

AThEME POLICY BRIEF



Advancing the European Multilingual Experience (AThEME) is a 5- year collaborative research project investigating cognitive, linguistic and sociological issues in multilingual Europe. This particular policy brief is based on AThEME findings dealing with **multilingualism and communicative impairment**.

Introduction

Migration across Europe is making Europe increasingly multilingual but also raising challenges for families, educators and health professionals. Both parents and children are expected to learn the language of the host country, which is also the language of schooling. Maintaining the home language is often regarded as counter-productive by parents, who would like their child to be successfully integrated, and by teachers, who often explicitly advise families to switch to the majority language as soon as possible. In addition, children learning the majority language go through developmental stages in which their use of the language deviates from the target norms. While this behaviour is completely normal and predictable, educators and health professionals may interpret this non-target use as a sign of a specific language impairment, such as **Developmental Language Disorder (DLD)** or **Developmental Dyslexia (DD)**: this may lead to **over-diagnosing** a non-existent impairment in typically developing multilingual children. It can also happen that specific language impairments are **under-diagnosed** in developing multilingual children because the manifestations of these impairments are incorrectly seen as just related to their underdeveloped language skills. Furthermore, multilingualism is often regarded as undermining the language development of children with a diagnosis of language impairment. As a

consequence, families with a child diagnosed with DLD or DD are discouraged from speaking their home language or from learning a second language.

These problems are worsened by two factors. First, neither DLD nor DD is a discrete category; rather they are dimensional disorders, ranging from mild to severe with no clear cut-off between 'typical' and 'impaired' in either general linguistic ability or reading. Second, tests and instruments typically employed to diagnose language impairments are based on a particular language (mostly the majority language), which accentuates the risk of confusing developmental language delays and disorders. **Both over- and under-diagnoses can have negative repercussions on children's well-being and families' integration in the host country.** It is important that parents are given good advice, that schools and teachers are properly informed about how multilingualism may (or may not) influence a child's linguistic and literacy development, and that tools become available to reliably detect underlying developmental language disorder in both monolingual and multilingual children.

Currently there is no evidence-based policy that explicitly addresses multilingualism and communicative impairment. Existing policy focuses either on inclusive education for children with disability (see for example the EU policy on "Support for children with special education needs (SEN)") and the

draft EU policy on specific learning disabilities/difficulties), or on multilingualism, but there is a gap with respect to the overlap between multilingualism and communicative impairment. This is precisely the issue addressed by AThEME research.

In an effort to contribute to a better understanding of communicative impairments, as well as more appropriate targeted assessment and intervention in monolingual and multilingual populations, AThEME researchers in the **United Kingdom** and **Italy** focused on developing instruments and diagnostic tools that improve the detection of DLD and DD. Crucial to their design is the fact they include non-language-based tasks, to probe for linguistic impairments and that they were tested both on monolingual and bilingual children. The researchers' findings show that:

- DD arise irrespective of the number of languages a child is exposed to.
- Multilingualism does not compound the difficulties of children with language impairments, specifically children with DLD and DD, and can in fact be beneficial.
- Differences in pragmatic interpretation, i.e., the ability to draw on contextual cues in a discourse, between monolinguals and multilinguals need to be considered when relying on the results of standardized cognitive and psychological tests.
- A range of tailor-made tasks based on artificial grammars can distinguish between general cognitive impairments and linguistic impairment in both monolinguals and multilinguals.

Evidence and analysis

The first relevant finding is that **over-diagnosis and under-diagnosis of lan-**

guage impairments in multilingual children can be avoided (a) by relying on appropriate tests that do not rely on language abilities, and (b) by understanding differences between monolinguals and multilinguals with respect to pragmatic abilities involved in cognitive and psychological tests.

AThEME research on **artificial grammar** learning carried out in the **United Kingdom**, led to the creation of a battery of language-independent tasks to assess structural sensitivity, which is an essential component of linguistic competence. The tailor-made tasks can probe into very specific kinds of dependencies found in natural languages and other cognitive abilities (vision, decision making, etc.) without actually using language. In the case of DLD and DD, this is particularly relevant because it allows a principled dissociation between general cognitive impairments and linguistic impairments. These new tailor-made tasks have been validated comparing monolingual and multilingual adults, multilingual children with dyslexia, as well as early school age children with development language disorder.

Another strand of AThEME research in the UK examined **pragmatic abilities in communication** (i.e., abilities to draw on contextual cues in a discourse) and how multilingualism affects such abilities. Importantly, such abilities are associated with scores on the Autism Spectrum Quotient, Working Memory Tasks, and Systematizing Quotient Revised Questionnaire. AThEME researchers found that (i) pragmatic abilities tested by these tasks can be affected by methodological design; and (ii) the language status of interlocutors (monolingual vs. multilingual) affects the way individuals perform in pragmatic tests.

These results indicate that (a) it is important to use language-independent tasks to assess

communicative impairment, particularly in multilingual populations, and (b) when language dependent tasks are used to assess pragmatic abilities (for instance, in the case of Autism Spectrum), it is essential to consider not only the methodological design, but also the language status of the interlocutors.

The second relevant finding is that **multilingualism, far from being detrimental for children affected by DD, can have a positive effect on language impairments, especially by enhancing the children's metalinguistic and morphological abilities.** Factors such as length of exposure to the second language, however, need to be taken into account.

Previous research has shown that multilingualism may provide a positive boost to (i) cognitive functioning, conveying important advantages in specific domains, such as executive functions, where the use of two languages seems to favor the ability to focus on the relevant stimuli while inhibiting the irrelevant ones, and (ii) metalinguistic awareness, where multilingualism appears to enhance speakers' sensitivity to the structures of their languages. AThEME research conducted in **Italy** aimed at **disentangling the relationship between multilingualism and DD**, comparing the performance of monolingual and multilingual children, with and without a diagnosis of dyslexia, in a task tapping morphological competence, and in particular their ability to provide the plural form of invented words ("nonwords") modelled on the phonotactic constraints of Italian. The results confirmed the presence of a positive effect of multilingualism, with multilingual children outperforming monolingual children in the pluralization of nonwords. Importantly, this advantage was also found in multilingual dyslexic children: they consistently outperformed monolingual dyslexic children, approaching and even outweighing, in the most difficult conditions, the perfor-

mance of monolingual typically developing children. These results thus indicate that multilingualism can have a positive effect on morphological and metalinguistic abilities, both in impaired and unimpaired children. More particularly, bilingual children seem to benefit from a higher metalinguistic awareness, which makes them more sensitive to the structures and the rules of each of their languages, independently from the presence of developmental language disorders like dyslexia.

AThEME researchers in Italy also examined the **production of clitic pronouns in Italian** (as in *Il bambino lo mangia*, 'The child it eats' = The child eats it) in monolingual and multilingual children. Clitic production is considered a reliable clinical marker for Italian monolingual children suffering from DLD and it is also reported to be particularly challenging for early second language children (EL2), who are less accurate than their peers in this task. The results confirmed that the deficits previously found in EL2 children were not related to multilingualism, but rather to their still incomplete competence in Italian: with longer exposure (e.g., 8 years of Italian), EL2 performed at ceiling.

AThEME's Italian team extended this research to multilingual children with DD. Like monolingual children with DLD, multilingual dyslexic children also struggle with the production of clitic pronouns. The study aimed to verify whether multilingualism could exacerbate the difficulties in clitic production. Results revealed that dyslexic children, both monolingual and multilingual, have more difficulties than typically developing children in clitic production. For multilingual children with dyslexia, a significant positive correlation was found in the bilingual dyslexics between length of exposure to Italian and accuracy in clitic production. This stresses the importance of taking into account exposure factors in the assessment of multilingual chil-

dren's linguistic competence.

In sum, these results indicate that extended exposure to multilingual input has a positive effect on the linguistic abilities of both typically developing children and children affected by DLD and DD.

Policy implications and recommendations

The AThEME research reported above focus on the relationship between multilingualism and communicative impairments, such as DLD and DD. There are several policy implications. First, the findings can be the basis for more effective and accurate diagnostic tools and interventions that minimize the risk of both over-diagnosing non-existing impairments and under-diagnosing actual conditions in multilingual children. Within this context, we offer the following recommendation:

Develop and use diagnostic instruments that can identify specific language impairments in a language-independent way. When using language-based instruments, take into account the monolingual vs. multilingual status of the participants. This can take different forms, for example:

- invest in the further development and application of language-independent diagnostic tools;
- train (future) professionals in health and education who are involved in diagnosing communicative impairment about the use of language-independent measurements;
- develop reliable methods to take the multilingual status of children into account;
- inform both professionals and families about the risks of over- and under-

diagnosis in multilingual settings and about the availability of inclusive approaches to language testing.

Second, the AThEME research points to the independence of multilingualism and communication impairments. This is the basis for the following recommendation: **Promote awareness that language development can be typical or atypical independently of the number of languages the child is exposed to. In addition, language impairments and dyslexia arise irrespective of multilingualism.** This may involve:

- stimulating active cooperation between researchers, speech therapists, teachers and families dealing with language impairment;
- requiring that future speech therapists as well as teachers are educated about the ways language development, language impairment and multilingualism do and don't interact;
- developing and disseminating research-based information specifically aimed at families in which language impairment occurs about multilingualism in combination with DLD and DD.

Third, the AThEME findings confirm that **multilingualism can be beneficial to the prognosis and treatment of language impairments, especially if children are exposed to a sufficient amount of multilingual input over time.**

Four further recommendations can therefore be offered for the benefit of families and educators:

- 1) **Promote awareness of the fact that growing up with more than one language is beneficial for both typically developing and language impaired children.**
- 2) **Multilingual children diagnosed with language impairments should con-**

tinue to receive input both in the majority language and in the home language to ensure that they do not lose it or become socially isolated from their immediate and extended families. Families should be dissuaded from switching to the majority language and abandoning the home language.

- 3) **Promote awareness of how exposure to continuous, regular and rich input in more than one language can bring benefits both in the linguistic and in the cognitive domains**, in terms of more sophisticated metalinguistic and morphological skills which can at least partly counterbalance the effects of language impairments.
- 4) **Learning an additional language should be encouraged as an integral part of the education of children with language impairments.**

Research Parameters

AThEME is a 5-year collaborative research project studying multilingualism in Europe. Researchers from 17 partner institutions across 8 European countries worked on (1) investigating cognitive, linguistic and sociological issues in multilingual Europe, (2) assessing existing public policies and practices within the areas of education and health and (3) contributing to evidence-based policy making.

The project focused on four main research themes: **(a) regional minority languages, (b) heritage languages, (c) atypical bilingualism and communicative impairment, and (d) the cognitive aspects of being multilingual.** The aim is to advance knowledge of the various factors that contribute to successful multilingualism in different environments and in typical and atypical con-

texts, as well as to understand how multilingualism affects language comprehension in human interaction, and what the effects of multilingualism are at the neuro-cognitive level.

The main research objective relating to atypical development and communicative impairment was to increase the understanding of the consequences of language disorders, specifically DLD and DD, on multilingual children, and to improve the accuracy of testing and diagnosing these conditions. To this end, the following objectives were identified and addressed:

- to devise both language independent and language-based task for a reliable diagnosis of language disorders in multilingual children, which separates typical stages of linguistic development from atypical disordered behaviour;
- to investigate the consequences of language disorders such as DLD and DD on language use in monolingual and multilingual children;
- to assess the impact of multilingualism and language learning on children affected by language disorders and evaluate whether it results in positive, negative, or neutral effects.

A defining feature of the AThEME project is its **interdisciplinarity**, involving researchers from theoretical linguistics, experimental linguistics and cognitive psychology working together to address complex research questions arising in different contexts of multilingualism. AThEME research combined theoretical and empirical work. Most of the linguistic research was qualitative, but some teams used a range of quantitative methods. Most of the psycholinguistic research was experimental and relied on a variety of methods to collect both online and offline data.

Dissemination plays an important role in the AThEME project and was coordinated jointly by Bilingualism Matters centre in Edinburgh (through a network of branches set up in each partner country) and De Taalstudio in Amsterdam. Dissemination meetings were organised every other year in order to establish and facilitate contact and exchange between research teams and different groups of practitioners. ~~More details on the AThEME project, its activities and research outcomes are available on www.atheme.eu.~~