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**Title: Marking of Verb Tense in the English of Preschool English-Mandarin Bilingual Children: Evidence from language development profiles within subgroups on the Singapore English Action Picture Test**

**Running head: Tense Marking in English-Mandarin Bilinguals**

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**What this paper adds**

The phonological and morphosyntactic structures of English and Mandarin contrast maximally and an increasing number of bilinguals speak these two languages. We know that the development of language for bilingual children differs to that of monolingual children and speech and language therapists need to understand bilingual development for children speaking these languages in order to reliably assess and provide intervention. This study examines the marking of verb tense in the English of two groups of bilingual pre-schoolers learning these languages in a multilingual setting where the main educational language is English.

This study provides further evidence that bilingual language development is not the same as monolingual language development. We now know there are very different rates and patterns of verb tense marking in English for children bilingual in English and Mandarin, depending on their language dominance. When assessing bilingual children's language, accurate information needs to be obtained on the child's language dominance over time, even if the language of education for the population is English.

**Abstract**

**Background**

The phonological and morphosyntactic structures of English and Mandarin contrast maximally and an increasing number of bilinguals speak these two languages. Speech and language therapists need to understand bilingual development for children speaking these languages in order to reliably assess and provide intervention for this population.

**Aims**

This study examines the marking of verb tense in the English of two groups of bilingual pre-schoolers learning these languages in a multilingual setting where the main educational language is English. The main research question addressed was: Are there differences in the rate and pattern of acquisition of verb tense marking for English-Language 1 children compared to Mandarin-Language 1 children?

**Methods and Procedures**

Spoken language samples in English from 481 English-Mandarin bilingual children were elicited using a 10-item action picture test, and analysed for each child's use of verb tense markers: present progressive "-ing", regular past tense "-ed", third person singular "-s", and irregular past tense and irregular past participle forms. For 4, 5, and 6-year olds the use of inflectional markers by the different language dominance groups was compared statistically using nonparametric tests.

**Outcomes and Results**

This study provides further evidence that bilingual language development is not the same as monolingual language development. The results show that there are very different rates and patterns of verb tense marking in English for English-Language 1 and Mandarin-Language 1 children. Furthermore, they show that bilingual language development in

English in Singapore is not the same as monolingual language development in English, and that there are differences in development depending on language dominance.

**Conclusions**

Valid and reliable assessment of bilingual children's language skills needs to consider the characteristics of all languages spoken, obtaining accurate information on language use over time and accurately establishing language dominance is essential in order to make a differential diagnosis between language difference and impairment.

**Background**

With increasing linguistic diversity around the world, many bilinguals speak languages that contrast in terms of phonology and morphosyntax in predominantly English-speaking countries. In the UK, 8% of the population speak a language other than English in the home, with the top three major "other" languages being Polish, Panjabi and Urdu (Office for National Statistics, 2011); the top three other languages in the US are Spanish, Chinese and French (US Census Bureau, 2011); in Australia, there are over 400 languages spoken with the top five major "other" languages being Mandarin Chinese, Italian, Arabic, Cantonese and Greek (Australian Bureau of Statistics, 2012). Despite bilingualism being more common than monolingualism, bilingual children are disproportionally represented in special education services as it can be difficult to accurately assess their language skills (Peña, Gillam, Bedore & Bohman, 2011).

In order to conduct valid and reliable assessment of a bilingual child's oral language skills, an understanding of bilingual language development is needed (Kohnert, 2010; Williams & McLeod, 2012). Clearly assessment processes for bilingual children need to account for their skills in all of their languages (see for example position papers by American Speech-Language and Hearing Association, 2013; Speech Pathology Australia, 2009). The main issues that need to be considered are that bilingual children often have better skills in one of their languages (although these may be difficult to compare directly), language dominance can vary over time and the likely impact of cross-linguistic differences when children are learning languages that contrast in terms of phonology and/or morphosyntax (Kohnert, 2010).   All these issues make it difficult to provide an accurate and reliable assessment of a bilingual child's language skills (Kohnert, 2010).

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The bilingual child's acquisition patterns for both languages will be influenced by the amount of exposure they have to the different languages they speak, and the content to which they are exposed (Bedore & Peña, 2008; Jacobson & Livert, 2010; Kohnert, 2010). Features of a non-dominant language are often learned more slowly or may fail to develop fully (Yip & Matthews, 2006). There is emerging evidence, also, that bilingual children learning English as a second language can have particular difficulties with verb inflections (Bedore & Peña, 2008; Kohnert, 2010). There are differences in the morphosyntactic rules of languages, and bilingual children acquire morphosyntax at a different rate and in a different order to monolingual speakers (Bedore & Peña, 2008; Jacobson & Livert, 2010; Kohnert, 2010). Therefore, when assessing bilingual children, it is important to recognize that there will be considerable variability within bilingual individuals' skills in the abilities they have acquired in their languages, and knowledge of the development of English in monolinguals will not be directly applicable to this population (Kohnert, 2010). Thus, the characteristics of both languages spoken and the individual child's language context need to be understood to reliably assess their language abilities.

**Bilingualism and language dominance**

Bilinguals are often dominant in one language over another but there is no consistent measure of language dominance currently available (Bedore et al. 2012). Bedore and colleagues (2012), in their study of language dominance measures for Spanish-English bilingual children, stated that it is essential to consider language dominance, defining bilingualism using measures of both language proficiency and dominance. In their investigation into cross-linguistic transfer in Cantonese-English bilingual children in Hong Kong, Yip and Matthews (2006) established language dominance in a longitudinal way. They defined language dominance in terms of the dominant language being so due to higher

frequency of exposure. In their study of three Cantonese-English speakers, they focused on mean length of utterance (MLU) as a means of determining language dominance where there was unequal development across two languages. They emphasised the need to consider the variability in children's experiences and exposure to languages, and the need to consider language dominance in order to accurately assess a child's language skills. However, MLU is not consistent across languages, particularly those that are markedly different in morphosyntax, so this measure can be problematic.

**The development of morphosyntax in bilingual children**

There are known differences between bilingual and monolingual speakers in terms of morphosyntax, including inflectional morphology and tense marking, which develops differently across languages (Bedore & Peña, 2008; Kohnert, 2010). Jacobson and Livert (2010) studied the use of past tense marking in English in a group of Spanish-English bilingual children with language impairment (LI). They compared the use of past tense forms with those of younger bilingual children with both typically and atypically developing language. They found that the older bilingual children's use of past tense was behind that of the typically developing children. Their results also showed that in bilingual children with LI, there were differences in both irregular and regular forms of tense marking in comparison with typically developing bilingual children. These authors also identified differences in the acquisition of inflectional markers depending upon whether the child was a simultaneous or sequential bilingual (Jacobson & Livert, 2010).

There have been few studies of morphosyntactic development for English-Chinese bilingual children. Ooi and Wong (2012) looked at potential clinical markers of specific language impairment (SLI) in Chinese-English bilingual Malaysian preschool children. Their study of three language sample measures in English (mean length of utterance in words,

lexical development and syntax production) for typically developing children and those with SLI found that shorter utterance length and expressive syntax production were potential clinical markers of SLI for Chinese-English bilingual Malaysian children, in particular the non-standard omission of grammatical structures (e.g. they found a weak correlation between MLU and age because of this omission of grammatical structures).

**The context for this study: Singapore**

Singapore is a multilingual, multicultural nation in South East Asia. The language environment in Singapore is complex and there have been many changes in patterns of language use over the past century (Gupta, 1994). Currently, English is the language of education and business, but there are four official languages: English, Mandarin, Malay and Tamil, and both Singapore Standard English (SStdE) and Singapore Colloquial English (SCE) are spoken. Most Singaporeans are bilingual, and many are multilingual. Language exposure is highly variable, and children can be simultaneous bilinguals (i.e., exposed to more than one language from a young age) or sequential bilinguals (i.e., exposed to another language after a period of time learning their first language). SCE is the lingua franca in Singapore and the form of English most frequently used in everyday conversations (Gupta, 1994). It is also the form of English most commonly spoken with young children, although recent census data show that the use of SStdE in the home is increasing and that this is linked to higher socio-economic status (Singapore Department of Statistics, 2010).

The two forms of English spoken in Singapore differ from each other markedly. SStdE is similar to other forms of Standard English (StdE) spoken around the world with some differences in vocabulary and phonology, whereas SCE has marked differences across form, content and use (Gupta, 1994). Table 1 outlines the characteristics of SCE.

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**Insert Table 1 about here**

Preschool education is not compulsory in Singapore but almost all children attend a kindergarten before they enter primary school rising seven years (Ministry of Education, 2013). Kindergartens currently offer three-year programs (Nursery, Kindergarten 1 and 2) commencing in the year that children turn four, with daily half day attendance with session lengths increasing with age (i.e. up to three hours/day for the younger children through to up to five hours/day for older children). There is no common curriculum across kindergartens but children are exposed to SStdE approximately 75% of the time, with Mother Tongue classes (in Mandarin, Malay or Tamil depending on paternal ethnicity) 25% of the time (i.e. about 1 hour per day) (Ministry of Education, 2013).

Whilst English is the language of education, Singaporean children are bilingual and it is necessary to consider their skills in all of their languages when assessing their oral language abilities. There is, however, limited information on the development of the main languages in Singapore. This makes assessment and diagnosis of LI in children in Singapore complicated. Furthermore, there are very few standardized assessments for the local population (Brebner, 2010; Teoh, Brebner & McCormack, 2012) beyond the single word level except for the Singapore English Action Picture Test (SEAPT) (Brebner, 2002) described later. The Bilingual Language Assessment Battery (Lee, Sze and Rickard Liow, 2013), an assessment of receptive and expressive vocabulary for three main language groups in Singapore, has separate normative data for English, Mandarin and Malay dominant children aged 4-6 years, but there are no valid and reliable norms for sentence level. Without this information on language development, making an accurate differential diagnosis between language difference and LI is challenging, with speech and language therapists relying on

their understanding of normal language development for monolingual Standard English (StdE) speakers as well as their instinctive clinical judgement about a child's language abilities (Gupta, 1994; Brebner 2010).

**The development of morphosyntax in English in bilingual Singaporeans**

Whilst English is the language of education and business, in Singapore it does not develop in the same way as for monolingual speakers of StdE in other countries around the world (Brebner, 2010; Gupta, 1994). This has implications for the assessment of language skills. Teoh and colleagues (2012) looked at expressive vocabulary in English for bilingual English-Mandarin speaking preschoolers using the Expressive Vocabulary subtest of the Clinical Evaluation of Language Fundamentals Preschool 2 (UK). They found that the normative data for the UK version were not applicable for Singaporean children, as the children acquired different vocabulary items and in a different order. In particular, they noted difference in the scores obtained on the Expressive Vocabulary subtest of the CELF-P2 (UK) related to the marking of present progressive tense on some test items. They found that the Mandarin language dominant children did not mark verb tense, reducing their score if utilising the scoring system designed for use in the UK.

Other differences in the development of inflectional morphology for bilingual English-speaking children in Singapore have been identified. The SEAPT (Brebner, 2002), an assessment of expressive vocabulary and syntax and morphology in English adapted from the Renfrew Action Picture Test, has two sets of normative data for children with different language dominance: English-Language 1 (EL1) and Mandarin-Language 1 (ML1), with significant differences in the data between the two language groups. However, whilst it is recognized that there are differences in use of inflectional marking, the patterns of

development of English for the main language groups in Singapore are still not fully understood.

**Verb tense in Chinese languages and influences on SCE**

English in Singapore has been used in contact with other languages, and this has influenced the characteristics of SCE (Gupta, 1994). Mandarin is one of these contact languages (Gupta, 1994). There is no inflectional morphology used in Mandarin, and the morphological and phonological structure of words remains the same in sentences but is marked for aspect (Yu, Bi, Han & Law, 2013). This aspectual marking occurs through the insertion of markers, for example the"le" marker in Mandarin is inserted into an utterance to indicate the past tense/completed aspect (Yip & Rimmington, 1997). For example, "fall down" is "diē dǎo" in Mandarin and "fell down" is "diē dǎo le", translating directly as "fall down already".

Furthermore, in SCE it is optional to mark the verb for tense, number and person (Fong, 2004). Ho and Platt (1993) noted that verbs are often marked for past tense by the use of "already" or "just" (e.g. "just do" for "did", "finish already" for "finished) and Bao (1995) also reports on the use of "already" as a marker for the past tense in SCE, likely used due to contact with Chinese languages because it translates directly from the "le" marker in Mandarin to indicate completed aspect (Yip &Rimmington, 1997).

With these differences in the English spoken in Singapore, and a lack of data on the development of the local languages in Singapore, the main aim of this paper is to examine the verb marking used in the English of preschool English-Mandarin bilingual Singaporean children who are either EL1 or ML1.

**Aims**

The main research question addressed in this study is: Are there differences in the rate and pattern of acquisition of verb tense marking for EL1 children compared to ML1 children? We hypothesized that that there would be differences in the acquisition of tense marking between groups of children with different dominant languages (i.e. faster and different patterns of acquisition for children who are EL1 in comparison with those who are ML1).

Two sub-questions also addressed in this study are: 1) Do English-Mandarin bilingual preschool children in Singapore mark verb tense? We hypothesized that the EL1 children would use a range of tense markers, and that the ML1 children would use only some of the earlier acquired markers; 2) At what ages do Singaporean children demonstrate marking of verb tense? We hypothesized that tense marking for both groups would emerge later than for StdE, after children were exposed to SStdE.

**Method & Procedures**

*Participants*

A pool of 515 Ethnic Chinese EL1 and ML1 English-Mandarin bilingual children were selected for this preliminary analysis of verb tense marking in English. All children were native speakers of English and Mandarin, and were simultaneous bilinguals. As bilingual children do not have homogenous language profiles, there was variability in the participant group in relative amount of exposure to the different languages.

The children came from three preschool cohorts (Nursery, Kindergarten 1 and Kindergarten 2), were attending one of nine local-government kindergartens, and were aged between between 3;9 (i.e. 3 years; 9 months) and 6;8. Ethical clearance was obtained through Flinders University of South Australia and National University of Singapore. Parental

permission for participation in this research was obtained through the usual kindergarten processes, and verbal assent was obtained from each test prior to testing. The children were all rated as typically-developing and as competent in their language skills by their parents and class teacher in order to ensure minimal confounds associated with multilingualism.

Participants were assigned to one of two main language dominance groups according to how parents and teachers reported the child's language usage and proficiency. This was linked to the child's use and exposure to languages, and the language spoken in the home. Judgements about language dominance for this study were made based on parent/carer report of main language spoken by the child as it has been reported that parents/carers can reliably report on language proficiency and dominance (Bedore et al. 2012). These data were obtained from school records which documented the parent report of relative proportion of exposure to the child's different languages. The data were then cross-checked with the teacher/principal to confirm dominant language, with teachers reporting on the child's preferred language of interaction and proficiency in use at school. The allocations were further substantiated by the principal researcher during the initial rapport building activity (a short conversation about games the children liked to play) before data collection began. Data from nine children were eliminated from the analysis through this process as there was inconsistent information.

The two language dominance groups were subdivided into three yearly age ranges, with a minimum of 70 students in each language group. Data from a further 25 children were eliminated from the analysis as the ages of the children fell outside of the identified age groupings, resulting in a total sample of 481 children with 236 children identified as EL1 and 245 children as ML1. See Table 2 for distribution of the participants by age groups and language dominance.

**Insert table 2 about here**

The participants were also fairly equally distributed for gender with boys representing 47.7% and girls 52.3% of the participant sample.

To ensure a representative sample of the population had been obtained, the participants' fathers' educational level (data on mother's educational level were not available) and family housing type backgrounds were compared to the available Singapore Census data (Leow, 2000). Distribution of the participant sample was largely similar to the broader population but slightly under-represented by fathers with degree qualifications. At the time of data collection approximately 88% of the population in Singapore lived in Housing Development Board flats (Leow, 2000), which vary in size from two-room flats to five rooms or more. In Singapore, housing type is used as an indicator of socio-economic status. The participant sample was found to be largely representative of the Singapore population housing type.

*Materials*

The SEAPT (Brebner, 2002) (see Appendix 1 for example test item) was used to obtain expressive language samples in English.  This assessment was utilised as the test is currently the only available test of expressive syntax and morphology in English that has been designed specifically for the Singapore population. The test contains many structured opportunities for the marking of noun and verb inflections. The approach of eliciting targeted structures rather than analysing spontaneous language samples was selected  as inflectional marking in SCE is dependent on the linguistic context (e.g. if completed aspect is already established, there is no further need to mark verbs for tense in SCE) and this would

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be more difficult to control in conversational language samples. Questions were asked in SStdE (see Appendix 1 for sample picture and question) as this is the language of instruction in kindergartens and was most likely to elicit the 'best' sample of English morphosyntax from the participants.

*Procedure*

Participants were asked to answer questions designed to elicit a picture description from 13 pictures from the SEAPT (including three trial items). The items were presented in test order, and questions had been designed to elicit information on use of morphosyntax and expressive vocabulary (for examples of stimulus item see Appendix 1). Participants were tested individually in a quiet area in their kindergarten by the principal researcher. Responses were audio-recorded for subsequent transcription and reliability analysis. The language samples for each child were coded for use of present progressive "-ing", regular past tense "-ed", third person singular "-s", irregular past tense and irregular past participle markers using Systematic Analysis of Language Transcripts software (Language Analysis Laboratory, 1984). Use of these target forms was counted whenever they appeared in response to the target questions in the language samples and the number of obligatory contexts can be seen in table 3.

**Insert Table 3 approximately here.**

**Outcomes & Results**

For the analyses of this cross-sectional study of elicited language samples in English, to answer each of the research questions we compared the EL1 and ML1 bilingual children's use of present progressive "-ing", regular past tense "-ed", third person singular "-s",

irregular past tense and irregular past participle markers. For each age group a non-parametric Mann Whitney U analysis was used to compare the use of the inflectional marker for the different language groups. Non-parametric analyses were selected due to unequal variance. Medians and ranges are provided in table 4 and ranks in table 5.

**Insert Table 4 approximately here.**

**Insert Table 5 approximately here.**

**Use of present progressive "-ing".** Results of the Mann Whitney U for use of the present progressive tense '-ing' marker revealed significant main effects for language dominance group for all three age groups [Age group 1 $U$=1196.5, $p$<.001; Age group 2 $U$=1488.0, $p$<.001; Age group 3 $U$=1285.5, $p$<.001]. These results indicate different patterns in the use of the present progressive tense '-ing' marker between the two main language dominance groups for all age groups (see figure 1) with the EL1 children using the marker more than the ML1 children.

**Insert Figure 1 approximately here.**

**Use of regular past tense "-ed".** Results of the Mann Whitney U for use of the regular past tense '-ed' marker revealed significant main effects for language group for the children in age groups 1 and 3 [Age group 1 $U$=2804.5, $p$<.05; Age group 2 $U$=3609.5, n.s.; Age group 3 $U$=2460.5, $p$<.05 ]. These results indicate different patterns in the use of the regular past tense '-ed' marker between the two main language groups for two of the age groups (see figure 2) with the EL1 children using the marker more than the ML1 children.

**Insert Figure 2 approximately here.**

**Use of third person singular '-s'.** Results of the Mann Whitney U for use of the third person singular '-s' marker revealed significant main effects for language group for the children in age groups 1 and 2 [Age group 1 $U$=2842.0, n.s.; Age group 2 $U$=3563.0, n.s.; Age group 3 $U$=2590.5, $p$<.05]. This suggests that, as hypothesized, there are different patterns in the use of the third person singular "-s" marker between the two main language groups (see figure 3).

**Insert Figure 3 approximately here.**

**Use of irregular past tense forms.** Results of the Mann Whitney U for the use of irregular past tense forms revealed significant main effects for language group for age groups 1 and 3 [Age group 1 $U$=1961, $p$<.001; Age group 2 $U$=3345, n.s.; Age group 3 $U$=1649, $p$<.001 ]. These results indicate different patterns in the use of the irregular past tense between the two main language dominance groups for age groups 1 and 3 (see figure 4) with the EL1 children using the marker more than the ML1 children.

**Insert Figure 4 approximately here.**

**Use of irregular past participle forms.** The Mann Whitney U comparing the use of the irregular past participle form revealed significant main effects for language group for age groups 1 & 2 [Age group 1 $U$=2554.5, $p$<.049; Age group 2 $U$=2960.5, $p$<.008; Age group 3

*U*=2834, *n.s.*]. These results indicate different patterns in the use of the irregular past participle between the two main language groups for age groups 1 and 2 (see figure 5) with the EL1 children using the marker more than the ML1 children although use was relatively low for both language groups.

**Insert Figure 5 approximately here.**

**Discussion**

The phonological and morphosyntactic structures of English and Mandarin contrast maximally and an increasing number of bilinguals speak these two languages. Assessment and diagnosis of LI in this population can be challenging due to the paucity of information on the development of these languages in bilingual speakers. This study examines the marking of verb tense in the English of two groups of bilingual pre-schoolers who are learning these two languages in a multilingual setting where the use of colloquial English is common and the main educational language is SStdE.

The main research question addressed was: Are there differences in the rate and pattern of acquisition of verb tense marking for EL1 children compared to ML1 children? We hypothesized that that there would be differences in the acquisition of verb tense between groups of children with different language dominance (i.e. faster and different patterns of acquisition for children who are EL1 compared to those who are ML1). The results support our hypothesis. As would be expected, there is faster and different patterns of acquisition for children who are EL1 which are more comparable to the development of StdE but developing later. For the ML1 children there are significant differences in the rate

and pattern of acquisition, with no evidence in this data of verb marking by the end of kindergarten.

The results in this study also provide answers to the two sub-questions posed: 1) Do English-Mandarin bilingual preschool children in Singapore mark verb tense? We hypothesized that the EL1 children would use a range of verb tense marking, and that the ML1 children would use only some of the earlier acquired markers. The results show that, as hypothesized, the EL1 children were found to be starting to mark verbs for tense. However, interestingly, the results show that the ML1 children were not using any morphological marking of verbs in English by the end of kindergarten (6;8). This is discussed further in the general discussion section to follow.

2) At what ages do Singaporean children demonstrate marking of verb tense? We hypothesized that verb tense marking for both groups would emerge later than for StdE, after children were exposed to SStdE. The results support this hypothesis, with the EL1 children showing development of verb marking in a similar pattern to development in StdE but with later acquisition. The results show that present progressive "-ing" increases in frequency of use from age groups 1-3 suggesting increased use with age with more consistent use at six years of age. The other targets all show a significant increase in use in age group 3, suggesting increased use of verb inflectional marking in kindergarten 2 for the EL1 children. This would be consistent with exposure to SStdE (which has similar morphosyntax to other forms of StdE) in the formal schooling environment. The ML1 children, however, were not using any marking of verb inflections by the end of kindergarten (6;8) and this is discussed further in the following section.

**Discussion by language group**

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The differences between the results for the two main language groups in this study support the need to determine a child's language dominance in order to accurately interpret their assessment performance. This is evidenced by the EL1 children, with increased exposure to English, demonstrating more verb tense marking than the ML1 children (Bedore & Peña, 2008; Kohnert, 2010). Furthermore, the results for ML1 participants also support the concept that features of a non-dominant language are often learned more slowly (Yip & Matthews, 2006) and that bilingual children learning English as a second language can have difficulties with verb inflections (Kohnert, 2010; Bedore & Peña, 2008). It should be noted that significant differences between language groups were noted only for some age groups. This likely reflects the low frequency of use of many of the morphological markers for both language groups, which is characteristic of the English spoken in Singapore. There are two distinct patterns of results for the two language groups emerging from this study and these are further discussed by main language group.

*EL1 participants*

For the EL1 participants, the results indicate a similar pattern of development of verb marking in English as compared to monolingual speakers. However, these results suggest development at a different rate, with use emerging later than would be expected for monolingual speakers of StdE. These results are similar to those of other studies of bilingual language development where there were marked differences between monolingual and bilingual development (Bedore & Peña, 2008; Jacobson & Livert, 2010). As found in previous studies, there are differences in the development of morphosyntax across languages, and the development in English will depend on the characteristic of the other languages spoken. The results of this study suggest that Singaporean children are more likely to be first exposed to SCE, then exposed to SStdE on commencing formal schooling as demonstrated

by later use of verb tense marking which is more characteristic of SCE. This is consistent with Gupta's (1994) data, and that characteristics of SStdE will start to emerge after some time immersed in a formal educational environment.

Thus, the clinical implications of these results are that assessment of bilingual children's language skills in Singapore needs to consider all of the children's languages, including their proficiency in both the colloquial and standard forms of English, accounting for the amount of exposure the children have had to all of these languages.

*ML1 participants*

For the ML1 participants there was no marking of verbs evident in the results obtained.  The oldest participants in this study were 6;8, in their final year of kindergarten schooling. Logically, these participants would have had less exposure to English than the EL1 participants, and there would be elements of the results that could be explained by this relative lack of experience. However, it could reasonably be expected that ML1 English-Mandarin bilingual children would be able to use some verb tense markers in English in response to questions designed to elicit that verb tense marking by the end of kindergarten, given that by the time of data collection the children had attended nearly three years of formal education in SStdE. Therefore, language dominance and experience alone cannot account for the absence of verb tense marking in English for the ML1 English-Mandarin bilingual children.

One possible reason for this difference is the influence of Mandarin on the English spoken by ML1 children. In Mandarin the morphological and phonological structure of words is unchanged but verbs are marked for aspect through the insertion of markers. For example, "fall down" is "diē dǎo" in Mandarin and "fell down" is "diē dǎo le" (Yu, Bi, Han & Law, 2013; Yip &Rimmington, 1997). It is possible that the ML1 participants conceptualized

their responses to the questions in English either in Mandarin or in SCE rather than SStdE. The linguistic distance between Mandarin and SStdE is greater than between Mandarin and SCE. SCE is structurally more similar to Mandarin than SStdE, as in SCE it is optional to mark the verb for tense, number and person, and linguistic context is often used to indicate aspect (Gupta, 1994; Fong, 2004; Ho & Platt, 1993). Nicoladis et al. (2010) found that the participants in their study appeared to conceptualize responses in a language specific way, before even selecting the vocabulary that they were going to use. It could be that the participants in this study were operating in a similar way, resulting in omission of verb tense marking.

Further exploration is clearly required, and the importance of accounting for language dominance and possible cross-linguistic transfer when considering what is typical and atypical in the English spoken by the different language dominance groups in Singapore needs to be acknowledged.

The results for the ML1 participants are important as children are educated in SStdE in Singapore and if not proficient in the language are logically at higher risk of falling behind educationally. It is important to further develop understanding of what is occurring here in more depth and across time. There is currently a lack of information as to when verb tense markers in English are acquired and used by ML1 English-Mandarin bilingual children. This needs to be understood for all children in Singapore, for all of the major language groups. Furthermore, this study focuses on the expressive use of inflectional markers, and there are no published data on the reception/understanding of verb tense marking in English for Singaporean children. The implications of language dominance and possible cross-linguistic influence in this population need to be better understood.

*Clinical Implications of Language Dominance*

In Singapore, most children are bilingual or multilingual in structurally different languages, and two forms of English are spoken. Language dominance is an essential consideration that should inform assessment and intervention, as inaccurate determination of language dominance could result in a misdiagnosis of LI. Further development of strategies for speech and language therapists to accurately determine language dominance needs to occur as deeper understanding of the influences of the languages spoken in Singapore on the developing languages for Singaporean children will facilitate speech and language assessment, diagnosis and intervention.

Extremely complex linguistic environments provide opportunities for richness and diversity in language learning, but also challenges for speech and language therapists in defining typically developing language skills and, consequently, characteristics of LI. If detailed information about a child's language exposure over time is obtained, and their language dominance is accurately determined, speech and language therapists can use this knowledge of the child's languages through which to consider the child's English skills.

**Limitations & future directions**

A major strength of this study has been the number of children involved. However, one of the main limitations was that it was a "snapshot", cross sectional study which was not able to reflect the individual pathways in development of English for the participants. Whilst general patterns in English acquisition between age groups can be reported on, it is not possible to determine the pattern of development of English using this study design because it is not possible to look at the development of skills over time. A range of approaches is necessary in order to study language development in this context to obtain a clearer picture of the development of language skills in the main language dominance

groups. For example, a longitudinal study tracking children's development of English throughout kindergarten would enable analysis of development over time.

Another limitation of this study was the age range of the participant sample. Widening the age range to include younger children would allow for exploration of the early characteristics of verb tense marking for EL1 participants, enabling more detailed analysis of possible patterns in acquisition of the forms of English spoken in Singapore. It is also apparent that the English development of the EL1 and ML1 children needs to be tracked beyond the ages in this study to determine when the main characteristics of SStdE are acquired. Therefore, widening the age range to include children in primary school would also be important.

Future studies in this area should also consider matching the participant sample by MLU or vocabulary size. One of the confounds of this study was that the relative experience and exposure to English was different for the two main language groups as they were matched by age rather than language skills, making comparison of the results difficult.

Another limitation of this study was that detailed data on language use were not obtained. In order to further explore these differences in the patterns of verb marking, future studies should also consider more robust ways of determining a child's language dominance, and should gather more detailed data on children's exposure to different languages (including more detail of proportion of SCE and SStdE) in all environments.

**Conclusions & implications**

This study provides further evidence that bilingual language development is not the same as monolingual language development. The results show that bilingual language development in English in Singapore is not the same as monolingual language development

in English, and that there are differences in development depending on language dominance.

Clinically, assessment frameworks need to be based on what is known of typical development in languages in Singapore for the different bilingual groups. This includes assessment in English, as despite there being Singaporean forms of English, there is variation depending on the dominance of the other languages that a child speaks. Therefore, the child's language dominance also needs to be considered when analysing error patterns.

More broadly speaking, the development of morphological marking in English for children in Singapore needs to be understood, including the impact of language dominance on language learning. Future studies need to consider the characteristics of the English spoken by EL1 and ML1 children. Accurate data on language dominance, including information on both current and past language exposure needs to be obtained in order to determine language dominance. Participant samples should ideally be matched by characteristics such as amount of exposure to English, vocabulary or MLU, and not by age.

This study also demonstrates implications for speech and language therapists working with bilingual children in other countries. It is not realistic to apply the expectations of typical development for monolingual speakers of English to the diagnosis of LI in bilingual children. When assessing any bilingual child, speech and language therapists need to obtain accurate information on the child's language dominance over time. Analysis of assessment data must occur within the context of the language/s that the child speaks, and assessment needs to account for differences in the acquisition and age of emergence of morphological features.

**Appendix 1**

Sample picture from the Singapore English Action Picture Test (Brebner, 2002).

**Picture 5**

Target: The boy has got 2 stars.

**Declaration of interest**

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

**References**

AMERICAN SPEECH-LANGUAGE AND HEARING ASSOCIATION 2013. Multicultural practice information. http://www.asha.org/practice/multicultural/faculty/mmi/ (accessed 23 May 2013).

AUSTRALIAN BUREAU OF STATISTICS 2012. 2011 Census shows Asian languages on the rise in Australian households. http://www.abs.gov.au/websitedbs/censushome.nsf/home/CO-60 (accessed 31 July 2013).

BAO, Z.M. 1995. Already in Singapore English. World Englishes, 14, 2, 181-188.

BEDORE, L.M., PEÑA, E.D., SUMMERS, C.L., BOERGER, K.M., RESENDIZ, M.D., GREENE, K., BOHMAN, T.K. AND GILLAM, R.B. 2012. The measure matters: Language dominance pro☐les across measures in Spanish–English bilingual children. Bilingualism: Language and Cognition, 15, 616-629 doi:10.1017/1366728912000090

BEDORE, L.M.& PEÑA, E.D. 2008. Assessment of Bilingual Children for Identification of Language Impairment: Current findings & implications for practice. International Journal of Bilingual Education & Bilingualism, 11, 1, 1-29.

BREBNER, C. (2002) *The Singapore English Action Picture Test*. Published with permission of Speechmark Publishing Ltd. Contact chris.brebner@flinders.edu.au

BREBNER, C. 2010. The development of the Singapore English Action Picture Test: An expressive language screening assessment for Chinese Singaporean preschool children. In: Cruz-Ferreira, M. (ed.) Multilingualism, language norms and multilingual contexts. Bern: Peter Lang Publishing Group, p.p. 323-341.

FONG, V. (2004) The Verbal Cluster. In L. Lim (Ed.) Singapore English: A grammatical description, Amsterdam: John Benjamins Publishing Company, pp. 75-104.

GUPTA, A. F. 1994. The Step-Tongue: Children's English in Singapore, Clevedon, Multilingual Matters.

HO, M. L. & PLATT, J.Y. 1993. Dynamics of a Contact Continuum: Singapore English, Oxford, Clarendon Press.

JACOBSON, P. AND LIVERT, D. 2010. English past tense use as a clinical marker in older bilingual children with language impairment. Clinical Linguistics & Phonetics, 24, 2, 101–121.

KOHNERT, K. (2010) Bilingual Children with Primary Language Impairment: Issues, Evidence and Implications for Clinical Actions. Journal of Communication Disorders, 43(6), 456-473.

LEE, SZE AND RICKARD LIOW 2013. Bilingual Language Assessment Battery. Assessment presented in workshop in 2013. Singapore: National University of Singapore.

MINISTRY OF EDUCATION SINGAPORE 2013. Preschool education.

http://www.moe.gov.sg/education/preschool/ (accessed 25 February 2014).

NICOLADIS, E., ROSE, A. & FOURSHA-STEVENSON, C. 2010. Thinking for speaking and cross-linguistic transfer in preschool bilingual children. International Journal of Bilingual Education and Bilingualism, 13**,** 345-370.

OFFICE FOR NATIONAL STATISTICS 2011. 2011 Census: Quick Statistics for England and Wales, March 2011. http://www.ons.gov.uk/ons/rel/census/2011-census/key-statistics-and-quick-statistics-for-wards-and-output-areas-in-england-and-wales/STB-2011-census--quick-statistics-for-england-and-wales--march-2011.html (accessed 31 July 2013).

OOI, C. C-W. AND WONG, A. M-Y. 2012. Assessing Bilingual Chinese-English Young Children in Malaysia Using Language Sample Measures. International Journal of Speech-Language Pathology, 14, 6, 499-508.

PEÑA, E.D., GILLAM, R.B., BEDORE, L.M. AND NOHMAN, T.M. 2011. Risk for Poor Performance on a Language Screening Measure for Bilingual Preschoolers and Kindergarteners, American Journal of Speech-Language Pathology, 20, 302-314.

SINGAPORE DEPARTMENT OF STATISTICS 2010. Census of Population: Statistical Release 1 Demographic Characteristics, Education, Language & Religion. http://www.singstat.gov.sg/publications/publications_and_papers/cop2010/cop2010_sr1.html (accessed 10 September 2013).

SPEECH PATHOLOGY AUSTRALIA 2009. Working in a Culturally and Linguistically Diverse

Society.

http://www.speechpathologyaustralia.org.au/library/Clinical_Guidelines/Working_in_a_CAL
D_Society.pdf. (accessed 23 May 2013).


TEOH, W. Q., BREBNER, C. & MCCORMACK, P. 2012. Assessing the language skills of children

from culturally and linguistically diverse backgrounds: the expressive vocabulary

performance of Singaporean English- Mandarin bilingual pre-schoolers. *International journal

of speech-language pathology,* 14**,** 281.


UNITED STATES CENSUS BUREAU 2012. *Language Use* [Online]. Available:

http://www.census.gov/hhes/socdemo/language/  (accessed 31  July 2013).


WILLIAMS, C.J. AND MCLEOD, S. 2012. Speech-language Pathologists' Assessment &

Intervention Practices with Multilingual Children. International Journal of Speech-Language

Pathology, 14, 3, 292-305.


YIP, P. C. & RIMMINGTON, D. 1997. Chinese: An essential grammar, London, Routledge.


YIP, V. & MATTHEWS, S. 2006. Assessing Language Dominance in Bilingual Acquisition: A

case for mean length utterance differentials. Language Assessment Quarterly, 3, 2, 97-116.


YU, X., BI, Y., HAN, Z. AND LAW, S.P. 2013. An fMRI Study of Grammatical Morpheme

Processing Associated with Nouns and Verbs in Chinese. PLoS ONE 8(10): e74952.

Table 1: Characteristic features of SCE (adapted from Gupta, 1994; Gn, Brebner & McCormack, 2014, & Teoh, Brebner & McCormack, 2012)

| Area of language | Features |
|---|---|
| Form – syntax and morphology | <ul><li>Subject deletion before verbs where not required by the context. E.g. SCE 'drink water' versus StdE 'I drinkwater'.</li><li>'If / when' deleted if not required by context in some conditional clauses.</li><li>E.g. SCE 'do that, mummy angry' versus StdE 'if you do that then Mummy will be angry'.</li><li>BE deletion if not required by context where StdE requires a conjugation of BE. For example, SCE 'She_hungry' versus Standard English 'She is hungry'.</li></ul> |
| Form - phonology | The following phonological processes are observed in SCE:<ul><li>Syllable final cluster reduction e.g. ɛlifən for elephant</li><li>Syllable-final obstruent devoicinge.g. faɪf for faɪv</li><li>Syllable final plosive glottalisation e.g. dɑʔ for dɑk</li></ul>Dental fricative substitution: |

- f for th e.g. tif for tiθ

- t/d for th e.g. tɛŋkju for θɛŋkju; fɛdə for fɛðə

Other articulatory substitutions:

- Unaspirated syllable-initial plosives

- Syllable-final /l/ deletion/substitution e.g. [sku] for school

| | |
|---|---|
| Content | Vocabulary differences including: <br><br> • use of loan words e.g. "kiasu" meaning selfish or self promoting <br><br> • code switching. |
| Use | 11 pragmatic particles can be added to utterances in SCE to highlight speaker's feelings about what they have said. For example, the particle 'la' indicates strong feelings (SCE 'cannot la!' versus Standard English 'I can't do that!'). |

Table 2:     Age groups

| Age group | Age range (year;months) | Number of EL1 participants | | Number of ML1 participants | |
|---|---|---|---|---|---|
| | | Girls | Boys | Girls | Boys |
| 1 | 3;9 – 4;8 | 39 | 36 | 37 | 42 |
| 2 | 4;9 – 5;8 | 52 | 34 | 45 | 42 |
| 3 | 5;9 – 6;8 | 40 | 38 | 43 | 38 |

Table 3: Obligatory contexts for all variables

| Variable | No. obligatory contexts | Age group | No. of forms produced | | | |
|---|---|---|---|---|---|---|
| | | | EL1 | | ML1 | |
| | | | Mean | Standard deviation | Mean | Standard deviation |
| present progressive "-ing" | 6 | 3;9-4;8 | 4.45 | 3.46 | 1.09 | 2.20 |
| | | 4;9-5;8 | 4.90 | 3.45 | 1.44 | 2.11 |
| | | 5;9-6;8 | 6.08 | 3.44 | 2.73 | 3.22 |
| regular past tense "-ed" | 2 | 3;9-4;8 | 0.07 | 0.30 | 0.00 | 0.00 |
| | | 4;9-5;8 | 0.06 | 0.23 | 0.02 | 0.15 |
| | | 5;9-6;8 | 0.31 | 0.57 | 0.09 | 0.29 |
| third person singular "-s" | 1 | 3;9-4;8 | 0.05 | 0.23 | 0.01 | 0.11 |
| | | 4;9-5;8 | 0.16 | 0.59 | 0.07 | 0.30 |
| | | 5;9-6;8 | 0.39 | 0.84 | 0.16 | 0.54 |
| irregular past tense | 2 | 3;9-4;8 | 0.62 | 0.75 | 0.18 | 0.50 |
| | | 4;9-5;8 | 0.69 | 0.89 | 0.53 | 0.79 |
| | | 5;9-6;8 | 1.53 | 1.45 | 0.52 | 0.81 |
| irregular past participle | 1 | 3;9-4;8 | 0.37 | .61 | .23 | .55 |
| | | 4;9-5;8 | 0.73 | 0.76 | 0.51 | 0.86 |
| | | 5;9-6;8 | 0.83 | 0.81 | 0.77 | 0.83 |

Table 4: N, medians and ranges for both language groups for all variables

| Variable | Age group | EL1 N | Median | Range | ML1 N | Median | Range |
|---|---|---|---|---|---|---|---|
| present progressive "-ing" | 3;9-4;8 | 75 | 4 | 14 | 79 | 0 | 11 |
| | 4;9-5;8 | 86 | 5 | 15 | 87 | 1 | 8 |
| | 5;9-6;8 | 75 | 6 | 19 | 79 | 2 | 13 |
| regular past tense "-ed" | 3;9-4;8 | 75 | 0 | 2 | 79 | 0 | 0 |
| | 4;9-5;8 | 86 | 0 | 2 | 87 | 0 | 1 |
| | 5;9-6;8 | 75 | 0 | 2 | 79 | 0 | 1 |
| third person singular "-s" | 3;9-4;8 | 75 | 0 | 1 | 79 | 0 | 1 |
| | 4;9-5;8 | 86 | 0 | 4 | 87 | 0 | 2 |
| | 5;9-6;8 | 75 | 0 | 4 | 79 | 0 | 3 |
| irregular past tense | 3;9-4;8 | 75 | 0 | 2 | 79 | 0 | 3 |
| | 4;9-5;8 | 86 | 0 | 5 | 87 | 0 | 4 |
| | 5;9-6;8 | 75 | 1 | 6 | 79 | 0 | 3 |
| irregular past participle | 3;9-4;8 | 75 | 0 | 3 | 79 | 0 | 3 |
| | 4;9-5;8 | 86 | 1 | 3 | 87 | 0 | 4 |
| | 5;9-6;8 | 75 | 1 | 3 | 79 | 1 | 3 |

Table 5: Ranks for all variables by age group and language

|  | Age group 1 3;9-4;8 | | | | Age group 2 4;9-5;8 | | | | Age group 3 5;9-6;8 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Variable | Language | N | Mean rank | Sum of ranks | Language | N | Mean rank | Sum of ranks | Language | N | Mean rank | Sum of ranks |
| present progressive "-ing" | 1 | 75 | 101.05 | 7578.5 | 1 | 86 | 113.2 | 9735 | 1 | 75 | 99.86 | 7489.5 |
|  | 2 | 79 | 55.15 | 4356.5 | 2 | 87 | 61.1 | 5316 | 2 | 79 | 56.27 | 4445.5 |
| regular past tense "-ed" | 1 | 75 | 79.61 | 5970.5 | 1 | 86 | 88.53 | 7613.5 | 1 | 75 | 84.19 | 6314.5 |
|  | 2 | 79 | 75.50 | 5964.5 | 2 | 87 | 85.49 | 7437.5 | 2 | 79 | 71.15 | 5620.5 |
| third person singular "-s" | 1 | 75 | 79.11 | 5933.00 | 1 | 86 | 89.07 | 7660 | 1 | 75 | 82.46 | 6184.5 |
|  | 2 | 79 | 75.97 | 6002 | 2 | 87 | 84.95 | 7391 | 2 | 79 | 72.79 | 5750.5 |
| irregular past tense | 1 | 75 | 90 | 6660 | 1 | 86 | 91.6 | 7878 | 1 | 75 | 95.04 | 7126 |
|  | 2 | 79 | 64.82 | 5121 | 2 | 87 | 82.45 | 7173 | 2 | 79 | 60.87 | 4809 |
| irregular past participle | 1 | 75 | 82.94 | 6220.5 | 1 | 86 | 96.05 | 8262.5 | 1 | 75 | 79.21 | 5941 |
|  | 2 | 79 | 72.34 | 5714.5 | 2 | 87 | 78.03 | 6788.5 | 2 | 79 | 75.87 | 5994 |

Figure 1: Mean use of present progressive "-ing" by language dominance and age group
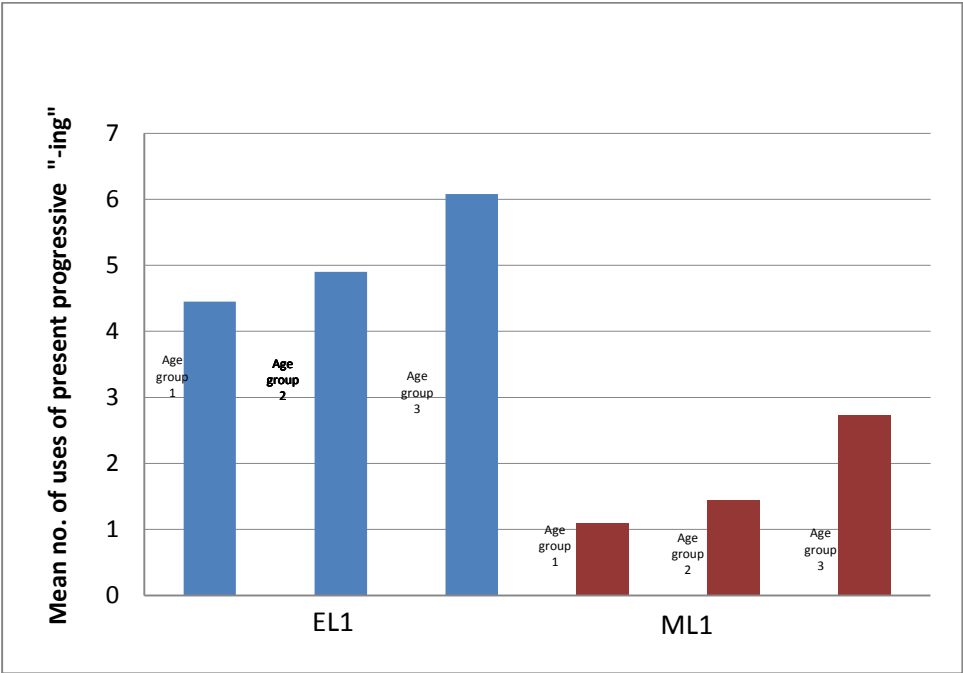
Figure 2: Mean use of third person singular "-s" by language dominance and age group
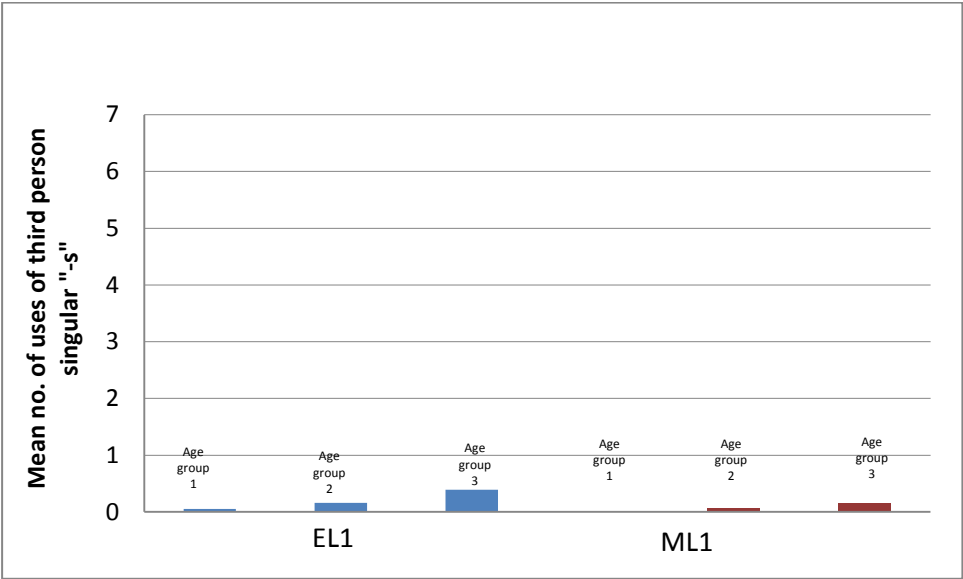
Figure 3: Mean use of regular past tense "-ed" by language dominance and age group
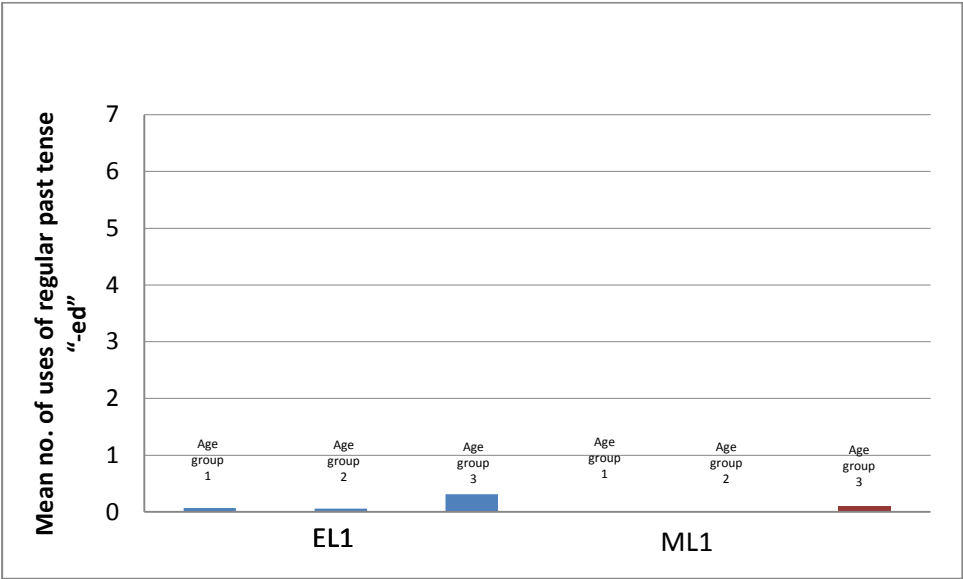
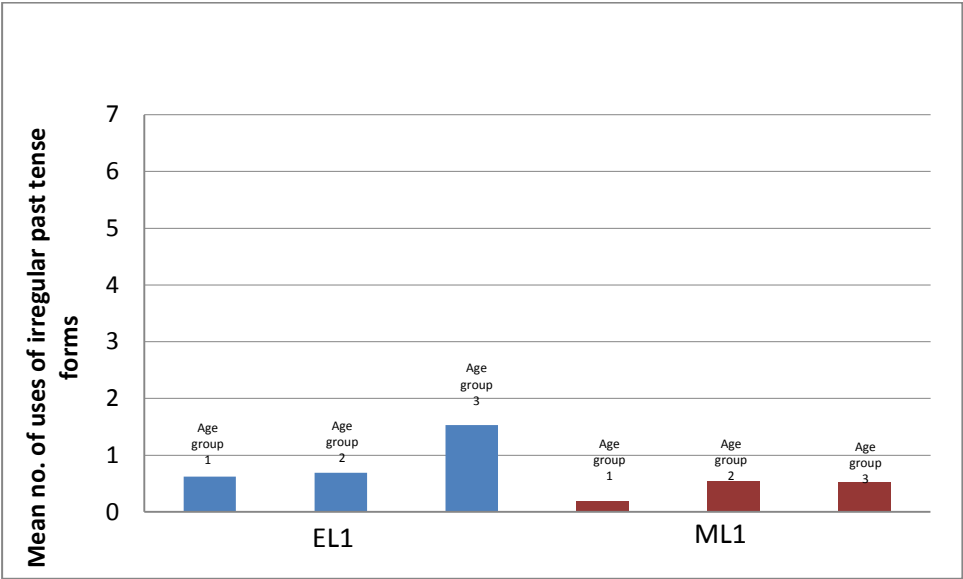Figure 4: Mean use of irregular past tense by language dominance and age group

Figure 5: Mean use of irregular past participle by language dominance and age group