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PART VI

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HERITAGE LANGUAGES

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CHAPTER 34

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INTRODUCTION TO HERITAGE LANGUAGE DEVELOPMENT

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SILVINA MONTRUL AND MARIA POLINSKY

34.1 INTRODUCTION

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> A language qualifies as a heritage language if it is a language spoken at home or otherwise readily available to young children, and crucially this language is not a dominant language of the larger (national) society. Like the acquisition of a primary language in monolingual situations and the acquisition of two or more languages in situations of societal bilingualism/ multilingualism, the heritage language is acquired on the basis of an interaction with naturalistic input and whatever in-born linguistic mechanisms are at play in any instance of child language acquisition.   (Rothman, 2009, p. 156)

Given this definition, heritage speakers are bilinguals who speak a minority language (their heritage language) and another language that is societally more dominant. To quote Tanja Kupisch (Chapter 37, this volume),

> a heritage language (HL) is considered to be a minority language that is not an official language in a speaker's geographical area, and that was acquired at home, regardless of whether the HL was spoken by one or both parents.   (p. xxx)

There may be different reasons for the dominance of the ~~other~~ language, and we cannot do them justice in this short chapter; in what follows we will be referring to ~~this other~~ language as the dominant/majority ~~one~~. In Guatemala, for instance, where Spanish is the dominant societal language, any other language used in a specific community may be considered a heritage language, including immigrant, indigenous, or even sign language communities. Similarly, in the United States, immigrant (and colonial) languages, as well as ethnic (Fishman, 2001) and sign languages, are considered heritage languages in an

English-dominant bilingual context. Because of the nature of their language acquisition, heritage speakers are often more competent speakers of their second language (the socially dominant language) than their first language (heritage language). The imperfect control that heritage speakers exhibit over their first language (L1) often differs in significant and consistent ways from the imperfect control of second-language learners; frequently, heritage learners are understood to experience 'attrition' of their original language system, not just incomplete mastery of that system (Polinsky, 2006; Polinsky & Kagan, 2007; Rothman, 2009; Benmamoun et al., 2013a; Scontras et al., 2015; Montrul, 2016a).

Although we find a great degree of variance in heritage populations, it is typical for the heritage language to be the weaker one of the bilingual dyad; differences between heritage speakers lie in the degree of that weakness, as some heritage speakers are quite close to the monolingual baseline while others may be at the level of recessive bilinguals. The degree of dissonance between the two languages in the dyad varies, but the general balance in favour of the dominant language is a hallmark of heritage speakers. Heritage speakers often lack confidence in their home language and feel that they are not as good at speaking it as one may expect them to be—especially since the high expectations are based on their native-like control of the sound system.

Heritage speakers can shed light upon the current theoretical discussion about the nature of language, allowing us to adopt a novel approach to an old question: *what do we know when we know a language?* We may have intuitions about what a native speaker knows about language, but a heritage language forces us to consider more deeply the question of what exactly it means for a person to be a native speaker. There is a consensus that native speakers/signers differ from non-native speakers of a language because the native speakers acquired their language from a very early age within a natural input environment; this makes native speakers different from second language (L2) speakers but identical to heritage speakers. Heritage speakers, like native speakers, acquire a home language naturally, at an early age—the difference is that they also acquire a community language at the same time, which they gradually come to rely on as their primary language in the dominant society (for example, Chinese at home and English at school and elsewhere).

Heritage speakers are exposed to the heritage language exclusively during early childhood or simultaneously with the majority language. During the school age period the majority language tends to become dominant and by early adulthood heritage speakers display a wide range of proficiencies in the heritage language, which vary significantly and span the entire spectrum from low/receptive to full productive ability. As a result, heritage speakers display systematic gaps in their linguistic knowledge in several structural components of language (phonology, morphology, syntax, semantics, discourse). Still they are native speakers of their heritage language, in many aspects different from L2 learners (Montrul, 2013; Rothman & Treffer-Dallers, 2014), which is particularly apparent in their target-like sound system. Given that they are native speakers (or at least they start as such), why do they vary so much in the levels of proficiency eventually attained in the heritage language? In what follows, we argue that it is largely due to how the heritage language was acquired and nurtured from birth to adolescence in a bilingual environment, and many individual and contextual factors play a role in its development.

34.2 BILINGUAL ACQUISITION: FROM INFANCY TO ADOLESCENCE

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~~A bilingual child needs to figure out the components and rules for each of the languages based on input in two languages,~~ Hoff (2006) provides considerable evidence that many social factors affect language development in children, ranging from the amount of time children spend in conversation with interlocutors to the contexts in which they talk and hear the language. How many opportunities children have to exercise their communicative skills, and how well their language model matches their abilities for analysis, will have an effect on the rate of their particular language development (Shatz, 2009).

Although some approaches to child language acquisition stress the rapidity and universality of the process (Crain & Lillo-Martin, 1999; Guasti, 2002), language acquisition develops over time: it begins at birth, if not in the womb, and it takes several years for a child to become an adult native speaker of the language. There are well-attested linguistic milestones in both monolingual and bilingual acquisition that children reach at specific ages. Children who are a few days old can discriminate their own language from another, and bilingual children recognize the two languages spoken in their ambient environment (Sebastián-Gallés, 2010). By 6 months of age, infants recognize the sounds of their native language(s). By about 7 to 10 months, infants begin to babble, producing reduplicated CV syllables, and by 10 to 12 months children produce their first words (excluding 'mama'). They understand the meaning of several words several months before they begin to produce any words (Huttenlocher & Smiley, 1987). By about 18 months, there is rapid acquisition and use of new words, and a vocabulary spurt is observed in most children. Carey (1978) estimated that children acquire about nine new words a day from the age of 18 months to 6 years. At about the same time, children start to combine words into two-word phrases (*big toy*, *mommy go*)—the two-word stage—but do not produce inflectional morphology. Studies of monolingual and bilingual children show that at the two-word stage, children respect the word order of the languages they are exposed to. For example, if the language, or one of the languages, is SVO, the child will tend to produce words that stand for SV (*mommy go*) or VO (*eat cookie*), but not for OV (*cookie eat*). Brown (1973), Pinker (1984), Braine (1987), and Bloom (1990), among many others, have noted that word order 'errors' are very infrequent in L1 acquisition. These two-word utterances are characterized as 'telegraphic' speech because they are composed of lexical categories only (nouns, verbs, adjectives, prepositions) and lack function words and grammatical morphemes. English-speaking children, for example, frequently omit subjects at this stage (*eating soup 'I am eating soup'). This is not a grammatical option in the adult language, which is the main source of input to the child.

Children at first omit grammatical morphology, especially in a language like English, and when inflectional morphemes appear, they emerge and develop in a fixed order. Children learning two languages follow the developmental sequence established in each of the languages (Meisel, 1990, 1994). The omission of a morpheme in an obligatory context and the use of the wrong morpheme in a given context are referred to as developmental 'errors' in child language. Developmental errors eventually go away, naturally. By 30 months, children's utterances become longer and more complex and the children gradually produce the required morphemes in the contexts where they are required. This, of course, depends on the

particular language being acquired, since not all features exist in all languages and not all features are acquired at the same speed from one language to another. For example, gender in nouns and definite determiners in Dutch is acquired quite late by Dutch-speaking children, after age 4 (Gillis & De Houwer, 2001) or even by age 6 (Unsworth & Hulk, 2010), whereas in Spanish gender agreement is mastered by age 3 (Montrul, 2004a).

Comprehension-production dissociations are common during early syntactic and phonological development. Children begin to produce a variety of complex sentences during the pre-school period. The earliest complex sentences in English-speaking children emerge around the second year (bare infinitives, *wanna* constructions, complements of verbs *think*, *said*, *know*, conjunctions *and* and *but*) (Diessel, 2004). By age 3, children produce relative clauses, adverbial clauses, participial clauses, and modal verbs. Yet comprehension-based experiments have shown that children do not understand many complex sentences until well into the school years (Chomsky, 1969; Clark, 1971; Sheldon, 1974; Tavakolian, 1977), perhaps because the acquisition of complex sentences is related to the complexity of relating two clauses on the one hand, and to the frequency of the constructions in the input, on the other. Furthermore, pragmatic and cognitive factors also play a role in the acquisition of complex sentences. For example, presentational relative clauses, which require the use of indicative in Spanish, as in (1), are acquired earlier than presuppositional relative clauses, which require the use of subjunctive, (2):

(1) Juan necesita un empleado que sabe   computación.
     Juan needs   an employee who knows.INDIC computation
     'Juan needs an employee who knows computers.'

(2) Juan necesita un empleado que sepa   computación.
     Juan needs   an employee who knows.SBJV   computation
     'Juan needs an employee who would know computers.'

The subjunctive in Spanish is used with complex syntax, and is not mastered until age 12 to 13 (Blake, 1983). Table 34.1 summarizes key milestones in early monolingual and bilingual development in pre-literate children, whose linguistic competence is acquired largely orally

Table 34.1. Developmental milestones in early language development

Age	Milestone	Linguistic characteristics
Birth to 5 months	Cooing	Early speech perception and phonetic discrimination
6 to 8 months	Babbling	Production of syllable CV Attuned to sounds of the native language
12 to 18 months	One-word stage	Production of first word(s) (form-meaning matching)
18 to 24 months	Two-word stage	Telegraphic speech Memorized chunks No productive use of inflectional morphology
24 to 36 months	Early multiword speech	Basic syntax. Emergence of morphology
36+ months	Later multiword speech	Complex sentences

and implicitly. Many adult heritage speakers display morphological and syntactic errors typical of early language development in monolingual children (Montrul, 2016a).

Later language development refers to the school-age period, and this period has not been as intensely investigated in linguistics as the pre-school period, perhaps because the Chomskyan view of language acquisition portrays becoming a native speaker as a fast and efficient process, with a continuous and effortless transition from the initial state to the final state (Crain & McKee, 1985, p. 94). In stark contrast to this view, Berman (2001, 2004) contends that becoming a *proficient* native speaker takes a long time because in addition to basic linguistic competence, language use in a variety of contexts must be taken into account. Berman's studies show that the language of 9- and 10-year-old children differs markedly from that of adults, not only in content, but also in morphosyntax and lexicon. Many linguistic forms, even those that emerge at early preschool age, have a long developmental history to become acquired and mastered, that is, entrenched (Berman, 2004, p. 10). Keijzer (2007) showed that in a number of tests of morphology and syntax in Dutch, 13- and 14-year-olds were still very different from adult Dutch speakers as measured by a grammaticality judgement task and an elicited production test. Albirini (2014) documented that it takes a while for Jordanian Arabic children to produce plural morphology in Arabic with more than 90% accuracy. Only at ages 5 and 6 years do the children appear to have internalized the complexity of plural morphology in Arabic. The children use all the forms but make mistakes until about age 8, when they behave like adult native speakers.

Crucial to understanding later language development is the distinction between *emergence, acquisition*, and *mastery*. For Berman (2004) a native speaker is somebody who has mastered and become proficient in several dimensions of knowledge and use of the native language through a constant interaction of competence and performance. For example, children may have acquired the grammar of number and gender agreement, yet still be at an 'item-based' phase of person marking (Tomasello, 2001), which for Berman would be 'partial' knowledge. Command of linguistic knowledge develops and is successfully reintegrated with increased ability in the domain of language use, which in the case of school-age children is reinforced by reading and writing. With increased age and cognitive and social maturation, the linguistic behaviour of speaker-writers comes to have an increasing effect on their internal linguistic representations. Ravid (2004) shows that Hebrew-speaking children know and use the passive participle -*u* by age 3 to 4, but it is not fully mastered until age 9. In a test administered to school-age children, 6-year-olds gave consistently non-passive responses when presented with obligatory contexts for passive formation. Only around 11 years of age did the children regularly provide passive constructions where required on the same test. Therefore, the morphology and syntax acquired during early language development is not always mastered until later.

By the time children start elementary school, at age 5 or 6, they exhibit a vocabulary of 4,000 to 6,000 words (Carey, 1978), inflect nouns and verbs with the correct morphology (90% accuracy according to Brown, 1973), and articulate most of their words correctly. Bilingual children develop an amount of concepts equal to or greater than monolinguals, except that they are distributed between the two languages because the acquisition of vocabulary is context-dependent. Bilingual children who attend school in only one language—like many heritage speakers in the United States and in other countries—show faster and more development in the language of school (Merino, 1983). Input is particularly important for vocabulary development (Menyuk & Brisk, 2005). During the

pre-school period, children also gradually develop awareness of the language, and begin to discriminate between grammatical and ~~incorrect~~ forms. Because they cannot verbalize the rules, their grammaticality judgements are based on intuitions. Metalinguistic awareness develops at around age 4 (Doherty & Perner, 1998) and is crucial for literacy development.

At school, children fix, restructure, and expand their basic linguistic competence, gaining more communicative competence as they learn to read and write (Barriga Villanueva, 2008). They are also exposed to different types of discourse that require the expansion of more abstract vocabulary, and the use of more complex syntactic, semantic, and pragmatic structures. For example, children are encouraged to describe abstract objects or processes, to talk about cause and effect, to formulate hypotheses, and to support arguments. Depending on children's interests, they develop vocabulary for specific areas of knowledge, and their vocabulary size can range from 8,000 to 13,000 words by the end of first grade (Menyuk & Brisk, 2005). During this period, children also learn semantic and formal relationships between words (synomyms, antonyms, homophones, etc.) and morphological relatedness (*rapid-rapidly*, *amaze-amazement-amazingly*). Children learn to use their language as a medium to express their thoughts and experiences in speaking and writing. Syntactically, children develop the ability to use low-frequency structures such as the passive voice, common in scientific reports and writing, as well as generic statements (*Dogs have four legs*). Table 34.2 gives some of the features of later language development.

Table 34.2. Structural and pragmatic development in 6- to 8-year-old children

Category		Change
Grammar	Syntax	Sentence length increases (e.g. *I see the boy who I played with yesterday*) Combining structures becomes more frequent (through complementation, conjunction, subordination) (e.g., *She likes me to do homework before watching television*)
Morphology		Prefixing and suffixing increases (e.g. *unhappiness*, *disapprove*, *discussion*)
	Lexicon	Use of abstract categories increases (e.g., *liberty*, *vast*, *imagination*) Synonyms and antonyms used more widely (e.g., *large*, *big*, *huge*, *small*, *little*, *minute*) Multisyllabic words appear more frequently (e.g., *disappointment*, *unhappiness*)
	Phonology	Stress rules of language acquired (e.g., *history*, *historical*, *influence*, *influential*) Morpho-phonological rules (e.g., *a car*, *an apple*)
Pragmatics Conversation		Begin to take perspective of others Begin to make relevant responses
	Storytelling	Begin to be listener friendly Begin to follow story grammar
	Explanation	Begin to move from personal reference to abstract knowledge

Source: adapted from Menyuk & Brisk (2005).

However, mere exposure to and analysis of complex language at school is not sufficient for learning to occur. It is critical that older children have the opportunity to use the language in academic assignments requiring formal speaking and writing (Nippold, 2004). Compared to the oral discourse of conversation, expository discourse stimulates the use of longer utterances containing greater clausal density through adverbial, relative, and nominal clauses (Nippold, 1998). Analysing poetry or writing about controversial topics also stimulates use of complex thought and language. By engaging in these activities, children are called upon to employ the sophisticated lexical and syntactic elements they have been learning.

At school, children acquire advanced levels of spoken and written language (Scott, 2004). Learning to write requires learning to use more abstract language and to move from simple noun phrases (*my house*) to complex nominalizations (*the housing project that was inaugurated last year*). It also requires use of modal verbs, conditionals, and adverbial conjunctions (*meanwhile, consequently, therefore*) in complex sentences. Children must also acquire knowledge of different registers and the ability to recognize when to use formal or informal language. Some languages, such as Korean and Japanese, grammatically encode honourification and use multiple registers to encode the social status of the addressee and speaker. Such registers are acquired in school and are an essential component of literacy.

In addition to the knowledge of registers, children learn about other types of variation in the target language at school. The source of such variation may be dialectal, as in the standard language of school compared with the local dialect of the home; and/or contextual, as in differences between everyday colloquial usage, standard-intermediate level usage of the media or of academic discourse, or the normative requirements of the official language establishment. Ready and flexible access to diverse linguistic registers, varied levels of usage, and different types of texts are prerequisites for 'linguistic literacy' (Ravid & Tolschinsky, 2002), and require both protracted cognitive maturation and extensive experience with different communicative settings. A native speaker is someone who can distinguish between various styles and dialects of their language; they may not be able to name them all or explain how they work but they have enough knowledge to recognize the differences. But such knowledge comes from years of experience with different types of speakers and different contexts. It takes years to develop sensitivity to variation in one's language and that is a type of sensitivity that heritage speakers often lack.

Another critical aspect of literacy is written proficiency and spelling. Writing offers important advantages over speaking for linguistic development. Writing allows the learner more time to search the lexicon for the precise vocabulary and to organize the discourse more concisely, and to devote more thought to the formal aspects of language (Nippold, 2004).

To summarize, the process of native language development extends beyond early childhood. Mature and proficient knowledge and use of the native language require several years of cognitive and linguistic maturation and experience with literacy-related school-based activities. At the same time, many aspects of later language development continue throughout life, since the language used by adult speaker-writers of a standard dialect differs in significant ways from that of high school seniors (Reilly et al., 2005). Since many heritage speakers do not receive academic support of their heritage language through schooling, it is not surprising to see that they do not develop many aspects of their heritage language, even those aspects that were supposed to be mastered in the early language development period, like inflectional morphology.

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34.3 LANGUAGE DEVELOPMENT AND AGE

From the discussion above, it should be obvious that it takes several years of substantial exposure and use of the language in a variety of social contexts in order for a person to become a *proficient native speaker*, be that monolingual or bilingual. The basic linguistic competence developed during the pre-school years gets expanded and solidified as the child grows cognitively and socially, and is exposed to written language at school. The two main ingredients for language acquisition are the innate linguistic capacity for language (or language acquisition device (LAD)) (nature) and the input (nurture). However, mere exposure to samples of language is not sufficient: both the comprehension and the production systems need to be engaged for the speaker to use and produce the language in meaningful contexts. Literate children and adults need exposure to written and oral language. Another key factor that interacts with the innate capacity for language and input is *timing*, conceptualized as the age of the learner, as in Figure 34.1.

Successful language acquisition is subject to a maturational schedule: the LAD must be set in motion early, through exposure to the language. The idea that the elements and structure of language must be learned in childhood to be mastered at native levels has been around for many years, and supported by scientific evidence from brain development (Penfield, 1953; Penfield & Roberts, 1959; Lenneberg, 1967; Mayberry, 2010). The critical period hypothesis for language states that the capacity for implicit and unconscious native language learning is lost if it is not activated during a 'critical' period in childhood.
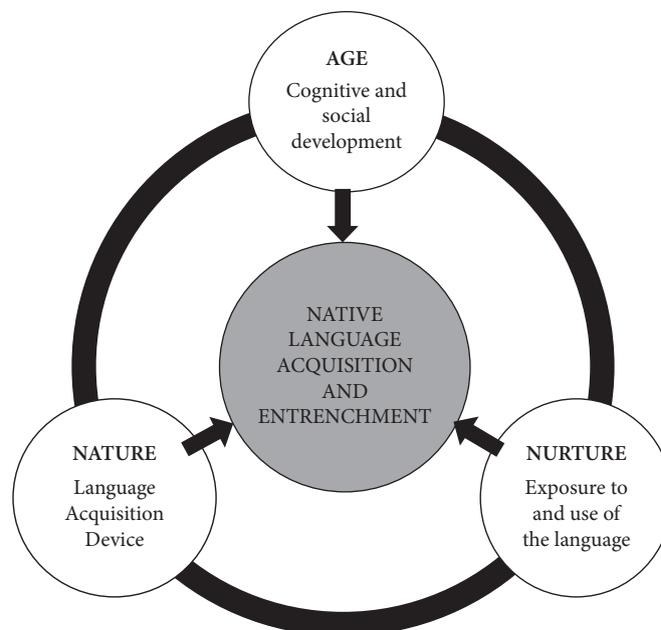
FIGURE 34.1. Nature, nurture and age: factors affecting native language acquisition and entrenchment

Although Lenneberg (1967) set the terminus of the critical period at age 13 (or puberty), other ages were proposed in later research, as well as multiple ages for different components of language (Seliger, 1978; Long, 1990; Newport, 1990; Bialystok & Hakuta, 1999).

Age effects are relevant both for L1 and L2 acquisition, as well as for L1 loss or attrition (Pallier, 2007; Montrul, 2008; Bylund, 2009a,b). When attrition occurs in adulthood, the L1 grammar appears to undergo minor changes (Schmid, 2014), which in some cases can be induced by the L2. In general, individuals undergoing attrition in an immigrant setting retain the ability to understand and use the language at an advanced level. It appears that reduced input and even disuse of the language for several years in adults does not seem to affect the integrity of the native grammar substantially (Schmid, 2007; 2014). In some reported cases, the effects of L1 attrition have been minimal: after more than fifty years of language disuse Schmid (2002) found that German Jewish émigrés living in the United States exhibited some transfer from English but very few actual morphosyntactic errors that could be attributed to L1 attrition. No adult undergoing attrition in a bilingual environment has been shown to regress to such an extent as to forget how to conjugate verbs, ask questions, or produce and discriminate native sounds (Keijzer, 2007).

The situation is different, however, when intense exposure to the L2 starts in childhood, as in the case of heritage speakers, although it is not the case that acquisition of an L2 in itself necessarily causes loss of the L1 in childhood. After all, there are fully fluent bilinguals who are exposed to the L1 and L2 in childhood and who do not exhibit L1 attrition (Kupisch et al., 2013). The studies documenting extensive effects of attrition at the lexical, phonological, and morphosyntactic levels are about children (Kaufman & Aronoff, 1991; Turian & Altenberg, 1991) or about adults who immigrated in childhood (Vago, 1991; Polinsky, 2006), suggesting important differences due to age of intense exposure to the L2 and reduced used of the L1. What causes severe L1 attrition is reduced input and lack of consistent and sustained exposure to and use of the L1 during a time when the native language is not fully fixed in the brain, most likely before and around the closure of the critical period (puberty). The L1 is used less because children growing up in an L2 environment spend most of their waking hours using the L2 at school and with peers, at the expense of the L1.

Age of emigration and intense exposure to the L2 affect L1 loss in a bilingual environment (Montrul, 2008; Bylund, 2009a,b; Flores, 2014a). The younger the individual when reduction of input and lack of use of the L1 take place, the more severe the extent of language loss at the grammatical level, such that the effects of L1 attrition in childhood are more dramatic than in adulthood. Several studies have shown that child and adult heritage speakers who are sequential bilinguals and who experienced a period of monolingualism or language dominance in their heritage language tend to have higher proficiency in the heritage language than children who are simultaneous bilinguals (Montrul, 2002, 2008; Allen et al., 2006; Allen, 2007; Montrul & Sánchez-Walker, 2015). Montrul (2008) shows that within childhood and in a minority language context, simultaneous bilingual children are more vulnerable to attrition than sequential bilingual children, because sequential bilinguals were exposed to their L1 for a longer period of time than simultaneous bilinguals (Montrul, 2002). However, it is important to bear in mind that L1 attrition also happens in adult immigrants, and such attrition may happen even without extensive knowledge of an L2 (Köpke, 2004c; Schmid, 2011a; Baladzhaeva & Laufer, 2017; among others).

In addition to age and timing of L2 input, the quantity and quality of first language input play a significant role in the extent of L1 attrition: reduced input in childhood is not the

same as completely interrupted input (Montrul, 2008; Hyltenstam et al., 2009). Immigrant children continue to have exposure to the family language, even if they do not use the language very often and may end up being receptive bilinguals or overhearers (Au et al., 2002; Oh et al., Chapter 39, this volume). In general, bilingual children who immigrate with their parents have some productive ability in their family language even though they may exhibit different degrees of acquisition and attrition (Montrul, 2002, 2008; Polinsky, 2006; Polinsky & Kagan, 2007). By contrast, internationally adopted children are often adopted by families who do not speak the child's language, although some families make efforts to keep the culture of the child present in some way (Di Gregorio, 2005). As a result input in the L1 is interrupted abruptly right after adoption in international adoptees. The extent and speed of attrition and actual total loss of the L1 is even more severe in adoptees than in immigrant children (Montrul, 2011c).

To summarize, for a language to develop, stabilize and not regress, a critical mass of input and use is required during an extended period of time, including the span of the language development period, which does not automatically end at age 4 and 5 but continues throughout the period of schooling and later language development. Reduced input interacts with age: it affects the developing grammars of bilingual children more than that of bilingual adults.

34.4 OTHER FACTORS AFFECTING THE LANGUAGE DEVELOPMENT OF HERITAGE SPEAKERS

Native language development is a long process, if we take into account early emergence, acquisition, and mastery of simple and complex structures in production and comprehension, in addition to their subtle semantic and pragmatic implications. It takes at least thirteen to fourteen years, if not more, to achieve adult native levels of proficiency, and schooling plays a role in morphosyntactic development in adolescence (Keijzer, 2007). A bilingual environment presents additional challenges since all these linguistic milestones must be achieved in two languages when the quantity of input in each language is not a hundred percent. When input is not optimal in quantity, many heritage speakers exhibit *acquisition without target mastery* of several aspects of their heritage grammars. Input factors and use of the heritage language in the immediate family and school context and in the broader socio-linguistic context contribute to the acquisition and development of specific grammatical properties of the heritage language grammar.

How can the quantity of input be operationalized? In the previous section we noted that, in general, young adult sequential bilingual heritage speakers show stronger language acquisition and maintenance in several areas than heritage speakers who are simultaneous bilinguals, and this was operationalized as an age of onset of bilingualism effect (early in simultaneous bilinguals and later in sequential bilinguals). Naturally, the time and cumulative amount of exposure as a simultaneous or sequential bilingual cannot be disentangled from the quantity of input and the type of input required to reach full linguistic proficiency in the two languages. In a study of French-English bilingual children in Montreal, where

both English and French are valued and used widely in the community, Thordardottir (2013) found that 50% exposure to each language is sufficient to develop the language at monolingual levels in bilingual children. But the reality is that the amount of time or proportion of daily input a bilingual child is exposed to in the two languages can range from 0% to 100% in each language depending on the circumstances.

The quality of the input and the contexts of language use also matter. The quality of input (and of output) refers to the richness of the language the child is exposed to in terms of diversity and complexity of structures and vocabulary (Jia & Paradis, 2014). This includes the type of vocabulary the bilingual is exposed to and actually uses, the specific syntactic structures used when speaking in a particular context or about a particular topic, and the type of discourse required depending on topic/context; that is, familiar and presentational versus descriptive, hypothetical, argumentative, etc. Examples of situations and activities that contribute to the quantity and quality of input in child heritage speakers are the percentage of time spent speaking the heritage language versus the L2; the number of different people with whom the heritage language is spoken; the percentage of time that the heritage language is used in leisure activities (i.e., playing games, reading books and magazines, watching TV and movies, or using the computer in the heritage language); and the frequency with which children attend activities conducted in the heritage language, such as playing with children who speak the heritage language, extracurricular activities, or weekend heritage language school.

If a language is not needed in some context or for some purpose, the vocabulary and linguistic properties associated with the context or purpose may not develop, and if reading and writing skills are not needed in one of the languages, they will not be developed either. Because many heritage speakers do not receive schooling in their heritage language, they do not develop their language beyond basic, concrete vocabulary and the syntactic structures required to talk about past and present events. Some heritage speakers may later lose many of the basics learned. Even if heritage speakers continue to use the language throughout their life, the language is used in restricted contexts and may lack lexical and structural variety. Both the quantity and the quality of input are crucial for heritage language acquisition and eventual maintenance (Jia, 2008).

Furthermore, the quality of input in a language contact situation can vary depending on the linguistic proficiency of the interlocutors. If the parents, for example, have lived in the immigration context for more than ten years, they may experience attrition in some aspects of their grammar. One area that has been shown to be subject to change in first generation speakers, for example, is the use of null and overt subjects in null subject languages (Nagy et al., 2011; Benmamoun et al., 2013a; Benmamoun et al., 2013b; Sorace, 2000a; Tsimpli et al., 2004; among many others). Therefore, some heritage speakers may also be exposed to input different input from the homeland variety, and in this input variety some changes may even arise due to attrition; the source of this input can be the language of their parents or other interlocutors in their social networks (Montrul, 2016). Another possibility is that some heritage speakers may be exposed to heritage speakers from the same language but a different dialect, and that the dialects may differ in a particular property. Otheguy & Zentella's (2012) study of pronoun expression in the Spanish of New York City is an example of this situation, because speakers of non-Caribbean dialects develop higher frequency of use of subject pronouns due to contact with speakers of Caribbean varieties and English. Although all heritage speakers report using the heritage language mostly with

their parents or grandparents, in some families heritage speakers use the heritage language with siblings and friends, who are also heritage speakers themselves. Therefore, the social networks of the heritage speakers, the density of the networks (number of interlocutors), and the degree of proficiency of the speakers in the network also contribute in important ways to the quality of input heritage speakers are exposed to.

While the immediate family plays a significant role in heritage language acquisition, after children start school the family is not sufficient for continued language development (Kerswill, 1996). The broader socio-cultural and political atmosphere contributes to language development as well. According to Armon-Lotem et al. (2014), political forces, identity, attitudes, and socio-cultural and socio-linguistic preferences of the particular heritage language community also influence in significant ways the heritage language acquisition process. Even if the parents make an effort to use and transmit the heritage language to their children, the minority status and socio-political prestige status of the language in the broader society also play a critical role in the degree of bilingual development, and can influence the degree of proficiency achieved in the heritage language. As children grow, ~~the peer group and the broader society~~ become the main sources of input and ~~values about~~ the heritage language. Associated government and educational language policies directly impact the eventual level of ultimate attainment of the minority language in heritage speakers. Because minority languages do not typically have official status, do not have the same public presence as majority languages, and are often not used as the medium of instruction in schools, there are few opportunities to use the language beyond the home.

In modern day~~s~~, more and more heritage speakers choose to re-learn their home language when they enter adulthood, for example through college classes. Heritage speakers seem to have some advantages in language classes as compared to L2 learners, but those advantages are typically limited to phonetic and lexical levels (Au & Romo, 1997, Au et al., 2002; see also Oh et al., Chapter 39, this volume). Heritage speakers of course excel in listening and some speaking but their literacy skills are lacking and sometimes take longer to develop than the skills of L2 learners. It appears that their re-learning process can be greatly enhanced by tapping into their existing knowledge ~~and~~ helping them systematize it and by exposing them to the full range of variation in their home language, ~~something that~~ takes ~~a long time~~ for L2 speakers to grasp. A good understanding of heritage language development, structure, and use is crucial for the development of heritage language ~~relearning~~ methodologies, and new research has been emerging that calls for a direct link between the two fields, linguistic research and evidence-based pedagogical approaches to heritage ~~speakers~~ in a classroom setting and beyond (Polinsky, 2016; Bayram et al., 2016).

Other major factors related to socio-political status that also contribute to ~~degree of~~ heritage language development are internal to the individual and have to do with attitudes and identity. When a language is not important in a particular society, parents may hold unfavourable attitudes toward their own language, leading them to neglect the language at home, impacting the heritage language development of their children. This is common with speakers of indigenous languages in parts of Mexico (Barriga Villanueva, 2008). On the other hand, often parents do not have negative attitudes toward their language, consider that the heritage language is valuable, and insist on its exclusive use at home. Still, the children may refuse to speak the language or even feel ashamed of the language because they are aware of its minority status in the broader society. For many immigrant children, reduced exposure and use of the heritage language begin as soon as they enter

kindergarten (Wong Fillmore, 1991, 2000; Ellis et al., 2002; Shin, 2005), but the steepest decline is observed in early adolescence, ages 8 to 14 (Portes & Rumbaut, 1996). During this time, rejection of the home language is accompanied by feelings of embarrassment, frustration over the widening cultural gap with parents, and cultural isolation (Tse, 1998, 2001a,b). A move away from the heritage language and culture and toward the majority language and culture is common once children start schooling and their main peer group is other children.

In addition to their own feelings about their identity, some heritage speakers are often judged by elder speakers with higher proficiency in the language. Sherkina-Lieber et al. (2011) report that one difficult feature of Labrador Inuit communities has been the negative attitude of fluent speakers towards non-fluent speech in Inuktitut. Older fluent speakers have been described as producing negative reactions to non-fluent speakers' attempts to speak Inuktitut, so that non-fluent speakers reported being discouraged from trying. Embarrassment at their language abilities and the realization that their proficiency is not very high also affects heritage speakers' willingness to use the language at home during the period of later language development.

As learners' identification with the heritage language and culture evolves, so do their language choices and competencies, which in turn may change how they relate to parents, siblings, neighbours, teachers and friends as part of the socialization process. He (2006) articulates how the ebb and flow of heritage language competencies throughout the lifespan are intrinsically linked to ideologies and language choices that change as heritage language learners grow up. The changes are conditioned by the bilingual learners' motivations to use the languages, social networks, and opportunities to use the languages. The quantity and quality of input in the heritage language, which feeds the LAD and determines the degree of acquisition and proficiency in the heritage language, is ultimately linked to all these socio-political, ideological, affective and situational factors, as exemplified in Figure 34.2.

Once we establish the relationship between the biological, cognitive, political, social, and affective factors that contribute to language development, we can see that there are several
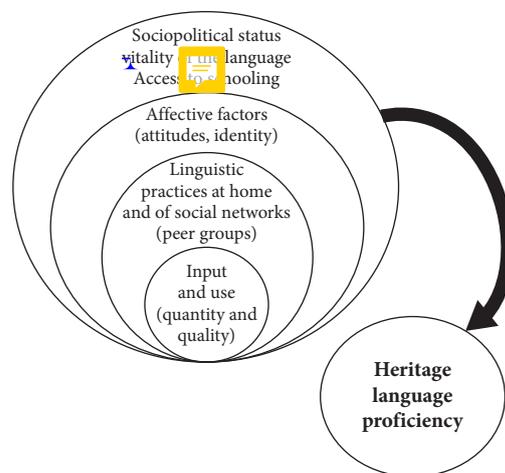
FIGURE 34.2. Interrelated factors that play a role in heritage language acquisition and proficiency

causes of lower proficiency in the heritage language than in the majority language in many heritage speakers and that these causes ultimately drive the structural changes at all linguistic levels.

In previous work (Polinsky, 2006; Montrul, 2008) we have referred to heritage language grammars as 'incomplete grammars', the result of incomplete acquisition. We acknowledge that referring to a grammar as incomplete can be theoretically problematic if one considers that languages are always changing in some way (see Kupisch & Rothman, 2016, for discussion). It is also hard to tell when individual grammars can actually be acquired completely, as pointed out by Otheguy & Zentella (2012) and Meisel (2013). Even more unfortunate is the fact that the term 'incomplete grammar' can also unintentionally lead to a negative portrayal of the ethnic minorities who speak these languages.[1] Perhaps more appropriate is to suggest that the process of incomplete acquisition can lead to a *divergent or innovative grammar* (see Flores, 2014b, Scontras et al., 2015, for the terminology and further discussion), different from the target grammar or baseline, due in part to insufficient input and use necessary to match the monolingual baseline (see also Chapter 36 by Bayram et al., this volume, for a discussion of this issue).

Before concluding, we would also like to offer some observations on the bicultural competence of heritage speakers. It is often assumed without much questioning that heritage language speakers are fully bicultural. 'Yes, they may be limited in their knowledge of language, but they are culturally proficient.' A couple of decades ago, when research on heritage languages was just starting, researchers were equally confident that heritage speakers were not much different from monolinguals. We now know that this is not the case; it is time to re-examine the bi-culturality assumption as well. Heritage speakers may know a great deal more about their heritage culture than an average outsider, but they are also limited in their knowledge of cultural norms, especially if those norms are connected with verbal communication. If they do not know how to use different registers they may not be aware of politeness norms (cf. Dubinina, 2010); they may lack culture-specific gestures or use them inappropriately; they often do not know cultural references of the home culture; they may be unaware of the conversation turn-taking rules in the homeland—this list can be continued indefinitely. As we get better at understanding the subtleties of heritage-language bilingualism, we should examine the bicultural status of heritage language speakers as well.

In conclusion, because heritage speakers are a highly heterogeneous population from both a psycholinguistic and socio-linguistic point of view, age of onset of bilingualism, and quantity and quality of input lead to acquisition and mastery of some grammatical areas and attrition or incomplete mastery of others. All of these factors, or a combination of them, contribute to the particular language development of these individuals. The chapters in this section discuss in more detail theoretical approaches and research designs aimed at identifying and isolating these factors.

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[1] For example, Chamorro, Sturt, & Sorace (2016, p. 3) refer to 'incomplete heritage speakers', an unintentional but unfortunate description of these bilinguals. Of course that echoes the notion of 'semi-speakers' or 'quasi-speakers', introduced by Dorian (1977) and still used in studies of endangered languages. Some degree of attrition or reduced mastery of grammar in endangered languages is often taken for granted, but parallels between endangered languages and heritage languages as spoken by bilinguals in large societies still remain to be explored.

Three chapters in this section (Part VI) address the nature of the quality and quantity of input received by heritage speakers. Sharon Unsworth (Chapter 35) emphasizes that the quantity of input may vary in a significant way, and that this in turn has an effect on the linguistic development of a heritage speaker. Echoing the comments made earlier in this chapter, Fatih Bayram and his co-authors (Chapter 36) call the reader's attention to the fact that immigrant language (the language of the baseline, which serves as input for heritage language acquisition) already has a number of differences from the language in the homeland, including some differences due to genuine attrition. Heritage speakers only amplify these differences, which results in observable changes in their grammar and usage. In her chapter (Chapter 38), Tanja Kupisch also considers the quantity and quality of input. Crucially, she points out that the factors responsible for shaping heritage grammars also include the age of onset effects caused by a loss of brain plasticity and lateralization, distance to the homeland, similarities and differences between the two languages in the bilingual dyad, and the degree of language dominance. Her compelling conclusion is that all of these factors need to be taken into account together; otherwise, we stand the risk of oversimplifying heritage language data and missing important generalizations.

Three other chapters focus on particular populations that need to be taken into account in heritage language research: early childhood speakers (overhearers), international adoptees, and international returnees. The chapter by Janet Oh and co-authors (Chapter 39) examines the potential benefits of early childhood exposure to language for later language (re)learning among immigrant-background adults. Lara Pierce et al. (Chapter 38) address the degree to which international adoptees retain their first language (if at all). Understanding what aspects of language undergo attrition and what is retained ~~in the brain in~~ international adoptees sets the stage for determining the neural substrates available for language learning/processing and the constraints under which language is acquired at any given stage of development. Christina Flores (Chapter 40) provides an overview of research on bilingual returnees: ex-migrants, who have lived for an extended period in a migration context and have, at some point in their life, returned to their homeland. Flores highlights the research potential that has yet to be explored in the study of their language. In particular, their data can shed light on the role of extra-linguistic variables, such as quantity and quality of exposure, age, and literacy skills on language development.