Language maintenance and loss in a population study of young Australian children

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A R T I C L E   I N F O
Article history:
Received 25 May 2013
Received in revised form 1 November 2013
Accepted 29 December 2013

Keywords:
Multilingual
Bilingual
Speech
Language
Communication
Longitudinal

A B S T R A C T
Information about children’s cultural and linguistic diversity and language acquisition patterns is important for the development of sustainable educational practices. While there is some knowledge about language maintenance and loss in adults and older children, there is limited information about young children. The first three waves of data from the Longitudinal Study of Australian Children (LSAC), involving 4252 young children, were considered longitudinally over the first five years of life to identify patterns of language maintenance and loss among those who speak languages other than English. The most common languages other than English spoken by the children were Arabic, Vietnamese, Italian, Spanish, and Greek and 9.1% of all children were reported to use a language other than English at wave 1, 15.7% at wave 2, and 15.2% at wave 3. Overall, 91.5% of children maintained speaking a language other than English between wave 1 and wave 2, and 86.6% did so between wave 1 and wave 3. Children’s patterns of language acquisition and loss over the first five years of life varied within and between language groups. For example, Arabic-speaking children tended to maintain Arabic throughout early childhood, whereas Italian-speaking children’s use of Italian decreased over the first five years of life while use of English steadily increased. Environmental and personal factors such as parental language use, presence of a grandparent in the home, type of early childhood care, first- and second-generation immigrant status, and parental perception of support from the educational environment were related to language maintenance among non-English speaking children.

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1. Language maintenance and loss in young Australian children

Children’s early years are a time of rapid language acquisition whether they are learning one, two, or multiple languages. To date, limited large-scale data have been presented to examine patterns of language acquisition, maintenance, and loss among multilingual children in English-dominant countries. The current paper explores the patterns of language learning (in home languages and in English) occurring both within individual children and various language groups. The influence of personal factors as well as the home and educational environments upon multilingual children’s acquisition, maintenance, and loss of languages are also considered and discussed. The terms multilingualism and bilingualism are often used interchangeably (Crystal, 2003); however, in this paper, multilingualism is used synonymously with bilingualism and encompasses those who speak two or more languages. Multilingualism is parallel with the term multiculturalism recognizing the breadth of cultural and linguistic influences within society.

1.1. Benefits of multilingualism

There are many known benefits to multilingualism, both cognitively and socially. A meta-analysis of the relationship between multilingualism and cognitive outcomes, undertaken by Adesope, Lavin, Thompson, & Ungerleider (2010), found that multilingualism was associated with cognitive benefits including: increased abstract and symbolic representation skills, attention, working memory, and metalinguistic awareness. A number of other studies have found that multilingual children exhibit higher performance on executive functioning tasks (Bialystok, 2011; Gathercole et al., 2010), mathematical thinking (McLeod, Walker, Whiteford, & Harrison, 2013), and generally have greater metacognitive and metalinguistic capabilities. While multilingual children may acquire speech differently from monolingual children (Paradis, Genesee,
& Crago, 2011), there is no evidence that being multilingual, per se, has a negative impact upon speech acquisition (Hambly, Wren, McLeod, & Roulstone, 2013), particularly when the language input the child receives in each language is rich and frequent (Hammer, Lawrence, Rodriguez, Davison, & Miccio, 2011). Multilingualism also has a number of social benefits as it enables children to communicate with members of their home community who may not speak the dominant language of the broader social environment (such as grandparents) and facilitates increased cohesion among immigrant families (Tannenbaum & Howie, 2002) and communities (Ward & Hewstone, 1985).

1.2. Multilingual language acquisition

There are a number of circumstances in which children may be, or become, multilingual. These circumstances, as defined by Paradis et al. (2011), may involve two types of settings: a majority ethnolinguistic community (where the language being learned by the child is the dominant language of the community) and a minority ethnolinguistic community (in which a child belongs to a language-minority group within the larger community). In each of these communities, two different types of language acquisition patterns may occur: simultaneous or sequential language acquisition. Additionally, the phenomenon of subtractive multilingualism may be occurring in each of these settings. These patterns of language acquisition and loss are detailed below.

1.2.1. Simultaneous multilingualism

To be considered a simultaneous language learner, children would be exposed to two or more languages regularly from birth or soon after birth. Some authors (De Houwer, 1995; Paradis et al., 2011) have suggested that for a language to be considered a first language, children should have begun learning it before they are three-years-old. By this age, children have developed a foundation for the grammatical and syntactic structure of a language, as well as an increasingly expansive vocabulary (Saville-Troike, 2006). There is also evidence to suggest a difference in the cognitive skills of simultaneous multilinguals that does not appear to be present when an additional language is acquired after three years of age (Paradis et al., 2011). An example of a simultaneous multilingual would be a child living in the United States whose mother spoke English and father spoke Arabic, who learned both languages from birth and was supported in the development of each of these languages within both an English majority ethnolinguistic community (e.g., the school environment) and an Arabic minority ethnolinguistic community (e.g., home and/or religious environment).

1.2.2. Sequential multilingualism

Sequential multilinguals are children who form solid foundations in the acquisition of a first language (also known as the home language) before learning additional languages. This often occurs when children are raised in a minority ethnolinguistic community where the home language is spoken to the children until the commencement of schooling, where subsequently the dominant language of the community is used. Children are generally accepted as being sequential multilinguals if the additional language learning commences after the first language has been established (Tabors, 1997). An example of a sequential multilingual would be a child living in Australia whose mother and father spoke Vietnamese and lived within an Australian-Vietnamese ethnolinguistic minority community (with limited exposure to English), who then acquired English upon commencing formal schooling at five years of age. As can be seen from these examples, it is often the case that simultaneous multilinguals acquire their languages in the home, whereas sequential multilinguals acquire their additional languages in an educational or community setting.

1.2.3. Subtractive multilingualism

Subtractive multilingualism refers to the loss of language(s) (usually the home language) as other language(s) (usually the dominant language of the community or educational setting) become more developed (Roberts, 1995). This subtraction can be due to a number of factors including greater exposure to the other language(s), opportunities to use other language(s), parents’ and educators’ attitudes/beliefs about languages (e.g., language status), and personal preference of the child or family. An example of subtractive multilingualism would be a child whose family migrated to a different country and upon being immersed in the dominant language of their new environment, ceased or significantly reduced speaking the home language.

1.3. Language acquisition, maintenance, and loss

Theories of multilingualism in early childhood generally fall into two categories: psycholinguistic theories, which focus on individual skills, motivation, and strategies for language learning, and sociolinguistic theories, which focus on language use in social contexts (Diaz & Harvey, 2002). The current paper has adopted a sociolinguistic approach to consider the influence of social, and environmental factors that impact language use, maintenance, and loss in young multilingual children. Sociolinguistic theories draw upon sociocultural perspectives of language and learning such as those developed by Vygotsky (1986) to provide “a motivated account of the way language is used in a community, and of the choices people make when they use language” (Holmes, 1992, p. 16). This perspective views language acquisition as a function of children’s interactions in social spheres with different interlocutors in the home and broader community. Within this sociocultural interactionist perspective of language acquisition, the amount of linguistic input, interaction style, context of language exposure, and conversational partners that children engage with will determine their acquisition of language(s) (Chapman, 2000). These factors and their impact upon language acquisition, maintenance, and loss among children living in an English-dominant context have been explored in relation to the literature below.

In English-speaking countries, children from multilingual families are often exposed to a number of languages. Languages used with children may be different between home, social, and educational environments. Children may be exposed to and acquire all languages in the home simultaneously. Alternatively, they may acquire a new language upon commencing school if the language of instruction in their educational environment is different from the language(s) used at home. Upon learning a new language, children may maintain using their home language, resulting in them becoming multilingual, or they may experience a language shift to the dominant language and cease speaking the home language, resulting in language loss. The factors influencing each of these patterns as well as the social and educational consequences are discussed below.

1.3.1. Language acquisition

In order to become multilingual, children must receive sufficient exposure to, and support for, all of the languages they are learning (Patterson & Pearson, 2004). The home environment plays an important role in providing children’s early models of language (Lyon, 1996; Weigel, Martin, & Bennett, 2006). The languages that children are exposed to and acquire in the home will depend on the family language policy. The family language policy is defined as explicit and overt planning in relation to language use within the home among family members (Schiffman, 1996; Shohamy, 2006).
Multilingual children are a highly heterogeneous population, therefore the choices made by parents regarding family language policy and the factors impacting upon language acquisition will vary based on differences in parenting behaviors, beliefs, and values as a result of diversity in country of origin, generations since migration, and cultural and linguistic background (De Fryer & Winsler, 2009; Yamamoto, 2008). These factors will ultimately lead to maintenance or loss of home language(s) in the presence of English language acquisition.

1.3.2. Language maintenance

Parents may choose to support the acquisition and maintenance of multiple languages throughout childhood by employing strategies such as using multiple languages in the home environment (King & Fogle, 2006). Parents’ positive attitudes toward multilingualism can benefit home language maintenance as children begin to learn additional languages (Li, 1999; Park & Sarkar, 2007) and parental language input is one of the most influential determining factors of home language maintenance (Crowe, McKinnon, McLeod, & Ching, 2013; De Houwer, 2007; Lyon, 1996; Yamamoto, 2001). Additionally, parental support in the home literacy environment has been associated with home language maintenance among multilingual children (Duursma et al., 2007; Scheele, Leseman, & Mayo, 2010). Parents may choose to maintain the use of the home language alongside the acquisition of English to develop children’s cultural identity, maintain cultural and intergenerational links with family members and their community, and provide better future economic opportunities (King & Fogle, 2006; Park & Sarkar, 2007; Puig, 2010). Parents may choose to maintain speaking the home language to enable children to form relationships with members of their family who do not speak English. In the case of migrant families, multilingual children can play an important role as language brokers for family members who may not have acquired the dominant language of their new home (Morales, 2005). In many cases children’s ability to access to both the home and dominant languages can be a vital asset for facilitating cross-cultural communication between the family and their new society (Morales, 2005). Additionally, parents may choose to speak their home language with their children if their level of proficiency in the dominant language of the community is limited (Lambert & Taylor, 1996; Saravanan, 2001).

Social and educational environments also play an important role in the maintenance of home languages (Kondo, 1998; Pease-Alvarez & Winsler, 1994; Winsler, Diaz, Espinosa, & Rodriguez, 1999; Wong Fillmore, 1991). Differences between early childhood education and care environments can influence the development children’s languages. Family-based care is particularly influential in supporting home language development as home languages are inherited predominantly through intergenerational transmission within families (Pauwels, 2005; Tannenbaum & Howie, 2002). For example, a home language may be developed as a result of being cared for by grandparents or members of their family. Additionally, home languages may be developed by attending a family day care setting facilitated by someone in the child’s linguistic community, or by attending a multilingual preschool. It is also possible for language maintenance to be supported in formal care settings through bilingual programs and staff. Support of home languages in educational settings can provide children with continuity of language use between home and school settings, and plays an important role in language maintenance (Wong Fillmore, 1991; Puig, 2010).

Multilingualism often occurs as a result of migration. Consequently, patterns of language use, maintenance, and loss can vary between speakers depending on where they migrate to (i.e., to an ethnolinguistic minority or an ethnolinguistic majority community) and the type of migration that they undertake (e.g., permanent or circular migration) (Hugo, 2009). Circular migration is the voluntary movement of people between countries, including temporary or more permanent movement, and is driven by the labor needs of both the countries of origin and destination (Newland & Aguinias, 2007). Circular migrants are known to maintain strong links to their home country (Newland, 2009) and, therefore, the language policy among migrant families is more likely to be one of home language maintenance during the period of migration to countries where their language is not the dominant language spoken by the community. This phenomenon is relevant to the current context, as circular migration is a common activity undertaken by many people who migrate to Australia (Hugo, 2009).

1.3.3. Language loss

Language loss is the replacement of a home language with the dominant language of the context (Wong Fillmore, 2000), which in the Australian context is English. Language loss commonly occurs as immigrant groups assimilate into dominant ethnolinguistic communities and is often referred to as language shift (Veltman, 1983). The extent to which language shift occurs varies among different ethnolinguistic minority communities (Portes & Hao, 1998). The loss of home language may occur for a number of reasons including the level of support for and understanding of multilingual language development, and also the attitudes of teachers, families, and the children themselves. Previous case study research has documented that home language maintenance is essential for the “curriculum of the home” (Wong Fillmore, 2000, p. 206) and the loss of this important tool can have negative impacts upon familial relationships. The language barrier between generations creates a divide between parents’ and grandparents’ ability to communicate with, effectively discipline, and form close relationships with their children and grandchildren (Wong Fillmore, 2000; Portes & Hao, 1998). Early research in this field documented that switch to the dominant language of a community and loss of the home language typically occurred two generations after migration took place (Fishman, 1966). However, more recent studies suggest that language shift is occurring more rapidly, often in just one generation (Hurtado & Vega, 2004). Additionally, age at the time of migration has been linked with language loss, with younger migrant children being more likely to adopt the language of their new context (Portes & Hao, 1998; Veltman, 1988).

Children may begin acquiring English as they enter their first English-dominant setting, such as a mainstream preschool or child care center, and parents may focus primarily using English with the child to prepare them for an English-based education system (Jordaan, 2008). The choice to focus on the child’s acquisition of the dominant language of the community is often based on the (mis)conception that this will lead to future educational success (Wong Fillmore, 1991). Parents may also choose to cease speaking a home language with their children if that language is of a low social status (Dixon, Wu, & Daraghmeh, 2012). If a child displays speech and/or language difficulties, parents may cease multiple language input and use one language as they may believe that children have a limited capacity to develop a high level of proficiency in multiple languages (Baker, 2006) or that multilingualism is the cause of these difficulties (King & Fogle, 2006). However, these views are not supported by evidence analyzed within systematic reviews (Crowe & McLeod, 2013; Hambly et al., 2013).

Additionally, the role of the child in language choice is important to consider when discussing influential factors for home language maintenance and loss. In many cases, despite efforts from the home and/or education environment to facilitate multilingualism, children may choose to be monolingual in the language of the dominant culture, thus losing their ability to communicate in their home language. Previous research has found that language choice by the child is influenced by the presence of influential interlocutors such as older siblings, with whom children may prefer to speak the
dominant language of the community rather than communicate using the home language (Wong Fillmore, 1991; Taft & Bodí, 1980). Additionally, social pressures may influence children in their choice to become monolingual, as the dominant language is the means of social communication with same-aged peers. To avoid appearing different, children may use only the dominant language in all contexts, regardless of their interlocutors (Wong Fillmore, 2000).

1.4. The Australian context: a microcosm of minority ethnolinguistic communities

Australia represents a microcosm of the world. It is a culturally diverse nation comprising people speaking over 300 different languages (Department of Immigration & Citizenship, 2008) with 57 different countries of birth being represented by 10,000 or more Australian residents (Hugo, 2004). Unlike many other English-speaking western countries, Australia does not have one dominant second language. In the United States, for instance, 62% of people who speak a language other than English speak Spanish (Shin & Kominiski, 2010). Similarly in Canada, French, the most common language other than English, is spoken by 22.7% of the population, and it is also recognized as an official language of Canada (Statistics Canada, 2001). In contrast, Australia’s cultural and linguistic diversity presents a rich tapestry of cultures and languages that co-exist in small numbers, but as a whole, make up a large proportion of Australian society. Included in this multilingual diversity are Indigenous languages that existed prior to and, have been maintained since, European settlement (Clyne, 1991). Also included are the plethora of languages that have been added to the Australian linguistic landscape during various waves of migration influenced by changing Australian migration policies toward and against multiculturalism and resulting from financial opportunities, war, and religious and political oppression, primarily from Europe, Asia, and more recently Africa (Clyne, 1991; Hugo, 2004). In the 2011 Australian census, 23.2% of people aged over five spoke a language other than English at home. The main languages other than English spoken, in order, were Mandarin (1.6%), Italian (1.4%), Arabic (1.3%), Cantonese (1.2%), and Greek (1.2%) (Australian Bureau of Statistics, 2012a). These findings differed from the 2006 census, which found that 21.5% of Australians spoke a language other than English at home and the main languages other than English spoken were Italian (1.6%), Greek (1.3%), Arabic (1.2%), Cantonese (1.2%), and Mandarin (1.1%) (Department of Immigration & Citizenship, 2008). These differences show that in a period of just five years, Australia’s linguistic landscape has not only increased in diversity but the languages spoken by Australians also have changed.

The current paper aims to add to what is known about the cultural and linguistic diversity of Australian children by investigating the language use, maintenance, and loss of Australian children in the birth (B) cohort of the Longitudinal Study of Australian Children, as explained below. This paper provides a distinctive offering in both the age of its participants and the linguistic context in which they are situated. It draws upon longitudinal data from a population-based sample of Australian children to report on the linguistic diversity, patterns of language use, maintenance, and loss occurring in the first five years of life, and personal and environmental factors that influence these patterns. The linguistic context of Australia provides a unique lens that may be applicable to many countries with increasingly diverse populations, that is, a highly culturally and linguistically diverse, yet English-dominant, developed nation without a majority second language.

1.5. Context of the current study

Growing up in Australia: The Longitudinal Study of Australian Children (LSIC) is a nationally representative study supported by the Australian government. The study commenced data collection in 2004 and is ongoing, with new waves of data being collected at two-year intervals. Data are collected from two cohorts, the birth (B) cohort (who were studied from birth) and the kindergarten (K) cohort (who were studied from kindergarten, aged four- to five-years) each containing approximately 5000 children. Preliminary data regarding primary languages spoken by the K cohort were presented by McLeod (2011) and languages spoken by the B cohort were presented in the Longitudinal Study of Australian Children 2010 statistical report (Maguire, 2011). The current study expands on these initial findings by examining the patterns of language acquisition, maintenance, and loss that are occurring as a whole and within individual language groups, and the personal and environmental factors that impact upon language maintenance.

1.6. Aims of the current study

The aim of this paper is to identify patterns of language acquisition, maintenance, and loss that are occurring among Australian children during early childhood. The following research questions are addressed:

1. What patterns of language use, maintenance, and loss are occurring within multilingual children and among the most common language-minority communities in Australia during early childhood?
2. What personal and environmental factors (including gender, languages spoken by parents, presence of a grandparent or older sibling in the home, being a first- or second-generation immigrant, type of childcare and support for languages other than English in the learning environment) are associated with patterns of language use, maintenance, and loss in Australian multilingual children?

2. Method

2.1. Recruitment of participants

Participants within LSIC were recruited through the Australian national Medicare database (AIFS, 2007). The recruitment process ensured that the children comprised a nationally representative sample matching the Australian population of families with a zero- to one-year-old child on key characteristics including ethnicity, country of birth, whether a language other than English was spoken at home, postcode, month of birth, education, and income (Gray & Sanson, 2005). The children in the B cohort were randomly selected from 311 postcodes across Australia (AIFS, 2011). This means that a maximum of 15–20 children were recruited per postcode. Postcodes in Australia vary in size and population with some covering vast geographical regions and populations up to 100,000 people. Therefore, given the sampling design, the nesting of children within educational or care environments was not a consideration in this study due to the unlikelihood of more than one to two children attending the same setting. While Indigenous children were included in the sample, it is important to note that the LSAC did not include children from extremely remote areas and therefore the children in this study who speak Indigenous languages may not accurately represent the Indigenous population nation wide. For this reason, the Longitudinal Study of Indigenous Children (LSIC) was undertaken (Department of Family, Community Services and Indigenous Affairs, 2012). Findings of the LSIC study regarding languages spoken by Australia’s Indigenous children are reported elsewhere (McLeod, Verdon, & Bennetts Kneebone, 2014; Verdon & McLeod, 2014).
2.2. Participants

2.2.1. The B cohort

Participants were 4252 children and their parents/caregivers in the birth (B) cohort of LSAC who were present for the first three waves of data collection. At wave 1, children were aged zero to one years, at wave 2 children were aged two to three years and at wave 3, children were aged four to five years. Consistent with current recommendations not to impute critical categorical predictor and outcome variables, for longitudinal analyses concerning language maintenance and loss over time, only those with complete data at all waves were considered. Children who were missing from any of these three waves of data collection were excluded from the study.

The sample consisted of 51.2% (n = 2177) males and 48.8% (n = 2075) females. The Socio-Economic Index for Areas (SEIFA) Scale of Advantage/Disadvantage was applied to the data set to determine the level of financial disadvantage experienced by the children at the community level. Possible scores on the SEIFA Advantage/Disadvantage scale range from 500 to 1300 with the average score being 1000 and larger numbers indicating more resources. Children in the study scored between 700 and 1270, with mean score of 1005.72. The socioeconomic position (SEP) (Blakemore, Gibbings, & Strazdins, 2006) of families was also described for children in the sample. SEP is a variable derived using LSAC data combining information on family’s socio-economic position based on: parental education, family income, and occupational prestige. The continuous measure of relative SEP derived by Blakemore et al. (2006) shows associations with other indicators of disadvantage. SEP is a continuous variable with lower SEP score indicating a higher probability of the family experiencing disadvantage. Children in the study scored between −4.28 and 3.08, with mean score of 0.9.

Some children in the study were reported by their parents to have speech problems (wave 2 n = 120, 2.8%; wave 3 n = 269, 6.3%) or learning difficulties (wave 2 n = 32, 0.8%; wave 3 n = 81, 1.9%). Parental concern regarding language capabilities at wave 3 were also obtained using the Parent’s Evaluation of Developmental Status (PEDS, Glascoe, 2000) with 24.6% (n = 1046) reporting a concern about their child’s expressive language and 6.4% (n = 274) reporting concerns about their child’s receptive language skills. This represented a similar level of concern to children in the K cohort of LSAC (McLeod & Harrison, 2009).

Children in the study were born between March 2003 and February 2004. The vast majority of children were born in Australia (n = 4237, 95.6%). Of the 15 children born outside of Australia, nine (0.2%) arrived in 2003 and six (0.1%) arrived in 2004. The majority of study children’s parents were also born in Australia. For parent 1, that is, the parent deemed to be the primary caregiver for each child (AIFS, 2007), 46 different countries of birth were listed, with the most common place of birth being Australia (n = 3394, 79.8%). Other common places of birth for parent 1 included United Kingdom (n = 170, 4.0%), New Zealand (n = 121, 2.8%), India (n = 40, 0.9%), Philippines (n = 38, 0.9%), and Vietnam (n = 34, 0.8%). Data were present for 3943 (92.7%) adults considered parent 2. Analyses regarding parent 2 were undertaken on this reduced sample. For parent 2, 43 different countries of birth were listed. Again, the majority were born in Australia (n = 3069, 72.2%) and other most common places of birth were United Kingdom (n = 239, 5.6%), New Zealand (n = 129, 3.0%), India (n = 40, 0.9%), Lebanon (n = 29, 0.7%), and Vietnam (n = 28, 0.7%).

The Indigenous status of participants in the sample was also recorded. There were 122 (2.9%) children who were identified as Aboriginal, 10 (0.2%) were of Torres Strait Islander decent, and eight (0.2%) children were identified as both Aboriginal and Torres Strait Islander. This is a slightly higher proportion than the latest census statistics which state that 2.5% of the Australian population is from an Aboriginal and/or Torres Strait Islander background (Australian Bureau of Statistics, 2012b). A small number of children’s parents (parent 1: n = 944, 2.2%; parent 2: n = 61, 1.5%) also identified as being Aboriginal, Torres Strait Islander, or both.

There were 5107 children in the wave 1 of the B cohort, and 4252 children present in all three waves of data collection representing 83.3% of the original, full sample. Given that the original sample was recruited to be nationally representative of Australian children, the demographics of children excluded from the current sample (i.e., children who were not present for all three waves of data collection) were examined to determine if the children who did not continue in the study were different from those who had complete data. These analyses were undertaken for gender, SEIFA Advantage/Disadvantage, maternal education, parent 1 migration status, and language background other than English. No significant difference between the groups was found by gender. Children who were missing from the sample were slightly more disadvantaged on the SEIFA Advantage/Disadvantage scale (M = 993.65, SD = 77.25), than those present in all three waves (M = 1005.70, SD = 78.74), t(5105) = 4.09, p < .001 with a Cohen’s d effect size of 0.15. The mothers of children with missing data also had slightly lower levels of education on a five-point scale where a lower score indicates a higher level of education (M = 3.93, SD = 1.31) than those present in all three waves (M = 3.56, SD = 1.36), t(3478) = −5.59, p < .001, d = 0.28. Children missing from the sample were more likely to have parent 1 born outside of Australia (29.5%) than those present (20.2%) (χ² (1) 36.22, p < .001). Children missing from the sample were also more likely to speak a language other than English at wave 1 (18.7%) as compared to those present at all three waves (9.1%) (χ² (1) 68.16, p < .001).

2.3. Procedure

During wave 1 of LSAC data collection for the B cohort (when children were aged zero- to one-year-old), parent 1 took part in a face-to-face interview with a member of the LSAC data collection team. During wave 1, the data collection team were members of a social marketing research agency, contracted to collect data on behalf of the study developers (Soloff, Millward, Sanson, & The LSAC Consortium Advisory Group, & Sampling Design Team, 2003). From wave 2 onwards, data collection and management were handled by the Australian Bureau of Statistics. Data collection involved the completion of a comprehensive questionnaire about their child and their family situation. Areas of enquiry included: core measures (e.g., socio-demographics, child development and functioning), family functioning (e.g., relationships, parenting practices), health (e.g., gestation, birth, and development), child care (e.g., use of non-parental care, quality of care) and education (e.g., schooling environments, direct cognitive assessment) (Soloff et al., 2003). During waves 2 and 3 (when children were aged two- to three-years-old and four- to five-years-old, respectively), additional face-to-face interviews with parent 1 were conducted by the LSAC data collection team. Interpreters were used during interviews with some non-English speaking parents during wave 1 (n = 131, 2.3%), wave 2 (n = 45, 1.1%), and wave 3 (n = 40, 0.9%). Interpreters used in data collection included LSAC employees, professional interpreters, and family members or friends of the study child.

All relevant questions are reported verbatim in the results section. A question regarding the languages used by participants was asked in all waves of data collection. However, it is important to note that the question asked at wave 1 differed somewhat from the questions about language asked at waves 2 and 3. When children were aged zero to one years, Parents were asked “Does the study child use a language other than English at home? If more than one, record the main language”. However, at this age, children are not
typically speaking, so this item is most likely reflective of the main language spoken in the home with the child. The item used in wave 2 and 3 was recorded in two parts. "Is the child regularly spoken to in a language other than English by anyone?" If the answer was yes, the interviewer then asked "What is the main other language that the child understands and/or speaks?" The acquisition of languages is dependent upon the interaction of exposure, use, attitudes, and proficiency (Patterson & Pearson, 2004). We acknowledge that the wording of these items combines/confuses several important elements of language acquisition (i.e., exposure, use, and proficiency) and this should be considered in the interpretation of results. Full information about the interviews and questionnaire content is available from AIFS (2007). Data analyses were undertaken using the IBM Statistical Package for Social Sciences (SPSS) Statistics for Windows, Version 20.0 (IBM Corporation, 2011).

3. Results

3.1. Patterns of language acquisition, maintenance, and loss during early childhood within children who speak a language other than English

Analyses were undertaken to identify patterns of language acquisition, maintenance, and loss for multilingual children in the study over the first five years of life. In the interpretation of these findings it is important to remember that the wording of the question asked at wave 1 to obtain the following figures differed from the questions asked at wave 2 and 3 (as described in the method). There were 9.1% (n = 388) of children who were reported to use a language other than English at wave 1, 15.7% (n = 666) spoke a language other than English at wave 2, and 15.2% (n = 645) spoke a language other than English at wave 3. The most common languages other than English spoken by the children in the sample by wave 3 were Arabic (n = 57, 1.3%), Vietnamese (n = 27, 0.6%), Italian (n = 25, 0.6%), Spanish (n = 22, 0.5%), and Greek (n = 20, 0.5%).

Two methods of considering language maintenance and loss were employed. The first was to consider language change from wave 1 through waves 2 and 3. Of the children who spoke a language other than English at wave 1 (n = 388), 91.5% (n = 355) of the children continued to speak a language other than English at wave 2, and only 86.6% (n = 336) maintained speaking a language other than English into wave 3 (compared with wave 1) (see Fig. 1a). A second method to consider language change was employed by looking from wave 2 (when the children were aged two to three years) to wave 3 (four to five years). This second method was adopted for a number of reasons. Firstly, the wording of the questions was identical at waves 2 and 3. This allowed for a more accurate interpretation of longitudinal findings as parents were being asked questions about children's language exposure and use, not simply the main language spoken at home. Also, this period is particularly interesting because at two to three years of age children have begun speaking and more children in the dataset were reported to speak languages other than English from wave 2 onwards. Of the children who spoke a language other than English at wave 2 (n = 666), only 77.8% (n = 519) maintained speaking a language other than English at wave 3. The remaining children experienced home language loss and began speaking English (see Fig. 1b).

3.1.1. Variations between ethnolinguistic minority groups

Analyses of language maintenance and loss occurring within select individual ethnolinguistic minority communities in the sample were undertaken to identify whether these patterns varied depending on the language children spoke. The following are group case studies of children who spoke Arabic and Italian within LSAC. These two languages were considered individually as they were among the largest language groups other than English spoken by children in the study and because each shows a unique pattern of language maintenance and loss.

3.1.2. Arabic

Among children who were present at all three waves (n = 4252), 1.3% (n = 57) spoke Arabic at wave 1, 1.6% (n = 68) spoke Arabic at wave 2 and 1.5% (n = 64) spoke Arabic at wave 3. Of the children who spoke Arabic at wave 1 (n = 57), 86.0% (n = 49) of the children continued to speak Arabic at wave 2, and 86.0% (n = 49) maintained speaking Arabic into wave 3 (see Fig. 2a). Of the children who spoke Arabic at wave 2 (n = 68), 88.2% (n = 60) maintained speaking Arabic at wave 3 (see Fig. 2b). Interestingly, among the children who experienced language loss in Arabic, the main languages they began speaking did not only include English but also other languages including, Assyrian, Italian, and Mandarin.

3.1.3. Italian

Among children present at all three waves (n = 4252), 0.6% (n = 25) spoke Italian at wave 1, 1.5% (n = 62) spoke Italian at wave 2 and 1.3% (n = 54) spoke Italian at wave 3. Of the children who spoke Italian at wave 1 (n = 25), only 60.0% (n = 15) continued to speak Italian at wave 2, and only 52.0% (n = 13) maintained speaking Italian into wave 3 (see Fig. 3a). Of the children who spoke Italian at wave 2 (n = 62), 48.4% (n = 30) maintained Italian at wave 3 (see Fig. 3b). All children who experienced language loss in Italian began speaking English, apart from two, one of whom began to speak Spanish and the other who started speaking Croatian.
Environmental factors influencing language maintenance in early childhood

A range of personal and environmental variables were examined to determine their relationship with language maintenance in early childhood. These variables included: gender, language spoken by parent 1, whether both parents spoke the same language in the home, presence of grandparents and siblings in the home, socioeconomic status, generations since migration, type of childcare, and support of languages other than English in the learning environment. Variables were considered in three ways. First, a descriptive analysis of each variable within the group of children who spoke a language other than English at wave 1 (n = 388) and wave 2 (n = 666) is given. Second, the relationship between these variables and the children who maintained speaking a language other than English from wave 1 to wave 3 (n = 336) and from wave 2 to wave 3 (n = 519) was examined using chi square, t tests and ANOVA. Finally, all variables were entered into a logistic multiple regression model to look at the combined and unique contribution of each predictor variable. The influence of each of these factors upon language maintenance is outlined in Table 1.

3.2.1. Gender

The influence of gender upon use and maintenance of a language other than English was examined. A chi square analysis was undertaken to determine whether a relationship existed between gender and language maintenance from wave 1 to wave 3 (n = 336) or from wave 2 to wave 3 (n = 519). When the child was female, 86.2% maintained speaking a language other than English from wave 1 to wave 3, compared with 87.0% of males who maintained another language from wave 1 to wave 3 (χ²(1) = 0.07, p = .80). From wave 2 to wave 3, when female, 76.9% maintained the other language compared with 79.0% of males (χ²(1) = 0.43, p = .51). These gender differences in language maintenance were not statistically significant.

3.2.2. Home language environment

3.2.2.1. Parental language use. The main language spoken by parent 1 at wave one was examined as an environmental factor to determine its relationship with children’s use and maintenance of a language other than English. In the group of children who spoke a language other than English at wave 1 (n = 388), 92.5% (n = 359) had a parent 1 who spoke a language other than English. Among children who spoke a language other than English at wave 2 (n = 666), 68.8% (n = 455) had a parent 1 who spoke a language other than English.

A chi square analysis was undertaken to determine whether a relationship existed between children who maintained speaking a language other than English from wave 1 to wave 3 (n = 336) or from wave 2 to wave 3 (n = 519) and whether or not their parent 1 spoke a language other than English. As expected, this relationship was found to be significant for both time points. When parent 1 spoke a language other than English at wave 1, 90.3% of the children maintained speaking a language other than English from wave 1 to wave 3, compared with only 41.4% of children maintaining another language from wave 1 to wave 3 when parent 1 did not speak a language other than English at wave 1 (χ²(1) = 55.22, p < .001). Similarly, among children who maintained speaking a language other than English at wave 2, 89.5% maintained the other language through wave 3 if their parent 1 spoke a language other than English at wave 1, as compared with 53.1% of children maintaining the language when their parent did not speak a language other than English at wave 1 (χ²(1) = 110.86, p < .001).
Further analyses were conducted to determine if maintenance of home language was impacted by whether or not parent 1 and parent 2 spoke the same main language at home. When both parents spoke the same main language at home at wave 1, 94.1% of children maintained speaking a language other than English from wave 1 to wave 3. In comparison, only 65.2% of children maintained another language from wave 1 to wave 3 when parent 1 and parent 2 spoke different languages at wave 1. This finding was significant ($\chi^2 (1) = 50.40, p < .001$). However, the difference was not found to be significant among children who maintained speaking a language other than English from wave 1 to wave 2, with 80.1% maintaining the other language if both parents spoke the same language at wave 1, and 73.7% of children maintaining the language when parent 1 and parent 2 spoke different languages ($\chi^2 (1) = 2.79, p = .095$).

### 3.2.2.2. Presence of grandparent in the home

The presence of a grandparent in the home was examined to identify its influence upon home upon language use and maintenance. This variable was derived by combining children who were identified as having a grandmother or grandfather in the home at either wave 2 or wave 3. A grandparent was present in the home for 13.7% ($n = 53$) of children who spoke a language other than English at wave 1 and 12.0% ($n = 80$) of children who spoke a language other than English at wave 2.

A chi square analysis was undertaken to determine whether a relationship existed between maintaining speaking a language other than English from wave 1 to wave 3 ($n = 336$) or from wave 2 to wave 3 ($n = 519$) and the presence of a grandparent in the home. When a grandparent was present in the home, 88.7% of children maintained speaking a language other than English from wave 1 to wave 3, when a grandparent was not present in the home 86.3% of children maintained speaking a language other than English form wave 1 to wave 3. This relationship was not found to be significant ($\chi^2 (1) = 0.23, p = .63$). For children who spoke a language other than English at wave 2, 87.5% maintained the other language through wave 3 when a grandparent was present the home, as compared with 76.6% of children maintaining the language when a grandparent was not present, and this was found to be significant ($\chi^2 (1) = 4.84, p < .05$).

### 3.2.2.3. Presence of an older sibling in the home

The presence of an older sibling in the home was also examined in reference to language use and maintenance. This variable was selected on the basis of having an older sibling in the home at wave 3. An older sibling was present in the home for 58.5% ($n = 227$) of children who spoke a language other than English at wave 1 and 55.4% ($n = 369$) of children who spoke a language other than English at wave 2.

A chi square analysis was undertaken to determine whether a relationship existed between maintenance of speaking a language other than English from wave 1 to wave 3 ($n = 336$) or from wave 2 to wave 3 ($n = 519$) and the presence of an older sibling in the home. When an older sibling was present in the home, 88.5% of children maintained speaking a language other than English from wave 1 to wave 3, and when an older sibling was not present in the home, 83.9% of children maintained the non-English language. This relationship was not significant ($\chi^2 (1) = 1.79, p = .18$). For children who spoke a language other than English at wave 2, 79.4% maintained the other language through wave 3 when an older sibling was present the home, as compared with 76.1% of children maintaining the language when an older sibling was not present. This relationship was not significant ($\chi^2 (1) = 1.04, p = .31$).

### 3.2.3. Socioeconomic status

Analyses were undertaken to determine whether community level socioeconomic advantage/disadvantage or family socioeconomic position significantly influenced language maintenance among children who spoke a language other than English. An independent samples t test found community level socioeconomic advantage/disadvantage, as determined by the SEIFA Advantage/Disadvantage index, was not significantly different between groups that did ($M = 1026.9, SD = 82.5$) or did not ($M = 1016.9, SD = 70.0$) maintain their home language from wave 1 to wave 3 ($t(386) = −.83, p = .41$). Similarly, no differences were found between groups who did ($M = 1013.0, SD = 77.1$) or did not ($M = 1014.2, SD = 70.2$) maintain their home language from wave 2 to wave 3 on socioeconomic status ($t(664) = −1.47, p = .14$). Additionally, family socioeconomic position was not significantly different between groups that did ($M = −.02, SD = 1.1$) or did not ($M = .09, SD = .86$) maintain their home language from wave 1 to wave 3 ($t(383) = .67, p = .50$) or groups that did ($M = .00, SD = 1.1$) or did not ($M = −.11, SD = .99$) maintain their home language from wave 2 to wave 3 ($t(663) = 1.1, p = .28$).

### 3.2.4. Generations since migration

The influence of being a first- or second-generation migrant was examined in relation to language maintenance among children who spoke a language other than English. This variable was derived
by combining children who were identified as first-generation migrants (that is the children were born outside of Australia) and children whose parent 1 was born outside of Australia. Of the children who spoke a language other than English at wave 1 ($n = 388$), 72.7% ($n = 282$) were first- or second-generation migrants and among the children who were reported to speak a language other than English at wave 2 ($n = 666$), 58.0% ($n = 386$) were identified as first- or second-generation migrants.

A chi square analysis was undertaken to determine whether a relationship existed between migrant status and maintenance of a language other than English from wave 1 to wave 3 ($n = 336$) or from wave 2 to wave 3 ($n = 519$). When identified as a first- or second-generation migrant, 91.1% of children maintained speaking a language other than English from wave 1 to wave 3, and when not a first- or second-generation migrant, 74.5% of children maintained speaking a language other than English from wave 1 to wave 3. This relationship was significant ($\chi^2(1) = 18.31, p < .001$). For children who spoke a language other than English at wave 2, 89.4% maintained the other language through wave 3 when identified as a first- or second-generation migrant, as compared with 62.1% of children maintaining when not a first- or second-generation migrant. Again, this relationship was significant ($\chi^2(1) = 69.98, p < .001$).

### 3.2.5. Type of childcare

The type of childcare attended by children at wave 2 (when children were aged two to three years old) was examined to determine if a relationship existed between childcare type and language maintenance. Childcare type was coded into three categories: center-based care, family-based/other care (including relatives, nanny, friends etc.), and no external care. Children receiving no external care were those who were only cared for by their parents.

Of the children who spoke a language other than English at wave 1 ($n = 388$), 33.5% ($n = 130$) were in center-based child care, 24.2% ($n = 94$) were in family-based care, and 42.3% ($n = 164$) received no external child care. For children who were spoken a language other than English at wave 2 ($n = 666$), 37.8% ($n = 252$) were in center-based child care, 26.9% ($n = 179$) were in family-based care, and 35.3% ($n = 235$) received no external childcare.

A chi square analysis was undertaken to determine if there was a relationship between type of childcare and maintenance of a language other than English from wave 1 to wave 3 or from wave 2 to wave 3. When children attended center-based care, 78.5% maintained speaking a language other than English from wave 1 to wave 3, when in family-based care, 88.3% maintained speaking a language other than English from wave 1 to wave 3, and when no external childcare, 92.1% maintained from wave 1 to wave 3. This relationship was significant ($\chi^2(2) = 1.189, p < .005$).

For children who spoke a language other than English at wave 2; 73.6% maintained the other language through wave 3 when attending center-based care, as compared with 78.8% of children maintaining who were in family-based care, and 82.6% of children who received no external childcare. This relationship was significant ($\chi^2(2) = 6.53, p < .05$).

### 3.2.6. Support of languages other than English in the learning environment

Support of multilingual children in their early education environment was also considered. During wave 3 of data collection, parents were asked “How well does the child’s teacher, center, or pre-school understand the needs of families from a non-English background or Indigenous background?” This analysis was only conducted on children who attended some type of non parental childcare at wave 3. Among the children who spoke a language other than English at wave 1 who were regularly cared for by others ($n = 114$), responses showed that 14.0% ($n = 16$) of parents believed that needs were understood “very well”, 21.9% ($n = 25$) said “well”, 15.8% ($n = 18$) said “just OK” and 22.8% ($n = 26$) said “not done at all”. Missing data or “don’t know” accounted for 25.4% ($n = 29$) of responses. Of the children who spoke a language other than English at wave 2 who were regularly cared for by others ($n = 213$), responses showed that 19.7% ($n = 42$) of parents believed that needs were understood “very well”, 22.5% ($n = 48$) said “well”, 11.7% ($n = 25$) said “just OK,” and 20.2% ($n = 43$) said “not done at all”. Missing data or “don’t know” accounted for 25.8% ($n = 55$) of responses.

To examine the relationship between parents’ perceived level of support in the early learning environment and language maintenance for children who were regularly cared for by others, the ordinal parent perception variable (1 = very well, 2 = well, 3 = just OK, 4 = not done at all) was treated as continuous, and ANOVAs were run comparing the groups who did and did not maintain speaking a language other than English from wave 1 to wave 3 and from wave 2 to wave 3. These ANOVAs revealed a significant relationship between parents’ perceived level understanding of the needs of families from a non-English background or Indigenous background by the child’s teacher, center, or pre-school and those who maintained a language other than English both from wave 1 to wave 3 ($F(1) = 7.1, p = .009$) and from wave 2 to wave 3 ($F(1) = 6.674, p = .010$). Parents of children who maintained speaking a language other than English from wave 1 to wave 3 ($M = 2.6, SD = 1.1$) and from wave 2 to wave 3 ($M = 2.4, SD = 1.2$) perceived less support and understanding from the child’s educational environment, compared with those who did not maintain a language other than English from wave 1 to wave 3 ($M = 1.8, SD = 0.9$) or from wave 2 to wave 3 ($M = 1.9, SD = 1.2$).

### 3.2.7. Multivariate analysis

Finally, given that the above analyses have all been bivariate, a logistic multiple regression analysis was conducted to examine the unique and combined contributions of each variable in the model and whether they still predict language maintenance when controlling for other variables in the model. Variables included in the model were gender, SEIFA Advantage/Disadvantage, socioeconomic position, presence of grandparent in the home, presence of an older sibling at home, first- or second-generation migration status, type of childcare, and parents’ perceived level of teachers’ understanding of the child’s language needs. The correlation between SEIFA Advantage/Disadvantage and socioeconomic position was 0.41, indicating that collinearity was not a problem, so both SES variables were included in the model. These variables were analyzed in relation to maintenance of a language other than English from wave 2 to wave 3. These analyses, and the results reported in Table 2, were run on a reduced sample only including children who

### Table 2

<table>
<thead>
<tr>
<th>Variables</th>
<th>Odds ratio</th>
<th>SE (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>0.75</td>
<td>0.38</td>
</tr>
<tr>
<td>SEIFA Advantage/Disadvantage</td>
<td>1.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Socioeconomic position</td>
<td>1.10</td>
<td>0.20</td>
</tr>
<tr>
<td>Grandparent in home</td>
<td>1.79</td>
<td>0.58</td>
</tr>
<tr>
<td>Older sibling in home</td>
<td>0.37</td>
<td>0.93</td>
</tr>
<tr>
<td>First/second generation migrant</td>
<td>5.15**</td>
<td>0.42</td>
</tr>
<tr>
<td>Family-based/center-based</td>
<td>2.25*</td>
<td>0.40</td>
</tr>
<tr>
<td>No external care/center-based</td>
<td>2.13</td>
<td>0.63</td>
</tr>
<tr>
<td>Center-based care/no external care</td>
<td>0.47</td>
<td>0.63</td>
</tr>
<tr>
<td>Family-based care/no external care</td>
<td>1.06</td>
<td>0.67</td>
</tr>
<tr>
<td>Level of understanding by early learning model</td>
<td>1.41</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Key: SE(B) = Standard error of B. All contrasts involving childcare type were run and included above by re-running the model and changing the reference group.

* $p < .05$  
** $p < .01$
were in non-parental care at wave 3, so that the variable regarding parent perception of teacher understanding the needs of families from non-English background could be included in the model. We also performed the same analysis on the full sample of children who spoke a language other than English and the same variables were significantly related to language maintenance.

The overall chi square significance of the model was $\chi^2 (9)= 33.52, p < .001$, and Cox and Snell $R^2 = 0.15$ indicating that approximately 15% of the variance was explained using the variables in the model. The variables that were significant when all variables were included and thus controlled, were first/second generation migrant status, family-based childcare as compared with center-based childcare, and parent perception of teachers' understanding of the family's language needs. The odds of a child maintaining their home language were 5.2 times higher for children from first and second generation immigrant families than when children and/or their parents were born in Australia, controlling for the other variables in the model. Also, even after controlling for the other demographic variables, children who were in family-based child care had more than twice the odds (2.3) of maintaining their home language from wave 2 to wave 3 compared to children in center-based care. Finally, children whose parents perceived a lower level of understanding of the needs of families from a non-English background or Indigenous background by the child’s teacher, center, or pre-school were 1.4 times more likely to maintain their language. Presence of a grandparent in the home was no longer significant in the regression model when immigrant status and other variables were included, suggesting that it is immigrant status, type of child care, and perceived level of understanding in the educational environment that are key. The complete findings of the logistic multiple regression analysis are outlined in Table 2.

4. Discussion

The present sample of 4252 Australian children studied longitudinally at three time points from birth to school entry provides a description of patterns of language use, maintenance, and loss that occur within multilingual families in Australia, a microcosm of diverse ethnolinguistic minority communities within an English-dominant environment. Using a sociolinguistic approach, the influence of social and environment factors upon language use, maintenance and loss among multilingual children during early childhood are discussed.

4.1. Longitudinal understandings of language acquisition, maintenance, and loss

For multilingual children living in an English-dominant society, there are a number of patterns which may occur when developing their languages. Some children are simultaneous language learners who maintain their home language throughout early childhood and continue speaking this language for the rest of their lives. In Australia, the language of instruction in education systems is English, and therefore, if children are not simultaneous learners of their home language and English from birth, they must subsequently acquire English in order to attend and complete their schooling (i.e., be sequential language learners). In other cases, children may lose their home language in the pursuit of English attainment. This phenomenon of subtractive multilingualism may result from a number of factors including: decreased exposure to home languages, the educational emphasis placed on English learning and development, or as a result of personal choice by the child, despite their family's desire to maintain multiple languages (Wong Fillmore, 1991; Pearson, 2007; Pease-Alvarez, 1993; Taft & Bodi, 1980). As seen in Fig. 1a, many children in Australia do maintain their home language throughout early childhood. However, by the age of four to five years, a number of children begin speaking English as their main language instead of their home language. For children that began speaking a language other than English at wave 2, the decline by wave three was much higher, with around a quarter of children ceasing home language use and speaking only English. Previous research seeking to explain the high amount of home language loss that occurs at this age has suggested that lack of input of home language (Pearson, 2007), attending English-dominant early childhood education settings (Wong Fillmore, 1991), and the language choice of siblings (Pease-Alvarez, 1993) could be influential factors for children adopting the dominant language of the society rather than persevering with home language use.

Patterns of language maintenance and loss in early childhood were not the same when comparing between speakers of different languages. As cases in point, the patterns of children who spoke Arabic and Italian varied. Most Arabic-speaking children maintained Arabic across all three waves, with few adopting English as their main language by wave 3. Italian-speaking children on the other hand had higher rates of language loss and adoption of English as a main language by wave 3, with more than half of the children identified as speaking Italian at wave 2 no longer speaking Italian at wave 3. This finding is in keeping with previous research in the United States, that found that the incidence of home language maintenance varied between different language groups (Portes & Hao, 1998). The findings of the current paper could be explained by the fact that migration to Australian from Arabic-speaking countries has generally occurred more recently (from the 1970s) (Clayne & Kipp, 1997) than migration from Italy, which peaked in the post-World War II era (Clayne, 1991). Therefore, a higher level of maintenance among Arabic-speaking children is consistent with the relationship found in the current study between generation since migration and language maintenance. These examples highlight that each ethnolinguistic community is unique and experiences different rates of language maintenance and loss. The patterns exhibited are influenced by personal and environmental factors experienced by children in early childhood that either support or inhibit their language maintenance. These influences are discussed below.

4.2. Environmental factors influencing language maintenance in early childhood

Sociolinguistic theories of multilingual language acquisition propose that interactions with people and social environments, during early childhood will shape the language competencies that are developed by multilingual children. Exposure to multiple languages and cultural contexts requires a constant negotiation of social and cultural worlds and identities as children are in the process of developing their own personal, social and cultural identity (Diaz & Harvey, 2002). Exposure to languages and attitudes toward languages from influential interlocutors and social environments during this time can directly impact children's language acquisition, maintenance, and loss as well as their attitudes toward language use (McNamara, 1997).

The literature suggests that the strongest predictor of home language maintenance is the use of these languages within the home environment (Luo & Wiseman, 2000; Pauwels, 2005). The language used with multilingual children at home can be influenced by a number of factors including parental beliefs about multilingualism (positive or negative) and the speaking partners that the child encounters in the home (for example, monolingual grandparents with whom the children must speak their home language). As previously discussed, if children are in families that engage in circular migration, a greater emphasis may be placed on maintaining their home language and culture in preparation for returning
to the home country (Newland, 2009). Conversely, some parents may see it as important that children who are permanent migrants become fluent in the dominant language of the country to give them the best chance of success in education and later employment (Stow & Dodd, 2003). These notions are supported by the results of the current study which found that parental use of a language other than English was highly correlated with children speaking languages other than English. The finding that language maintenance was significantly higher when both parent 1 and parent 2 spoke the same language is in keeping with previous research by Duursma et al. (2007) and De Houwer (2007) who found that children had more chance of being multilingual if both parents used the home language. Additionally, the presence of a grandparent living in the home throughout early childhood was significantly related to the maintenance of home languages in the current study. Previous studies have reported mixed results with regards to the relationship between the presence and order of siblings in the home and language maintenance (De Houwer, 2007; Pease-Alvarez, 1993). Language maintenance was not related to the presence of an older sibling in the home in the current study. In keeping with previous research by Portes and Hao (1998), socioeconomic status (at both the community and family level) was not found to be a significant factor influencing home language maintenance among children from non-English speaking backgrounds.

Another factor thought to influence the maintenance of a language other than English in children is the number of generations since migration. Immigrant status was associated with language maintenance in the current study with the majority of the children who maintained their home language throughout the early childhood years being either first- or second-generation migrants. Intergenerational exchange has been identified as a critical factor in ensuring the maintenance of languages in subsequent generations post migration from the home country (Fishman, 1991). This is often facilitated by communication with extended family such as grandparents or aunts and uncles who continue to speak the home language with the child (Pauwels, 2005). Indeed, once all predictors were included in the multiple regression model, it was immigrant status that was most strongly related to language maintenance. This finding is consistent with previous literature identifying the relationship between time since migration and language maintenance (Portes & Hao, 1998; Veltman, 1983).

Additionally, early childhood education and care settings play a role in the languages that children are exposed to and, therefore, impact language use, maintenance, and loss. This is reflected in the findings of the current study in which the multiple regression analysis found that family-based care (which included a high proportion of grandparent care), as compared with center-based care was significantly related to language maintenance when controlling for all other variables in the model. Family-based care provides opportunity for generational and community exchange of languages, which is a protective factor for language maintenance (Pauwels, 2005). In contrast, English is the language of instruction in the majority of early childhood centers in Australia and therefore this monolingual environment affords little opportunity for children’s development of home language.

By four to five years of age, most Australian children attend a formal preschool setting (Harrison et al., 2009). Formal early childhood education and care settings, where English-based language development and communication is the focus, may place home language maintenance at risk (Puig, 2010). However, if language-minority preschool children attend a high-quality, truly bilingual early childhood center-based program that values and supports children’s home language use in addition to English, they can show language growth in both English and their home language (Winsler et al., 1999). Therefore, support of language development for all languages in multilingual children at this age is essential to enable language maintenance and strong future outcomes for children (Bialystok, 2011; Gathercole et al., 2010).

To our knowledge, this is the first study to show the association between children’s home language maintenance and parental perceptions of preschool teachers’ language and cultural/home language support. Interestingly however, teachers’ understanding and support for language-diverse families was reported as lower among families whose children maintained their home language over time, compared to those who exhibited home language loss. This suggests that families in Australia that are strongly interested in maintaining their non-English home language, and indeed are successful at doing so, do not feel optimally supported by their child’s educational environment. Thus, it does not appear to be the case that parents who are more serious about home language maintenance actively select (or have access to) child care settings that will help with this language goal. Perhaps the reason why families involving children who stopped using their language other than English during early childhood were more satisfied with their teachers’ language support is that the teachers were following the desires of the parents to emphasize only English in the childcare setting. Unfortunately, we do not have data on families’ specific language policies or goals, or teachers’ specific perspectives on cultural/home language support. It is clear from the literature, though, that many parents rely on educational settings to provide ongoing support for children’s home language development when choosing to maintain home language, and many parents of multilingual children would prefer their children attend an educational setting that supports multiple language development (Lao, 2004; Lee, 1999; Schwartz, 2013).

4.3. Implications

The findings of this study have important implications for understanding factors that affect the acquisition, maintenance, and loss of home languages among children from non-English speaking backgrounds. Sociolinguistic theories highlight the important influence of children’s social contexts upon their language acquisition and maintenance. The findings of the current study support this theory by demonstrating the importance of language development and exposure in the home environment. To support children in maintaining home languages, it is crucial that children have opportunities to hear and speak home languages with parents and other influential interlocutors in the home environment. The current findings suggest that maintenance can be improved when both parents use their home language with multilingual children and also the presence of other family members (such as grandparents) in the home can promote home language maintenance.

Most children who speak a language other than English in Australia will learn to speak English, either as a first or an additional language, given that education is predominantly provided in English. This means that many of these children will be multilingual. Therefore, multilingual educational support is an approach that is needed to support children to develop competencies in all of the languages they speak. Previous studies have reported that parents support multilingual education for their children since it facilitates language development, the ability to communicate with members of their home community, positive self-image, and future career opportunities (Lao, 2004).

It is important that educational settings provide multilingual children with equitable opportunities to facilitate and support home language maintenance as well as English language learning (Commonwealth of Australia, 2009). Previous research has indicated that educators with little professional training or experience in working with languages other than English express negative or indifferent attitudes toward their role in supporting home language maintenance in the educational setting (Lee & Oxelson, 2006).
Therefore, it is essential that staff who work with multilingual children receive adequate training to increase their understanding of the importance of multilingual education and to engage in culturally appropriate practices and possess cultural competence (Betancourt, Green, Carrillo, & Ananeh-Firempong, 2003; McLeod, Verdon, Bowen, International Expert Panel on Multilingual Children’s Speech, 2013). This includes teachers, teacher’s aides, speech-language pathologists, and other support staff within educational settings.

The analysis of Arabic- and Italian-speaking children within the dataset highlights the fact that ethnolinguistic minority cultures existing within an English dominant society are individual and transmit (or do not transmit) the language of their community between generations in different ways. It also highlights the high rates of language loss that are occurring in some linguistic communities and with it, the need to support children in home language development in order to avoid language loss and the possible negative social and academic impacts this may have upon children in the future. Further research is needed to identify effective strategies for supporting home language maintenance in children in the critical years of language acquisition. Additionally, there is a need for greater parental education about the benefits of multilingualism and ongoing support for parents attempting to raise children multilingually.

Understanding the nature of a population’s cultural and linguistic diversity is essential for supporting multilingual children to prosper in an otherwise monolingual-dominant society. The availability of these data regarding Australia’s multilingual children provides a model for other nations who have a similar diversity in languages spoken by children. Using data such as those from a large population-based study to inform service planning, development, resourcing, staff training, and funding can assist in the provision of equitable and quality services that facilitate positive outcomes for all children, regardless of their ethnicity.

4.4. Limitations

Although the present study, with its large, nationally representative sample, longitudinal design, and focus on very young children has clear strengths, there are also important limitations of the current study to be acknowledged. Limitations mostly have to do with the archival, large-scale nature of the LSAC data collection which was understandably designed for breadth, to get at many aspects of child development, as opposed to depth in examining the quantitative and qualitative aspects of children’s multilingual language environments and skills. It is a limitation that the current authors had no control over the way questions were asked and therefore the nature of the data that were collected relating to language use, maintenance, and loss. Importantly, the wording of questions regarding languages used by the child in the home changed between wave 1 and 2. It is possible that this wording change influenced the different findings between the group of children who maintained their home language between waves 1 and 3, the group who maintained between waves 2 and 3 when considering the influence of parents both speaking the same language and the presence of a grandparent at home. Additionally, since questions only asked for the main language spoken by children, these data do not enable a distinction to be made between simultaneous and sequential language learners within the sample. Future research concerning language acquisition, maintenance, and loss is needed to further investigate, in detail, individual aspects of language development in multilingual children. This includes explicitly asking about the number of language spoken by the child, proficiency in each language, the type of multilingual acquisition occurring (i.e., simultaneous or sequential), the languages the child is exposed to and the context of exposure, and attitudes surrounding multilingualism.

5. Conclusions and future directions

The data presented here provide valuable information regarding home language maintenance and loss in young children from ethnolinguistic minority communities. In summary, this study found that while many Australian children maintain speaking a language other than English throughout early childhood, many experience a language shift toward English by age five. The patterns of language use, maintenance, and loss varied between individual linguistic groups. For example, Arabic-speaking children were more likely to maintain speaking Arabic throughout early childhood, while a large number of Italian-speaking children began to speak English as their main language by wave 3. Future research could consider migration patterns (i.e., circular or permanent migration) among immigrants to determine what impact this has upon language maintenance in different immigrant populations.

These data also provide information about the patterns of language use, maintenance, and loss that are occurring within language groups in Australia and suggest potential protective and risk factors for the maintenance of home languages. Future longitudinal research should consider the multiple influences upon speech acquisition, maintenance and loss during early childhood (such as language exposure, language use and language environments) and questions should be designed investigate these important areas individually and consistently across waves of data collection to ensure stability in longitudinal analyses. In light of these findings, practical strategies for supporting language development in Australian multilingual children in both the home and educational environments are needed. To achieve this, further research is needed to equip both early childhood education and health (such as speech-language pathology) services to meet the needs of multilingual children. Research is also needed into preparing professionals with culturally appropriate practice approaches for working within increasingly diverse early childhood populations to support language acquisition, use, and maintenance, and facilitate positive outcomes for all children.

Acknowledgments

Sarah Verdon acknowledges support from a scholarship from the Australian Department of Education, and an Excellence in Research in Early Years Education Collaborative Research Network scholarship from Charles Sturt University. Sharynne McLeod acknowledges support from the Australian Research Council Future Fellowship (FT0990588). This paper uses unit record data from Growing Up in Australia, the Longitudinal Study of Australian Children. The study is conducted in partnership between the Department of Social Services (DoSS) (previously Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA)), the Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS). The findings and views reported in this paper are those of the author and should not be attributed to DoSS, AIFS or the ABS.

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