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Introduction

...not only one of the few truly perennial issues in discussion of language acquisition,
...also one of the few truly popular issues...the age factor has been a constantly recurring
theme... (Singleton & Ryan, 2004 : 1)

The following study aims to examine this issue from a number of theoretical perspectives, looking for evidence for the existence of an age factor in second language acquisition while also examining the related topic of bilingualism and its development. To the extent that the phenomenon can be confirmed, possible explanations will also be sought. Thus the two questions that are likely to be central to the discussion are firstly, how age affects linguistic development, and secondly, why this should be the case.

Before entering into such complex and often divisive debate, it may be useful to undertake a brief investigation of bilingualism itself, a subject which will be shown to have undergone numerous transformations during the past century and continuing into the present.

1. Bilingualism

Bilinguals can be ranged along a continuum from the rare equilingual who is indistinguishable from a native speaker in both languages at one end to the person who had just begun to acquire a second language at the other...They are all bilinguals, but possessing different *degrees* of bilingualism. (Saunders, 1988 : 8)

1.1 Definitions

While describing past and present definitions of bilingualism as inadequate due to their one-dimensional view, single analytical level (failing to encompass the full range from individual to societal) and lack of basis in any general theory of language behaviour, Hamers & Blanc (2003 : 355) do attempt some explanation of key terminology in the introduction to their comprehensive study of the field. The concept of ‘languages in contact’ is described as representing “the use of two or more codes in interpersonal and intergroup relations as well as the psychological state of an individual who uses more than one language”, with ‘bilingualism’ then “the state of a linguistic community in which two languages are in contact”. Finally, ‘bilinguality’ is “the psychological state of an individual who has access to more than one linguistic code as a means of social communications” (ibid : 6). The authors note that in the absence of the multidimensional theoretical model of language behaviour needing to be applied such topics, an “almost...overwhelming excess of data gathering” has been undertaken, providing limited insights (ibid : 360).

More recent studies have taken into account the move away from a monolingual view of Second Language Acquisition (SLA) to accept the reality of widespread multilingualism, hence Cook’s “knowledge of two or more languages in one mind” (2003 : 2). Gass & Selinker (2008) also admit the difficulty of defining

bilingualism in their introduction to SLA, explaining the strict view as that of two languages learnt and known in an ultimately steady state, similar to Bhatia's positioning of it at the end of the learning process, whatever the level of competence reached as a result (2006). The question of ultimate attainment is another contentious issue recurring through the discussions, with some regarding the ideal of perfection in two languages as fundamentally 'mythical' (Valdes, 2001).

1.2 Types

Studies of bilingualism¹⁾ abound with contrasting pairs in terminology that distinguish between balanced and dominant, simultaneous and consecutive, compound and coordinate, additive and subtractive forms. Some are directly related to the current study, others less so, but their prominence in much of the research to date gives some indication of the variety of inroads into the subject that can be taken.

The balance between the two languages is an obvious source of interest, with Weinreich (1953: 76) noting the likelihood of first-learnt (L1) 'mother tongue' dominance, with "emotional involvement" rarely transferred in full to the second language (L2), even when a higher level of proficiency has eventually been attained in the latter. Hamers & Blanc (Op. Cit.) describe 'balance' as more of a state of equilibrium than native competence in two languages, all individuals having their own particular dominance configuration, with perfect symmetry being rare (Klein, 1986). These variations in bilingual proficiency led Dodson (1981, as discussed in

1) The term 'bilinguality', from Hamers & Blanc's title (Op. Cit.), has not gained widespread usage and, in those dictionaries in which it appears, is indicated as synonymous with 'bilingualism', in spite of the authors' partial distinction. An online search produces nearly thirty times the results for the latter, which will subsequently be used throughout this article except when quoting directly from the aforementioned text.

Baetens-Beardsmore, 1986 : 28) to apply the more flexible term “preferred” language as less judgemental.

A number of studies (e. g. Hamers & Blanc, Klein, Baetens-Beardsmore, all Op. Cit.) note the evolution of Weinreich’s tripartite division (Op. Cit.) into the distinction between the pairing of compound and coordinate bilingualism by Ervin & Osgood (1954). In the former, bilinguals were seen to use one system within which internal switching between their two languages took place, whereas the latter involved a switch between the two separate systems, one for each language. Coordinate acquisition was also defined as taking place in two different contexts for the two languages. While the distinction was later criticised on theoretical grounds and for further confusing an already complex discussion, it did, however, include some significant elements, such as the parallel division between simultaneous acquisition, effectively of two first languages (Swain’s “bilingualism as the first language” -1972, as discussed in Baker, 1996 : 76) and consecutive (or sequential) acquisition (a first and *then* a second language). As a key differentiation in child bilingualism (Baker, *ibid.*, Hamers & Blanc, Op. Cit.), this will feature again later in the central section of this paper.

To conclude this brief summary of the types of bilingualism as distinguished by numerous writers in the field, mention should be made of the comprehensive lists provided by Romaine (1989 : 166-8) and Gass & Selinker (Op. Cit. : 27-8). The former identifies six types of bilingual acquisition in childhood on the basis of a number of factors including the context of the languages spoken by both parents (and their actual use in communication with the child) and in the community outside the home. In the later study, Gass & Selinker broaden their scope to include no fewer than thirty-seven forms of bilingualism in their alphabetical table,

from “achieved” to “vertical” (ibid.). Admittedly, the same definition is provided for multiple terms, and some might be considered to overstretch the boundaries, such as the “minimal” bilingualism of having only a few words or phrases of any additional language, echoing Edwards claim that “everyone is bilingual” and the question being merely one of degree (2006 : 7).

1.3 Effects

...almost no general statements are warranted by research on the effects of bilingualism. It has not been demonstrated that bilingualism has positive or negative consequences
(McLaughlin, 1984, as discussed in Klein, 86 : 14)

Is bilingualism an advantage or a disadvantage ? For many of the world’s bilinguals this question is purely academic : they have no choice but to be bilingual.
(Saunders, Op. Cit. : 14)

The final section of this overview of the literature relates to the frequently cited question of whether or not the experience of bilingualism has a positive effect on the individual concerned. A negative view was held by most commentators for much of the last century, contradicted only by a handful of diary studies (Ronjat, 1913 ; Leopold, 1939-49), themselves later criticised by some, perhaps rather harshly, as the work of linguist parents describing only “elitist or additive bilingualism” (Romaine, Op. Cit. : 169). A turning point appears to have been reached with the work of Peal & Lambert (1962), with their assessment of the various cognitive advantages for the bilingual :

...experience with two language systems seems to have left him with a mental flexibility, a superiority in concept formation, and a more diversified set of...abilities...there is no question about the fact that he is superior intellectually. (ibid, in Saunders, Op. Cit. : 16)

This positive view has been maintained by the authors due to the lack of contradictory evidence and confirmation of the observation that resources were not being divided to negative effect (Lambert, 1990). As Gass & Selinker (Op. Cit.) indicate, current thinking enables communicative, cultural-economic and cognitive advantages to be more readily seen. Most recently, there have been timely indications to ageing societies around the world that bilingualism may even delay (though not prevent) the onset of Alzheimer Disease by approximately four years in comparison with monolingual sufferers (Bialystok, 2010).

For some, the considerable shift in popular opinion represents an incentive to possibly abandon traditional perspectives and recognise “bilinguality and bilingualism...as the norm, and monolinguality and monolingualism as the exception which needs to be explained” (Hamers & Blanc, Op. Cit. : 360). Others also use the evidence to assuage the commonly-held fears of parents and educators, claiming that “children have such language-learning capacities that they can acquire two languages simultaneously without experiencing any real problem” (Appel & Muysken, 1988 : 100).

Perhaps the only words of warning come in the requirement for a reasonable balance between the languages (Saunders, Op. Cit.) and, most importantly for Hamers & Blanc (Op. Cit.), sufficient “valorisation” of the two, lack of which lies at the root of the observation that “negative consequences of bilingual experience are so far only evidenced in the schooling of minority children in Western countries” (ibid : 103). This is the location of the final distinction of bilingual typology, between the additive and subtractive (Lambert, 1974). Any potential problems, rather than being the direct consequence of bilingualism, are especially dependent on the sociocultural context and the views held both within the family and in the

general population (Saunders and Baetens-Beardsmore, both Op. Cit.).

Many individual factors affect the success of bilingualism and second language learning for all those who experience it. One of the most frequently cited is the age of acquisition, and it is to this central topic that attention must now be turned.

2 . The age factor

2.1 Theory

The topics of bilingualism and second language acquisition...come from the same family. Becoming bilingual often involves second language acquisition...achieved formally...or informally...At the same time, research into bilingualism feeds into the wide topic of second language acquisition. (Baker, Op. Cit. : 108)

Research into second language acquisition (SLA) has been described (Cook, 1993) as the product of a combination of linguistic elements, most notably during the 1950s and '60s ; from Weinreich's interest in bilingualism and society, through the subsequent focus on first language acquisition (particularly in the influential writings of Chomsky), with Lado and others adding a language teaching perspective to the emerging field.

While doubts may be raised regarding both the appropriateness of applying monolingual models to what is now widely recognised as the norm of multilingualism, and even viewing a state of balanced bilingualism as the ultimate goal for all second language learners (in spite of this being inapplicable to ninety-nine percent according to Cook, 1993), the significance of various findings in SLA research is generally accepted. Without them, Spolsky's comprehensive request for

information regarding “Who learns how much of what language under what conditions ?” (1989 : 3) is unlikely to be answered.

The results of research take on particular importance when used to support certain views in the debate regarding the continuing controversy of age as one of the key factors (Ellis, 1986, lists it as one of five, alongside aptitude, cognitive style, motivation and personality) in the differential success of individual language acquisition. Questions of route, rate and success (in terms of proficiency) have been frequently examined, with the results being of both theoretical (with arguably the same universal core, are L1 and L2 learnt via identical innate faculties, possibly regardless of age ?) and practical importance (as applied to language education planning in relation to timing, content, and goals, for example ; Larsen-Freeman & Long, 1991). In discussing the latter below, more recent views from the SLA perspective will be considered.

2.2 Practice

In addition to being crucial for research into language acquisition and cognitive theory, findings regarding age-related change may (and some would argue *should* do more so than at present) also influence both the professional and personal lives of a wide range of individuals, from teachers to policy makers, social workers to speakers of non-standard varieties (Long, 1990). Thus consideration of the common call, from parents and politicians as much as educators themselves, for an earlier start to additional language education needs to be tempered with an awareness of expert opinion less united than many perhaps envisage.

Alvarez (2006 : 153) reminds all concerned that “advancing the age of first exposure...does not...guarantee a higher level of attainment at the end of

compulsory schooling”, emphasising the importance of continuing quantity rather than merely the timing of initial contact (see also Cenoz, 2004, Munoz, 2006, Tragant, 2006). The context is key ; in the foreign language learning taking place in most schools, instruction is usually the only point of contact, Munoz (Op. Cit : 17) calculating total exposure of no more than 540 hours (a generous estimate based on five years of three hours per week, nine months a year), in comparison with figures of 7,000 and 14,000 hours for learners actually in the L2 or L1 environment respectively (during a conservative four or eight hours of exposure per day).

The description, originally of a course of instruction in writing, provided by Torras et al. (2006 : 179) feels disappointingly applicable, as “subjects undergo a “drip-feed”, an impoverished low intensity type of programme and a low quantity of input over a relatively extended period of time.” In terms of motivation, the negative influence of an unsatisfactory learning experience, potentially exacerbated by its early start, should not be ignored (Tragant, Op. Cit.).

2.3 Observations

...there are very few simple truths concerning the role of age in language acquisition. Such as there are concern either end of the age continuum. Of the very young acquiring their mother tongue...major speech milestones occur in a predictable order...within well-defined age-ranges...the middle-aged and senescent embarking on the acquisition of an L2...are likely to experience more difficulties with oral-aural aspects...than younger learners...

(Singleton & Ryan, Op. Cit. : 226)

This admission of the apparent lack of concrete conclusions that can be drawn from extensive observation of language learning across the age range is perhaps indicative of the problem facing any related discussion. While some commentators

may wish to use such evidence as exists in order to promote a personal cause such as recommending particular school levels at which to start a second language or the most appropriate teaching methodology to employ in doing so, the indefinite nature of many research findings tends to lessen the conviction of their claims.

The fact that second language learners rarely attain complete mastery of the L2 and yet, in normal circumstances, most children become fully proficient in their first language could be interpreted as an example of age-related limitations to potential success in acquisition. However, “a host of other factors” must also be considered (Larsen-Freeman & Long, Op. Cit.: 153), and acknowledgement made of the contrast between the inherently speculative nature of research involving the very young, who “cannot explain what they are thinking, or reflect on what they are doing”, and the far more tangible information provided by adult subjects (Foster, 1990 : 67).

It has been noted that the actual time spent on language learning is heavily weighted in favour of children acquiring their L1. Furthermore, where both are learning an L2, even the middle-aged and elderly *can* be as successful as their younger counterparts in many respects. Marinova-Todd, Marshall and Snow (2000 : 27) are unwilling to accept the generalisation that post-childhood SLA must always end in failure, observing that “the misconception that adults cannot master foreign languages is as widespread as it is erroneous”. Disappointing levels of attainment are due to lack of motivation, time and environmental support, while children often learn no less slowly or effortfully. Age may be easier to define and measure than other learner characteristics, but it would appear that the mode and context of acquisition are also significant.

Further observation will be presented in the following section, displaying direct ties with some of the theoretical explanations proposed for the age factor. The validity of these explanations will also be critically discussed.

3. Explanations

There are four principal explanations for the effect of age differences upon linguistic development. Firstly, that concerned with biological factors, in particular neuropsychological elements; secondly, that involving cognitive factors; thirdly, that based on affective factors; and finally, that citing environmental factors. All of these have been subject to intense scrutiny in much of the related literature, and most are associated with specific theories and proponents (Hyltenstam and Abrahamsson, 2003).

The argument for a biological basis to the age factor can be traced to the work of Lenneberg (1967), who proposed a Critical Period Hypothesis (CPH) which claimed that cerebral dominance (lateralisation), beginning from the age of two and completed at puberty, made language acquisition increasingly difficult and virtually impossible to succeed in adulthood. While few may be aware of the neurological background, the popularly-held belief that ‘younger is better’ regarding language learning can produce some supportive evidence :

Languages learned informally before the age of six are generally mastered with native-like proficiency, whereas those learned in adolescence and adulthood will rarely attain a native-like level”
(Hamers & Blanc, Op. Cit. : 65)

Support for the CPH has been shown in later studies (Patkowski, 1980 and

Johnson & Newport, 1989, as discussed in Lightbown & Spada, 1998), though these also tended to focus attention on an upper age-limit (around fifteen, or even ten years of age) before which acquisition must start in order to have any chance of reaching native speaker-like mastery. The question of whether or not such levels of achievement are the realistic goal of most L2 learners has already been noted, as has the possible limitation of the benefits of an early start to oral skills. Both reports also indicated the close links with other factors such as the age of arrival and subsequent length of residence in the L2 country.

There is also a notable divide among proponents in terms of the nature of the change ; on the one hand, what Ellis (2008 : 24) refers to as the conventional view that the Critical Period marks the irreversible end of the decline (with acquisition permanently blocked), and on the other, the “unconventional” (as in Birdsong, 2006) that sees it as the *start* of the decline, before which little or no age effect has been witnessed. However, both are concerned with discontinuity or change in the pattern of learning.

Other authors, such as Snow & Hoefnagel-Hohle (1978), counter claims for a critical period with the lack of evidence provided. Findings for a number of initial tests showed adults to be better at first, children better later, but adolescents to be most successful throughout. An alternative explanation for the more likely success of younger learners has also been suggested :

The young child does not have a greater facility for learning, but a less complex task for which he has more time.
(Hamers & Blanc, Op. Cit. : 75)

More recently, a key distinction has been the focus of much insightful study

into age-related differences, namely that between ‘implicit’ and ‘explicit’ learning (DeKeyser, 2003 ; Ellis, 2008). Adults and older students initially learn faster due to their *explicit* problem-solving skills (particularly advantageous in grammatical matters), while younger learners are able to both pick and catch up at greater speed where extensive exposure and practice allows them to utilise their superior capacity for *implicit* learning (most widely known as benefitting oral and aural abilities). This raises questions about comparing results from a naturalistic L1 (or L1-type) environment (Krashen, Long and Scarcella, 1979) with the structured learning that is common for most L2s, as seen in the Barcelona Age Factor Project (Munoz, Op. Cit.).

Various misgivings, coupled with an undermining of the original neurological basis (most lateralisation in fact occurring in the first five years) have led to an apparent consensus in many quarters that “the idea of a critical period specifically for language development may well have had its day” (Singleton & Ryan, Op. Cit. : 227), in spite of its habitual appearance in the literature. Similarly, throughout decades of exhaustive research, the variety of results depending on the aspect of language being examined can be seen as contributing to the lack of agreement regarding the timing or length of any such stage (Ellis, 2008).

A cognitive explanation for the maturational factor is based on Piaget’s explanation of the role of language in the child’s expanding consciousness (1926), and sees the onset of the final stage of such development, adult ‘formal operations’, as marking the end of the possibility for subconscious acquisition. However, the very existence of such a stage would later be questioned. Other problems with the model included the initially quicker advance of adult learners, though related theorists would counter this argument in their own terms :

one reason older learners are faster in early stages is that they obtain more *comprehensible* input via better conversational management, even though the input...appears to be more complex. (Dulay et al., 1982 : 93)

Other cognitive theories related more directly to bilingualism were the Developmental Interdependence Hypothesis and Thresholds Theory proposed by Cummins (1978 and 1976), accounting for varying levels of attainment in different bilingual circumstances. Although open to criticism on the grounds of lacking “explanatory adequacy” (Hamers & Blanc, Op. Cit. : 99), there were some implications for education with the observation that :

...when bilingual development does not result in cognitive advantages it is always in cases where children did not possess the skills prerequisite for literacy. (ibid)

The final two explanatory fields, focussing upon affective and environmental factors, undoubtedly add relevant elements to the discussion, but without sufficient theoretical substance to account for the full range of age-related factors. Schumann (1975) proposed an “acculturation model” in which the excessive strength of an adult’s affective filter would create a self-conscious, closed mental state hardly conducive to language acquisition. Differences in language environment were mentioned in relation to types of bilingualism in Lambert’s (1974) distinction between additive and subtractive forms. It would appear likely that both these areas of research are, at least in part, directly connected to age factors, leading Hamers and Blanc to remind participants in the debate that “an ontogenetic model of bilinguality should not consider bilinguistic development in isolation from its social and cognitive correlates” (Op. Cit. : 81).

Conclusion

It is clear that the development of bilingualism is a complex issue that warrants further examination than is possible within the limitations of the current study. Theoretical discussion appears to have reached the point where insight from widespread multilingual experience can finally be accepted as a unique and valuable element in understanding both first and second language acquisition. This change in status has been duly noted :

Three fields...contribute to knowledge about the human language faculty and its acquisition : first language acquisition, bilingualism and SLA...Both first language acquisition and SLA have traditionally taken monolingual competence as the default benchmark of language development. This monolingual bias has been problematized in contemporary SLA... (Ortega, 2009 : 10)

While undeniably difficult to define and account for, the age factor has been shown to be one of the most significant determinants of individual differences in language learning. In addition to calling for a vast increase in the amount and scale of research in the field (particularly in the long, relatively uncharted period *beyond* childhood), Singleton and Ryan conclude their detailed work on the subject with the suggestion that the focus may still be prohibitively narrow, and that “talking about *an* age factor may be misconceived...rather...a range of age-related factors” (Op. Cit. : 227).

The quest to find a specific ‘point of no return’, the Critical Period beyond which successful language learning becomes increasingly unlikely or even impossible, has also become less evangelical, researchers now more accepting of a looser and more realistic framework of multiple sensitive periods (capitals

intentionally omitted), evidenced in the loss of ability to acquire *native-like* ability at two or more stages, namely second language phonology and lexis between the ages of 4 and 7, followed by morphology and syntax in the mid-teens (Sibata, 1990 ; Spadaro, 1996 ; Lee, 1996 ; DeKeyser, 2000 ; all discussed in Long, 2007 : 50-58).

In a globalised world, where most non-native speakers of English may be using it among themselves as a lingua franca, does native-like performance still remain a genuine need or goal, or is varying ability an accepted, inevitable facet of multicompetence (Cook, 2003)? What if fossilization at the interlanguage level is interpreted less negatively as stabilization (Long, 2003), a mere hiatus from which further progress may still be possible given the stimulus of appropriate instruction ?

If various effects of age on second language learning are indeed “pervasive and undisputed, but satisfactory explanations...yet to be conclusively produced” (Ortega, Op. Cit. : 25), it might be argued that rather than remaining “premature” (ibid.), a half century of claims for the very existence of critical periods for L2 acquisition seem to have lessening relevance in comparison with the practical implications of more general findings. Three decades have already passed since Hatch (1983 : 196-7) concurred with the view of multiple variables, advising that even the considered hypothesis of “the older *child* the better” might be less useful in guiding opinion on language development than the favourable “learning prognosis” that views more exposure, more practice and more interaction, all potentially age-related aspects of acquisition, as paramount.

DeKeyser (Op. Cit. : 335) appears to bring together many of the strands woven through the preceding pages, recognising the situation and its relevance in indicating

a way forward for all concerned :

...this is how the critical period ought to be understood : somewhere between early childhood and puberty children gradually lose the ability to learn a language successfully through implicit mechanisms only...

...given ample time in an unstructured environment, children come out on top. In a traditional school context, however, where time is limited and learning is highly structured, adults and older children learn more...

...important practical implications...are often misunderstood. Rather than suggesting the importance of starting early, they indicate that the instructional approach should be different depending on age...

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