1 Introduction

This Element concerns young children growing up with more than a single spoken language. Three life stages form its organizing structure (Steinberg et al., 2011, p. 5): (i) infancy, until about age 2 (infants); (ii) early childhood, until about age 6 (toddlers and preschoolers); and (iii) middle childhood, to about age 11 (schoolchildren).

The transitions between (i) and (ii) and between (ii) and (iii) coincide with fundamental changes in children's language use worldwide. When infants begin to speak, they do so mostly in just single words. Shortly before their second birthdays, toddlers combine words into short units that start to resemble sentences. Around age 6, schoolchildren start to learn to read and write.

Many newborns start hearing two languages from birth. This is a Bilingual First Language Acquisition (BFLA) language learning setting (Meisel, 1989). BFLA children have no experience with monolingualism. They are learning Language A and Language Alpha (Wölck, 1987/1988). This terminology expresses the lack of chronological difference between languages in terms of first regular exposure.

Other children first hear just a single language. For many of these initially monolingually reared children the transition between stages (i) and (ii) coincides with fundamental changes in linguistic environment: Children may start to regularly hear a second language through day care or preschool. Children who grew up monolingually in a first language (L1) but start regularly hearing a second language (L2) in late infancy or early childhood are growing up in an Early Second Language Acquisition (ESLA) setting (De Houwer, 1990).

For yet other initially monolingually reared children, it is the transition between (ii) and (iii) that coincides with fundamental changes in linguistic environment. Children who grew up monolingually throughout infancy and early childhood may start attending school in a new second language (L2) that differs from the one people were talking to them before (their L1). These children in middle childhood are growing up in a Second Language Acquisition (SLA) setting (De Houwer, 2019c). The latter differs from ESLA because SLA schoolchildren are simultaneously learning not only to understand and speak but also to read and write the new L2.

Bilingual children in very early infancy are typically BFLA children. Bilingual children in late infancy and early childhood are either BFLA or ESLA children. Bilingual children in middle childhood include BFLA, ESLA, and SLA children (see Figure 1).

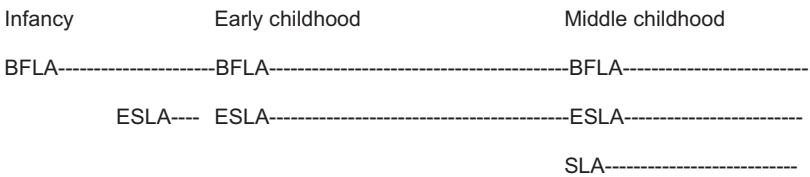

Figure 1 Three kinds of bilingual learning settings in three life stages
Legend: BFLA = Bilingual First Language Acquisition; ESLA = Early Second Language Acquisition; SLA = Second Language Acquisition

Many people are bilingual because of a migration background. Bilingualism also occurs in regions where two or more languages have been used side by side for centuries, as in Papua New Guinea, much of South America, the Indian subcontinent, and many regions in North America and Europe (Bhatia & Ritchie, 2013). There is usually a social hierarchy between languages, with one particular language and its users having higher status, social value, and power. The language locally used in public life, government, and education tends to be the one with the most prestige and is henceforth called the societal language (Soc-L). All other languages are non-societal languages (Non-Soc-Ls). Non-Soc-Ls are not used in education (except in foreign language classes); what is a Non-Soc-L in one region may be a Soc-L in another. In some regions two languages may be used in public life or in schools, or the local Soc-L differs from that in other parts of the country, but even in those settings there is a language hierarchy. The specific language environments and local language hierarchies individuals find themselves in strongly influence their bilingualism (De Houwer & Ortega, 2019). Local language hierarchies likewise affect bilingual children, regardless of whether the bilingual environment is one of BFLA, ESLA, or SLA.

BFLA children may hear a Non-Soc-L and the Soc-L at home, or they may hear two Non-Soc-Ls at home and learn the Soc-L in an (E)SLA setting at (pre) school. Because we know hardly anything about BFLA children in the latter case, the review in this Element only considers BFLA children with a Non-Soc-L and the Soc-L at home. Families who speak a Non-Soc-L and the Soc-L with BFLA children usually want their children to learn to understand and speak both languages from the start (De Houwer, 2017c). There are emotional and cultural bonds with both languages, and children are typically expected to speak both at home. This is different for families with (E)SLA children, who only use a Non-Soc-L at home. These families generally have a much stronger emotional and cultural connection to the Non-Soc-L than to the Soc-L that children learn through day care or (pre)school: Children are expected to speak the Non-Soc-L at home, not the Soc-L.

The term "bilingual children" refers to typically developing, normally hearing children under age 12 who need to learn to communicate in more than a single language in daily life, leaving unspecified to what extent children are able to communicate in two languages. The focus is on the untutored, so-called "naturalistic" learning of several languages as a result of life circumstances that are not easy to change. Children are born into a bilingual family (BFLA). Children born into families speaking just a Non-Soc-L (ESLA and SLA) usually have no other choice than to attend (pre)school in a Soc-L that differs from the home language, and must learn to function in the Soc-L.

Aside from a Non-Soc-L and a Soc-L, children may learn a foreign language (For-L), that is, a language that is not a local Soc-L. The For-L may be a Non-Soc-L for some children in the classroom and a Soc-L in other regions and countries. Although a For-L often carries high prestige and its learning is an asset, learning a For-L well is not fundamental for children's future in a particular region: They do not need a For-L in daily life. In contrast, all children, bilingual and monolingual, need to learn the local Soc-L well to function in society. Furthermore, people's emotional and cultural connections with For-Ls are generally different from those they have with languages learned at home and/or through residence in a new country. Muñoz and Spada (2019) and Juan-Garau and Lyster (2019) offer overviews of For-L teaching and learning.

Much of the heavy social and financial investment in the early teaching of For-Ls (especially English) in Europe and elsewhere rests on the assumption that children need to learn a language from an early age to learn it well (De Houwer, 2015a). As summarized in Section 6, the joint findings from studies on child bilingual development in naturalistic settings do not support this notion of "the earlier, the better."

The focus in this Element is on oral language use (Tang & Sze, 2019, discuss how children acquire a spoken and a sign language or two sign languages; Murphy, 2018, reviews how bilingual children learn to read and write). Excluded from discussion are transnational adoptees who have replaced their L1 with a single L2 (Genesee & Delcenserie, 2016) and children with developmental challenges such as autism and Developmental Language Disorder (Marinis et al., 2017; Patterson & Rodríguez, 2016).

It is possible for children to hear more than two languages. In referring to bilingualism, this Element includes those more complex multilingual situations, although the research basis for early multilingual rather than narrowly bilingual development is still thin (some excellent studies are Chevalier, 2015; Cruz-Ferreira, 2006; Montanari, 2010). Children may acquire different varieties of the same language (e.g., Appalachian dialect and Standard

American English) or varieties of different languages (e.g., Mexican Spanish and Standard American English). Given the paucity of research on the first case (Chevrot & Ghimenton, 2019; Durrant et al., 2014), this Element exclusively refers to learning different languages, although learning very different varieties of what is considered the same language is also a form of bilingualism.

Child bilingualism is a widespread global phenomenon. Precise statistics are not available. The fact that many societies in the Global South[1] are highly multilingual (Bhatia & Ritchie, 2013) means that children living there come into contact with several languages as a normal part of everyday life. If children do not encounter several languages before starting school, they often learn an ex-colonial language at school that they do not hear at home but that functions as a Soc-L (e.g., French in the south of Morocco; English in South Africa). Children in the Global North[2] are more likely to live in societies dominated by a single language in which monolingual ideologies reign (Fuller, 2019). In many of those societies, various types of statistics suggest that a fifth to over a third of children do not solely hear a Soc-L at home: for instance, the 2016 Australian census[3] found that more than one fifth of people spoke another language than English at home; in Germany, well over a third of children under age 10 had a migration background in 2016 (Autorengruppe Bildungsberichterstattung, 2018) and thus may have heard another language than German at home; the United-States-based Annie E. Casey Foundation brought together data suggesting that 23% of US children speak a language other than English at home;[4] and survey data collected in the officially Dutch-speaking region of Flanders, Belgium, in the 1990s (De Houwer, 2003) suggested that in one out of eight families, children heard a language other than Dutch at home.

In what circumstances do children become bilingual? We know little about the proportions of BFLA, ESLA, and SLA children. However, BFLA may occur about three times as often as ESLA and SLA combined (calculation based on survey data from different continents in De Houwer, 2007 [N = 1,899; Belgium], and in Winsler et al., 2014a [N = 1,900; United States];

[1] North–South Divide in the World. (n.d.). *Wikipedia* [website]. https://en.wikipedia.org/wiki/North%E2%80%93South_divide_in_the_World
[2] North–South Divide in the World. (n.d.). *Wikipedia* [website]. https://en.wikipedia.org/wiki/North%E2%80%93South_divide_in_the_World.
[3] 2016 Census: Multicultural. (n.d.). Australian Bureau of Statistics [website]. abs.gov.au/ausstats/abs@.nsf/lookup/media%20release3
[4] Children Who Speak a Language Other than English at Home in the United States. (2020, October). The Annie E. Casey Foundation: Kids Data Center [website]. https://datacenter.kidscount.org/

when families reported using two languages at home, children likely heard these from birth; when families used only a Non-Soc-L at home, children likely grew up with that language as an L1 and learned an L2 later). A rare study of 681 bilingual students in Germany probing children's language learning histories found that 51% of children had grown up in a BFLA setting, 24% in an ESLA setting, and 25% in an SLA setting (calculations based on several tables in Ahrenholz et al., 2013). A majority of bilingual children thus likely grow up bilingually from birth rather than with a single L1 that is later complemented by an L2.

Different language learning environments (BFLA, ESLA, and SLA) have different effects on bilingual children's language learning trajectories in the first decade of life. It is the main aim of this Element to elucidate these language learning trajectories. The online presentations HaBilNet Class 1: Trajectories for Early Bilingualism[5] and HaBilNet Class 2: BFLA Compared to ESLA[6] on the HaBilNet Vimeo channel offer a quick overview for BFLA and ESLA.

Lay people and researchers alike often want to know how bilingual children compare to monolingual peers in the single Soc-L monolinguals are learning. "Success" for bilinguals is frequently measured *solely* in terms of bilinguals' performance in the Soc-L compared to monolinguals. If bilinguals perform worse than monolinguals the blame is often laid with the fact that bilinguals are acquiring another language. Even though bilingual–monolingual comparisons can elucidate theoretical questions, a *unique* focus on how bilinguals resemble monolinguals in Soc-L performance rarely leads to a better understanding of child bilingualism. Bilingualism is not a sort of double monolingualism (Grosjean, 1989). This Element mainly discusses bilingual development on its own merit.

The review here is based on a wide array of data collection methods, ranging from detailed case studies based on parental diaries to parental surveys yielding information on thousands of children. Aside from parent reports, studies may rely on experiments, standardized language tests, specially designed tasks, or direct observations of children's language use. Studies report on individual children's language use or, as has been much more often the case of late, on levels of language use or language behavior that are averaged across groups of children (i.e., group studies).

Terms in this Element that are ambivalent as to whether they refer to ethnicity, citizenship, or language refer to language unless otherwise indicated. The

[5] HaBilNet [Screen name]. (2020, May 6). HaBilNet Class 1: Trajectories for Early Bilingualism [Video]. Vimeo. https://vimeo.com/415653440

[6] HaBilNet [Screen name]. (2020, May 9). HaBilNet Class 2: BFLA Compared to ESLA [Video]. Vimeo. https://vimeo.com/416621250

term "family" designates any private household made up of at least one child under age 12 and one adult who is responsible for the child. The term "parents" refers to the adult(s) who is/are part of such a family. This Element follows Bornstein's transactional and dynamic perspective on the family, according to which "[c]hild and parent bring distinctive characteristics to, and each changes as a result of, every interaction; both then enter the next round of interaction as changed individuals" (Bornstein, 2019, p. 279). At the same time, macrosystem patterns of beliefs and values influence the interpersonal experiences individuals have (Bornstein, 2009). The influence of such macrosystem patterns is particularly relevant to bilingual children and their families. Societal attitudes toward early bilingualism and the languages involved affect stances and behaviors toward bilingual children and their families and may affect their socioemotional well-being (De Houwer, 2020a). Educational approaches in (pre-) schools play a large role in this dynamic.

In addition to describing bilingual children's oral language learning trajectories, this Element examines the nature of children's bilingual language learning environments. Aside from aspects such as the quantity of child-directed speech, these environments include parental conversational practices and effects of the aforementioned language-related attitudes. A separate section (Section 5) briefly examines the possible role of socioeconomic status in bilingual development.

Children's language learning environments determine the degree to which they and their families experience harmonious bilingualism; that is, "a subjectively neutral or positive experience that members of a family in a bilingual setting have with aspects of that setting" (De Houwer, 2020a, p. 63). This Element concludes with a summary of the main points and a plea for more research attention to harmonious bilingualism.

In brief, this Element focuses on the oral language development of three kinds of bilingual children: (i) BFLA children acquiring a Non-Soc-L (Language A) and a Soc-L (Language Alpha) from birth (followed from infancy to middle childhood); (ii) ESLA children acquiring a Non-Soc-L as their L1 and a Soc-L as their L2 (traced from early to middle childhood); and (iii) SLA children acquiring a Non-Soc-L as their L1 and a Soc-L as their L2 in middle childhood.

2 Becoming Bilingual in Infancy: Focus on Bilingual First Language Acquisition

Infants may hear two languages from birth within the family. Infants may also be reared bilingually in spite of not living in a bilingual family. They may hear one language at home but may start to be regularly addressed in an L2 well

before the second birthday, often through childcare outside the home, and are thus growing up in an ESLA setting. There are virtually no reports on ESLA *infants*' language development (but see Pavlovitch, 1920; Vihman, 1999). Hence the current section focuses exclusively on infants growing up with two languages from birth.

The section starts by examining what it means to be born into a bilingual family, and focuses on aspects of the language input to infants, that is, on what they hear. We know about input through written records kept by parents (often in the form of diaries), audio and/or video recordings, and parental questionnaires. Infants must learn to make sense of what they hear. How infants with bilingual input from birth do so is discussed in Section 2.2 on early speech perception. Most research here relies on ingenious experiments. Infants must learn to categorize sounds into units that are meaningful in each of their two languages. Learning how to do this is part of their phonological development, that is, the development of the sound system of a particular language. Section 2.3 goes on to describe the first steps in BFLA infants' word comprehension. Learning to understand words is part of infants' lexical development and has been studied through observation and sometimes experiments. The size of infants' comprehension vocabulary is assessed through parental questionnaires. The best known are the MacArthur-Bates Communicative Development Inventories (CDIs; Fenson et al., 1993) and their different language versions. CDIs were first developed in American English, but currently exist in about 50 languages and varieties (see the official CDI website).[7] CDIs are standardized report instruments asking caregivers to tick off on a list which words or phrases children understand and/or say. For children between 16 and 30 months, CDIs also ask about early word combinations. CDIs are important both in research and in clinical practice. For many languages CDI norms[8] have been established that allow clinicians to decide whether an individual child is developing as expected or not. BFLA infants' use of words and word combinations is the subject of Section 2.4. That section also discusses BFLA infants' phonological development in production.

Both in early comprehension and in production BFLA infants may develop each language at a different pace. This uneven development is the subject of Section 2.5. Section 2.6 examines factors that may influence early bilingual development in BFLA. A brief summary concludes Section 2.

[7] MacArthur-BatesCDI. (n.d.) [website] https://mb-cdi.stanford.edu/
[8] Vocabulary Norms. (n.d.). Word Bank [website]. http://wordbank.stanford.edu/analyses?name=vocab_norms

2.1 Born into a Bilingual Family

Once parents start talking to newborns, they may use both Language A and Language Alpha, creating a bilingual language input environment from the very start. BFLA newborns finding themselves in a bilingual family may hear each parent speak both languages to them. A second possibility is that one parent speaks both languages to newborns and the other parent(s) just a single language. Alternatively, each parent may address the newborn in just a single language (OPOL, the (in)famous "one person, one language" setting). The first two patterns occur about equally frequently; the OPOL pattern occurs least often (De Houwer, 2007; Yamamoto, 2001). Regardless of the language(s) parents use to address them, babies may overhear parents address each other in a third language (or more). The variation is large.

Language input patterns that infants experience from their parents are complemented by those from other people both inside (e.g., siblings) and outside (e.g., family friends) the home. Added to this variation comes variation in the number of people children come into regular contact with.

In addition to the variation in the languages BFLA babies are hearing and whom they are hearing them from, there is wide interindividual variation in how parents verbally engage with infants. Parents may speak to babies a lot, or less so. They may speak clearly, or less so. They may use a lot of typical infant-directed speech (IDS) with exaggerated intonation patterns, short utterances, and frequent repetitions, or less so. Listen to excerpts of American English IDS[9] that contain stimuli used for, among others, Byers-Heinlein et al. (2021). Listen to typical Portuguese IDS[10] (and young BFLA infant vocalizations) in the Portuguese–Swedish MCF Corpus[11] collected by Madalena Cruz-Ferreira (Cruz-Ferreira, 2006, is an in-depth study of the BFLA children featuring in this corpus). Parents may be verbally quite responsive to babies (illustrated in this video of a father interacting with his infant),[12] or less so. Parents may regularly read books and enact rhymes and songs with babies, or less so.

To what extent variability on parameters of parent–infant verbal engagement has to do with parents' bilingual status or with their status as being part of a bilingual or monolingual family has hardly been explored. Parents of bilingual and monolingual infants did not differ in the modalities of action, language, and

[9] Audio Stimuli. (n.d.). *Google Drive* [website]. https://drive.google.com/drive/u/0/folders/0B4NwkcR_udMNUmdOVzZVVkgtZFE

[10] https://media.talkbank.org/childes/Biling/MCF/Karin/020403.mp3

[11] MCF Bilingual Corpus. (n.d.). *Talkbank* [website]. https://childes.talkbank.org/access/Biling/MCF.html

[12] Acery [Screen name]. (2019, June 5) Dad Has Full Convo With Baby [Video]. *YouTube.* www.youtube.com/watch?v=0IaNR8YGdow

gesture during parent–child interaction with their 14-month-olds (Gampe et al., 2020). Mothers in bilingual and monolingual families addressed the same amount of speech to their 13- and 20-month-olds (De Houwer, 2014). However, within-group variability was large, with some monolingually reared infants having very silent mothers, and some bilingually reared infants having very talkative mothers, as well as the other way around (Orena et al., 2020, likewise found large variability among bilingual families in the number of words addressed to BFLA infants). Although it is often claimed that bilingual infants hear less of each language than monolinguals of their single one, the wide variability within each parent group as well as the lack of intergroup differences render this assumption doubtful (De Houwer, 2018b). Assumptions of bilingual–monolingual differences in frequency of input in a language are further complicated by possibly large variation within bilingual families in global use of a particular language, with parents speaking Language Alpha far more frequently during trips to the "home" country (Leopold, 1939–1949; Slavkov, 2015), or with families hosting grandparents who speak Language Alpha for weeks or months at a time (Leist-Villis, 2004). Such changes in environment directly affect the amount of speech that bilingual infants hear in each language.

Van de Weijer's (1997) acoustic study is unique in presenting analyses of intonation patterns in speech addressed to a BFLA infant and in comparing that IDS to adult-to-adult speech (ADS) by the same adults. Data were collected in the home for about 90% of the time that the Dutch–German infant was awake between 6 and 9 months of age (720 hours in total). A total of 4,376 utterances produced by mother, father, and a regular babysitter over a selection of 18 days were the basis for analysis. Compared to ADS, in IDS adults spoke much more slowly, used a much higher pitch, larger pitch variations, and more simple intonation contours that made utterance boundaries quite clear (van de Weijer, 1998, furnishes more details), confirming findings for adults in monolingual families. Van de Weijer's analyses did not focus on the family's bilingual nature. Focusing mainly on maternal speech, De Houwer (2009, pp. 121–123) analyzed information in van de Weijer (2000, 2002) about IDS to the infant and her sister, who was 2 years older. On average the mother spoke about twice as often to her toddler than to her infant, suggesting that IDS speaking rates of parents in bilingual families change as a function of children's ages, as was later confirmed in longitudinal studies of maternal speech to BFLA 13- and 20-month-olds (De Houwer, 2014; Song et al., 2012).

A study of language input within two days in the lives of 58 bilingual (at least 46 were likely BFLA) 10- to 12-month-olds in Paris found that many infants heard both French and one or more of 16 other languages within the same half-

hour, rather than just a single language (Carbajal & Peperkamp, 2020). About half the families followed an OPOL approach. Regardless of parental input patterns, infants encountered more people who spoke French to them than their other language.

Parents in both bilingual and monolingual families may address infants in a language they themselves learned later in life. They may speak that language with a "foreign accent" (that is, an accent influenced by a language learned earlier in life). The chance that parents in bilingual families speak a language with a "foreign accent" is high. If they speak that language to infants, their use of IDS may show traces of a "foreign accent" as well. Fish et al. (2017) demonstrated how Spanish–English bilingual parents pronounced English words addressed to infants with both Spanish- and English-like characteristics. Fish et al. suggested that the use of specific bilingual characteristics of IDS may have implications for bilingual infants' early speech perception, the topic of the next section.

2.2 Phonological Development: Bilingual Infant Speech Perception

For bilingually reared infants to gain entry into each of the two languages they are hearing, they must be able to pay auditory attention to the way people verbally engage with them. Although BFLA infants can learn from any kind of language addressed to them, the special features of IDS capture infants' attention to speech. BFLA infants (N = 333) from various countries preferred to listen to IDS rather than to ADS (Byers-Heinlein et al., 2021). As Ronjat noted in 1913, BFLA infants not only use auditory but also visual cues as present on a speaker's face to help them process and distinguish the dual language input they receive (Weikum et al., 2007).

Newborns born into either bilingual or monolingual families are able to globally distinguish among languages (Byers-Heinlein et al., 2010). Languages differ widely in their use of particular sound patterns, that is, in their phonology. As part of phonological development, infants gradually learn to order the multitude of speech sounds they hear into perceptual categories that are relevant to the language(s) they are learning. They simultaneously learn to ignore perceptual differences that are of no consequence to meaning creation in the language(s) they are learning. BFLA infants must keep an "open ear," so to speak, toward a larger variety of speech sounds than monolinguals. They must develop sufficiently separate perceptual categories relevant to each input language to be able to learn words in each language.

Most words are independent units whose meaning relies on a particular combination of sounds. Languages differ widely in what kinds of sound