	2	1
Highest Education:		
High school	1	1
Community college	1	0
Undergraduate	3	5
Graduate	4	2
	GH Participants, *M (SD)*	GS Participants, *M (SD)*
Age	51.6 (6.8)	41.1 (3.5)
Years living in Japan	2.1 (3.9)	1.4 (1.9)
Years living in the US	49.2 (8.6)	39.2 (3.3)
Japanese Proficiency 1=Not at all, 7=Perfectly	1.6 (.83)	3.1 (1.90)
English Proficiency 1=Not at all, 7=Perfectly	6.8 (.42)	6.9 (.33)

Figures 13 and 14 show the father's language use to the child in GH and GS families respectively.

Figure 13

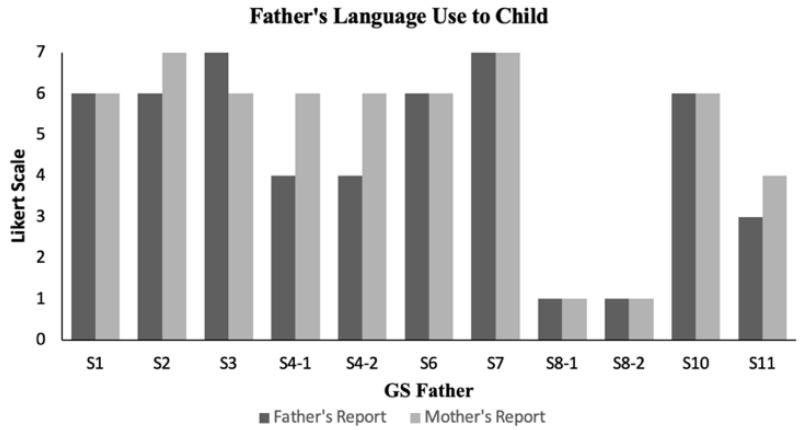
GH Family's Report on Father's Language Use to Child



Note. The *x*-axis indicates individual GH families. The *y*-axis indicates 7-point Likert Scale with 1=*Always Japanese*, 7=*Always English*.

Figure 14

GH Family's Report on Father's Language Use to Child



Note. The *x*-axis indicates individual GS families. The *y*-axis indicates 7-point Likert Scale with 1=*Always Japanese*, 7=*Always English*.

Independent sample *t* test was conducted to find any differences in family's language use, the children's and parents' language proficiency, and language ideology between GH and GS groups. From the fathers' reports shown in Table 12, the fathers' language use to both the mother and child, as well as the child's language use to their father showed significant differences.

Table 12

Fathers' Report on Language Use

Language Use	GH		GS		*t*	*p*
	M	*SD*	*M*	*SD*		
Father to Child	6.727	0.647	4.400	2.171	3.262	0.008
Child to Father	6.727	0.467	4.400	2.497	2.528	0.031

Although the *t* test showed a significant difference, the standard deviations of the GS group are high in both reports. This was caused by a particular father (Father's ID S8s) in GS as illustrated in Figure 14. Therefore, as a different approach, I removed the outlier (Father's ID S8s) from the GS group and ran Mann-Whitney *U* tests at the .05 significance level to find out if

they still showed significant differences between the fathers' reports about the language use between the groups. Regarding the father's language use to the child, the test showed a significant difference, $U = 19$, the critical value = 23, $z = 2.279$, $p = .0226$. However, the result of the child's language use to father did not show a significant difference, $U = 29.5$, the critical value = 19, $z = 1.156$, $p = .246$. In summary, the GS fathers used more Japanese when speaking to their children.

Table 13 presents the independent t test results of the mothers' reports. The test results showed statistical differences in both language uses from the mother to the father, and from the father to the child.

Table 13

Mothers' Report on Language Use

Language Use	GH		GS		*t*	*p*
	M	*SD*	*M*	*SD*		
Mother to Father	6.454	0.934	4.4	2.171	2.769	0.017
Father to Child	6.909	0.302	4.900	2.183	2.885	0.017

Once again, these test results may not be reliable because of the outlier father in GS. Thus, I ran Mann-Whitney U tests after removing the father's data. The results found no difference among the two groups about the mother's language use to the father ($U = 26$, the critical value = 23, $z = 1.747$, $p = .0801$), whereas the father's language use to the child had a significant difference, $U = 15$, the critical value = 23, $z = 2.583$, $p = .0099$. The mothers' reports also indicated that the GS fathers spoke more Japanese to their children than the GH fathers.

Next, the children's language use to the fathers between the two regions were compared in the same procedures. Figures 15 and 16 present the individual data about the child's language use to the father from child's and father's reports. The *x*-axis indicates individual families, while the *y*-axis indicates 7-point Likert Scale with 1=Always Japanese, 7=Always English.

Figure 15

GH Child's Language Use to Father from Child's and Father's Reports

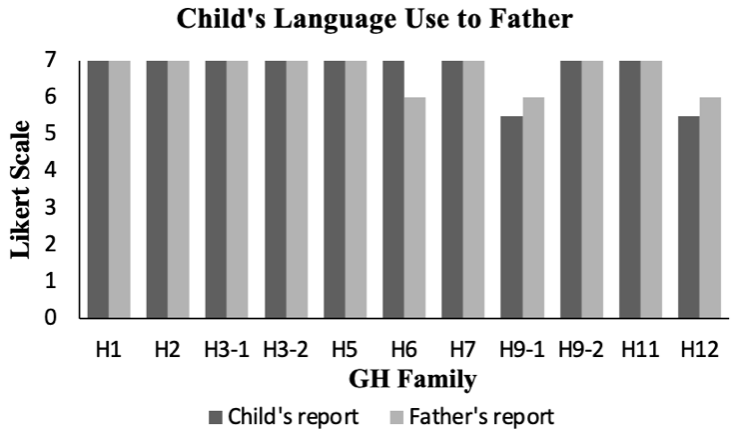
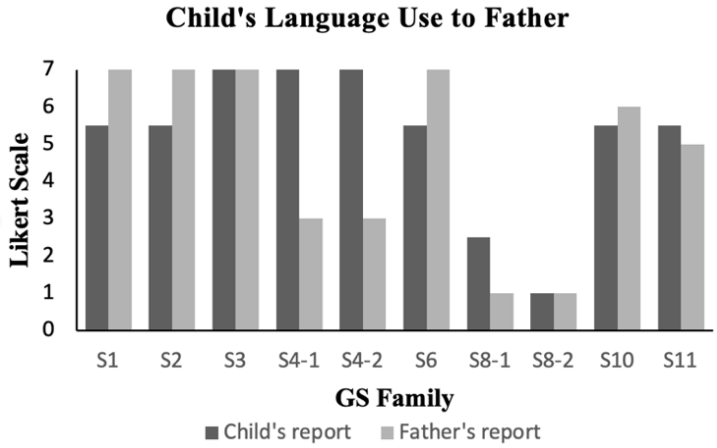


Figure 16

GS Child's Language Use to Father from Child's and Father's Reports



The *t* test result from the children's reports in Table 14 showed a statistic difference in the child's language use to the father between the groups. However, the result from the Mann-Whitney *U* test was not significant, $U = 24.5$, the critical value = 19, $z = 1.569$, $p = .116$.

Table 14

Child's Reports on the Language Use to Father

Language Use	GH		GS		*t*	*p*
	M	*SD*	*M*	*SD*		
Child to Father	6.727	0.607	5.200	1.975	2.347	0.04

Regarding the children's proficiency, averages of their Japanese and dominance scores were compared between the two regional groups. Figures 17 and 18 show the Japanese and language dominance of each child in GH and GS. The *y*-axis shows scores for the HALA-Japanese and the dominance (the HALA-English minus the HALA-Japanese).

Figure 17

GH Child's Proficiency in Japanese and Dominance

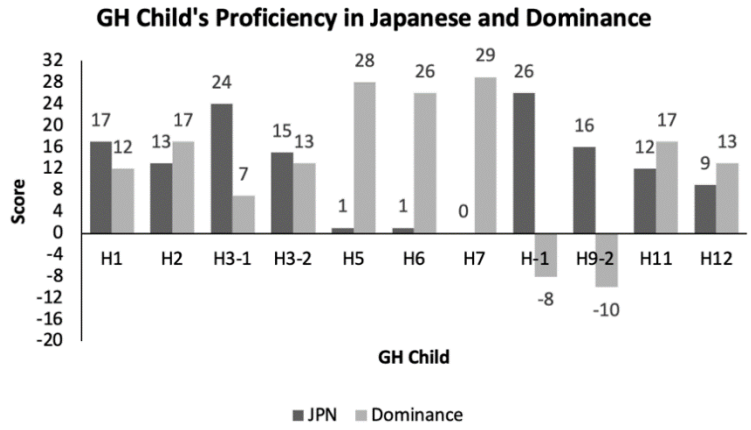
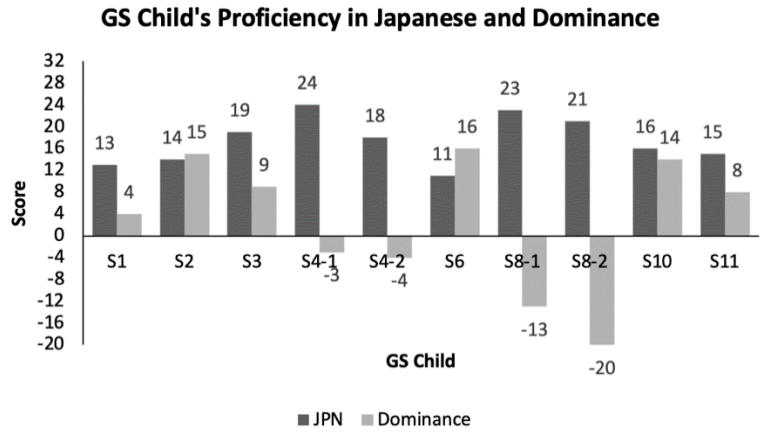


Figure 18

GS Child's Proficiency in Japanese and Dominance



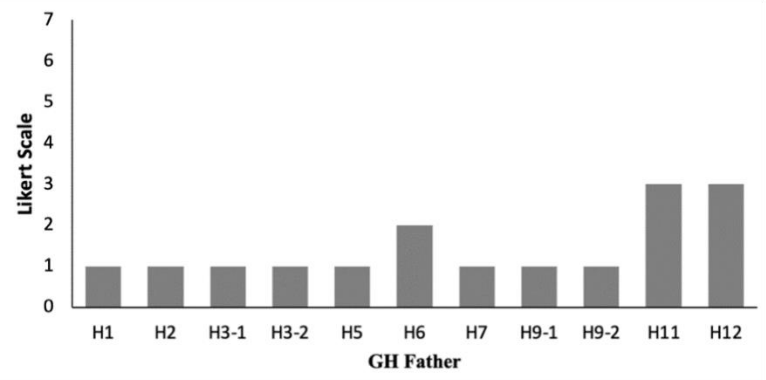
Note. The *y*-axis shows scores for the HALA-Japanese and the dominance (the HALA-English minus the HALA-Japanese) of the GS children.

The results from the Mann-Whitney U tests showed significant differences in neither the Japanese scores (U = 31, the critical value = 19, z = 1.032. p = .303) nor the dominance between the groups, U = 30, the critical value = 19, z = 1.115, p = .267. This means that children in both groups had similar Japanese proficiency and the language dominance.

Next, the father's self-reported Japanese proficiency were compared between the two groups. Figures 19 and 20 present the individual father's self-reported Japanese proficiency between the two groups.

Figure 19

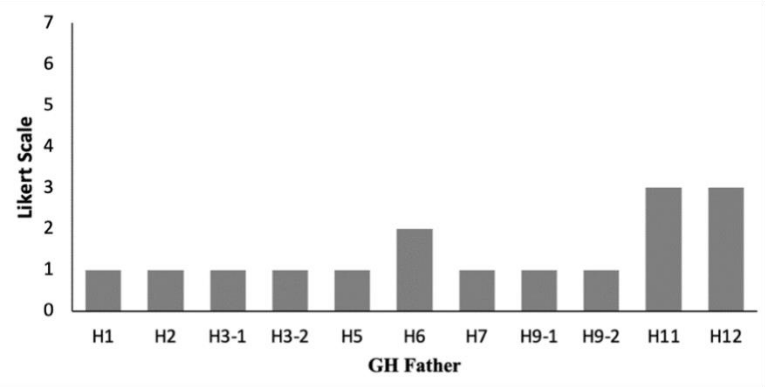
GH Father's Japanese Proficiency



Note. The average of GH father's self-reported Japanese proficiency was 1.56 (1 = least proficient, 7 = most proficient).

Figure 20

GS Father's Japanese Proficiency



Note. The average of GS father's self-reported Japanese proficiency was 2.75 (1 = least proficient, 7 = most proficient).

As illustrated in Table 15, the *t* test result showed a statistical difference; however, this data included the outlier father in GS, which caused a large standard deviation (*SD* = 2.058).

Table 15

Fathers' Language Proficiency

Language Proficiency	GH		GS		*t*	*p*
	M	*SD*	*M*	*SD*		
Japanese	1.455	0.82	3.700	2.058	-3.226	0.008

After taking out the outlier father's self-reported data, a Mann-Whitney U test was run. It also showed a significant difference, $U = 19.5$, the critical value = 23. $z = -2.241$, $p = .0251$. These test results attested that the GS father group had higher Japanese proficiency than the fathers of GH.

Lastly, the study examined parental language ideology by comparing responses from the 7-point Likert scales about parental language expectations toward their children's bilingualism and

satisfaction with their children's HL proficiency between the two groups. Figures 21 and 22 depict the individual reports from the two groups about the parental language ideology.

Figure 21

GH Parental Language Ideology on HL and Bilingualism from Mother's and Father's Reports

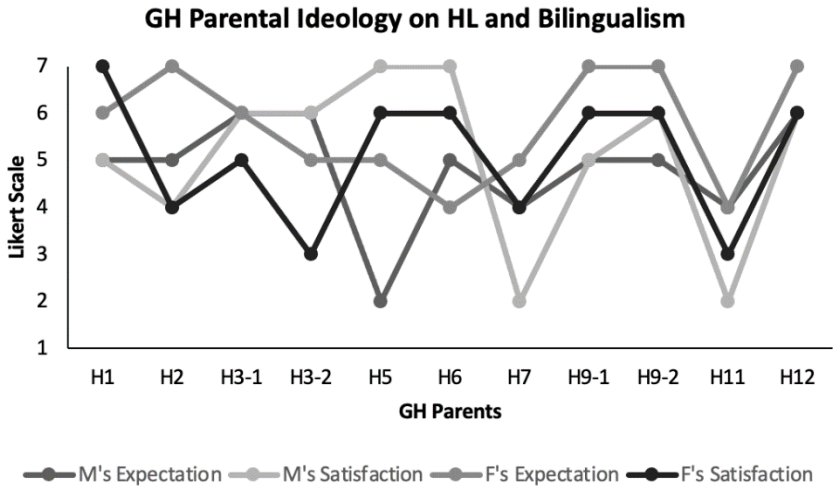
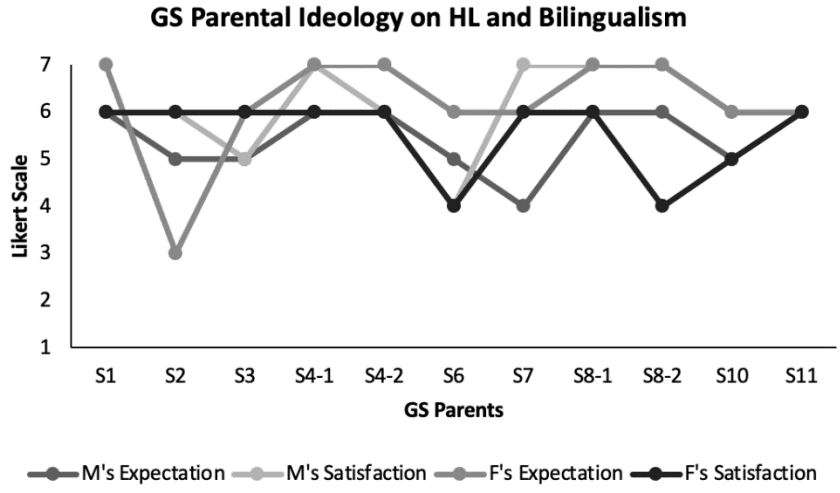


Figure 22

GS Parental Language Ideology on HL and Bilingualism from Mother's and Father's Reports



Furthermore, Table 16 presents the average of GH and GS parental reports about their HL ideologies toward the children. The reports were responses to the survey questions: what level of

oral Japanese fluency they expected of the child, and to what degree they were satisfied with the child's bilingual development.

Table 16

Parental Reports on the HL Ideologies

	Mother's Expectation	Mother's Satisfaction	Father's Expectation	Father's Satisfaction
GH Mean	4.82	5.09	5.73	5.09
GS Mean	5.33	5.89	6.00	5.67

Note. The GS outlier parents' reports were excluded from the average calculation.

As seen in the table above, little difference was found across the average responses in both groups. It was also confirmed by the results of the Mann-Whitney *U* tests that none of the statistic results demonstrated clear differences (see Table 17).

Table 17

Critical value of U

	U	Critical value of *U*	*z*	*p*
Mother's Expectation	37	23	-0.912	0.363
Mother's Satisfaction	37.5	23	-0.874	0.384
Father's Expectation	42	23	-0.532	0.596
Father's Satisfaction	39	23	-0.760	0.447

Note. The result is not significant at $p < .05$.

To summarize the test results that compared the GH and GS groups, it was found that one family disproportionately impacted the results. However, the statistic results which excluded the outlier family's data still proved that the GS fathers were more proficient in Japanese and spoke more Japanese to their children. Regional differences were present in only these two items. There were no clear evidence to suggest differences found in the children's Japanese proficiency, the language dominance, and the parental ideology among these two groups.

DISCUSSION

The purpose of the present study was to explore the family language use in the Japanese-English-speaking bilingual families, particularly focusing on whether it was perceptually consistent between mothers, fathers and children, to investigate whether the language use had any association with the children's lexical proficiency in both languages, and to examine whether there were any regional differences in language use, as well as other factors which could affect the children's language.

The finding for RQ1 was that language use from mothers', fathers' and children's reports were confirmed to be consistent with each other. As Said (2021) claimed, the importance of parents' and children's reciprocal language use practices, the language use consistency across the family attested that their FLP were mutually agreed upon, and successfully accomplished.

The results of RQ2 had shown that there were significant and positive correlations between parental language use and children's lexical proficiency (Sun et al., 2010; Dixon, 2011; Dixon et al., 2012; Gharibi & Boers, 2019; Verhagen et al., 2022). To be precise, the present study found a correlation between children's language dominance and the language use from not only native Japanese mothers but non-native Japanese fathers. This indicated that children were more likely to have higher relative Japanese vocabulary if both their parents regularly spoke Japanese with the children. In this respect, the results partially support Scheele et al.'s (2010) conclusion that an increase of HL language input could positively affect the children's HL vocabulary development but may adversely affect their societal language development. However, the finding in the present study provided evidence that both parents' language choice at home is important for the HL development of bilingual children. In particular, the non-native Japanese parents' heritage Japanese input quantity to their children played an important role, as they contributed to increase the relative Japanese vocabulary. This result was consistent with the results reported in Noro (2009), albeit with different approaches. The study claimed that non-native parents' relationship to Japan and their experiences in Japan, as well as their active Japanese language use at home, contributed to the school-age children's Japanese narrative fluency. Active participation by non-native heritage parents would allow the bilingual children to learn, practice and develop their HL at home. This is especially important for school-age children who are typically exposed to a tremendous amount of social language.

Regarding RQ3 and the impact of regional differences, my hypothesis was that in a region where HL are commonly available, there would be greater awareness about the HL use at home and more robust parental language ideology toward the children, resulting in stronger development of the children's HL oral vocabulary. The statistic test results between the GH and GS groups after removing the GS outlier family's data presented significant differences in fathers' HL use as well as their Japanese proficiency. However, contrary to my expectation that the greater societal acceptance of Japanese languages in GH would elicit more HL use and an advantage in the children's HL development, the results showed that it was GS fathers with higher Japanese proficiency used more Japanese at home, not GH fathers. A possible explanation for this could be addressed through the response to the survey question on whether the family belong to any Japanese community was compared between the groups. Only 22 % of the GH families responded that they were closely connected with Japanese communities through their families or schools, while 63 % of the GS groups reported yes to the question. These results attested that the significance of HL community regardless of social acceptance of HL.

Consequently, the present study demonstrated the crucial value in the family language use, especially both native and non-native parents' active HL use as a proximal input factor. In addition, the results imply that HL community support also provided a positive impact on the bilingual family's HL use and the children's language development.

LIMITATIONS AND FUTURE RESEARCH

Whereas previous research examined the parents' language input contribution to the heritage children's language development, the findings in the present study provided evidence that parents' language choice from both mothers and fathers played an important role in child's lexical development in their HL. Further quantitative analysis with a larger sample size would be necessary to increase the reliability in exploring potential contributors. With a larger sample size, the existence of multiple FLPs among first born child and younger siblings could also be explored. Additionally, looking at other family structures including Japanese fathers and non-Japanese mothers, or other non-traditional family structures, such as multi-generational families living with grandparents from Japan or LGBTQ families, would be interesting to examine. Moreover, introducing a qualitative approach in a mixed-methods design could be effective as it

would provide contextualized insights into particular bilingual families and enhance comprehensive understanding of language use and FLP decision makings.

CONCLUSION

In summary, the findings of the present study demonstrated that the language use from native and non-native HL parents to the bilingual children had played a significant role in elementary school children's lexical development in both HL and societal language. In particular, active Japanese language use from non-native Japanese parents to children could not only increase the entire HL input within the family, but also improve the bilingual children's relative Japanese vocabulary. Additionally, there was slight evidence suggesting that the heritage Japanese community, which motivated non-native Japanese parents to use the HL at home, indirectly had a positive impact on the children's heritage language maintenance. Therefore, the proximal factor supplemented with the HL community support seemed to be crucial to children's HL development.

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APPENDIX A

Parent's Questionnaire Items in English

1. Child's first name	19 (e). If the child has any siblings, which language do you hear your children speak to each other, and if mixed, how much of each respective language do you hear?
2. Child's gender	20 (a). Who was the most influential in deciding which language you should speak to the child?
3. What is your child's birth year and month?	20 (b). If you chose "Other" above, please describe who they are.
4. Child's place of Birth	21. Have you ever discussed the decision of family language use with your partner?
5 (a). Does the child have any siblings?	22 (a). Are you raising the child bilingually?
5 (b). If you chose "Yes" above, please list their first name(s) and year(s) of birth.	22 (b). Please describe the reason for your choice above.
6. About the child's English proficiency: How well does the child understand it?	23. What level of oral Japanese fluency do you expect of the child?
7. About the child's Japanese proficiency: How well does the child understand it?	24 (a). Are you satisfied with the child's bilingual development?
8. Does the child go to a Japanese school?	24 (b). Please describe the reason for your choice above.
9. Your first name	25 (a). Do you and your partner have a different opinion about the family language use?
10. Your gender	25 (b). Please describe the reason for your choice above.

11. Your year of Birth	26 (a). Do you think it is challenging to promote or maintain child's Japanese language development in the current setting (living in the U.S.)?
12. Your place of Birth (City, State, Country)	26 (b). Please describe the reason for your choice above.
13. How many years in total did you live in Japan?	27 (a). Only for non-native Japanese speakers: Have you ever studied about Japan or Japanese language?
14. How many years in total have you lived in the U.S. and/or English-speaking country? (e.g., 5 yrs 2 mos)	27 (b). If you chose "Yes" above, please describe your experiences (e.g., where and how long)
15. Education: What is your highest level of education?	28 (a). Do you belong to any social community where you can communicate with Japanese people? (e.g., church, play circle)
16. About your English proficiency: How well do you understand it?	28 (b). If you chose "Yes" above, please describe the social community.
17. About your Japanese proficiency: How well do you understand it?	29. How important is it for you to spend time and speak with other Japanese people?
18. If you speak other languages besides English and Japanese, please list them.	30. How important is it for you to have your child spend time and speak with other Japanese people?
19 (a). Which language do you speak to your partner, and if mixed, how much of each respective language do you speak?	31. How often do you go back to Japan (before the COVID-19)?
19 (b). Which language do you speak to the child, and if mixed, how much of each respective language do you speak?	32 (a). Do you keep up with Japanese news and current events?
19 (c). Which language does your partner speak to the child, and if mixed, how much of each respective language does your partner speak?	32 (b) If you chose "Yes" above, where is your source of information?
19 (d). Which language does the child speak to you, and if mixed, how much of each respective language does the child speak?	33. If there is any additional information you wish to share with us about your and your child's language history and use, please write it here.

APPENDIX B

Parent's Questionnaire Items in Japanese

1. 子供の下の名前	19 (e). 対象の子供に兄弟・姉妹がいる場合、子供たち同士でどちらの言語をどれくらいの頻度で使いますか？
2. 子供の性別	20 (a). あなたが子供に話しかける言語を決定する際に、誰に最も影響を受けましたか？
3. 子供が誕生した年と月	20 (b). 「Other（その他）」を選択した場合、最も影響を受けた人物を記述してください。

4. 子供の生誕地

5 (a). 兄弟・姉妹はいますか？

5 (b). 上記で「はい」を選択した場合、兄弟・姉妹の下の名前と誕生した年を教えてください。

6. 子供の英語の習熟度について: 英語をどれくらい理解していますか？

7. 子供の日本語の習熟度について: 日本語をどれくらい理解していますか？

8. 日本語の学校に通っていますか？

9. 下の名前

10. 性別

11. 誕生した年

12. 生誕地 (国、州 / 県、市)

13. 合計でどれくらい日本に住んでいましたか？

14. 合計でどれくらい米国（または英語圏内）に住んでいますか？（例：5 年 2 か月）

15. 最終学歴を教えてください。

16. 英語の習熟度について: 英語をどれくらい理解していますか？

17. 日本語の習熟度について: 日本語をどれくらい理解していますか？

18. 日本語と英語以外の言語が話せる場合は、その言語を記入してください。

19 (a). 配偶者に対してどちらの言語をどれくらいの頻度で使いますか？

19 (b). 対象の子供に対してどちらの言語をどれくらいの頻度で使いますか？

19 (c). 配偶者は対象の子供に対してどちらの言語をどれくらいの頻度で使いますか？

21. 家庭での使用言語について配偶者と話し合ったことがありますか？

22 (a). 子供をバイリンガルに育てていますか？

22 (b). その回答の理由を説明してください。

23. 子供にどの程度の日本語レベルを期待しますか？

24 (a). 子供のバイリンガル能力に満足していますか？

24 (b). その回答の理由を説明してください。

25 (a). 家庭での言語使用について配偶者と意見に相違がありますか？

25 (b). その回答の理由を説明してください。

26 (a). 現在の状況（米国在住）で子供の日本語の発達を促進または維持することは難しいと思いますか？

26 (b). その回答の理由を説明してください。

27 (a). 日本語が母語でない人のみ回答してください：日本や日本語について勉強したことがありますか？

27 (b). 上で「はい」を回答した場合、日本での経験や日本語学習について説明してください。

28 (a). 日本人とコミュニケーションがとれる社会的コミュニティに所属していますか？（例：教会、プレイサークルなど）

28 (b). 上で「はい」を回答した場合、そのコミュニティについて説明してください。

29. あなたにとって日本人と話す機会を持つことはどれくらい重要ですか？

30. 子供が日本人と話す機会を持つことは、あなたにとってどれくらい重要ですか？

31. どの頻度で日本に帰省しますか？ (コロナ禍以外の状況で回答してください。)

32 (a). 日本のニュースや時事問題に目を通していますか？

32 (b). 上で「はい」を回答した場合、その情報源について説明してください。

19 (d). 対象の子供はあなたに対してどちらの言語をどれくらいの頻度で使いますか？	33. その他に、ご自身や子供の言語使用や言語にまつわる体験について共有していただける情報がある場合は、ここに記述してください。

APPENDIX C

Child's Interview Items

Oral questions in Japanese	Translation
1. まずはお名前を教えてください。	1. Please tell me your name.
2. XXさんは何歳ですか。	2. How old are you, NAME?
3. 兄弟がいますか。	3. Do you have any siblings?
おうちで話している言葉について質問しますね。	I am going to ask you about languages you speak at home.
4. お母さんとは日本語と英語のどっちで喋りますか。	4. Which language do you speak with your mother, Japanese or English?
5. お父さんとは日本語と英語のどっちで喋りますか。	5. Which language do you speak with your father, Japanese or English?
6. 兄弟とは日本語と英語のどっちで喋りますか。	6. Which language do you speak with your sibling(s), Japanese or English?
7. おうち以外の人と日本語で話すことがありますか。	7. Do you ever speak Japanese with people outside your home?
8. 日本語を話すのは難しいですか。	8. Is it challenging to speak Japanese?
9. 日本語をこれからも勉強しますか。	9. Do you continue to learn Japanese?
10. 日本語をこれからも話したいですか。	10. Do you want to keep speaking Japanese?
11. どうして日本語を話したいですか。	11. Why do you want to speak Japanese?

APPENDIX D

Online Session Sheet: HALA List

Date _____ **Time** _____

Name _____ **ID** _____

	Picture naming task (JPN)		Picture naming task (ENG)
1	足	1	tongue
2	鼻	2	back
3	耳	3	ear
4	顔	4	legs
5	お腹・おへそ・へそ	5	eyes
6	背中	6	feet
7	頭	7	lips
8	手	8	hand
9	肩	9	shoulder
10	歯	10	teeth
11	舌・べろ	11	face
12	くちびる	12	mouth
13	口	13	head
14	目	14	belly button, belly, tummy, stomach
15	指	15	fingers
16	膝	16	knees
17	足	17	nose
18	うで	18	heels
19	手首	19	forehead
20	つま先・足の指	20	toes
21	足首	21	ankles
22	かかと	22	arm
23	ひじ	23	palm
24	くび	24	neck
25	ほっぺ・ほほ・ほう	25	chin
26	まゆげ	26	eyebrows
27	おでこ	27	wrist
28	あご	28	cheeks
29	親指	29	thumb
30	つめ	30	nails
31	手のひら	31	elbow