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Different Patterns of L2 Learning: Language, Cognition and Education

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Abstract: Children who are bilingual either from birth or from an early age may present a delay in learning language compared to their monolingual peers. However, recent research suggests that as a trade-off, their cognitive and communicative profile is enhanced, precisely because they are learning to interact in two languages. In this paper we present the profile of three main types of second language learner, and we explore whether the advantages of bilingualism can be gained by older second language learners. We conclude with a discussion of the challenges for teachers and parents, and the types of learning situations that may lead to these advantages.

1. Definitions of bilingualism

Speaking more than one language is not uncommon, either as a result of having been exposed to two languages from birth or having learned one or more languages later on in life. Indeed, some surveys suggest up to two thirds of children in the world are currently raised with two or more languages (Crystal, 1997). The social and professional advantages of bilingualism and multilingualism are recognized internationally, with the European Commission setting a target of each EU citizen speaking “their mother tongue and two or more languages”ⁱ. However, the circumstances under which the second or additional languages are learned are important in determining the cognitive and linguistic profile of the learner. In this position paper we will outline the major profiles of learners, and present recent research on the cognitive and communicative advantages of bilingualism. We will also highlight areas where parents, teachers and clinicians need to be particularly careful, and deal with some of the common misconceptions about bilingualism. We will conclude with a discussion on whether older second language learners may gain the advantages of bilingualism and under what circumstances this may be achieved. We hope that this paper will contribute towards greater awareness of the challenges and benefits of bilingualism and inform the practice of bilingual education from a cognitive perspective.

2. Types of bilingual learners

The circumstances under which a person may learn an additional language can vary dramatically. Some children are born into a bilingual environment, some are exposed to an additional language early on in life, either in the community or formal education, while some people may aspire to learn an additional language during adulthood for a multitude of reasons. Individual differences in the amount of input people receive in each language, the type of input (formal education or naturalistic), their motivation, their cognitive profile and other factors contribute towards creating a unique experience of bilingualism for every learner. Researchers in bilingual language acquisition attempt to draw three broad categories of bilingual learners: *Simultaneous* bilinguals, *successive* bilinguals, and (child, adolescent or adult) *second language learners*. The classification is a necessary abstraction, and it is founded on the age of onset of exposure to the additional language which seems to determine whether language learning will eventually reach native or near-native competence; and whether the stages of learning are similar to those of the monolingual learner.

Simultaneous bilingual children are those exposed to two languages from birth or from a very early age (typically before 3 years of age). The amount of input that is available to the learner may vary, and usually one of the languages will become dominant. Simultaneous bilingual children reach the most fundamental developmental milestones (the 50-word vocabulary stage, and the production of the first syntactic structures) at the same age as their monolingual peers (see Bialystok, 2001; Bialystok, Craik, Green & Gollan, 2009; de Houwer, 1995; among others). Studies of language outcome consistently report that if they receive sustained and sufficiently rich input throughout development, simultaneous bilingual learners reach native-like competence with both languages. Nevertheless, in terms of absolute vocabulary size, bilingual learners know fewer words than monolinguals in either language (but note that when vocabulary is estimated as a sum of both languages, vocabulary volume may be as rich as that of monolingual peers). Moreover, in terms of grammar, simultaneous bilingual children may take longer time to learn the most complicated morphological and syntactic rules.

In any case, the bilingual experience will differ fundamentally from that of the monolingual learner: the two language systems are competing with each other at a level beyond the conscious access or control of the learner in everyday conversation and interaction. As a result, bilingual children are slower in word finding, because they have more candidate words for a concept. They may also alternate between words and structure of each language, a phenomenon known as code-switching. However, as a result of learning two languages and having to activate and inhibit them according to circumstances, bilingual children also experience significant cognitive advantages, to which we turn in section 3.

Sequential bilingual children are those exposed to an additional language from the age of 3 onwards. There are no clear boundaries as regards the age at which a child is considered a sequential rather than a simultaneous learner, but the concept is related to the critical period for language learning, and

to the fact that after a certain age, the sequential bilingual can start using their first language in order to learn the second. Again, individual circumstances will differ. Some sequential bilinguals may have been passively exposed to the additional language from birth but only actively learning it when they enter nursery or kindergarten. Or they may be immersed in the language with little preparation, as a result of parental mobility. In terms of stages of language learning, sequential bilingual children will usually experience a 'silent phase' when first encountering the second language. It is not uncommon for children not to speak at all at the nursery or to speakers of the other language for a period ranging from a few weeks to upwards of 3 months. This is in fact an intensively active learning phase where the child is absorbing the grammar and vocabulary. Interaction with peers is a key motivation to begin speaking, and children typically emerge out of this phase using telegraphic and formulaic expressions. In the process of learning, there is going to be high rates of transfer from one language to the other as well as an initial phase of mis-analysis of grammatical rules. In terms of attaining native-like competence, sequential bilingual children seem to be as successful as simultaneous bilinguals. This however does assume the sustained availability of rich input in either language. There are several case studies where learning has been hindered when for social or other reasons the input in one language was decreased or even ceased at the onset of the other language. Characteristically, the Royal College of Speech and Language Therapists acknowledges that "bilinguals...may be vulnerable to well-meaning but ill-informed professionals who advise the abandonment of mother tongue in order to facilitate the development of skills in English" (RCSLT, 2006: 270)

A typical challenge arising with simultaneous but especially with sequential bilingual learners is distinguishing language delay from language impairment. In the typical situation, a sequential bilingual child for whom the language of the community is the additional language will be less proficient in that language than their monolingual peers at school. This makes them particularly vulnerable to misdiagnosis for speech and language difficulties, and in particular for specific language impairment, a condition where children experience significant difficulties with learning grammar and vocabulary, in the light of an otherwise typical cognitive profile. It is not uncommon for a bilingual child with language delay evident in their second language (e.g. English) to be assessed in that language using language tests and benchmarks that have been standardised on monolinguals. The child will have a lower score than age-matched monolinguals but it is difficult to know if this is because of bilingualism ('natural' delay, child catches up later on in childhood) or because of actual language impairment. This usually leads to both under-diagnosis, where children with real difficulties are dismissed and the critical period for treatment is missed; as well as particularly stressful over-diagnoses, where the 'natural' delay is treated as impairment. We will return to this issue in section 4.

The third type of learner is older children (aged 8 or older), adolescents and adults learning a second language. Again, the boundary at which learners are classified as sequential bilinguals or second language learners is not clear. It is in this case where the type of learning setting (naturalistic or formal or a combination thereof), the length of exposure to the language, motivation, and other social and affective factors seem to be most important for determining the outcome. Native- or near-native-like competence is the exception rather than the typical destination of the process, with many learners stabilizing to some communicatively adequate but grammatically non-standard form of the second language.

3. Advantages of bilingualism

For all three types of learners, speaking an additional language may have profound socio-economic advantages; indeed, in many situations speaking one of the widely used languages (such as English or Spanish) may be considered a basic skill. There are also significant cultural advantages, with access to two or more cultures, and with a positive association of belonging to a 'special group' (when other factors such as socio-economic level are taken into account; see ESRC *Understanding Society*¹¹). What is perhaps less known is that bilingualism bestows certain linguistic and cognitive advantages as well. These arise for at least two reasons: bilingual learners have to monitor which language to use for which interlocutor, and therefore they develop a heightened sensitivity to their conversational partners; also, bilinguals need to adjust the level of activation of the two language systems, to boost the activation of one and to inhibit the contextually-inappropriate language.

In a series of studies (see Bialystok et al., 2009 and Diamond, 2010 for reviews of the studies mentioned in this section), it has been shown that bilingual children have better executive functions, a term which covers a range of cognitive skills related to attention, memory, and split-second decision making. For example, it has been found that bilingual children are better at inhibiting irrelevant or conflicting information in reaction time studies. Similarly, they are also better at directing concentration on the relevant aspects as attested in embedded figures tasks (examples of the tasks will be given in the presentation). The advantages are also evident in more ecologically-relevant skills that are transferable to real-life situations, such as task-switching tests which measure the cost of adapting from one task to another. For example, in the dimensional change card sort task (Zelazo, Frye & Rapus, 1996) participants are required to group a set of objects (of different shapes and different colours) first according to one dimension (e.g. shape) and then to re-group them according to another dimension (e.g. colour). The task requires the flexibility to adopt a new rule and to inhibit the previous one. A consistent finding is that young children are perfectly good at sorting items according to whichever rule they were given first. However, when the rule changes, even though they are capable of explicitly stating the new rule, they often continue sorting the items according to the old rule. Bilingual children however perform better when required to adapt to the new rule.

Moreover, bilingual children seem to have better meta-linguistic skills, a set of skills related to awareness that language is a set of symbols that are combined according to well-formedness rules and that are arbitrarily related to their meaning. Bilingual children are in an ideal position to make a good start with learning that there is no natural relation between sounds and objects, e.g. when learning that the very same object is 'ice cream' and 'gelato'. Similarly, it has been found that bilingual children are better than their monolingual peers at separating meaning from form: e.g. they are better at saying that 'apples grow on noses' is said in the right way even though it is non-sensical, and at saying that 'apples grows on trees' is said in the wrong way, even though it is semantically correct (Bialystok, 1988).

Finally, bilingual children seem to be particularly adept with communicative competence. Communication is much more than the production of grammatical sentences, and in fact interlocutors are expected to conform to certain conversational maxims, such as that their contributions should be informative, relevant, truthful, concise, unambiguous and polite (see Levinson, 1983). As bilingual children need to be particularly adept at monitoring which language form to use with whom, they acquire a heightened sensitivity to rules of conversation. Work by Siegal and colleagues (Siegal, Iozzi & Surian, 2009; Siegal, Surian, Matsuo, Geraci, Iozzi, Okumura & Itakura, 2010) suggests that bilingual children are better than monolingual at spotting violations of conversational norms. For example, given a question such as "What did you get for your birthday?" bilingual children are better at pointing that the answer: "A present." as compared to "A bicycle." is under-informative.

4. Implications

The considerations above contribute towards an understanding of child bilingualism both as a gift and as a commitment on behalf of the individual, their families and education systems. Concerning the latter, it is important for parents and education systems to provide rich and sustained input in every language as well as pragmatic motivation for the child to use the languages. Under these conditions, bilingual language learning will take its natural course of seamless native-like language attainment. Several strategies are available for parents and teachers, (see Grosjean, 2010) as well as advice for how to choose between them (Harding-Esch, E. & Riley, 2003). When it comes to cases where there are concerns about progress with language learning, a delay in vocabulary or grammar in the non-dominant language need not be a sign of a language difficulty, but neither should it be dismissed automatically as a side-effect of bilingualism. Bilingual children with real difficulties will not catch-up with their monolingual peers later on, and valuable opportunities for early intervention will be lost. On the other hand, branding bilingualism as an obstacle to child development flies in the face of the multitude communicative, cognitive and social advantages of bilingualism itself.

In cases of concern, clinical guidelines in the UK (RCSLT, 2006) recommend evaluating a bilingual child's progress in both the dominant and the non-dominant language using culturally appropriate assessment tools, and compiling a rich case history. Given the relative scarcity of standardised tests

for these purposes, a promising development is *dynamic assessment*, a process which tests the amount of novel learning that occurs within a session in an environment where the input and transparency of learning materials can be controlled. Children who fail to learn (i.e., they do not acquire novel words) at the rate that typical bilingual children do (Pena, Iglesias & Lidz, 2001) can be referred for further evaluation, with the presence of specialist therapists and interpreters to assist the assessment of the home-language.

Turning to the effects of bilingualism, we should highlight that neither the effects on cognition nor on communicative competence are dependent on which specific languages are being learned. It is important to bear this in mind, especially in the face of attitudes where bilingualism is 'tolerated' only if the languages learned are 'useful' or 'prestigious'. A further consideration is whether these advantages are restricted to only some type of bilingual language learner. There is a dearth of research in this area, but the findings of a handful of studies suggest that the degree of bilingualism is positively associated with the prevalence of the metalinguistic and cognitive advantages. For example, it is reported that young second language learners, e.g. children in immersion programs, showed more advantages than their monolingual peers, but less than their fully-fluent bilingual peers (see Luk, 2008, for recent findings and a review of the literature). In these studies the 'degree' of bilingualism is a function of the age of onset of exposure to the second language, the length of this exposure, and the type of learning environment. However, the precise contribution of each of these factors is difficult to establish. As regards type of learning, a reasonable stipulation is that the cognitive and communicative advantages will be most apparent in contexts where there is a real and ecological need for communication in both languages. This is the case for bilingual families, where relatives with whom the child is in regular contact use different languages, as well as in immersion-style education. In terms of the more traditional language-learning curriculum, it is likely that interactive and conversational activities in or outside the classroom will be the ones that contribute the most towards the bilingual benefits. We expect that future research will highlight the extent of these benefits to second language learners, as well the contribution of different types of learning. For many of us it is too late to be born bilingual, but we can all chose to be second language learners!

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ⁱ http://ec.europa.eu/education/languages/news/news2853_en.htm retrieved on 5 April 2011

ⁱⁱ <http://research.understandingsociety.org.uk/files/research/findings/early-findings/3%20Early%20findings%20Chapter%203.pdf> retrieved on 5 April 2011