

# **‘What Effect Will Bilingualism Have on my Child’s Intelligence?’:**

## **A Short Report**

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### **Introduction**

Any serious and loving parent would agree that parenting is a challenging and sometimes daunting commitment. Inundated with a sea of conflicting information from numerous sources—their own parents’ advice, online chat forum, educational pamphlets, television guru, just to name a few—modern parents cannot be blamed to have qualms about how best they can support their child’s educational journey, because for them the stakes cannot be higher. Much emphasis is placed on empowering children/students, and rightly so, but it is increasingly acknowledged that parents should also be empowered to make better and informed parenting decisions with some confidence.

Bilingual education is one such area where decades of robust research can indeed empower parents and teachers alike. While the idea of bilingualism is in general well-received worldwide, how to translate the idea into action at home and classroom is altogether quite another matter where no perfect consensus seems to exist. Confusion arises when contradictory information and prejudice abounds. This is why it is vital for parents and front-line educators to have easy access to guides that are written by the experts with the busy, confused, and sometimes desperate parents in mind.

By zooming in to Baker’s (2014) exemplar guide to one of the most asked questions regarding bilingual parenting, i.e. “What effect will bilingualism have on my child’s intelligence”, this short report 1) appraises how Baker constructs and communicates his clarification for parents and teachers; 2) discusses and evaluates Baker’s advice in a larger context of recent studies/theories on bilingualism and its wider relevance; 3) offers a succinct report for parents.

## **Part A: An Appraisal of Baker (2014) on Bilingualism and Intelligence**

*A Parents' and Teachers' Guide to Bilingualism* (Baker, 2014), now in its fourth edition and in an accessible Q&A format, is the epitome of a good research-based practical guide that offers parents and teachers short answers to the most asked questions. Written and updated by Professor Collin Baker, an esteemed scholar on bilingual education and himself a parent of three bilingual children, the guide has been a huge success. Without the slightest donnish condescension and abstraction, Baker explains the bilingual model in plain language, debunks many ages-old myths and prejudices, and reassures parents the value and principles of a good bilingual education.

Answering the question “What effect will bilingualism have on my child’s intelligence?”, Baker gently invites parents to join him for a walk along a short journey of discovery, by the end of which readers should indeed feel enlightened with a basic understanding of how bilingualism works for children.

The journey, i.e. Baker’s elucidation on this thorny issue, starts at a time when there was widespread prejudice against bilingualism, among both lay people and the groves of Academe. Lay parents envision a brain torn in half, with the extra language being a heavy burden inhibiting the full growth of their children’s mental capacity. For one thing, they fear “the more someone learns and uses a second language, the less skill a person will have in their first language” (Baker and Wright, 2021, p. 275). Moreover, speaking two languages confuses the mind and is best to avoid. In short, many parents seem to fear that by initiating bilingual education, it is not like opening the pandora’s box, letting loose all kinds of mental chaos.

More importantly, early scholars have not helped to assuage the fears. On the contrary, early research—a timeframe roughly from early 19th century to the 1960s (Baker and Wright, 2021)—on bilingual education and intelligence tend to give fodder to those unfounded myths against bilingualism. Baker laments that this thread of early research often misunderstands and misrepresents both bilingualism and intelligence, and at a great cost.

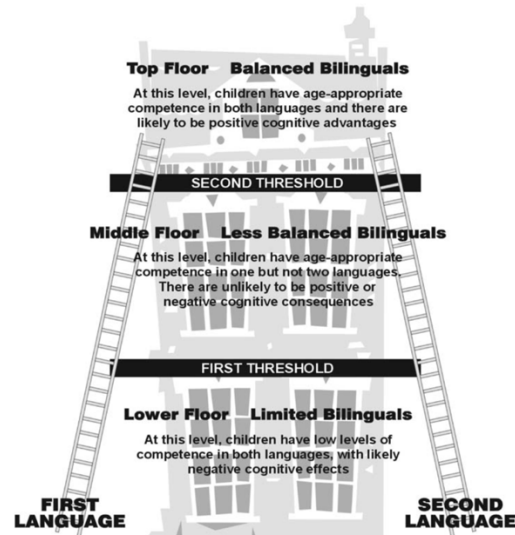
First, Baker argues that “early research was badly designed”, by often giving bilinguals “an IQ test in their weaker language—often English” (Baker, 2014, p. 53). He rightly points out that had these tests been tested in test takers’ chosen language, the result might have been rather different. In short, any conclusions drawn from these tests are fundamentally unfair. One could even claim that by “rigging” the tests, bilingual children are almost set up to fail. Second, Baker complains from a methodological point of view that “like was not compared with like” (Baker, 2014, p. 53). What he means is that early research comparing bilingual and monolingual children in mental capacity often fails to take into consideration of other factors such as socio-economic status (SES), which is often a better indicator of the difference in results. These seriously

flawed designs tend to overall render their conclusions invalid.

The same lamentable academic “miscarriage” concerns the very concept of intelligence. Intelligence as a notion has historically been so abused and misunderstood—in the wrong and biased hands, it could be a dangerous weapon justifying racial eugenics or female inferiority in the name of science—that Baker administers caution. “IQ tests do not measure intelligence. IQ tests measure a small sample of the broadest concept of intelligence” (Baker, 2014, p. 54). In other words, in an IQ test people get what they are tested, no more and no less, its result dependent on how it is designed and with what criteria they have in mind.

Psychometricians have long warned that it would be impossible to translate someone’s set of abstract cognitive abilities into a neat numerical IQ score, and that a fixed-intelligence mentality has started to give way to a focus on the malleability of intelligence (Treffers-Daller, 2019). For example, Baker introduces readers to the seminal Multiple Intelligences (MI) theory by Howard Gardner, which after decades of updates and reconfiguration, includes not only the familiar logical-mathematical component, but other equally important components: verbal-linguistic, visual spatial, musical-rhythmical, bodily-kinesthetic, interpersonal, intrapersonal and existential (Gardner, 1993). Other important advancements on redefining intelligence, though Baker does not go into detail, include Robert Sternberg’s (2011) triarchic view of intelligence, consisting of componential ability, experiential ability, and contextual ability; and Daniel Goleman’s work on EQ (emotional intelligence), placing the emotional mind on the same level as the rational mind (Tavacoli, 2012). With all the caveats, it is important to note that Baker is not suggesting we give up on the idea of intelligence altogether but simply to be cautious applying it. Indeed, most psychologists agree that though not perfect, intelligence is still a great, if not the best, indicator of success in the society. (Gardner, 2020; Hunt, 2011).

How exactly does bilingual education influence students’ intelligence? Is the influence positive or negative? The answer, as Baker patiently explains, is not so straightforward. In fact, there is contradictory data from research that applies different methodologies, factoring in different language groups, participant populations and different cultural contexts, resulting in a disarray of inconsistent literature. Instead of zooming in to each knotty controversy, Baker does a great service to readers by simplifying the current consensus (up to the point of 2014 when the guide was last updated) through his vivid metaphor of a “three-floor house”.



(Baker, 2014, p. 56)

The three floors represent three stages of bilingual competence, separated by two language thresholds. On the two sides of the house stand two ladders and these symbolize the first and the second language. Climbing the ladders, the bilingual child progresses and crosses the two thresholds, exerting different influences on their intelligence.

At the first stage, i.e. the bottom floor, a child is incompetent in either language. It is at this stage that there is potentially negative cognitive effects. Bilingual children at this stage are slower in lexical retrieval (Bialystok and Craik, 2010) and possess a smaller vocabulary than their monolingual counterparts (Filippi and Bright, 2023). When elements of a second language replace, rather than adds to the first language—scholars call it subtractive bilingualism—it seems to bring about minor but noticeable detrimental effects on children’s cognitive ability. The reason for this is far from clear though, and it could be other factors at play such as the cognitive control (Ronderos *et al.*, 2024). However, this might explain why many classroom teachers remain uncomfortable in preaching bilingualism to students. Baker (2021) in his most recent edition of *Foundations of Bilingual Education and Bilingualism* prepares a fuller account of the early research, from about 1920s to the 1960s, that overwhelmingly focuses on the negative effect. He observes that “none of these studies suggests that bilinguals have a mental overload, process inefficiently or have weaknesses compared with monolinguals everyday thinking” (Baker and Wright, 2021, p. 282). He firmly concludes that those early fearmongering conclusions of detrimental effect cannot be accepted due to “so many limitations and methodological flaws” (Baker and Wright, 2021, p. 282).

At the second stage, where children have “age-appropriate competence in one of their languages but not in both” (Baker, 2014, p. 58), no negative influence is observed and in fact bilingual and monolinguals children at this stage do not display meaningful

cognitive difference. These findings directly challenge the negative influence hypotheses and historically herald a new era of examining the possible positive influence bilingualism has on intelligence. More recently, large scale mega-analysis also seems to corroborate this middle stage of neutral effect. For example, no positive or negative effect of bilingualism on cognitive capabilities is manifest among children 7-9 years old (Arizmendi *et al.*, 2018); and similarly, no evidence is found among students 9-10 years old in a large sample examination (Dick *et al.*, 2019).

It is at the third stage, where children become balanced bilinguals competent in both languages, that we start to find the apparent cognitive advantages over monolinguals. Baker summarizes that “there is a tendency for bilinguals to be ahead of monolinguals on such tests of creativity and divergent thinking” (Baker, 2014, p. 55). To give an example, he invites readers to consider the enhanced elasticity in thinking that bilingualism might stimulate: when a Welsh child fluent in both Welsh and English learns about the word ‘school’ and its Welsh counterpart ‘ysgol’, which also means a ladder, the child is easier to think metaphorically to see school learning akin to climbing up a ladder. (Baker, 2014) Other than being creative ‘divergers’, balanced bilinguals are also observed to have an enhanced sensitivity to communication, and faster mental development (Baker, 2014). What is more, citing Ellen Bialystok’s research, Baker reminds us that balanced bilinguals “show superior skills in tasks that require selective attention to information in the executive control system of the brain” (Baker, 2014, p. 55), thus they tend to be better multitaskers and have a “definite advantage in cognitive processing” (Baker, 2014, p. 56). The advantages of balanced bilinguals, moreover, are not confined to children. Recent findings seem to confirm that bilinguals can slow the onset of dementia to 4-6 years among the aging population (Sternberg, 2011).

In all, Baker’s ‘three floor house’ metaphor is a fair and succinct answer to the question “What effect will bilingualism have on my child’s intelligence”. He acknowledges the difficulty to give a yes/no answer because the question defies easy categorization. Instead, he provides the history of research behind the question, and points out that there has been a noticeable trend in shifting the focus from the negative influence to the positive, roughly corresponding to the three stages in his metaphor. As the children progress in their bilingual competence, what the slight disadvantages they may initially have will gradually be compensated by the appearance of positive cognitive advantages later.

In *Foundations of Bilingual Education and Bilingualism*, Baker devotes an entire chapter to provide a fuller historical background, and weighs the evidence more carefully. But the guide has a different target readership, and its very success is due to his expert summary of the research on bilingualism, balanced and impartial discussion of case studies, and admirable easy-to-understand writing. This is of course not to say that Baker has the final verdict on this question. As is in any scientific research, progress is continuously being made, paradigms shifted, evidence re-examined and older conclusions challenged. To give just one example, the clearest evidence for the

advantages of bilingualism on intelligence seem to target children and the elderly people (Woumans *et al.*, 2015), and psychologists have long been puzzled by the uneven distribution of bilingual cognitive benefits. One thing is certain though. As the research goes on, especially on cognitive science, we will in the future have a more complete picture. Until then, busy parents wondering what bilingualism is doing to their children's brain are fortunate to have Baker's guide as their go-to reference.

## **Part B: Advice for Parents on Bilingualism and Intelligence**

Part A discusses Baker's answer to the question "What effect will bilingualism have on my child's intelligence". Interested parents who wish to learn more should consult first of all *Foundations of Bilingual Education and Bilingualism* (2021), and then other entries in the references section. A good research article or guide should be as enlightening as it is enjoyable, especially when it means parents have a chance to gain a deeper insight into what is happening when their children receive a bilingual education. Part B is written with the busier reader in mind, who generally keep away from too much academic nuance. It is a summary of Baker's summary in his guide, but with a re-organization of information and a re-presentation of its implications to make it easier to digest.

The first advice for parents is to be aware of what kind of advice you are fed. Is it peer-reviewed? Is it robustly tested? Is it relevant? Specious arguments, like conspiracies, tend to find their way into people's mind, confuddle them and in the end weaken their resolve. If there is one message that Baker delivers loud and clear, that would be his merciless dispelling of old myths. Those misconceptions asserting bilingualism leads to mental confusion has been proven to be untrue and should in no way frighten modern parents away from giving their children a bilingual education. Quite to the contrary of old misconceptions, there are now proven advantages to being a bilingual learner, unlocking a wide range of cognitive benefits.

Parents should beware of the existence of different stages of bilingual development. If we recall the 'three-floor house' metaphor from Part A, we will notice that there is a growing trend for the benefits of bilingualism to manifest as children ascend the bilingual ladders. In the initial stage, when children have limited master of either language, bilinguals may have slight disadvantages when tests are administered. This disadvantage is not due to bilingualism per se, but rather has more to do with a natural struggle when children start to use one language, let alone two. In this case, parents should not worry too much. Instead, parents should encourage their children to build a strong foundation for both languages, making bilingualism a positive experience for children. As children become more balanced bilinguals, cognitive benefits start to reveal themselves. Proven advantages include enhanced executive control such as a better ability to switch attention and ignore distraction; improved creativity and mental

flexibility; sharpened memory capacity and so on. Parents can even expect their children to defer the onset of dementia when they get old. Parents are also encouraged to pay attention to these cognitive benefits, and support their children to fortify their cognitive strength.

For teachers, the most important advice is to have faith in bilingualism. There is no way bilingualism will work if teachers cannot even convince themselves and have serious secret doubts. Baker's guide could be a great starting point, if teachers need reassurance and reminding that they are cultivating great bilingual minds. They should strive to foster an inclusive environment, in which two languages are both valued and their cultures adequately represented; they should be patient, kind and flexible to help students, especially beginners, to achieve a higher level of bilingual competence; they should also partner with parents, and together foster an encouraging and consistent environment in which children are supported and motivated.

In conclusion, by promoting good bilingualism, parents in partnership with classroom teachers have the potential to unlock a world of cognitive advantages for children. Bilingualism, when sufficiently understood, is a powerful tool to empower children for their future success.

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