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This is a contribution from *Input and Experience in Bilingual Development*.

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# Introduction to “Input and experience in bilingual development”

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“The more you hear a language, the better you learn it” – a statement that seems almost trivially true. If you spend five years in Japan, chances are you will learn more Japanese than if you spend only a few weeks. If a bilingual child experiences more meaningful interactions in English every day than in Spanish, chances are her English will be stronger. Yet the relationship between language input and experience on the one hand, and language outcomes on the other, has proven to be much more complex than the simple one-to-one relation implied by this common-sense statement. What exactly do we mean by “more” input or experience? In what terms is quantity of exposure best understood, and how can we obtain accurate measurements of it? In addition to sheer *quantity* of input, what *qualitative* aspects of experience affect language development? Similar questions arise on the other end of the equation: What exactly do we mean by “it”, that is, the actual language outcomes we consider? Does it make a difference whether we look at vocabulary size, morphosyntax, processing speed, or abstract constraints on sentence interpretation? Does it matter whether we assess language outcomes in production or in comprehension, or whether we use standardized, omnibus tests of language skill versus custom-made tasks targeting specific linguistic properties? Finally, can we expect the relationship between input and outcomes to be a linear one, or are there potential thresholds beyond which the effects of variation in exposure may be diminished?

The chapters in this volume all speak to one or more of these questions, reflecting the burgeoning interest in and research on input and experience in bilingual development, which had prompted the organization of two symposia on this topic at the congresses of the *International Association for the Study of Child Language (IASCL)*, by Johanne Paradis in 2008, and by Theres Grüter in 2011. These symposia provided the foundation for this volume. Chapters include research on early bilinguals, that is, children who have been exposed to two languages either from birth or within the preschool years. They represent a range of theoretical and methodological approaches to the study of childhood bilingualism, covering a variety of language combinations and sociocultural contexts such as Spanish-English

bilinguals in the United States (Grüter, Hurtado, Marchman & Fernald; Hoff, Place, Welsh & Ribot), French-English bilinguals in Canada (Elin Thordardottir; Paradis, Tremblay & Crago), Russian-Hebrew and English-Hebrew bilinguals in Israel (Armon-Lotem, Joffe, Abutbul-Oz, Altman & Walters), English-Dutch bilinguals in the Netherlands (Unsworth), and Dutch-French bilinguals in Belgium (De Houwer). One chapter examines factors underlying bilingual development in the context of language maintenance in indigenous communities in South America (Pearson & Amaral). Another chapter reports on studies with internationally adopted children in Canada (Pierce & Genesee), who are a special and relevant case because they typically discontinue learning their first language, but nonetheless, their exposure to the second or adopted language does not begin at birth.

Research with monolingual children has demonstrated that the amount of input a child receives matters greatly, particularly with regard to vocabulary development (e.g. Hart & Risley 1995; Hurtado, Marchman & Fernald 2008), but also for the development of some grammatical constructions (Huttenlocher, Vasilyeva, Cymerman & Levine 2002). Beyond the role of the sheer amount of language a child is exposed to, recent work conducted within usage-based approaches to language acquisition has uncovered complex relationships between variation in input structural properties and variation in children's developmental outcomes (Bybee 2001; Lieven & Tomasello 2008; Lieven 2010). For example, the type frequency of a morphological pattern and the degree of consistency in form-to-function mapping often predict morphological acquisition sequences more than token frequency. Furthermore, developmental outcomes are also shaped by broader familial and social experiential factors that go beyond sheer amount of exposure and variation in input structural properties, and those broader, more distal experience factors may in turn affect the nature and impact of more proximal factors such as amount of exposure (Fernald & Weisleder 2011; Hoff 2006). We can thus identify both *child-level* input factors, including variation among children in the quantity of input they receive, and variation in various aspects of the social environments they live in, as well as *language-level* input factors, such as token/type frequency and distributional consistency of particular constructions within a given language.

If monolingual children's language development is shaped by both child-level and language-level input factors, then the same would be the case for bilingual children's development, but even more so. This is because there are more sources of variation in a bilingual child's language input and broader language environment. Most obviously, the input the bilingual child receives is divided between two languages, and is rarely equal between them, both with regard to the amount of time the child spends in each language, as well as the domains of life in which he or she experiences and uses each language (Grosjean, in press). Moreover, this

balance may change over time. This is the case particularly, but not only, for children who do not experience both languages from birth, but for whom exposure to the second language begins at a later point in infancy or childhood. For those children, measures of input at a given point in time may not reflect *cumulative* experience with each language across their lifespans (Unsworth 2013). In addition, specific language combinations will give rise to variable patterns of cross-linguistic influence, and the consequent potential for acceleration or delay in development, depending on how certain features or functions are encoded grammatically in each of the two languages (Paradis & Genesee 1996). These language- and child-level sources of variation in the linguistic environments of bilingual children are likely to add to, and interact with, the sources of variation that are known to affect monolingual children's development.

The inherent complexity and variation in the input bilingual children experience make bilingual development an ideal domain for investigating the role of input in language acquisition, a topic that is of both theoretical and practical relevance. In the wake of emergentist approaches to language acquisition, exemplified by work such as *Rethinking Innateness* (Elman et al. 1996) and extended by the advent of usage-based models of language acquisition (e.g. Bybee 2001; Lieven & Tomasello 2008), the theoretical debate on the extent to which language development is reliant on input has been reinvigorated over the past two decades. Yet interestingly, evidence from bilingual development has played only a limited role in this debate. This is unfortunate because how sensitive or resilient the human capacity for language learning is to variation in the linguistic environment is, arguably, best investigated in contexts where such variation is maximal. For evidence from bilingual development to have a more significant theoretical impact, however, identifying and teasing apart the various dimensions of input variability in bilingual children's environments is pivotal. The chapters in this volume make a significant contribution in this regard, both in terms of the evidence they present themselves, and the methodological and conceptual issues they raise for future research in the field.

Parallel to the rise in theoretical interest in the role of input has been an increasing focus on bilingual-monolingual differences in rates of development and the educational and clinical implications of such differences (e.g. Gathercole 2007; Oller & Eilers 2002; Paradis 2007). The difference in the amount of input received by bilinguals versus monolinguals has been considered to be a primary factor underlying monolingual-bilingual differences in rates of development (Gathercole & Hoff 2007). For clinicians, in order for language assessment of bilingual children to be valid and effective, bilingual children's performance needs to be compared to appropriate norms. If rates of development differ greatly amongst bilingual children and between bilinguals and monolinguals, determining what the appropriate

norms are becomes a complex task. One cause for concern is the risk of over-identification of language and learning disabilities in bilingual children due to inappropriate use of monolingual norms to measure their developmental achievements (Paradis, Genesee & Crago 2011). For educators, setting appropriate expectations for bilingual students' language development and making any necessary pedagogical adjustments in function of differences between bilinguals and monolinguals is important for delivering high quality programs suitable for all children. Therefore, research on the role of input variation in bilingual acquisition speaks to the daily challenges faced by educators and clinicians in many parts of the world.

In sum, the role of input factors in bilingual development is important to both theoretical and applied domains, and moreover, it contributes to our understanding of the environmental factors shaping language development in all children. For the remainder of this introduction, we discuss the chapters in this volume in terms of the methodological, theoretical and applied issues they touch on. Our purpose is to show how, collectively, these chapters drive forward our understanding of the role of input and experience in bilingual development, and importantly, lay the ground work for the future debates and research foci in this field.

### 1. Defining and measuring input quantity

In line with prior research, the majority of chapters in this volume present evidence for how the amount, or quantity, of exposure bilingual children receive in their languages impacts their rates of development in those languages (Armon-Lotem et al.; Elin Thordardottir; Grüter et al.; Hoff et al.; Paradis et al.; Pierce & Genesee; Unsworth). Also in line with existing research, most chapters relegate the discussion of how input quantity was measured to brief descriptions in methods sections. In contrast, two chapters, Grüter et al. and De Houwer, focus directly on measurement issues with regard to input quantity, and how choices in measurement might affect findings. Input quantity in studies with bilingual children is most often measured through parent questionnaires, which consist of parents indicating language use per unit of time in the day or week or according to context and activities (e.g. Marchman & Martínez-Sussmann 2002; Place & Hoff 2011). Researchers use this information to derive qualitative categories, such as 'Spanish-only spoken at home' and 'Spanish and English spoken at home', or numeric values for what percentage of each language is spoken at home, for example, 40% Spanish-60% English. In both these cases, exposure to the two languages is measured in relative terms.

Grüter et al. discuss the distinction between measuring the input bilingual children receive in relative versus absolute terms. They contrast the commonly used relative method with one where absolute amounts of input in each language

are calculated, for example, number of words per hour, an approach more commonly used in research addressing input factors in monolingual development (e.g. Hart & Risley 1995; Huttenlocher et al. 1991). They draw on published and new research on vocabulary size and online processing efficiency among young Spanish-English bilinguals to demonstrate how the choice of relative vs. absolute measures of language exposure, in conjunction with relative vs. absolute measures of language outcomes, can lead to substantially different results regarding the extent to which input predicts outcomes. They illustrate how this discrepancy could occur due to variability in caregiver engagement: While a child might spend less time overall exposed to Spanish than English, the Spanish-speaking interlocutors in that particular child's life might be more verbally engaged with the child, providing more, and more diverse, linguistic input in a relatively shorter period of time than this child's English-speaking interlocutors in a relatively longer stretch of time. In order to better capture such variation, Grüter et al. highlight the need for the inclusion of absolute in addition to relative measures of input, and outline the challenges of, and a potential solution for, obtaining such measurements in bilingual contexts.

De Houwer also points to differences between relative and absolute measures of input, with a focus on challenging the assumption that bilinguals *necessarily* experience less input in each of their languages than monolinguals in their one language. She reports a study based on a set of absolute frequency measures at the syllable, morpheme, word, and utterance level derived from recordings of dyadic interactions between Dutch-speaking mothers and their infants. Some of the infants were being raised bilingually and others monolingually. De Houwer's study showed that there were no between-group differences in terms of verbal engagement between mothers of monolingual children and mothers of bilingual children. Yet importantly, the variation among individual mothers in both groups was vast, thus leaving room for the possibility that an individual bilingual child might receive more input (in absolute terms) in one language, than an individual monolingual child does in that same language. Her study provides the foundation for further research where the impact of variation in absolute input on bilingual and monolingual outcomes is examined and compared.

## 2. Experiential factors beyond input quantity

Input factors can be categorized as being *proximal* or *distal* (e.g. Armon-Lotem et al.). Proximal factors comprise the basic input quantity measures, such as length of exposure and proportion or amount of daily input in a given language. Distal factors are the broader environmental influences that can shape the proximal

factors, and in addition, contribute to a child's language development in more qualitative ways. For example, socio-economic status, often measured through maternal education, has been found to have an impact on monolingual children's language development, vocabulary in particular (Hart & Risley 1995; Hoff 2006). This is likely because mothers with lower levels of education speak less often to their children, show less diversity in the words and grammatical constructions they use, and have fewer conversation enhancing strategies in their interactional style (Hart & Risley 1995; Hoff 2006). Thus, maternal education is a distal factor, but it conditions more proximal input factors that, in turn, affect children's outcomes. Another distal factor is the minority or majority status of the languages involved, which conditions the richness of the broader linguistic environments that the child may experience for each language, and is likely to impact children's attitudes to each language (Pearson 2007). Several chapters in this volume include distal factors, and some focus on them primarily. The title of this volume – *Input and experience in bilingual development* – reflects the recognition that 'experience' in the wider, more distal sense critically complements and shapes 'input' in its most basic, proximal sense.

**Pierce and Genesee** offer an in-depth review of how joint attention between parents and children shapes their conversational interactions and, in turn, impacts children's uptake. They present research from joint attention episodes between internationally adopted children and their mothers and fathers to reveal the relationship between the nature of parents' input during these interactions, that is, the types of attention regulation strategies they employ, and children's vocabulary outcomes. This research complements the previous work they review on children in other atypical language-learning situations, who for various reasons have low levels of ability in the language(s) they are acquiring. As Pierce and Genesee outline, children who find themselves in this situation are likely to benefit from different interactional strategies (e.g. redirections vs. follow-ins) than children whose language and general cognitive development are more closely aligned. Pierce and Genesee draw attention to the particular relevance of these differences for bilingual children in a one-parent-one-language context, where the child may benefit from different interactional strategies by the parent providing the input in the child's less proficient language. The authors thus present an agenda for future research on the role of attention regulation strategies in the language development of simultaneous bilingual children, a territory that has remained largely uncharted so far.

**Armon-Lotem et al.** examined the developmental impact of sociolinguistic factors, such as ethnolinguistic identity and attitudes towards speakers and languages, in two groups of bilingual children in Israel, one from families who immigrated for primarily economic reasons (from Russia) and the other from families whose reasons for migration (from America) were primarily ideological.



These are factors that have not hitherto been well studied in research on bilingual development. Armon-Lotem et al.'s results revealed differences between the Russian-Hebrew and English-Hebrew groups in terms of these sociolinguistic factors, and suggest that the influence of these identity and attitude factors on children's L2 Hebrew proficiency may be greater in the economically motivated Russian-Hebrew group than in the ideologically motivated English-Hebrew group. The impact of these factors on children's L2 Hebrew proficiency partially complemented, yet was not as strong as, the impact of more proximal factors, such as length of exposure.

**Pearson and Amaral's** chapter begins with a review of established proximal and distal factors impacting bilingual development, including input quantity, children's language models and interlocutors, and the circumstances or domains in which they hear each language. These factors are well established in research on bilingualism at the level of individual children, where they are known to affect the development and maintenance of the child's two languages. In their chapter, Pearson and Amaral move the discussion of these factors from the level of the individual child to that of the language community, asking specifically how proximal and distal input factors will impact the maintenance of an endangered language at the level of the community. Drawing on their on-going work with speakers of Wapichana, an endangered language spoken in the Amazon regions of Brazil and Guyana, Pearson and Amaral emphasize the critical importance of providing children in these communities with language environments that will foster the development of stable long-term bilingualism in order to slow or even reverse the process of language shift in the community that threatens to lead to the loss of Wapichana within the next few generations.

### **3. Comparing bilingual and monolingual rates of development across linguistic domains**

Assessing language development in bilingual children almost inevitably involves comparisons: comparisons between groups (bilingual vs. monolingual), as well as comparisons across linguistic domains (e.g. lexical vs. grammatical development). Yet when are such comparisons appropriate, and what exactly is to be learned from them? These questions are of immediate practical relevance given that most educational and clinical assessment tools are calibrated on monolingual populations. Educators and clinicians are thus faced with the question of whether it is appropriate to use these tools with their bilingual clients. Research increasing our understanding of the circumstances under which bilingual children's language performance can be expected to resemble that of their monolingual peers is



critically needed. The chapters by Elin Thordardottir, Hoff et al. Paradis et al. and Unsworth all contribute to this understanding.

At the same time, bilingual-monolingual comparisons have important theoretical implications for the wider field of language acquisition. Assuming that bilingual children, on average, have less exposure to one language than their monolingual peers, theories arguing language acquisition to be largely input-driven should predict that bilingual children will lag behind their monolingual peers at some point in development, for both vocabulary and grammar – at least until a critical mass or threshold of input has been reached so they can ‘catch up’ (Gathercole 2007). On the other hand, if important parts of language development are innately driven, with only marginal impact of input frequency, those aspects of language development should not be delayed in bilingual compared to monolingual children. For example, if the learning of words and the learning of their combinatorial properties (i.e. grammar) are seen as two fundamentally different processes, one guided by input-dependent general learning strategies, the other driven by a domain-specific innate acquisition mechanism (e.g. Pinker 1999), properties of the input are expected to have a far greater impact on the development of vocabulary than on the acquisition of structural constraints. Comparisons between bilinguals and monolinguals across linguistic domains can thus inform theoretical debates extending beyond the field of bilingualism itself.

Several chapters in this volume present comparisons between bilingual and monolingual groups, as well as comparisons across linguistic domains within those groups, including vocabulary size and general indices of grammatical development (Elin Thordardottir; Hoff et al.) as well as tests of specific morphosyntactic and semantic constructions (Paradis et al.; Unsworth). The similarities and differences between the findings from these studies speak directly to the practical and theoretical issues outlined above.

Hoff et al. bring forward the question of whether bilinguals can ‘keep pace’ with monolinguals, and point out the importance of distinguishing between bilinguals’ language abilities merely falling *within the normal range* established for monolinguals, versus bilinguals having *equivalent* abilities to a relevant monolingual group the same age. They report on a series of studies with Spanish-English preschool children, from toddlers to 4-year-olds, and compare children’s performance on standardized measures of vocabulary size and general morphosyntactic development derived from the CDI Inventories (Fenson et al. 2007). They found that bilinguals, as a group, do not keep pace with monolinguals overall, but they usually can keep pace in the language they receive most of their input in. These findings were broadly similar for vocabulary size and basic grammatical abilities, suggesting that input variation affects language development across domains. Correlational analyses within their bilingual groups, relating both quantitative and

qualitative input factors (including family size and parents' language background and fluency) to outcome measures are consistent with the conclusion that input variability is meaningfully related to language outcomes in different domains.

**Elin Thordardottir** also reports studies from a program of research with preschool children, including French-English bilinguals as well as French and English monolinguals from the same communities. Language outcomes were assessed using standardized tests of expressive and receptive vocabulary, indices of morphosyntactic development derived from spontaneous speech samples, and processing measures (nonword repetition, sentence imitation). The results of a series of studies from this program showed that amount of input was related to vocabulary development, productivity with grammatical morphemes, and performance on sentence imitation, yet less so to nonword repetition, suggesting that the latter could be a useful tool for the evaluation of primary language impairment in bilingual children. A key finding of this research was that French-English bilinguals could perform within monolingual norms or similarly to monolinguals when directly compared on certain measures; a finding that contrasts with that of Hoff et al. A potentially critical piece in explaining this discrepancy between studies is Elin Thordardottir's additional finding that while bilingual children's ability to meet monolingual age-based expectations in a language was influenced by how much input they received in that language, this was the case only up to a point. Importantly, that point varied depending on the outcome measure considered, lending further support to the observation that the choice of outcome measure matters when looking at the effects of input on language development. In addition to differences between outcomes measures, Elin Thordardottir also reports cross-linguistic differences between outcomes in the two languages, reflecting the role of language-level input factors: Inflectional morphemes were used more consistently by French- than by English-speaking children, and similarly, bilinguals with relatively balanced exposure to the two languages used them more consistently in French than in English.

**Paradis et al.** address similar issues to those in chapters by Hoff et al. and Elin Thordardottir. Paradis et al. focus specifically on language- and child-level input factors and their interaction in bilingual morphosyntactic development in older children. They report findings from two existing and one new study examining the morphosyntactic abilities in the production and grammaticality judgements of French-English bilingual children aged 4 to 11 years, looking specifically at verb inflections, definite articles, and pronominal object clitics. These properties and constructions differ from each other, within and across the two languages, with regard to their input frequency and distributional properties, which should render them relatively more easy or difficult to acquire. For constructions predicted to be easier to acquire, that is, requiring less exposure, fewer differences between

bilinguals and monolinguals as well as among bilinguals with various input profiles were expected. Findings were in line with these predictions: Bilingual-monolingual and within-bilingual differences were diminished or even neutralized for constructions with high input frequency and consistency, while input-related between- and within-group differences were more evident for harder-to-acquire constructions. Consistent with findings reported in the chapters by Elin Thordardottir and Hoff et al., bilinguals were more likely to perform like monolinguals in their dominant language of exposure, and bilinguals with balanced exposure to both languages could perform similarly to monolinguals in both their languages on many, but not all, measures. In addition, differences among bilinguals in morphosyntactic ability as a function of variation in home language input largely disappeared in the 11-year-old group, and these older bilinguals showed accurate and stable performance on the tasks. This latter finding suggests that bilinguals' early sensitivity to input variation need not prevent them from mastering morphosyntactic constructions in the longer term.

Unsworth draws further attention to the importance of distinguishing between different aspects of what is often considered collectively as 'grammatical development'. The acquisition of inflection, often used as a proxy for grammar in studies of childhood bilingualism, critically involves the learning of individual morphemes (e.g. /-s/) and their specific meanings or function (e.g. 3rd person singular), a task very similar to word learning. Yet the acquisition of grammar also involves knowledge of sentence-level constraints not immediately related to individual morphemes, such as interpretive consequences of differences in word order, as in *Not all the children were asleep* versus *All the children were not asleep*. Little is known about the development of this type of grammatical knowledge – central to generative approaches to language acquisition – in bilingual development. Unsworth presents evidence from the development of two properties of Dutch that are representative of these two different aspects of grammar in Dutch-English bilinguals aged between 5 and 17 years: grammatical gender on definite determiners, and indefinite object scrambling, a phenomenon that involves differences in word order with interpretive consequences. Unsworth reports effects of input variation on the development of gender-marking, the grammatical property more closely related to vocabulary learning. For scrambling, on the other hand, no differences were found between bilinguals and monolinguals, or between bilinguals with more or less exposure to Dutch. Unsworth notes that scrambled sentences occur rarely in the input, and yet, both monolingual and bilingual children were able to arrive at the correct interpretation at similar ages, arguing that this finding is difficult to reconcile with strongly input-driven accounts of development, such as usage-based approaches.

#### 4. Conclusions and future directions

Taken together, the chapters in this volume demonstrate that input and experience matter greatly in bilingual development, as much and more than they do in monolingual development. Yet just as importantly, the research in this volume also shows that the relationship between bilingual input and bilingual outcomes is not one-to-one; it is neither linear, nor does it generalize evenly across linguistic domains and constructions, or across populations of bilinguals in diverse sociolinguistic contexts. Despite the pervasive influence of environmental factors in many domains, bilinguals in some sociolinguistic contexts are able to keep pace with monolinguals in their dominant language for some domains of language knowledge and processing. In short, the research presented in this volume supports the following assertion: Bilingual development is both sensitive to and resilient against variation in input and experience. This assertion has theoretical and practical implications.

On the one hand, the many ways in which bilingual acquisition has been shown to be sensitive to variation in input appear to be consistent with usage-based theories of acquisition, where properties of the input are seen as a driving force in acquisition. On the other hand, if acquisition is so strongly input driven, one might expect young bilingual children to lag behind monolinguals more strikingly and consistently than they do, and across all linguistic domains. After all, bilingual children who achieve the same level of linguistic ability in their dominant language as monolinguals are still, on average, receiving less input in that language than monolinguals. The question thus arises: What may render bilingual development more advanced than one could predict based on the amount of input alone? One possibility is to consider bilingual children's outcomes as evidence for a domain-specific innate mechanism, resilient to variation in the environment, contributing to language development, as proposed by nativist theories of acquisition. Another possibility, not mutually exclusive from the first, is that seemingly advanced bilingual developmental rates stem from crosslinguistic interdependence in bilingual acquisition. For example, crosslinguistic influence in bilingual grammatical development is a robust phenomenon, but rarely is it considered in terms of positive instead of negative transfer. In other words, research on this topic has focused on cases where the languages of bilinguals interact in such a way that causes errors or infelicitous structures in one of their languages. However, if negative transfer is occurring, then logically, positive transfer should be as well – the result being that bilingual children do not have to learn everything twice. A third, and again potentially complementary, possibility concerns the role of domain-general cognitive mechanisms involved in human development, mechanisms that are assumed to be involved – to a greater or lesser

extent – by all theoretical accounts of language acquisition. These mechanisms would be the same regardless of how many languages are being learned (Paradis 2010a, b). They include memory systems and executive functions that increase in acuity through childhood, and that may be enhanced by the bilingual experience itself (Kovács & Mehler 2009). As Elin Thordardottir points out in her chapter in the context of the non-linear relations between input and outcomes she observed, limitations in memory systems might be an explanation for why monolinguals can only do so much with the input they receive, thus diminishing bilingual-monolingual differences in developmental rates.

The combination of sensitivity and resilience to variation in input and experience also has implications for clinicians and educators. Several chapters included comparisons between bilinguals and monolinguals based on standardized measures of assessment (Hoff et al.; Elin Thordardottir; Paradis et al.). In many cases, bilingual children did not perform according to age-based monolingual norms, but importantly, they sometimes did, depending on the linguistic domain being measured and whether a bilingual was tested in his/her dominant language. Elin Thordardottir points out the practical importance of the diminished differences between bilinguals and monolinguals on the non-word repetition tasks in her studies, which indicate that these processing-based measures may provide better diagnostic tools for identifying children with language impairment among bilinguals than measures of accumulated language knowledge like vocabulary tests. In general, all the research in this volume shows that guidelines determining whether it is appropriate to use standardized assessment measures with bilingual children must incorporate the complexities of how much and how little their development is dependent on variation in their input and experience.

“The more you hear a language, the better you learn it”: Future research on input and experience in bilingual development will have to pay closer attention to how constructs on both sides of this equation are operationalized and measured, and researchers will have to acknowledge ‘input and experience’ as a multi-layered construct comprised of not only basic frequency of exposure but also interactional, qualitative factors often conditioned by familial variables like socio-economic status, parents’ fluency, and family composition, as well as by broader sociocultural factors at the community level that shape speakers’ attitudes and identities. Collectively, the findings presented in this volume challenge nativist, emergentist and usage-based accounts of language acquisition alike. At the same time, they demonstrate that evidence from bilingual development can and should play a critical role in this theoretical debate, and the debate will be the richer for it.

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