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Vocabulary and grammar development in young learners of English as an Additional Language

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Abstract

Internationally, an increasing number of children learn English as an Additional Language (EAL). Children with EAL grow up in an environment where English is the majority language, but are exposed to a different, minority language at home. Despite the increase in the number of EAL learners around the world, comparatively little is known about the development of their vocabulary and grammar at preschool age. Furthermore, the use of different methods in EAL studies can make research evidence difficult to summarise. The aim of this chapter is to provide a comprehensive review of EAL learners' vocabulary and grammar development at preschool, drawing from studies that have used standardised tests, experimental tasks, or both. This review indicates that few studies have focused on preschool children with EAL. These suggest that, at the earliest stages of language learning, EAL learners generally know fewer words and acquire grammatical constructions at a slower pace than their English monolingual peers. These differences often persist throughout development, risking a negative impact on EAL learners' academic attainment in an English-only school environment. Thus, this chapter also includes

some suggestions for practice that could help children with EAL develop their vocabulary and grammar knowledge during and after preschool.

Keywords

English as an Additional Language; child bilingualism; vocabulary; grammar

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References

1. Introduction

Most children around the world are exposed to multiple languages from a young age (Eurydice, 2017). For example, children who grow up in an English-speaking country might use a different language at home and, thus, learn English as an Additional Language (EAL) at (pre)school (i.e., between the ages of 3;0 and 6;0). In the UK, these children are called EAL learners; outside the UK, they are referred to as ESL (English as a Second Language) learners and/or ELL (English Language Learners). To be classified as 'EAL' or equivalent, children must

reside in a country where English is the official language, limiting the use of the term in majority English-speaking countries, when the generic term 'bilingual' would likely have been used elsewhere (Murphy, 2014).

Children with EAL can be considered minority language speakers, as their home language is in the minority relative to the majority language of society (Murphy, 2014). In some countries, children from ethnic (and linguistic) minorities are the predominant group of bilingual learners in schools. In some other countries, however, bilingual learners can come from regional minority contexts, as they speak an indigenous home language but are educated in the majority language. This is the case in Wales, where some children speak Welsh in the home but are educated through the medium of English.

The population of EAL learners is inherently heterogeneous. Indeed, EAL learners can either be simultaneous bilinguals (that is, learning English and their home language at the same time) or sequential bilinguals (learning English sometime after the acquisition of the home language has begun) (Murphy, 2014). Depending on the age at which they started learning English, EAL learners can have a wide range of proficiencies in English as well as in their home language. Furthermore, simultaneous bilinguals do not always follow the same path of acquisition as sequential bilinguals (Unsworth, 2005) and thus, EAL learners are likely to manifest different developmental trajectories in English depending on their exposure to the language prior to the start of schooling.

This observation is echoed in school reports, according to which children with EAL start school on different proficiency levels (Strand & Hessel, 2018). In fact, in the first year of formal education in the UK, referred to as 'Reception Year', quite a few of the four-year-old pupils are recorded as being 'new to English' despite having lived in the UK from birth; this happens because the first year of formal education is also the first time that these children are exposed to English (Strand, Malmberg & Hall, 2015). While children who are 'new to English' do not always meet the curriculum targets at the end of Reception, the ones who are recorded as 'competent' or 'fluent' in English at the start of schooling achieve, and even score above, the national average (Strand & Hessel, 2018). In short, how well children know English affects how well they perform at school even from the age of 4;0. The relationship between English language proficiency and school performance persists throughout formal education, making EAL learners' early linguistic competence an important predictor of later academic skills and overall educational attainment (Demie & Strand, 2006; Muter, Hulme, Snowling & Stevenson, 2004; Whiteside, Gooch & Norbury, 2016).

While developing their English language proficiency, children with EAL also have to find ways to maintain the home language. Home language maintenance allows children to build and sustain ties with the home culture and their families (Gao, 2012; Pearson, 2007), and is also believed to facilitate the development of crucial skills, like literacy, in the majority language (Murphy & Evangelou, 2016). Moreover, bilingual children are reported to experience certain educational advantages including: the ability to communicate in more than one language; higher levels of proficiency; greater confidence and well-being; lower absentee and failure rates in school; higher aspirations to continue school; and positive correlations between levels of bilingualism and academic achievement (Cloud, Genesee & Hamayan, 2009; Genesee, 2019). However, these advantages are all dependent on high levels of proficiency in both of the children's languages; hence it is important that the children's home language is developed as fully as possible, in addition to the majority language.

In certain educational contexts (that possess appropriate resources, use suitable curricula, and allow bilingual children's two languages to coexist and grow in tandem), the socioeconomic and cognitive benefits of bilingualism can be used to children's advantage (Murphy, 2018). Yet, in many countries, schools struggle to fully support children from ethnic minority backgrounds. When bilingual children do not have access to adequate linguistic and educational resources, their lexical and grammatical knowledge in one or both of their languages is likely to remain less developed.

It is the lexical and grammatical knowledge acquired at the earliest periods of development that has the greatest impact on children's subsequent linguistic and educational progress (Strand & Hessel, 2018). This knowledge precedes systematic language instruction at school and at the same time forecasts its success. Thus, studying EAL learners' language skills over time, from preschool onwards, is valuable for mapping out children's developmental trajectories, noting the relative importance of different linguistic (sub)skills, and identifying which areas would benefit from early intervention (Bowyer-Crane, Fricke, Schaeffer, Lervåg & Hulme, 2017; Paradis & Jia, 2017). Consequently, this chapter focuses on early periods of language learning (i.e. preschool), but presents research on various age groups of EAL learners (ranging from infancy to the end of primary school) in order to address questions about preschool children's language skills from a developmental perspective.

However, the research on the lexical and grammatical development of preschool children with EAL is limited. To this end, some of the studies described in this chapter concern monolingual learners and/or bilingual learners who speak a language other than English in addition to their home language. These studies are then used to make predictions about EAL

learners' performance. Although this is a notable limitation of the present review, the small number of studies focusing on preschoolers with EAL is a problem of the field as a whole – albeit one that more and more researchers are addressing.

The chapter begins by introducing the process and importance of bilingual learners' acquisition of vocabulary and grammar. Then, it reviews existing, new, and prospective research on EAL learners' lexical and grammatical development. Finally, it includes a presentation of critical issues in the field of EAL research and a discussion of the educational implications that arise from the reviewed evidence.

2. Main Theoretical Concepts

The task of language learning requires children to acquire diverse kinds of knowledge, with the ultimate goal being to communicate with others - to understand and be understood by one's interlocutors. To achieve this goal, children must be able to assign meaning to the (combinations of) sounds that are present in their input, and to use these sound combinations accordingly in their output. Creating a collection of (recognisable) words to use, or building up a vocabulary, thus becomes a key part of children's language learning. However, knowing the words is not sufficient to guarantee successful communication, since a lot of meaning is not conveyed through individual words but through the way in which they are arranged, amended, and connected – in other words, through grammar. In short, both lexical and grammatical knowledge is required for children to understand and produce language.

While monolingual children focus on the acquisition of one language, their bilingual counterparts are tasked with the acquisition of two languages at (more or less) the same time. To achieve this dual task, bilingual children make use of the same cognitive resources as monolingual children (Butler, this volume). Yet, when it comes to the acquisition of vocabulary and grammar, bilingual children do not always perform on par with monolinguals in each of their languages (Bialystok, Luk, Peets & Yang, 2009; Melby-Lervåg & Lervåg, 2014; Spencer & Wagner, 2016).

As EAL learners comprise a subgroup of bilinguals, they could reasonably be expected to differ from monolinguals with respect to language acquisition. However, investigating EAL (and monolingual) lexical and grammatical knowledge is not a simple task – not least because of the fact that both vocabulary and grammar are multifaceted concepts. EAL learners' vocabulary development is often looked at in terms of the number of words a child knows, or *vocabulary size*. Children learning EAL are often found to know fewer words than their monolingual age peers (Hessel & Murphy, 2019; Mahon & Crutchley, 2006; Marchman &

Martínez-Sussmann, 2002). EAL learners' vocabulary development can also be looked at in terms of quality. Studies on the quality of EAL and monolingual children's vocabulary knowledge, or on *vocabulary depth*, reveal specific qualitative differences between the groups (Hessel & Murphy, 2019; Kan & Murphy, 2019; Smith & Murphy, 2015; for a comprehensive review, see Sun & Yin's contribution in this volume).

Like vocabulary, grammar is also a complex domain, that is composed of two essential elements: morphology and syntax. The former deals with how words are organised internally, while the latter is concerned with how words are put together to form sentences. Combining the two elements, *morphosyntax* denotes word-level features that affect the organisation of a sentence, like case and gender marking. Morphosyntax is known as a vulnerable domain for bilingual children and has often been the focus of research on young EAL learners' grammatical development.

In a nutshell, this research has shown that children with EAL can acquire morphological structures at a slower pace than monolinguals (a quantitative difference) (Paradis, 2005; Paradis, Rice, Crago & Marquis, 2008; Paradis, Nicoladis, Crago & Genesee, 2011) and, sometimes, also at a different order from monolinguals (a qualitative difference) (Jia & Fuse, 2007; Paradis, 2010a; Paradis & Blom, 2016). However, not all morphosyntactic phenomena represent as big a challenge to children with EAL. While the acquisition of verbal inflections, in particular of tense marking, appears to be troublesome for most EAL learners, their acquisition of nominal morphosyntax (e.g., pluralisation) is on par with that of their monolingual peers (Schwartz, Nir, Leikin, Levie & Ravid, 2014).

A factor that could facilitate or impede EAL children's acquisition of certain morphosyntactic structures is *cross-linguistic influence* (CLI), defined as "the systemic influence of the grammar of one language on the grammar of the other language during acquisition" (Paradis & Genesee, 1996: 3). According to Paradis and Genesee (1996), CLI can lead to: the transfer of grammatical properties from one language to the other; the accelerated acquisition of some grammatical properties in one language because of their presence in the other; or an overall delay in language acquisition. CLI (mostly in the form of transfer) has been well-documented in bilingualism research (for a review, see Serratrice, 2013), but the causes of the phenomenon remain unclear. To date, three accounts have been proposed: the first suggests that CLI results from differences in the relative structure of bilingual children's two languages (e.g., Hulk & Müller, 2000); the second argues that CLI stems from differences in the quantity of the input that children receive in either language (e.g., Argyri & Sorace, 2007). According to the third account, it is the quality of the input that children are exposed to that

affects the nature and direction of CLI (e.g., Paradis & Navarro, 2003). These three accounts are not mutually exclusive; in fact, different (combinations of the) accounts might be better suited to different bilingual sub-groups.

Investigating CLI and its effects requires highly specified methodologies, which can be difficult to design and implement with success, especially in complex and heterogenous groups like that of preschool children with EAL. Perhaps this is the reason why there seem to be no observation studies focusing on EAL learners' vocabulary and grammar. Instead, EAL researchers often opt for standardised tests. These are normed, valid, and reliable measures that are used in both academic and clinical contexts. For example, the Peabody Picture Vocabulary Test (PPVT; Dunn & Dunn, 2007) and its British equivalent, the British Picture Vocabulary Scale (BPVS; Dunn, Dunn, Styles & Sewell, 2009) can assess children's vocabulary from the age 3;0. Similarly, the Test for the Reception of Grammar (TROG; Bishop, 2003) and the Test of Early Grammatical Impairment (TEGI; Rice & Wexler, 2001) can be used with typically and non-typically developing children from 4;0.

However, standardised tests are usually not normed for bilingual populations, which hinders their use with EAL learners (Faitaki & Murphy, 2020). Thus, research on children with EAL warrants the use of experimental tasks. While experimental tasks are not normed (and, therefore, risk being less valid and reliable), they can be used with bilingual populations and target linguistic phenomena that standardised tests cannot (Ambridge & Rowland, 2013). Both methodological approaches have benefits and give rise to interesting results, that will be discussed in the following section.

3. Major Contributions

EAL preschoolers' knowledge of vocabulary and grammar is important for subsequent linguistic and educational development (Bowyer-Crane et al., 2017; Chen & Schwartz, 2018). Thus, a review of the literature on the issue must refer to preschoolers' competence but also, to the impact that potential knowledge gaps might have on later performance. At the same time, it is pivotal to examine EAL learners' performance under the light of linguistic and extra-linguistic factors beyond the performance itself. This section will present the findings of studies on young EAL learners' lexical and grammatical knowledge and discuss the additional factors that might underpin it.

3.1. EAL Learners' Vocabulary

Vocabulary knowledge has two dimensions: size and depth. To investigate preschoolers' vocabulary size, it is possible to use standardised tests, such as the aforementioned BPVS and

PPVT. In these tests, a child hears a word and is asked to match it to an image that captures its meaning. This format, then, taps into children's knowledge of the relationship between a word's form and meaning. As children do not produce the word but need to only recognise it, we can add that this procedure measures receptive (as opposed to productive) vocabulary size. Receptive vocabulary measures are often preferred with younger children as they can capture the early stages of knowing a word, thus providing a more complete picture of children's knowledge than more challenging procedures. Studies using standardised tests have found that EAL preschoolers (that, is between 3;0-6;0) have smaller vocabularies in English relative to their English monolingual peers (Bialystok et al., 2009; Hessel & Murphy, 2019; Mahon & Crutchley, 2006). On a second look, these seemingly quantitative measures can also reveal qualitative differences between EAL and monolingual children's vocabulary knowledge. For example, Bialystok et al (2009) compared EAL and monolingual children's knowledge of PPVT test items that are more likely to be encountered at home (e.g., 'squash' and 'pitcher') or in the preschool environment (e.g., 'rectangle' or 'astronaut'). They found that EAL learners were almost on par with their monolingual peers in their knowledge of school words but knew considerably fewer home words in English than monolinguals. In other words, quantitative differences in vocabulary size were more prominent for words that are less likely to be encountered in a non-English home context.

Beyond these differences in size, we can ask whether EAL and monolingual children differ in their vocabulary depth – in other words, in terms of qualitative aspects of word knowledge. An individual's word knowledge can vary in several dimensions, including meaning, form and use. For example, children might be able to understand a word's meaning but not use it correctly, and vice versa: they might be able to produce correct sentences with specific words without knowing their exact meaning (Nation, 2001). Compared to the number of studies on EAL and monolingual preschoolers' vocabulary size, studies exploring differences in depth are more limited. Vocabulary depth has primarily been studied using two different experimental paradigms: asking children to provide word associations or descriptions (Cremer & Schoonen, 2013; Cremer, Dingshoff, de Beer & Schoonen, 2011; Spätgens, & Schoonen, 2018); or studying their knowledge of challenging multi-word and figurative vocabulary such as metaphors, idioms or collocations (Hessel & Murphy, 2019; Kan & Murphy, 2019; Smith & Murphy, 2015). Both kinds of measures show that EAL learners tend to have less deeply developed vocabularies than their monolingual peers.

For example, Hessel and Murphy (2019) reported that their preschool, five-year-old EAL participants had weaker knowledge of both verbal metaphors (e.g., 'time flies') and

nominal metaphors (e.g., 'to be on cloud nine') than monolinguals. This difference was particularly strong on a task that required children to explain (rather than recall or choose) the meaning of these metaphors in the story context. The findings indicate that language group differences in vocabulary depth can be expected to appear when children's language use requires deeper word knowledge, and where a lack thereof weighs more heavily. Moreover, the authors highlight the often-stressed importance of investigating EAL vocabulary beyond single word knowledge in order to better understand and interpret EAL learners' competence and performance (Kan & Murphy, 2019; McKendry, 2014; Smith & Murphy, 2015).

EAL researchers are divided on the question of whether the pervasive quantitative and qualitative differences between EAL and monolingual children's English vocabulary require targeted support or vanish naturally over time. Some studies find that early differences between bilinguals and monolinguals persist throughout development; this has been reported in both longitudinal (Burgoyne, Whiteley, & Hutchinson, 2011; Hutchinson, Whiteley, Smith, & Connors, 2003) and cross-sectional investigations (Bialystok et al., 2009; Cameron, 2002). Moreover, one study has reported that group differences in vocabulary size widen as children get older (Whetton, 1997). Yet a few other studies found that vocabulary differences between the two groups are particularly wide in early years but close later on (Farnia & Geva, 2011; Mahon & Crutchley, 2006; Paradis & Jia, 2017). More research is required in order to better understand the gap between EAL and monolingual children's performance, and the ways to deal with it.

3.2. EAL Learners' Grammar

Bilingual children's morphosyntactic knowledge is usually measured through language production tasks – whether standardised or experimental. A typical measure of morphosyntactic knowledge involves children being presented with a (visual or auditory) stimulus and being prompted to describe it or answer questions about it (Ambridge & Rowland, 2013). Analysing children's descriptions and/or answers, researchers are able to note their (in)correct use of morphosyntactic features and compare it with monolingual norms. This format is used in the TEGI, which measures (different aspects of) children's morphosyntax. In particular, the TEGI is often used with EAL children from preschool onwards, as it is a nuanced measure that includes a Grammaticality Judgement Task (GJT) probe, testing children's ability to detect grammatical irregularities, as well as three elicitation probes, testing children's ability to produce a range of morphological markers. Using the TEGI (in parts or as a whole), it has been shown that children with EAL differ from their monolingual peers in terms of

morphosyntactic development. In addition, all studies report that children's morphological knowledge exhibits fluctuation and great individual variability from preschool onwards.

The differences between EAL and monolingual children's grammatical competence can be both quantitative and qualitative. The quantitative differences mostly pertain to the bilingual acquisition of certain grammatical structures with delay relative to monolinguals (Paradis, 2005; Paradis et al., 2008; Paradis et al., 2011). For instance, using the TEGI together with a picture description task, Paradis et al. (2008) found that their 24 EAL five-year-old participants, performed almost on par with their monolingual peers in terms of the acquisition of the auxiliaries 'be' (e.g., 'he is eating') and 'do' (e.g., 'does he eat?'). EAL learners' accuracy scores for the two structures were lower than, but not significantly different from, those of monolinguals. With time, EAL learners are expected to catch up and be as accurate as monolinguals in the production of auxiliaries.

EAL learners might also differ from monolinguals in terms of the order in which they acquire certain grammatical structures (Paradis, 2010a; Paradis & Blom, 2016; Paradis et al., 2008). This was evidenced in Paradis and Blom's (2016) investigation of the copula 'be' (e.g., 'he is hard-working') in 79 five-year-old children in Canada who learned EAL in a sequential fashion. The children were divided in two groups: the 'early L2' group and the 'late L2' group. Paradis and Blom (2016) used the GJT and elicitation probes of the TEGI and found that, all children acquired the copula with relative ease (like monolinguals), but before other verbal inflections (unlike monolinguals).

Another difference between the two groups of learners can be the incomplete acquisition of a grammatical structure, which can occur despite years of continuous exposure to English (Jia & Fuse, 2007). This was the main finding of Jia and Fuse's (2007) longitudinal investigation of ten EAL learners who had Mandarin as their first language. The authors were interested to monitor children's progress with respect to the acquisition of verbal morphology. They found that there was a structure that none of the learners mastered (i.e. produced accurately over 80% of the time) over the five years that the investigation lasted: the regular past tense '-ed'. The age at which children had started learning English partially predicted children's performance in the structure, such that children who had started learning English before 9;0 achieved higher accuracy scores than those who had started learning English later.

The patterns of acquisition observed in the results of standardised tests can be corroborated by those of experimental tasks (Paradis, 2010b). Using both kinds of measures not only allows researchers to triangulate their findings; it also gives them the chance to extend their research design. For example, many researchers have used the TEGI probes to measure

EAL learners' acquisition of morphological markers together with novel language production tasks which focus on morphemes that are not included in the TEGI (Paradis & Blom, 2016; Paradis et al., 2008; Paradis et al., 2011). Together, the two measures can provide researchers with a more informative overview of EAL learners' skills.

3.3. Discussion of the Evidence

The studies presented above paint a reasonably clear picture of EAL learners' lexical and grammatical knowledge at preschool and beyond. To judge whether this picture is accurate, it is imperative to consider the effect of three issues: first language (L1) typology; environmental factors; and methodological limitations. As discussed earlier, typological differences between two languages are often believed to result to CLI. In turn, CLI can manifest itself as positive transfer (e.g., if a structure is shared between languages) or as negative transfer (e.g. if a structure exists in one language but not in the other). While positive transfer will facilitate bilinguals' acquisition of the structure in question, negative transfer is expected to achieve the opposite effect. With this observation in mind, researchers should assess the effect of children's L1 on the acquisition of the second language (L2), especially if the children come from different linguistic backgrounds - as is often the case in EAL literature.

Indeed, many of the studies described in the previous sections have included the children's L1 as a variable in their modelling; however, the results that they report are mixed. For instance, Paradis et al. (2008) found that children's L1 had no effect on learners' performance. However, the lack of a significant effect of L1 in their study could be down to the small number of participants per comparison group. By contrast, Paradis and Blom (2016), who investigated the acquisition of inflectional morphemes, reported an effect of L1. The authors divided their sequential EAL participants in two fairly equal and robust groups: the first consisted of children whose home languages marked tense (e.g., Arabic, Punjabi, Spanish), and the second of those whose home languages did not (e.g., Cantonese, Mandarin, Vietnamese). Children in the latter group were less accurate in the production of inflectional morphemes than in the former group. To account for this finding, the authors argued that children whose home languages encode tense morphologically can transfer the tense features to their second language, English; children whose home languages do not encode tense have no such features to transfer across.

While linguistic differences between EAL learners' two languages might affect their performance, there is a range of extra-linguistic characteristics known to inform EAL learners' linguistic profile. These include socioeconomic status (SES) (that is, one's social and/or economic standing; De Cat, 2019) and the age of arrival to the country where the majority

language is spoken (Montrul, 2008). Another extra-linguistic characteristic that is of importance is maternal education (De Cat, 2020; Jia & Paradis, 2015; Paradis & Jia, 2017). Maternal education has been found to function as a predictor of performance in linguistic tasks. According to Jia and Paradis (2015), this finding can be attributed to the fact that mothers with higher education assign a higher value to language acquisition and, therefore, can better support their children's first (minority) and second (majority) language development. Moreover, mothers with higher education tend to talk more and to use more complex vocabulary and morphosyntax (Hoff, 2006).

In addition to maternal education, the richness of the input that EAL learners are exposed to is also a good predictor of individual performance (Jia & Fuse, 2007; Jia & Paradis, 2015). Measures of input richness aim to capture bilingual children's language use in different environments (at home or during extracurricular activities), and with the different speakers that children interact with in each of these environments. Jia and Paradis (2015) measured the effect of richness and other extra-linguistic factors on 38 EAL learners' use of referential expressions in Mandarin. The EAL learners, who had Mandarin as their first language and a mean age of 8;7, were pooled from two schools: a Mandarin-English bilingual school and an English monolingual school. Jia and Paradis (2015) reported that children's use of referential expressions was lower than that of monolingual speakers for some but not all structures. While richness did not have a main effect, it did impact the performance of children in the English monolingual school. In other words, having a richer Mandarin environment outside school helped the EAL learners (who received less input in Mandarin and would otherwise have fewer linguistic resources in their possession) to perform like their counterparts at the bilingual school, and to catch up with their monolingual peers (c.f. Paradis & Jia, 2017). Jia and Paradis' (2015) study highlights the role of two variables that remain under-investigated in EAL research: the school environment and richness (which stands for out-of-school environment). More research can further the understanding of environmental factors on EAL learners' performance, whilst providing practical suggestions to EAL practitioners.

Taking these observations into consideration, it becomes obvious that sampling is a pivotal issue in EAL research. Depending on their linguistic and socioeconomic background, children with EAL may develop different levels of English proficiency and perform differently in linguistic tasks (Paradis & Jia, 2017; Schwartz & Katzir, 2011). Yet, the issue of the tasks used in EAL research is just as pivotal. Tasks can be either expressive (asking participants to produce speech) or receptive (asking them to understand speech). Expressive tasks, which are the most common in EAL research, may be more demanding for EAL learners with fewer

linguistic resources. Under this light, the language in which the testing is conducted plays a role: if a test is administered in English, EAL learners who are not as proficient in English might not be able to manifest their full potential. In fact, a substantial body of research shows that children with EAL do not differ as much from monolinguals in terms of their English language competence and/or performance, when tested in their home language rather than English itself. This observation was evident in a study by Paradis (2010b), who tested French-English bilingual children's acquisition of various morphemes using the TEGI and a production task, administered in English. She reported that bilingual children had lower scores than monolinguals on all probes, but children who spoke French at home underperformed relative to children who spoke English at home, perhaps due to the fact that testing took place in English.

In addition to the task characteristics and the language of testing, another practical issue that could affect learners' performance is the subject of testing. Indeed, EAL learners' performance seems to fluctuate according to the lexical and grammatical items that they are being tested on. Consider the noted difference between verbal and nominal morphology that was discussed above: EAL learners are found to struggle with the former but excel in the latter. A similar phenomenon can be observed with respect to lexical items. A good example is presented in Bialystok et al's (2009) study, which compared EAL learners' knowledge of home and school vocabulary items. According to the study's results, differences in vocabulary size between EAL learners and monolinguals always have to be interpreted in relation to the kind of words that were tested, as asking for some words and not others will make differences appear larger or smaller. These results also highlight that group differences do not stem from a general weakness or inability to learn, but rather from differences in the language learning context.

In a nutshell, the evidence presented in the previous sections suggests that preschool children with EAL display both quantitative and specific qualitative differences from their monolingual peers, as far as the acquisition of both vocabulary and grammar is concerned. Some of these differences vanish as EAL learners grow older, but others can remain throughout development. The persisting gaps between EAL and monolingual children should not be ignored, as they might impede the development of further linguistic and educational skills. However, all this evidence should be examined with a critical eye. The individual traits of EAL learners, such as their home language and the quality of their linguistic environment, are believed to impact their acquisition of linguistic phenomena. Moreover, the design of the studies on EAL learners (including the language of testing and the structures that are being tested) are expected to play a role in their performance. These factors should all be considered

by researchers and practitioners when reading, designing, or conducting work on preschool children with EAL.

4. New Projects

The studies reported in the previous section used standardised or experimental measures to test EAL learners' vocabulary and grammar. These measures assess children's knowledge *offline* (that is, after processing has finished), which makes them unable to capture children's processing as it happens. It is not surprising, therefore, that new projects in the field make use of *online* measures, such as recording reaction times and eye movements during language comprehension. These measures allow researchers to capture children's resulting comprehension, but also their language processing during the task. Sometimes, online measures reveal differences in processing speed and low-level knowledge that do not appear in offline tasks. In addition, the field is moving from *explicit* (conscious) to *implicit* (subconscious) measures of children's lexical and grammatical knowledge. Implicit measures, such as structural priming, ensure that children are not aware of the testing process (or at least of the linguistic constructions that are being targeted through the testing process). As such, these measures are ideal for gauging participants' tacit knowledge of lexical and grammatical structures. Taking these observations into consideration, the following section explores these approaches, which could be valuable in the study of EAL learners.

4.1. Online Measures

In vocabulary research, there are many ways to collect data online. One approach is to record the speed with which participants respond in the course of standard vocabulary measures, like picture naming or word recognition. For example, Kohnert and Bates (2002) recorded children's reaction times in a picture-word verification task in order to investigate whether the linguistic context (i.e. monolingual English or bilingual English-Spanish) had an effect on EAL preschoolers' speed and accuracy of word recognition. The EAL preschoolers' reaction times revealed that they recognised words equally accurately in the two contexts but were slower when both their languages were present in the environment. In this example, online processing speed times uncovered what is most likely an effect of between-language interference on EAL preschoolers' word processing, that would have remained unnoticeable had the researchers considered the offline data alone. Future work could investigate other factors identified previously in this chapter (such as L1 typology or language exposure) whose effects on children's language development may show up in online but not offline data, or vice versa.

Another approach to collecting online data on preschoolers' word processing is to track their eye movements as they are looking at pictures of objects or scenes that are displayed on a screen. This approach is often referred to as the *visual world paradigm* (Huettig & Altmann, 2005). In visual world paradigm tasks, children are typically instructed to choose the picture that fits the words or sentences that they hear. As speakers tend to fixate on objects and pictures that are associated with the words they hear, the time that children fixate on a picture serves as an indicator of their comprehension, while the time that it takes children to clearly fixate on the correct answer suggests their processing time.

So far, the visual world paradigm has only been used with EAL learners between the ages of 2;0 and 3;0. For example, Marchman, Fernald and Hurtado (2010) measured children's fixations on images of simple and familiar objects, like cookies, while they listened to sentences like "where is the cookie?". Yet, the paradigm could easily be adapted for other uses and with older children. For instance, listening to words in sentence context allows researchers to look for intricate differences in more advanced language skills, such as predicting upcoming words (Nation, Marshall, & Altmann, 2003). Future work could rely on the visual world paradigm to pinpoint the effects that the gaps in EAL preschoolers' word knowledge may have on their moment-to-moment comprehension of English.

4.2. Implicit Measures

The ways to investigate bilingual children's grammatical acquisition are also changing, with implicit methods becoming more and more prominent. One such method is *structural priming* (also referred to as syntactic priming) (c.f. Branigan & Pickering, 2017). This method is inspired by the deeply-rooted and subconscious human tendency to use linguistic structures that have been used in the preceding discourse. As an experimental language production method, structural priming involves researchers 'priming' their participants with a particular linguistic structure and noting whether they use it in their subsequent utterances. Using structural priming, researchers can understand whether learners have a mental representation of the grammatical structure under investigation.

Priming has been used to uncover well-hidden discrepancies between bilingual children's performance and knowledge, as well as between bilingual children and their monolingual peers. Vasilyeva, Waterfall, Gámez, Gómez, Bowers and Shimpi (2010) used a cross-linguistic priming paradigm to investigate 65 EAL preschoolers' knowledge of the passive and active voice in Spanish, their home language, and English, the majority language. The children's priming patterns revealed them to have the same mental representation of the passive and active voice as adults. Moreover, their underlying knowledge of the constructs was

found on par with that of monolinguals in each of their languages, even though their performance seemed to lag behind. This finding reveals that differences in performance might not result from differences in representation. Thus, this study demonstrates how priming can provide researchers with a deeper understanding of EAL learners' linguistic skills.

Vasilyeva et al.'s (2010) study remains the only one that has used priming in the context of preschool children with EAL. Since the method can tap into children's subconscious knowledge, researchers can use it to shed more light on EAL learners' acquisition process(es) and further explore their differences with monolinguals. Using structural priming, researchers can target preschool children as the method does not involve conscious processing or advanced literacy skills, and is suitable for children from the age of 3;0 (Kirjavainen, Theakston & Lieven, 2017). Moreover, since structural priming can occur within and across languages, it provides a useful means of investigating CLI effects on children's knowledge and production of morphosyntactic constructions.

5. Critical Issues and Topics

The number of studies on EAL learners' lexical and grammatical development is limited. These studies show that EAL children tend to lag behind English monolingual children as far as the acquisition of vocabulary and grammar are concerned. According to the results of both longitudinal and cross-sectional studies, some EAL learners are not able to catch up with English monolinguals' lexical and grammatical knowledge throughout development. To better support EAL learners' development, new projects in the field offer a thorough exploration of EAL children's vocabulary and grammar, as well as of the positive or negative effects of CLI, through the use of online and implicit processing measures.

The designs used in new projects lead to a re-consideration of the methods that were used in previous research on EAL children's linguistic development. Most studies discussed in the previous sections use standardised and/or experimental measures. Standardised tests are norm-referenced against monolingual populations, which makes their use with EAL children problematic: tests that have been standardised on a monolingual sample do not necessarily have the same validity in a study of EAL language learning (Faitaki & Murphy, 2020). Moreover, since EAL children's lexical and grammatical development often is slower than that of their monolingual peers, using the age-norms provided in the tests' manuals to judge their knowledge is not useful. Another problem with standardised tests is that they may not always measure the constructs most relevant to EAL language learning, such as vocabulary depth. As addressed above, experimental measures offer an alternative route to testing EAL learners'

knowledge. These measures not only avoid the problem of being only normed on a monolingual population, but also allow the study of specific aspects of children's knowledge since their variables can be chosen and manipulated with precision (Ambridge & Rowland, 2013). However, experimental tasks are not without problems. For example, the fact that they range in design, difficulty and precision, can impede researchers from replicating (and thus ensuring the accuracy of) their results.

While inherent differences between experimental designs are noteworthy, the individual differences among EAL learners are critical to the analysis and interpretation of data. As mentioned throughout the chapter, EAL learners do not represent a homogenous group: the performance of children with EAL varies both among and within participants over a set period of time. Individual differences might make research on EAL learners' development less generalisable. However, they can also provide a wealth of information to researchers. Using advanced quantitative analyses, such as multilevel modelling, that can account for fluctuations between and within EAL learners' performance (e.g., De Cat, 2020; Paradis & Jia, 2017), researchers can discover the range of EAL learners' performance, while disentangling group and individual effects. Furthermore, deciphering EAL learners' individual developmental trajectories can have important educational but also, clinical implications.

Due to the societal importance of their findings, it is necessary that studies on EAL learners' vocabulary and grammar are replicable and reproducible. The variability in experimental designs, linguistic items, learning contexts and learners themselves makes generalising the findings more difficult, but not impossible. To increase the replicability and reproducibility of their studies and findings, researchers who use experimental measures could grant access to their task materials and data to other researchers. It is only through replication that the findings of previous studies (often conducted with small samples and/or in context-specific situations) can be validated. Open access and replication together, could increase the comparability among studies and allow researchers to draw clearer conclusions on the acquisition of vocabulary and grammar across tasks and samples.

6. Future Research Directions

As the previous sections highlight, research on young EAL learners' linguistic competence is still somewhat limited. Yet, the findings of these studies, as well as of those few that have focused on preschool EAL children, are clear: young EAL learners' lexical and grammatical knowledge tends to not be on a par with that of monolingual language learners. Given the noted lag, order-of-acquisition differences, and occasional lack of mastery for some difficult

structures, EAL learners' developmental profile is in some ways similar to that of children with Developmental Language Disorder (DLD), often leading to the misdiagnosis of EAL children as having DLD (Gutierrez-Clellen, et al., 2006; Paradis, 2005). Thus, tracking EAL learners' linguistic development from preschool onward is important.

Tracking EAL learners' lexical and grammatical knowledge is also important, as it allows researchers to pinpoint the areas of vocabulary and grammar that are particularly challenging for EAL learners. This task is possible through longitudinal studies; these allow an investigation of EAL learners' holistic first and second language development throughout an extended period of time. The few longitudinal studies on EAL acquisition that have been conducted so far (e.g., Jia & Fuse, 2007; Paradis & Jia, 2017) have given rise to large and informative datasets. These allow researchers to understand which aspects of vocabulary and grammar matter more for educational attainment, and to identify the areas that require and/or would most benefit from instruction. More longitudinal studies, using data from various ethnic and linguistic groups would be beneficial.

Having identified areas that are at risk or of interest, researchers can proceed to the implementation of intervention studies. Interventions are conducted in order to evaluate the effect(s) of a treatment on the participants' behaviour. For preschool children, the treatment can take the form of games, shared reading, or explicit instruction. Given the fact that the linguistic skills acquired at the earliest stages of life pave the way for subsequent linguistic and educational attainment, it would be useful for EAL-focused interventions to target preschoolers. This does appear to be the case; most of the interventions on EAL language skills have focused on preschool children (Murphy & Unthiah, 2015; Oxley & De Cat, 2019). However, the number of interventions on EAL learners' language and literacy is not high and has not changed much since 2000 (Oxley & De Cat, 2019; Murphy & Unthiah, 2015). It is imperative to conduct more varied as well as context-specific interventions in order to build a stronger knowledge base and to improve the current educational practice for EAL learners.

In addition to adopting new methods, research on EAL learners' vocabulary development could also benefit from adapting its linguistic focus. For example, most of the research on EAL learners' vocabulary acquisition to date has involved looking at words in isolation rather than as part of the context in which they are embedded. Yet, recent studies have sought to investigate how the different properties of words might influence acquisition. These properties include the diversity of the semantic contexts in which the words occur (Hsiao & Nation, 2018), the regular ways in which they get combined into phrases (Smith & Murphy, 2015) or their metaphorical use (Hessel & Murphy, 2019). In this framework, words are

believed to belong in interconnected networks (that are bound by lexical and grammatical rules alike), an observation that has theoretical and empirical implications. Indeed, some of the semantic networks (and words within them) might be easier or harder to acquire for particular groups, such as preschool children with EAL. Reformulating, or at least re-evaluating, the way in which linguistic constructs are viewed, can offer valuable insights into whether certain lexical and/or grammatical items require additional support, for instance in the form of explicit language instruction.

7. Conclusion

The reviewed research shows clear differences between EAL and monolingual learners in their acquisition of different aspects of vocabulary and grammar, irrespective of the measures used to test participants' knowledge. Standardised tests and experimental measures both suggest that EAL learners lag behind their monolingual peers at early stages of linguistic development. In particular, children with EAL are reported to have smaller and less developed vocabularies, and to acquire grammatical structures at a slower pace and different order than English monolingual children. Many of these differences persist over time, with some EAL learners being unable to bridge the gap with their monolingual peers even at later stages of (linguistic) development. Due to their lower proficiency, EAL learners tend to also have lower educational attainment (Strand & Hessel, 2018). Therefore, supporting children with EAL in their development of vocabulary and grammar is imperative in order to increase their chances of success at (and after) school.

To this end, researchers need to work together with teachers and parents to pinpoint and help children develop specific areas that appear to be difficult for EAL learners to master, such as vocabulary depth and morphosyntax. In general, these complex linguistic constructs could also benefit from explicit instruction which involves drawing learners' attention to the constructs in question and 'teaching' them the rule that underpins the use of these constructs (Ellis, 2009). While children can learn vocabulary and grammatical rules implicitly (that is, by encountering a word or phrase and figuring out its meaning or function), explicit instruction is known to benefit their acquisition (Spada & Tomita, 2010). Drawing learners' attention to the meanings of words can complement the process of incidental word learning (that occurs through reading), thus counterbalancing differences between EAL and monolingual children. Likewise, morphological acquisition can be facilitated through explicit instruction; although the acquisition of grammar is a tacit process for monolinguals, children with EAL might benefit from the learning about the morphemes that are challenging for them. Explicit instruction

should be especially beneficial to EAL learners, who possess fewer linguistic resources and might not be able to understand or notice a lexical or grammatical item that they encountered by chance.

Learning about a word and its properties allows EAL learners to notice it in the discourse and, thus, scaffolds its learning (Gallagher, Taboada Barber, Beck & Buehl; 2019). Noticing can also be facilitated through the production of language: when learners are asked to produce speech, they are confronted with gaps in their linguistic knowledge (Hopman & McDonald, 2018; Schmidt 1990; Swain & Lapkin; 1995). Under this light, the production of speech can be useful for the acquisition of new and consolidation of old vocabulary and grammar. Due to its learning potential, the production of speech has become a prominent component of most foreign language classrooms that adopt communicative approaches to teaching. However, such speech production opportunities are not always available to preschool children with EAL, who are often expected to pick up English. Future research could explore what kind of explicit instruction is beneficial and how to best integrate noticing and production practices in the classroom so as to support children with EAL in their lexical and grammatical development.

Using explicit language instruction and drawing EAL learners' attention to the language (through the production of language or otherwise) would be possible if schools had the required human and material resources to deliver English language lessons and/or interventions in order to help EAL learners improve their linguistic skills. This is often a difficult task for various reasons, including the wide distribution of EAL learners across the different regions and schools within them (Strand et al., 2016). Usually, some targeted support for EAL learners is available at least in the Reception Year (i.e. the last year of preschool in the UK). This is a positive measure, as Reception is an important year for shaping EAL learners' subsequent linguistic and educational development. Indeed, the early years is the first educational experience in which many children with EAL receive substantial input in English and, therefore, it sets the foundations of their language knowledge. This can be facilitated if teachers know which components of language to target in their lessons.

This chapter identified two linguistic features that are particularly vulnerable for language acquisition - vocabulary depth and verbal morphology. In addition, it presented some new methods in the field of language acquisition that can be used with young EAL learners so as to provide a more solid (and specific) understanding of EAL learners' knowledge and gaps therein. The chapter also identified problems with existing research and some under-explored issues in the EAL field, highlighting that the research produced to date is relatively scarce and

limited. More and wider research in the EAL field would allow researchers to pinpoint the linguistic problems that EAL learners might face and provide tangible solutions, thus having a positive impact on the lives of children with EAL.

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