

## Historical attitudes and perspectives

In the book which accompanies this course, Baker (2017) refers to three periods which categorise varying and changing attitudes to cognitive aspects of bilingualism, namely:

- the period of detrimental effects
- the period of neutral effects
- the period of additive effects

## The period of detrimental effects

Baker (2011: 133-137) describes the earliest period, ranging from the early 1800s until as late as the 1960s, as embracing extremely negative and prejudiced attitudes towards being bilingual /multilingual. It was believed that bilingualism had negative effects on the ability of an individual to think, and on intelligence generally. Baker (2017:132) refers to Laurie's (1890) assertion, that a bilingual person's intelligence would be halved rather than doubled, as being characteristic of the time:

If it were possible for a child to live in two languages at once equally well, so much the worse. His intellectual and spiritual growth would not thereby be doubled, but halved. Unity of mind and character would have great difficulty in asserting itself in such circumstances.  
(Laurie, 1890:15)

Being a Cambridge University academic at a time when there would have been very little knowledge, let alone expertise, in this field, it was inevitable that opinions such as his would have carried great weight amongst the general public, especially in the previously mentioned political context of an ever-increasing British Empire which carried with it the force of the English language. The effect of colonialism and political domination which led to prejudiced attitudes towards linguistic diversity is reflected in the words of Thompson (1953) much later:

There can be no doubt that the child reared in a bilingual environment is handicapped in his language growth. One can debate the issue as to whether speech facility in two languages is worth the consequent retardation *in the common language of the realm*. (Thompson, 1953, italics added)

As well as abroad, British colonialism had an inevitable linguistic and political impact on territories annexed *internally* within the British Isles, referred to by Blauner (1969) as “internal colonialism” (see ECDA-7011). An ethnocentric *Anglo*-British attitude towards the Welsh

language, for example, was famously expressed by Matthew Arnold as an inspector of schools in 1852:

It must always be the desire of a government to render its dominions, as far as possible, homogeneous. Sooner or later, the difference between Welsh and English will probably be effaced ... an event which is socially and politically so desirable.

(Cited in Jones & Thomas, 1973: 127)

In Wales, children in elementary schools were punished for speaking Welsh by having to wear a piece of wood on which the letters W.N. (Welsh Not) were written. The child wearing it at the end of the day would be physically beaten. In Australia, children of Greek settlers in Sydney were punished by having their mouths washed with soap and water for speaking Greek rather than English. In the past, therefore, there was so much prejudice against bilingualism that children were punished for speaking certain languages.

Although in the Welsh context the Welsh Not had been imposed for *social* as well as more purely educational reasons, bilingualism was generally widely regarded as having a range of negative cognitive effects, such as putting unnecessary strain on the brain, the cause of mental confusion, split personality and schizophrenia, and impeding the effective learning of a more useful language. As Baker (2017:132) points out, wide-spread concerns about bilingualism tended to be based on two main issues and beliefs:

- **balance:** the greater a person's use of and competence in a second language, the lesser one's ability would be in the first language
- **efficiency:** the belief that the ability to speak two languages restricted a person's ability to think effectively.

Such attitudes and beliefs were also propagated by many early research tests on the relationship between bilingualism and cognition, such as those carried out in the USA between the 1890s and 1920s; for example, the IQ tests given to immigrants, the results of which were compared to those of *monoglot* English Americans. These were tests which attempted to examine the relationship between bilingualism and cognition on the basis of a narrow concept of intelligence, resulting in a comparison of IQ scores (especially verbal IQ) where bilinguals were shown to be inferior to monolinguals. Goddard (1917) for instance 'found' that 25 out of 30 Jews tested were "feeble-minded" and Brigham (1923) ascribed the poor performance of immigrants to the USA in IQ tests to their racial

background. However, early research carried out in Wales into the effects of bilingualism also contributed to this misconception. Saer's (1923) study compared the IQ score of 1,400 children mainly aged 7-12 who were from monoglot English and Welsh-English bilingual backgrounds. The results were as follows:

|                        |     |
|------------------------|-----|
| Urban bilinguals       | 100 |
| Urban monoglot English | 99  |
| Rural bilinguals       | 86  |
| Rural monoglot English | 96  |

The 10-point difference in IQ scores between the *rural* bilingual children and the *rural* monolingual English speakers led him to conclude:

...that monoglot English-speaking children in the rural districts of Wales showed a considerable and a consistent superiority over the bilingual children in the same districts. The most obvious factor which seems to account for this is the use of two languages by the bilingualists before the power of using one has been acquired. (Saer, 1923: 52)

Further research by Saer et al. (1924) also concluded that this was also true of university students, that is, a mental condition which continued in later life and was of a permanent nature. However, Saer's research had fundamental methodological weaknesses; for example, comparing middle-class monolingual children with working-class bilinguals and translating tests from English to Welsh which can skew results. Reading 1 from Chin & Wigglesworth(2007) refers to the range of methodologically deficient research studies which were conducted world-wide and which encompassed a range of cultural groups. The most glaring methodological weakness of such research, however, is reflected in the fact that, although more than half the bilingual populations tested seemed to demonstrate low levels of English proficiency, the language in which tests were conducted was English.

Baker (2017: 133-136) draws our attention to the methodological defects of the early research, mentioning factors such as:

- the problem of defining and measuring 'intelligence'
- the language used in IQ tests
- unscientific methods of analysis
- 'bilingual' classification
- over-generalisation

- the social context (linguistic and cultural)
- inconsistent and unequal sampling

Defining ‘intelligence’ is itself problematic, Gardner’s (2003) typology, for example, encompassing a wide-range of possible aspects including logical-mathematical, verbal-linguistic, musical-rhythmical, visual-spatial as well as more socially-oriented interpersonal and intrapersonal intelligence.

Poor sampling is a characteristic which has bedevilled research in bilingualism at various times and even relatively recently, as Chin & Wigglesworth (2007: 55) point out in Reading 1 with regard to research carried out by Crutchley et al. (1997) into bilingual children with Specific Language Impairment. Nevertheless, despite the obvious methodological limitations and defects of the early period which lasted even as late as the 1960s, its effect on both professional practitioners and an impressionable public world-wide was immense. As Jones (1993) stated later:

The quality of the research is not as important in this respect as its adverse effect on the opinion of educators of the time; because this (and its unfortunate label ‘bilingual handicap’) was the period which coloured the attitude of the public towards bilingual education for future decades.  
(Jones, 1993: 9) (translated from the original Welsh)

However, despite the limitations which had a substantial adverse influence on professional and public attitudes generally, prevalent negative attitudes shown towards bilingualism may also have been rooted in misconceptions of how language is *generated*.

### **The Separate Underlying Proficiency Model of Bilingualism (SUP): the Balance or ‘Balloon’ Theory.**

Cummins (1980) describes what was (and still is, possibly, for many people) an historical concept of bilingualism and the generation of bilingual communication in terms of the Separate Underlying Proficiency Model of Bilingualism (SUP) and the Balance or ‘Balloon’ Theory (Figure 1). This model illustrates a common concept of bilingualism as two languages co-existing as *totally separate entities* in the human brain. It is a concept of having to keep a *balance* between two languages, hence the ‘weighing scales’ analogy of bilingualism adopted occasionally. An alternative analogy is that of conceiving each language as a balloon, the potential volume of inflation which can be applied to one being only *relative* to the volume of inflation applied to the other. In other words, the full potential size of one can only be achieved to the *detriment* of the

other, *both* being unable to reach their *full* potential development. Such an erroneous concept leads to a natural preference for one full ‘balloon’ rather than two half-filled ‘balloons’ and, inevitably, suggests an advantage in being monolingual rather than bilingual. Underpinning this concept, therefore, were (and are) two fundamental perceptions:

- both languages as being *totally separate* and operating as such
- a limited space for each language due to the presence of the other.

As Baker (2011: 165) mentions:

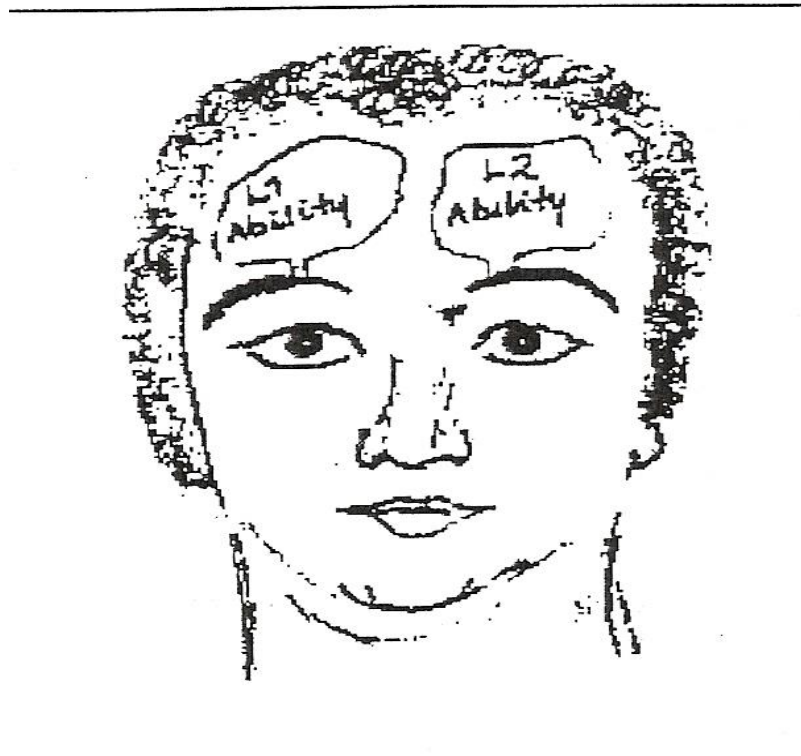
The balance and balloon picture theories of bilingualism and cognition appear to be held intuitively by many people. Many parents and teachers, politicians and large sections of the public appear to latently, subconsciously take the balloon picture as the one that best represents bilingual functioning.

Reading 1 makes a reference to Grosjean’s (1982) comment that while one does not doubt the pursuit of music as being good for one’s general development, learning an additional language attracts close scrutiny. Although Grosjean does not follow this argument through, music makes a very valid comparison since mastering the technique of playing a second (or third) instrument for instance is never seen as being at the expense of the first. To the contrary, musicians usually see this as a positive development in one’s *overall* musical development, the development on one instrument contributing to and strengthening one’s development on the other. As Chin & Wigglesworth (2007: 55) state in Reading 1:

While mathematical skills and musical skills are seen to enhance mental ability and, therefore, mental space, language learning has always been seen as something that occupies mental space. When it comes to languages, the brain is seen as a finite space for which language or languages must jostle for room.

Baker (2017) provides some examples as well as explanations for some of the conclusions reached by the comparative testing of bilinguals and monolinguals e.g. the sometimes slower lexical retrieval shown by some bilinguals caused by less frequency of use of some words being the inevitable effect of using both languages; pointing out, however, that “none of these studies suggests that bilinguals have a mental overload, process inefficiently or have weaknesses compared with monolinguals in everyday thinking” (p. 136).

Figure 1: The Separate Underlying Proficiency Model of Bilingualism (SUP) or the Balance or 'Balloon' Theory. (Source: Baker (1993: 133))



### **The period of neutral effects**

This was a period which ran from approximately the 1920s until the 1960s and which overlapped with the periods on each side. Research carried out during this period, despite being limited in volume, emphasised the defective nature of the earlier research. For example, in Wales, W.R. Jones' (1966) research undermined the results of Saer's (1923) earlier research by proving that there was no negative connection between bilingualism and intelligence. Having previously concluded on the basis of his own research involving 2,500 children aged 10 and 11 that bilinguals were inferior on IQ (Jones, 1959), a later reanalysis drew his attention to certain methodological deficiencies, such as a lack of attention to differences in socio-economic background (Jones, 1959), leading him to maintain that there was no significant difference between the two linguistic groups. Pinter & Arsenian (1937) had also previously shown a zero correlation in verbal (and non-verbal) IQ between Yiddish-English bilingualism and monolingualism. Chin & Wigglesworth (2007: 57) in Reading 1 provide further examples.

Research which characterised this period adopted a range of IQ tests in order to assess the cognitive skills of bilinguals which were a mixture of

language-based and non-language-based measures and which showed that bilinguals were not inferior when linguistic aspects were controlled.

Reading 1 also draws attention to the methodological inadequacies of the earlier research, mentioning issues such as the definition of bilingualism as well as ethnicity and the socio-economic background of bilinguals in the sampling. It mentions the analysis of previous studies made by McCarthy (1930) who maintained that, while English monolinguals in those studies were from middle-class homes, more than half of the bilingual children came from a working-class background. Problems regarding methods of assessing so-called 'bilingual' proficiency were also evident, an issue previously investigated in module ECDA-7010.

However, as the quotation from Jones (1993:9) above emphasises, the defective and misconceived research of the earlier period had already almost indelibly left its mark on attitudes towards bilingualism, resulting in the label 'bilingual handicap' "which coloured the attitude of the public towards bilingual education for future decades".

Categorising into three *discrete* periods the attitudes and perceptions of academics and the public at large towards the cognitive effects of bilingualism is, therefore, extremely misleading. Even today, it is not uncommon to hear of teachers, doctors, speech therapists and educational psychologists advising parents not to bring up their children to be bilingual. As Lewis (1981) commented much later than the period of the early research:

Delinquency, the propensity to drop out of school, and fragmented personality development are all laid at the door of bilingualism ( Lewis, 1981:343)

However, in the meantime, reasons for adopting a far more positive attitude towards bilingualism had already begun to emerge.

### **The period of additive effects**

In 1962 in Montreal, Canada, research carried out by Peal & Lambert (1962) compared the intelligence of 110 bilingual 10 year old children in six French-immersion schools with that of their monoglot peers. It is notable for heralding the dawn of a new period of research into the cognitive effects of bilingualism and for making bilingualism politically and culturally more acceptable. From that time to the present, research generally has tended to show not only that there are no detrimental effects

to bilingualism, but also that bilinguals have cognitive advantages over monolinguals.

Although, (as Chin & Wigglesworth (2007: 58-59) point out in Reading 1), Leopold (1949) had already drawn attention to the possible positive benefits of being bilingual, based on the evidence of his daughter's early ability to separate the sounds of words from their meaning, yet, his was a voice in the wilderness amidst what seemed to be a deluge of contrary evidence. Therefore, as Reading 1 states: "Peal and Lambert's (1962) study, which re-examined the issue of the relationship of bilingualism to intelligence, marked a watershed in the history of bilingual research." The research, (an extract of which is provided in Reading 1, B4.1), has been acknowledged as being significant for three reasons:

- Firstly, for overcoming many methodological deficiencies which characterised earlier research. For example, the original group which consisted of 364 10 year-old pupils was reduced to 110 so that the bilingual and monolingual groups were matched on socio-economic criteria as well as age, language and intelligence.
- Secondly, having controlled the socio-economic and language proficiency variables, the research pointed to evidence of *positive* cognitive advantages in IQ tests, contrary to the evidence of both previous periods. As Baker (2017:138) mentions, the research showed that the balanced bilinguals out-performed monolinguals on 15 out of 18 IQ variables, suggesting that bilingualism provided:
  - (a) greater mental flexibility
  - (b) the ability to think more abstractly and more independently of words, consequently providing superiority in concept formation
  - (c) a more enriched bilingual and bicultural environment which benefits the IQ
  - (d) a positive transfer between a bilingual's two languages, facilitating the development of verbal IQ.
- Thirdly, a major significant *methodological* aspect of the research, despite using IQ tests, was the broadening and extension of the attention given to cognitive aspects other than simply the IQ.

With regard to the *non-verbal* tests on which bilinguals were *not* found to be superior, Chin & Wigglesworth (2007: 59-60) mention that such tests can be divided into two sub-groups, namely:

- those which require spatial and perceptual processes
- those requiring symbolic manipulation

Whereas the performance of monolinguals was *equal* to that of bilinguals in tasks related to spatial and perceptual processes, bilinguals outperformed monolinguals in non-verbal tasks requiring symbolic manipulation, an ability which Peal & Lambert (1962) referred to as “mental or cognitive flexibility”. They ascribed this to the use of two linguistic codes and the association of two words with one object (Reading 1, page 60).

This research, which provided a fillip to bilingual education policies for example, also indirectly had more *political* consequences in that it not only undermined the concept of bilinguals as being intellectually inferior, but also suggested the contrary.

Despite the positive effect of the Peal & Lambert (1962) research which not only led to further similar research findings but also to a change in attitudes towards being bilingual, the need to be academically objective demands that we draw attention to some possible weaknesses in methodology. Again, these are discussed in some detail by Baker (2017:138) and include:

- the problem of generalisation
- the representativeness issue of being a ‘balanced’ bilingual (see Thresholds Theory (Cummins, 1976) below)
- the ‘chicken and egg’ causal relationship between bilingualism and IQ (or vice versa)
- the effect of *non-controllable socio-cultural* variables within a controlled socio-economic paradigm.

Chin & Wigglesworth (2007: 60) also deal with some of these issues in Reading 1 including that of the “thorny ‘chicken first or egg first’ issue”, referring to the longitudinal research of Hakuta and Diaz (1985) as evidence “that it is bilingual proficiency which exerts an influence on cognitive functioning and not the other way around”. However, subsequent re-analysis by Hakuta (1987) qualified this standpoint, pointing out that the opposite was also true, although not as strong (see Reading 1, page 60). Nevertheless, as Chin & Wigglesworth (2007: 60) emphasise:

Peal and Lambert’s study is extremely significant because it gave the next generation of researchers the ideological backdrop underpinning the methodological guidelines with which to investigate more rigorously the relationship between bilingualism and the mind.

Reading 1 mentions that, following Peal & Lambert's (1962) seminal research, subsequent studies showing the positive cognitive effects of bilingualism focussed their attention on more specific aspects than general IQ superiority, particularly *cognitive flexibility* (or *divergent thinking*) and *metalinguistic awareness*.

### **The Common Underlying Proficiency Model of Bilingualism (CUP) or 'Ice-berg' Theory**

In response to later research which indicated meta-linguistic cognitive advantages of bilingualism (and to highlight the archaic concept of the Separate Underlying Proficiency Model of Bilingualism (SUP) or 'Balloon' Theory), Cummins (1980) has illustrated the current concept of the cognitive process by means of the Common Underlying Proficiency Model (CUP) or the 'Ice-berg' Theory (Figure 2). Rather than existing as totally *separate* entities in the brain, this analogy presents the co-existence of two languages as being attached and emanating from *the same central processing system*. This model, therefore, dismisses the erroneous perceptions attached to the earlier SUP model (see above) which pictured both languages as separate 'balloons', each operating with limited space due to the presence of the other. To the contrary, the CUP model suggests that:

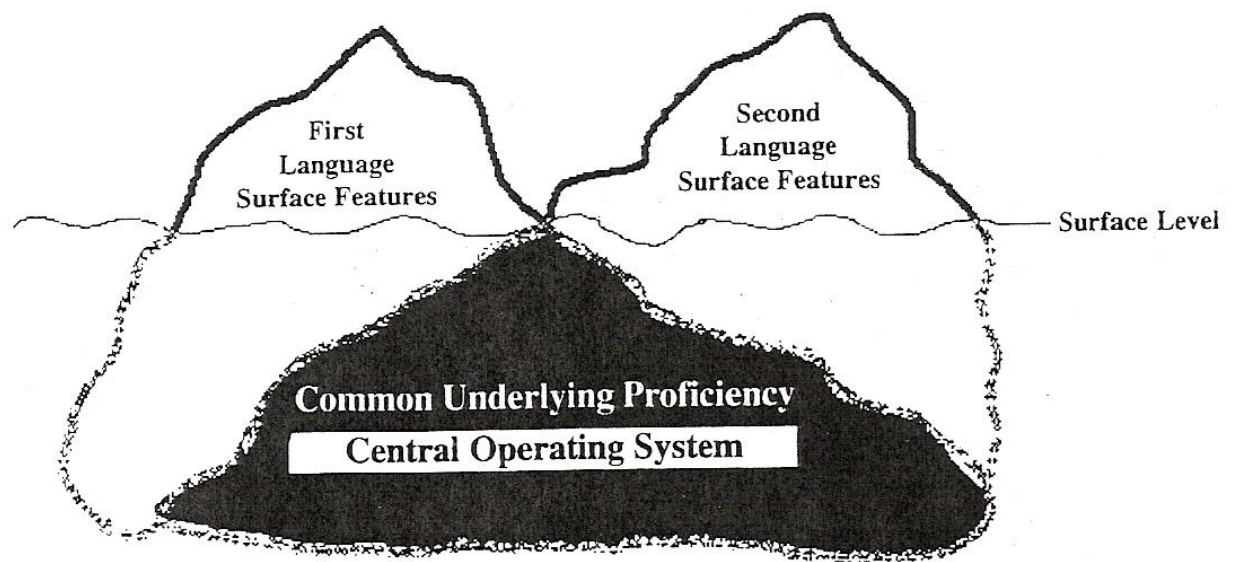
- languages share the same cognitive process
- concepts acquired in one are transferred to the other since both languages are interactive.

Baker (2017: 159) lists various points related to the CUP model of bilingualism but which can be further summarised as follows:

- the four basic linguistic skills emanate from "one integrated source of thought" or "the same central engine" regardless of which language a bilingual or multilingual person is using
- bilingualism/ multilingualism can be acquired easily because the human brain has sufficient capacity to store more than one language, enabling individuals to function competently in each
- since an individual's linguistic proficiency in various languages emanates from the same "integrated source of thought", information processing can be handled by either linguistic channel or both *as long as they are well-developed*, so that educational achievement, for instance, can be developed bilingually as well as monolingually
- *bilingual* cognitive processing, however, can have adverse effects when one of the two languages is not sufficiently developed.

However, to adopt a totally objective stance, differentiating between the two models of Separate Underlying Proficiency and Common Underlying Proficiency may over-simplify the cognitive process. Baker (2017: 159) points out that it “does not sum up the findings from research on cognitive functioning and bilingualism, nor does it reflect recent research on the brain and bilingualism” and refers to the Sapir-Whorf hypothesis that different languages result in individuals having different views of the world, thus *possibly* challenging the concept of one integrated source of thought (see also pages 150-51).

Figure 2: The Common Underlying Proficiency Model of Bilingualism (CUP) or ‘Ice-berg’ Theory. (Source: Baker (1993: 134))



### The Iceberg Analogy