



**European Cooperation  
in the field of Scientific  
and Technical Research  
- COST -**

**Brussels, 11 December 2008**

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**Secretariat**

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**COST 264/08**

**MEMORANDUM OF UNDERSTANDING**

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Subject : Memorandum of Understanding for the implementation of a European Concerted Research Action designated as Cost Action IS0804: Language impairment in a multilingual society: Linguistic patterns and the road to assessment

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Delegations will find attached the Memorandum of Understanding for COST Action IS0804 as approved by the COST Committee of Senior Officials (CSO) at its 172nd meeting on 24-25 November 2008.

## **MEMORANDUM OF UNDERSTANDING**

**For the implementation of a European Concerted Research Action designated as**

**COST Action IS0804**

### **LANGUAGE IMPAIRMENT IN A MULTILINGUAL SOCIETY: LINGUISTIC PATTERNS AND THE ROAD TO ASSESSMENT**

The Parties to this Memorandum of Understanding, declaring their common intention to participate in the concerted Action referred to above and described in the technical Annex to the Memorandum, have reached the following understanding:

1. The Action will be carried out in accordance with the provisions of document COST 270/07 “Rules and Procedures for Implementing COST Actions”, or in any new document amending or replacing it, the contents of which the Parties are fully aware of.
2. The main objective of the Action is to profile bilingual Specific Language Impairment (SLI) by establishing a network to coordinate research on linguistic and cognitive abilities of bilingual children with SLI across different migrant communities.
3. The economic dimension of the activities carried out under the Action has been estimated, on the basis of information available during the planning of the Action, at EUR 52 million in 2008 prices.
4. The Memorandum of Understanding will take effect on being accepted by at least five Parties.
5. The Memorandum of Understanding will remain in force for a period of 4 years, calculated from the date of the first meeting of the Management Committee, unless the duration of the Action is modified according to the provisions of Chapter V of the document referred to in Point 1 above.

## **A. ABSTRACT AND KEYWORDS**

European Union expansion and European integration have led to increased linguistic diversity in Europe and to dramatic increases in the number of children being raised in multilingual settings. This drives the need for coordinated research and policies which reflect bilingual situations when planning assessment, treatment and placement of migrant children with Specific Language Impairment (SLI) in appropriate educational frameworks. These needs are best served by studying SLI in bilingual contexts. The main objective of this Action is to profile bilingual SLI (henceforth BISLI) by establishing a network to coordinate research on the linguistic and cognitive abilities of bilingual children with SLI across different migrant communities. This field of research is new and significant networking is required to ensure synergy between current individual research efforts before formal multinational collaborations can be established. The exchange of knowledge within this Action will open new directions for studying BISLI, advancing the use of methods that uniquely address bilingual subject groups. The Action will develop guidelines for assessment techniques for early identification of BISLI in a wide range of European languages and help establish national and European policies regarding diagnosis, treatment and educational placement of children with BISLI in appropriate clinical and educational frameworks.

**Keywords:** Bilingualism, Specific Language Impairment (SLI), Language Acquisition, Children, Migration

## **B. BACKGROUND**

### **B.1 General Background**

European migrations have led to dramatic increases in the number of children being raised with two or more languages in multilingual communities. Professionals face difficulties in assessing and providing services to language impaired children in these communities. The numbers of children who come to school with more than one language has increased over threefold since the year 2000 in Ireland, Italy and Spain and by 50% in the last two years in the UK ([ec.europa.eu/education](http://ec.europa.eu/education)). In

the rest of Europe, this situation is far from unique. Second language learners often produce forms resembling those of children with Specific Language Impairment (SLI). The overlap among the features of bilingual and impaired language leads to methodological and clinical confounds, which this Action aims to resolve in order to improve language assessment of minority language children. At present, medical, language and educational professionals have only limited diagnostic instruments to distinguish language impaired migrant children from those who will eventually catch up with their monolingual peers. In the Netherlands, for example, bilinguals constitute 14% of the mainstream school population, but 24% of those in special schools for children with SLI (de Jong, to appear). If there were no misdiagnoses, the percentage of bilingual children should be identical in mainstream and special schools, by definition.

The main objective of this Action is to profile bilingual SLI by establishing a network to coordinate research on linguistic and cognitive abilities of bilingual children with SLI across different migrant communities.

The Action is motivated:

- theoretically, 1) by how typological differences between the two languages of bilingual children with SLI impact on the manifestation of SLI in each language, and 2) by how bilingualism and language impairment, respectively, affect the performance of bilingual children with SLI;
- practically, by challenges that multilingualism poses for the diagnosis and treatment of language impaired bilingual children.

Several national research teams are already studying children with bilingual SLI (BISLI). Some members of these teams have organized joint colloquia at several conferences (International Association for the Study of Child Language (IASCL) -2005, Child Language Seminar-2007, Deutschen Gesellschaft für Sprachwissenschaft (DGfS) 2007, 2008 and International Symposium on Bilingualism (ISB) 2006, 2007), with another workshop scheduled for February 2009. However, this field of research is new and more networking and learning from each others' experience is required before formal collaborations can be established through research programs within FP7. The most appropriate way forward at this stage is through a COST Action. This Action will enable more intensive networking, ensuring synergy between ongoing individual research efforts and

leading towards multinational collaborations in order to expand the search for what constitutes SLI in bilingual children. Networking will facilitate comparability by coordinating methodologies and discussing findings from different labs. This will enhance dissemination of knowledge to both young and senior researchers, expand research efforts to include language pairs of most urgent concern to European integration, and help organize research groups in less studied bilingual settings, e.g. Romany-Bulgarian or Albanian-Greek. Most important, the Action will specifically disseminate this knowledge to countries where BISLI (or even SLI) has not been studied via transfer of knowledge to clinicians and practitioners in order to promote early identification of indicators of SLI in bilingual children in communities across Europe.

Immediate scientific benefits will emerge from the exchange of knowledge within the network formed by this Action. The Action opens new directions for studying BISLI, taking into account a broad range of linguistic and cognitive indicators, and advancing the use of methods that uniquely address bilingual populations. The findings can also promote understanding of representation and processing of language in BISLI. Societal benefits of networking within this Action include the creation of guidelines for:

1. assessment techniques for early identification of BISLI in a range of European languages and
2. national and European policies regarding diagnosis, treatment and educational placement of children with BISLI in appropriate clinical and educational frameworks.

## **B.2 Current state of knowledge**

### **Summary of previous research**

Definitional and methodological controversies in research on both bilingualism and SLI are major obstacles to addressing the questions outlined above and to ensuring comparability of international research. Selection of homogeneous groups of bilingual children is complicated by social status (e.g. immigrant, indigenous, privileged minorities); differences in age (early/late age of onset of second language (L2) acquisition); birth order; family size; acquisition order (simultaneous/sequential); degree of exposure; acquisition contexts, e.g. one parent for each language, or first language (L1) at home vs. L2 at kindergarten or school (Meisel 2007); and the prestige of each language.

SLI (Specific Language Impairment) is a primary deficit in linguistic abilities and language development (Bishop et al. 2000). In England, the Bercow review (2008) reports that approximately 7% of 5 year-olds going into school in 2007 had significant difficulties with speech and/or language, and this situation applies across Europe. SLI has been defined by exclusionary criteria as language impairment which is unrelated to hearing loss, emotional and behavioral problems, intelligence and clear neurological problems (Tallal & Stark 1981). Lack of inclusionary criteria makes the SLI population very heterogeneous, with differing criteria and a controversy about which linguistic aspects are affected and to what extent (van der Lely 1998; Bishop 2000). SLI is manifested at different linguistic levels (Leonard 1998), but not all linguistic skills are equally impaired. A deficit in morphosyntax is often viewed as the key symptom (Crago & Gopnik 1994; Rice & Wexler 1996), but due to the heterogeneity of this population, some children might show a more severe impairment at a different linguistic level. In addition to purely linguistic skills, auditory memory, working memory and executive function skills are also reported to be impaired among children with SLI (Kohnert & Windsor 2004; Bishop & Norbury 2005). Two additional areas of interest, one genetically-based (e.g., Falcato et al., 2008) and the other neuroanatomically-grounded (e.g., Ullman & Pierpont 2005) also show promising directions for identifying SLI but are not a central focus of this Action.

For both SLI and bilingual children, representation of linguistic knowledge may be incomplete or different. Processing of linguistic stimuli may also differ under the influence of duration, rate and salience, showing up as difficulties in memory, temporal integration, or word-finding/lexical retrieval. Developing bilinguals, when compared to monolinguals, may also show evidence of different linguistic representations and/or difficulties in fluency related to their lexical knowledge or reduced exposure to each language. However, while bilingual children might superficially resemble children with SLI in their linguistic behavior, they may show advantages in the very executive function domains which are impaired in children with SLI, making this a potential domain in which the two populations can be distinguished. In light of these confounds associated with language impairment and bilingualism, Bedore and Pena (2008), who offer a summary of the current situation in the US, point to the necessity of further research for indicators of SLI in bilinguals. The present Action aims to do this.

## **Current state of the art**

Studies with a specifically bilingual approach to SLI (in that they examine data in both of a child's developing languages) are very few (usually only the L2 is studied). While several case studies have been reported over the past decade (e.g., Thordardottir et al. 1997, Restrepo & Kruth 2000), group studies have become available only in the past five years. Hakansson et al.'s (2003) pioneering study revealed that unimpaired bilingual migrant children acquire at least one language appropriately, while children with SLI fail in both languages. Research, published in the last couple of years, focuses primarily on the syntax-morphology interface and morphosyntactic indicators. Paradis, Genesee and Crago (2006), who have been leading the study of SLI and (often simultaneous) bilingualism in Canada looking at French-English bilinguals, found similarity among bilingual French-English SLI and language-matched typically developing (TD) bilinguals. In contrast, Hamann and Belletti (2008) report developmental differences between French SLI and French/German and French/Italian TD bilinguals. Research in the US, which mostly focuses on Spanish-English bilinguals, found that children with BISLI performed worse than their bilingual TD peers in their use of English verb inflections (Jacobson & Schwartz 2002).

Research in Europe, unlike the work in the US and Canada, explores a wide variety of language pairs. De Jong et al. (2007) showed that while verb inflection problems are an SLI indicator in Turkish-Dutch bilinguals, problems in gender assignment and adjectival agreement are markers of L2, but are more serious in children with SLI. Rothweiler et al. (2007) found agreement and case errors in both languages of Turkish-German bilingual children with SLI, with more errors in L2 German. Chilla and Babur (2008) found that SLI in the German of successive bilinguals matches SLI characteristics of monolingual German SLI. Armon-Lotem et al. (2006) found similar inflectional errors in both TD and SLI English-Hebrew children, but the frequency of errors was greater for impaired children. Armon-Lotem et al. (2008) further suggested that focus on verb-related problems may not be valid for all languages, and omission of prepositions in addition to inflectional errors might be better indicators for BISLI.

Only a few studies look into other syntactic aspects of BISLI. Studies of complex syntax in Turkish-German and English-Hebrew typically developing and language impaired bilinguals are underway. Initial evidence from studies of the syntax-semantics interface with bilingual children in Germany show that these learners demonstrate rapid progress which does not resemble the persistent deficits reported for SLI-children (Schulz & Wenzel, 2007). Even fewer studies look at the phonology interface. For example, Girbau and Schwartz (2007, 2008) report that non-word repetition discriminates well between bilinguals with and without SLI. Moreover, hardly any studies currently explore bilingual language impairment in narrative and discourse domains. The same is true for cognitive abilities and, in particular, executive functions, though deficits in updating and inhibition abilities affect efficient use of resources for activating relevant information in language tasks, and thus, these skills, (which are not language-specific), are sometimes argued to offer an additional perspective on the identification of BISLI. Such studies are currently underway in the Netherlands and Israel. This limited research, the sometimes inconsistent findings, and the fragmented profiling of BISLI, warrant increased networking among different research groups to enhance collaboration and to expand the domain of research.

### **Innovative approach of this Action**

1. The Action addresses the relatively new and ignored problem of identifying children with BISLI, which are an understudied and vulnerable population.
2. The Action has a new bilingual approach which draws from previous work on bilingualism and SLI. This new approach will promote:
  - a. testing in both languages in tandem with tools that are sensitive to the nature of bilingual acquisition.
  - b. testing which addresses several levels of linguistic and non-linguistic representation, also tapping into processing and memory skills which go beyond language use.
  - c. testing which takes into consideration sociolinguistic factors beyond language and parental background, e.g., social identity, attitudes, and preferences as related to the language(s) used.

### **B.3 Reasons for the Action**

There is major overlap between diagnostic concerns and scientific research in the field of bilingual SLI. Thus, the Action aims at both scientific and societal advances.

#### **Scientific Advances**

Objectives:

- Identifying unique patterns in bilingual SLI - whether qualitatively or quantitatively - in both of a child's languages
- Differentiating typical bilingual development from impaired development
- Evaluating whether symptoms of SLI are aggravated by the acquisition of more than one language.

Expected results:

- Development of tasks which address typological characteristics and contrasts and tap both unique bilingual phenomena and unique SLI phenomena.
- Better understanding of the relative contribution of representations and processing capacity in TD bilinguals, children with BISLI, and monolingual children with SLI.

Means for dissemination:

- Publication of these tasks and the findings in scientific conferences, journals and books as well as a designated webpage.

#### **Societal Advances**

Objectives:

- Improvement of diagnosis and treatment of language impairments following the progress in BISLI studies.

Expected outcome:

- A stronger research base and rationale for decisions about educating children with BISLI in a single (home or school) language or bilingually, by showing whether bilingualism adversely affects children with BISLI or not.
- Guidelines for diagnosis and developing instruments and test items to distinguish TD from SLI bilinguals.

Means for dissemination:

- Organization of workshops to increase knowledge of professionals who provide services to migrant children, leading to more accurate diagnoses.
- Publication of position papers on policy guidelines for assessment, treatment and placement of language impaired migrant children in appropriate educational frameworks.

#### **B.4 Complementarity with other research programmes**

To the best of our knowledge there is no COST, FP7, ESF or other EU funding directed at the study of BISLI.

The present Action is complementary with Action A33. However, it differs substantially in its objectives, target population, measures and expected outcomes (see Table 1). There is no duplication between the actions. Clearly, the present Action will benefit from the valuable crosslinguistic outcomes and the scientific advances achieved by A33, but the present Action aims at a wider range of indicators, which are particularly important in the bilingual setting, and its anticipated outcome is relevant for policy making and assessment in the bilingual setting, which A33 is naturally not aimed at.

The present Action is also complementary with Action IS0603 Health and Social Care for Migrants and Ethnic Minorities in Europe in targeting migrant populations, but the scope of investigation (language impairment rather than physical health), methods, expected outcomes, etc. set the two Actions apart.

**Table 1**

	<b>A33</b>	<b>Present Action</b>
<b>Objectives</b>	Identify robust stages in typical language acquisition in monolinguals	Disentangle bilingualism and SLI in order to identify early indicators of BISLI
<b>Target population</b>	Monolingual children	Bilingual children
<b>Measures</b>	Syntax and Semantics	Syntax and its interface with morphology and semantics, narrative and discourse abilities, lexical and phonological processing, and executive functions.
<b>Expected outcomes</b>	Crosslinguistic assessment for monolingual language acquisition	Profiling BISLI, guidelines for BISLI assessment tools, position papers for policy makers, workshops for practitioners.

## **C. OBJECTIVES AND BENEFITS**

### **C.1 Main/primary objectives**

The main objective of this Action is to profile bilingual SLI by establishing a network to coordinate research on linguistic and cognitive abilities of bilingual children with SLI across different migrant communities.

Since the research so far is insufficient (see B.2), this will make it possible to:

- disentangle bilingualism and SLI by establishing the relative contribution of each;
- show how bilingual SLI (BISLI) can be identified in both of a child's languages;

- explore the extent to which the manifestations of SLI are similar or different across languages in the same child;
- establish whether the nature and severity of SLI is affected by the acquisition of more than one language.

In keeping with the nature of COST activities, the Action will achieve the objective by facilitating high-level contacts between researchers in the field and stimulating international and interdisciplinary collaboration.

The joint focus on linguistic and cognitive abilities intends to overcome some of the difficulties caused by the similarities in the linguistic behavior of monolingual SLI and typically developing bilingual children, as well as to address the extent to which language impairment can be described in terms of underlying processing phenomena rather than linguistic representations.

The Action focuses on preschool children and children in their early school years because it is important to identify BISLI before academic (literacy) requirements put an additional strain on them. Early identification in preschool years improves later intervention. Knowledge of the second language, which is necessary for bilingual testing, is often achieved only after two years of exposure. Since obligatory schooling starts in kindergarten at best and minority children are often raised in monolingual homes until they go to school, it is necessary to extend the scope of the Action to early school years.

The second primary objective of the Action is to reconcile the methodologies of studies of language impaired and typically developing bilingual children in order to improve comparability and to provide innovative techniques for assessing language impairment. To this end, the Action will:

- study a broad range of skills, targeting a range of linguistic skills, using off-line and on-line tasks, and cognitive skills involving executive functions, +

- develop bilingually oriented criteria and procedures to investigate typologically similar (e.g. Arabic/Hebrew, Dutch/German) and typologically different language pairs (Dutch/Turkish, Russian/German, Russian/Greek).

- include not only major European languages, but also languages of non-European minority groups residing in Europe, such as Turkish, Arabic, and South Asian languages (Hindi, Urdu, Gujaratti, Sylleti).
- tap domains which are known to be vulnerable in monolingual children with SLI (e.g. verbal morphology), as well as uniquely bilingual phenomena which could reveal the specific nature of BISLI (e.g. difficulties with the grammar of intra-sentential code-switching, inappropriate code interference).

Expected scientific deliverables of the Action include:

- scientific workshops promoting expansion of BISLI studies to include complex syntax, narrative discourse and executive function abilities
- joint papers and books on research with a common methodology
- expansion of the data base on BISLI.

Expected societal deliverables of the Action include:

- position papers to help in decision making on treatment/placement of children with BISLI
- a textbook for clinicians and special educators on BISLI
- blueprints for bilingual assessment tools and diagnostic procedures
- a web forum for parents and professionals to discuss and consult
- workshops for practitioners

## **C.2 Secondary objectives**

While the main objective of this Action falls mostly within the area of basic science, secondary objectives build on this and are of a more applied nature, with societal as well as scientific impact.

Focusing on profiling BISLI, this Action aims:

1. To mentor additional young researchers from countries with significant immigrant populations and language combinations beyond the initial Action members, including new EU countries. This will provide opportunities for young researchers who are native speakers of minority languages and are interested in pursuing an academic career, to make a significant contribution to their community.

2. To identify critical sociolinguistic information which will set standards for increasing comparability of research in bilingual SLI, given the tremendous variation across research settings, language typologies, and immigration, exposure and acquisition patterns.
3. To develop guidelines for assessment. Achieving this objective could be difficult given the heterogeneity of language pairs and populations, but significant inroads to this objective could be achieved following successful accomplishment of the main objectives. Importantly, although the language pairs are different, the diagnostic problems concerning minority children are identical. This makes uniform guidelines attainable.
4. To disseminate the knowledge acquired through the Action via conferences and a web portal for health professionals, speech/language clinicians, and special education teachers.

### **C.3 How will the objectives be achieved?**

A variety of means will be employed to achieve the main and secondary objectives outlined above, including research reports and publications, position papers, conferences and workshops and study visits to recruit young researchers.

Table 2 summarizes the means to achieve the different objectives:

**Table 2**

<b>Objective</b>	<b>Means</b>
<i>Main Objective</i>	
Profiling BISLI and research coordination	Setting up the network Workshops Webpage
Expansion of language pairs	Recruiting new research teams Mentoring young researchers and researchers who are speakers of minority languages
Raising scientific impact	Mentoring grant proposals to secure local funding Expanding bilingual data in Child Language Data Exchange System (CHILDES) ( <a href="http://www.childes.psy.cmu.edu">www.childes.psy.cmu.edu</a> ) Conference presentations, scientific publications in books and journals

<b>Objective</b>	<b>Means</b>
<i>Second primary objective</i>	
Methodological innovation	Methodology workshops to introduce bilingual-oriented procedures Guidelines for different language pairs, narrowing the linguistic and cognitive phenomena to be studied and tasks to be used by the end of Year 2 Studying linguistic and cognitive phenomena Testing the different language pairs Generating tasks and results which will serve as the base for assessment development
<i>Secondary objectives</i>	
Mentoring	Workshops Webpage and e-mail Short Term Scientific Missions (STSMs)
Sociolinguistic information	Social identity data and testing
Dissemination of knowledge to policymakers and practitioners	Webpage Position papers related to guidelines for bilingual assessment and sociolinguistic tools Workshops for health and education professionals

## C.4 Benefits of the Action

Large increases in the numbers of bilingual children in Europe call for policy guidelines which take into consideration the bilingual situation when planning assessment, treatment and placement in appropriate educational frameworks. These aims are best served by studying language impairment in their bilingual contexts.

Scientifically, the networking in this Action provides a clear but flexible direction for coordinating research on BISLI. By addressing both typologically similar and different language pairs, and representational as well as processing issues, and aiming for methodological innovation where needed, the Action expects overall benefits in the following areas:

- comparability of research across language pairs and research teams
- insight into unique aspects of BISLI, disentanglement of bilingualism and SLI, and demonstration of how bilingual SLI (BISLI) can be identified in both of a child's languages
- increased understanding of representation and processing issues in BISLI

To attain these benefits, the Action will:

- improve current tasks examining morphological, syntactic and semantic abilities;
- develop and improve tasks in additional domains (narrative, discourse)
- develop and improve tasks which test language processing (lexical and phonological)
- select cognitive tasks most relevant to bilingualism (executive function)
- develop uniquely bilingual tasks (e.g. involving codeswitching)
- employ a within-subject case study design which generates a detailed profile of individual subjects, making it possible to account for the heterogeneity of the population and limit heterogeneity of subjects across languages.

Societal benefits include:

- a stronger empirical base for decisions about diagnosing, treating and educating bilingual children with SLI in a single (home or school) language or bilingually;
- policy guidelines for assessment, treatment and placement of language impaired migrant children in appropriate educational frameworks;
- increased knowledge of professionals providing services to migrant children, leading to more accurate diagnoses.

## **C.5 Target groups/end users**

The Action has both scientific and societal end users.

From the scientific perspective, the end users are:

- any researchers in the fields of bilingualism and language impairment, especially those interested in training in BISLI;
- mid-career researchers interested in processing and representational issues in language acquisition and language impairment, where the present Action is expected to contribute;
- researchers working on the manifestations of typological differences in language use;
- language researchers interested in innovative methodologies.

The scientific end users will benefit from workshops, presentations at scientific conferences, and publications in journals and books.

From a societal perspective, the results of the Action are directed at health professionals, speech/language clinicians, and teachers in special education. These professionals will benefit from:

- specialist workshops to advance essential linguistic knowledge and systematic aspects of bilingual language acquisition, which can be integrated into the relevant fields of language diagnostics/language assessment and improvement of language proficiency;
- guidelines for assessment and assessment tools which will take into consideration the bilingual backgrounds of the children, thereby enabling earlier and more accurate identification of impairment.

## **D. SCIENTIFIC PROGRAMME**

### **D.1 Scientific focus**

Bilingual children in Europe acquire a wide range of languages and language combinations. Only a minority of the European languages (e.g., English, Dutch, French, and German) have been studied in detail in terms of how language impairment manifests itself in children and which phenomena are clinical markers for SLI. There is even less research on how language impairment manifests itself in bilingual children, and whether the severity of SLI is affected by the acquisition of more than one language. Finally, tools for assessing language proficiency in children are available only for a small number of languages; existing tools are not comparable across languages, and they have not been normed for bilingual children, who generally do not conform to monolingual norms. This is problematic for differential diagnosis; it is very difficult to ascertain whether a bilingual child whose language development is delayed compared to monolingual children, has a genuine language impairment or whether the delay results from limited exposure to the L2.

This Action will coordinate basic and applied research on language acquisition in bilingual children, bringing together researchers interested in language impairment among bilingual children, as well as researchers who specialize in either bilingualism or language impairment. The Action intends to focus primarily on immigrant successive bilingual children. Most of these children speak one language at home and acquire their second language after the age of three at preschool/school. Acquisition anamneses will be administered to establish the influence of different external factors

The following questions are the central scientific focus of the Action:

1. How can linguistic symptoms of SLI be identified in both languages of a child (considering that, by definition, it should be reflected in both languages)?
2. Does a bilingual child with SLI exhibit the same symptoms as monolingual children with SLI, in both languages?

3. Are symptoms of SLI aggravated by the acquisition of more than one language?
4. How can the manifestations of SLI and typically developing (TD) bilingualism be differentiated given the fact that, according to several researchers, some of the same linguistic markers are characteristic of both bilingualism and SLI?

Profiling the language abilities of bilingual children over time and how SLI manifests itself requires comparable tasks and stimuli to be used in the child's two languages, and these need to address the specific linguistic and processing domains that are known to cause problems in monolingual children with SLI.

To date, a very limited number of studies has investigated bilingual children with SLI where both languages are tested (see Section B2), and these have included only some of the vulnerable domains of children with SLI. This Action will take the existing studies as a starting point and, in order to address the research questions above, will investigate a larger set of SLI indicators than have been identified thus far. This may also be necessary because SLI studies thus far have not addressed the full typological range. It will define more precisely the bilingual contexts that can occur, and will design crosslinguistic studies that address pairs of languages which are typologically similar as well as pairs of languages which are typologically different. Importantly, the present Action will not only target phenomena which are language dependent (syntax and interfaces with phonology, morphology, lexicon and semantics, narrative and discourse abilities, with special attention to specifically bilingual phenomena such as code switching and crosslinguistic interference), but will also measure phenomena which are less language dependent (e.g., working memory and executive function skills). The Action will also make innovative use of sociolinguistic data (social networks, ethnolinguistic identity, and language attitudes, preferences, use and proficiency) in addition to standard demographic information (e.g., length and amount of exposure, languages spoken at home, birth order, age, gender etc.). This is necessary to isolate language delays/differences which are not necessarily due to SLI and can make findings more useful for policymaking.

The research tasks to be examined by the Action are divided into four domains:

1. Syntax and interfaces with morphology and semantics
2. Narrative and discourse abilities
3. Lexical and phonological processing
4. Executive functions.

### **1. Syntax and interfaces with morphology and semantics**

Syntax and morphology are among the most established linguistic indicators of SLI, and are already a central focus of ongoing research on bilingual SLI (Armon-Lotem et al. 2008; Chilla & Barbur 2008; Jacobson & Schwartz 2005; de Jong et al. 2007; Marinis 2007; Papadopoulou et al. 2008; Rothweiler et al. 2007; among others).

This Action will target a set of morphosyntactic and syntactic phenomena in each language that have been shown to be vulnerable in monolingual children with SLI. In terms of morphosyntax, this will include e.g. verbal inflections (third person -s as in He walks), and auxiliaries (such as is in He is walking), plural marking on nouns and adjectives (such as the suffix *im* in *yeladim ktanim* ‘little children’ in Hebrew or *die kleinen Kinder* ‘the little children’ in German), determiners (such as the *in* in *The boy walked*), prepositions (such as *at* in *He laughed at the girl*, or *on* in *He turned on the light*), and case marking (such as German *Sie schenkt dem Mann den Apfel*). Omission and/or substitution of such morphemes is often taken to be an indicator of SLI, but in bilingual contexts such errors could reflect L2 characteristics and/or crosslinguistic influence. For example, Russian does not have definite articles, and Russian-Hebrew bilingual children often omit the definite article in Hebrew. In terms of syntax, the Action will include sentences with non-canonical word order, e.g. passives (*The elephant was pushed by the giraffe*), *wh*-questions (*Who did the elephant push?*), and relative clauses (*The elephant whom the giraffe pushed ran away*), but leave room for other phenomena, given the typology of other languages that may be added to the Action.

Deficits at the syntax-semantics interface have been reported in monolingual children with SLI for verb meaning (e.g. Schulz et al., 2001, Schulz et al., 2003; Schulz & Wittek, 2003; Schulz & Kiese-Himmel 2006), universal quantification (e.g., every book, some book) (Penner 1998) and the interpretation of wh-questions (De Villiers et al. 2008). These phenomena have not yet been studied in bilingual children with SLI. This Action will target a set of phenomena at the syntax-semantics interface that have been shown to be vulnerable in monolingual children with SLI. These include, for example, universal quantification (Every farmer rides a donkey) and the interpretation of wh-questions (Who is wearing a hat? in a context of several people wearing a hat).

This Action will coordinate research on the development of syntax and its interface with morphology and semantics in bilingual children with SLI by identifying structures which are less sensitive to crosslinguistic differences, and are vulnerable for monolingual and bilingual children with SLI, but not for typically developing bilingual children. These structures could be indicative of SLI in bilingual children, while others, which may show evidence of crosslinguistic interference, are less likely to do so. In addition, the Action will evaluate current research to select off-line and on-line tasks which can reveal quantitative and qualitative differences between typically developing bilingual children and bilingual children with SLI, and ultimately offer a window into representation and processing issues in BISLI.

## **2. Narrative and discourse abilities**

Telling a story, even from pictures, is difficult for children with SLI, since the ability to construct a narrative relies on a range of linguistic skills, including lexical, grammatical and discourse abilities (e.g. temporality, causality, cohesion, topic/focus, given/new). SLI children generally use fewer connectives, more lexical ties and more unclear reference, and they find it difficult to gain entry to an existing dyadic interaction (Thompson, Craig & Washington 2004). Research on bilingual narrative skills is still limited (e.g. Pearson 2002; Fiestas, Bedore, Pena & Nagy (2005), and even more limited among BISLI children (Gutierrez-Clellen 2002). The Action will target potentially diagnostic features manifested in narrative and discourse from six areas: (1) lexicon (lexical

diversity: general purpose verbs, e.g. make/get, are characteristic of children with SLI; (2) morphosyntax, especially tense and aspect markers appropriate to narrative discourse; (3) syntax, e.g. subordination or other means to distinguish main ideas from details; (4) narrative structure (e.g. story grammar categories, connectives, clause sequencing, cohesion); (5) discourse features, e.g. information density, elaborations, topic maintenance, explicitness; (6) fluency features including repetitions, false starts, pauses, discourse markers.

The Action will coordinate research and evaluate the use of different kinds of tasks to elicit narratives and tap into specifically bilingual properties, such as narratives in response to familiar and unfamiliar picture books, a bilingual task in which a child is asked to retell a story in a language different from the one in which the original story was told (Walters & Raichlin 2007), narratives without the benefit of picture stimuli, and an interactive task based on a controlled improvisation procedure (Anderson 2000). These tasks allow assessment of language dominance and codeswitching patterns based on: frequency and direction (L1->L2 vs. L2->L1) of codeswitching, pragmatic differences in codeswitching as a function of story content and the listener's preferred language. This will ultimately provide another angle on representation and processing issues that are fundamental in bilingualism and SLI.

### **3. Lexical and phonological processing**

Phonological processing and auditory memory are often claimed to be impaired in children with SLI, but they should be intact in bilingual children, offering a promising direction for disentangling the two. Previous research has revealed that monolingual and bilingual children with SLI perform poorly on non-word repetition tasks (Gathercole & Pickering 2000; Girbau & Schwartz 2007). These tasks require children to repeat nonexistent words and tap primarily phonological memory, but can also address lexical processing when the words are designed to reflect syllable structure, stress patterns and phonotactic rules similar to words in the target language. This task has been claimed to relate to vocabulary development, and possibly to the development of syntax.

Delayed and impaired lexical abilities are among the earliest indicators of SLI (Leonard 1998), partly because they appear early and partly because they are relatively easy to assess. Data on lexical abilities can be gathered via checklist measures such as the MacArthur-Bates Communicative Development Inventories (CDIs) and also by recording naturalistic data and by elicitation (e.g. Barriere 2007; de Houwer 2007). Children with SLI show a delay in lexical development in overall number of words, attainment of milestones (e.g. first 50, 100, 200 words), and in terms of semantic categories. Bilingual children often have smaller lexicons in each of their languages (even though the number of words in the two languages put together may be larger than monolingual norms). Lexical abilities are a potentially early identification measure of bilingual SLI (Gatt, Letts & Klee 2008), and can be used as a baseline for assessment of bilingual dominance/proficiency.

This Action will evaluate the parameters for developing tasks to test lexical and phonological processing in bilingual children with SLI. It will explore the properties of non-word repetition tasks relevant for bilingual populations with different language pairs. It will also review and meta-analyze bilingual lexical data as a starting point toward development of new bilingual measures of dominance and diversity and for establishing guidelines for developing norms for typical vs. atypical bilingual lexical development.

#### **4. Executive functions**

Of all cognitive skills, executive functions seem to offer a promising direction for disentangling bilingualism and SLI. Monolingual children with SLI perform worse than typically developing children on tasks tapping executive functions (e.g., Montgomery, 2002), such as the central executive in the model of Baddeley and Hitch (1974) and Baddeley (2007), and this suggests that they have a deficit in some executive functions. On the other hand, recent research on adult bilinguals has demonstrated that they have enhanced abilities in executive functions tapping inhibition and shifting (Bialystok 2004), which relate to monitoring two languages at the same time and being able to switch between the two languages. This Action will coordinate research targeting executive functions in bilingual children with SLI in language and non-language oriented tasks.

Cognitive (non-linguistic) tasks include the Embedded Figures Task (Piaget & Inhelder, 1971; Pascual-Leone, 1989) which tests inhibition, classification tasks (Ben-Zeev 1977) which test shifting, or the more complex Tower of Hanoi which tests children's abilities to direct, organize, solve problems, monitor and plan behavior, focus on targets, and update working memory. Tasks of this type are also found in standardized tests such as the Cambridge Neuropsychological Test Automated Battery (CANTAB) or the Wisconsin Card Sorting Test. Impairment in executive function could influence language abilities which have direct manifestations in bilinguals. A bilingual verbal fluency task (Luk & Bialystok, 2008) taps language control abilities, and can also serve as a measure of proficiency in both languages. A bilingual picture naming task (Hernandez et al., 2001; Festman et al., in press; Biran & Friedmann, 2005) can be used to test language control, that is, interference of the non-target language. The present Action will investigate which of these tasks are most appropriate for children with BISLI and what are the best ways to adapt the linguistic and non-linguistic tasks to the bilingual contexts.

The Action will also be informed by neuro-imaging studies in bilingualism (Abutalebi et al. 2005), since some of the participating research groups are already involved in such studies, but there is no attempt at present to develop and employ such tasks within the present Action, since these tasks require equipment which is not always available and the literature on neuroimaging studies with very young children is still limited. Nonetheless, the Action does not rule out expansion of the tasks to this domain in the future.

### **Human and technical means to achieve the main objective**

The Action is connected through its participants with several national and binational efforts to disentangle bilingualism and SLI. These efforts already address some of the issues and can provide the human and technical means to achieve the main objective, by establishing a network to coordinate research on linguistic and cognitive abilities of bilingual children with SLI across different migrant communities in order to profile bilingual SLI.

The network created by the Action and the biannual meetings will be the major means to achieve the second primary objective, that is, to reconcile the methodologies of studies of language impaired and typically developing bilingual children in order to improve comparability and to provide innovative techniques for assessing language impairment. Members from the different ongoing efforts will participate in these meetings and contribute their knowledge and the resources in their respective labs to achieve this objective as well as the secondary objectives. The secondary objectives will be achieved by workshops and publications as detailed in Sections F and H.

## **D.2 Scientific work plan – methods and means**

A central part of the scientific program is to coordinate future work. The Action will be coordinated by a Management Committee (MC), under which Working Groups (WGs) will be set up, and each of the major research domains will be assigned to a Working Group. Four Working Groups are foreseen:

### **WG 1 - Syntax and interfaces with morphology and semantics**

Syntax and its interfaces are the most established linguistic indicators of SLI and are already a central focus of ongoing research on bilingual SLI, thus serving as a starting point for this Action. To allow flexibility, WG 1 includes domains which are of interest to all the members of the Action and are already studied in different research labs. Thus, these domains will be initially discussed within one WG, enabling wide-scoped participation and dissemination of knowledge to all the members of the Action. During the second year, however, in an attempt to narrow down the domain of research and coordinate methodologies, this WG may find it more efficient to carry on part of its work in subgroups which will focus on more specific domains and will report their decisions to the whole WG.

WGs 2, 3 and 4 will discuss indicators of BISLI beyond syntax and its interfaces in order to provide a comprehensive profile of BISLI, and open the Action for more multidisciplinary networking and research. In addition to members who would choose these issues as their main focus, participants in WG 1 will be encouraged to join at least one of these groups as their secondary choice, thus providing the means to achieve the second primary objective. These groups will focus on:

### **WG 2 Narrative and discourse**

Telling a story, even from pictures, is difficult for children with SLI. WG2 will evaluate the use of different tasks to elicit narratives and tap specifically bilingual properties. These tasks allow assessment of language dominance and codeswitching patterns. After the exchange of knowledge in Year 1, and the discussion of methodologies in Year 2, WG2 is expected to narrow its domain of research to the most promising issues, and may find it necessary to divide into subgroups.

### **WG 3 Lexical and phonological processing**

Phonological processing and lexical processing are a potential for ‘quick-and-dirty’ assessment tools. WG3 will evaluate available tasks which test lexical and phonological processing and examine properties of these tasks relevant for identifying SLI in bilingual populations with different language pairs. Following exchange of knowledge and discussion of methodologies in Year 1, WG3 is expected to narrow its domain of research in Year 2 to the most promising issues, and if necessary split the effort into subgroups in an attempt to supply the members of the other groups with guidelines for testing phonological and lexical processing in children with BISLI.

### **WG 4 Executive functions**

Of all cognitive skills, executive functions seem to offer the most promising direction for disentangling bilingualism and SLI. WG4 will investigate which of the available tasks are most appropriate for children with BISLI and what are the best ways to adapt the linguistic and non-linguistic tasks to bilingual contexts. After the exchange of knowledge in Year 1, and the discussion of methodologies in Year 2, WG4 is expected to narrow its domain of research to the most promising tasks, and if necessary split the effort into more specialized subgroups.

## **E. ORGANISATION**

### **E.1 Coordination and organisation**

Research groups already studying bilingual LI children in COST countries will collaborate and disseminate knowledge to encourage new researchers to conduct research on other migrant language children, e.g. Arabic with Spanish, French, German, Hebrew. This Action brings together the expertise of groups already funded by national research councils and European resources but aims at extending the number of participating labs and countries. Some participants might need to secure further national and international funding to conduct the research specified in Section D.

#### **Management Committee (MC)**

The MC will be responsible for the overall coordination of the Action and the interaction among the four WGs. The leaders of the four WGs will form a Steering Group which, with the help and support of the MC, will coordinate the activities of the different groups (see E.2). The MC will organize the biannual meetings which will:

- Bring together members of the four WGs for mini-workshops which will focus on sharing knowledge, methodology, designs and findings according to the timetable of the Action (see section F) and the milestones below.
- Allow for the occasional participation of a guest lecturer/advisor from a non-COST country or who is not a member of the Action. These guests will be selected on the basis of required expertise that complements that of Action members.
- Learn about scientific achievements in the different labs which will be reported in order to plan further collaboration and STSMs.
- Appoint, where the MC deems it necessary, special purpose committees, e.g., an assessment committee, to investigate issues which cut cross WGs.

- Facilitate dissemination of knowledge to additional end users, whenever possible, by lectures or workshops open to the public, which will be organized by the institution hosting an event adjacent to the MC meeting.

### **Short Term Scientific Missions (STSMs)**

STSMs are an important means for collaboration and are critical for supporting visits of early-stage researchers to more established labs as well as visits of more senior researchers to complete joint publications related to the Action. Proposals for STSMs from local investigators will be assessed for the contribution of the STSM to the Actions objectives. STSMs can take place within a WG or across WGs.

### **Milestones**

The first milestone, at the end of Year 2, will be a peer-reviewed report setting the guidelines to be used in studying the different language pairs, narrowing the range of linguistic and cognitive phenomena to be studied and the tasks to be used. This milestone will be achieved in two stages, first by narrowing the domain of each WG by the end of the first year, followed by a methodological agreement by the end of the second year when the guidelines are to be set. A report of this stage will be the basis for further collaboration and studies by current and newly recruited participants/groups in Years 3-4.

The second milestone will come at the end of the fourth year when a concluding conference, publications, position papers and a final report are expected. The biannual meetings will serve as intermediate milestones for presentation of findings and development of new materials for differentiating LI and TD bilingualism. Each bi-annual meeting will be followed by 5 to 8 STSMs to enhance the collaboration and train young researchers.

## **Action specific website**

A website will be set up within the first two months of the Action. The website will serve as a repository of all documents relevant to the partnership; as a tracker of actions and tasks; as a source of training materials (on-line); as an invitation to other experts to join the community; and as a portal to the outside world. Following each biannual meeting, each WG leader will post a summary of its activities since the previous meeting. The website will also make presentations/testing materials available to all participants, thus strengthening the collaboration. State of the art reports will be published on the website. A junior researcher from one of the leading labs will be responsible for maintaining and updating the site following each biannual meeting, and in between meetings when applicable. WG leaders will have access to the website for distributing information and testing materials to the group members in between meetings. Finally, the website will regularly make information available to the general public, thereby helping raise awareness of the breadth and depth of research in progress on BISLI in Europe. Additionally, the Action will use collaborative conferencing tools, blogs and other telecommunication techniques.

## **E.2 Working Groups**

Four Working Groups are foreseen in this Action to cover the four major domains:

WG 1 Syntax and interfaces with morphology and semantics

WG 2 Narrative and discourse

WG 3 Lexical and phonological processing

WG 4 Executive functions

A description of these WGs is outlined in section D.2.

The following are the principal features of the WGs:

- Representatives from a variety of labs will contribute to each Working Group. The WGs will include both junior and senior researchers interested in BISLI but who have not investigated this area prior to the Action.
- Each Working Group will focus on one of the scientific domains (as specified in section D.2) and will be headed by a WG leader.
- Each WG will coordinate its individual research program in accordance with the general objectives and milestones of the Action.

- Each WG leader is responsible for organizing the WG meetings related to its domain, in parallel with the biannual meetings of the Management Committee (MC). Apart from coordinating the organization, the scientific content of the WGs will also be coordinated by the WG leader.
- The common aim is reflected in the organization and program of the meetings, in which each WG leader will report on the progress and decisions made within the group.
- The leaders of the WGs will form a Steering Group together with the Action Chair in order to coordinate the work of the four WGs with particular focus on both the interactions among the WGs and the need to avoid duplication.

### **E.3 Liaison and interaction with other research programmes**

The present Action is complementary with COST Action A33, differing in its objectives, target population, measures and expected outcomes, and therefore, there is no duplication between the actions (see B.4). Exchange of information with Action A33 will be achieved by occasional meetings in international conferences such as IASCL, Generative Approaches to Language Acquisition (GALA), ISB, etc. Moreover, since two of the members of this Action are also members of COST Action A33, some of the tasks developed for A33 (if found adequate for the present Action) might be used with approval of the Action Chair of A33, although applied to a different target group.

The Action is connected via collaborations to several national and binational efforts to disentangle BISLI in several European and non-European countries, including England, France, Germany, Israel, the Netherlands, Spain, Canada and the USA. The MC meetings, WGs workshops and the STSMs are aimed to maintain liaison and interaction with these research efforts.

### **E.4 Gender balance and involvement of early-stage researchers**

## **Gender Balance**

This COST Action will respect an appropriate gender balance in all its activities and the Management Committee will place this as a standard item on all its MC agendas. The Action will also be committed to considerably involve early-stage researchers. This item will also be placed as a standard item on all MC agendas

Gender balance will come naturally, since the field does not suffer from gender imbalance.

## **Early Stage Researchers**

The Action is also strongly committed to involvement and mentoring of early-stage researchers. Since the Action involves languages spoken by migrants it will have a special and natural - emphasis on training early-stage researchers from minority groups who are speakers of these languages, and are themselves committed to a scientific career and to carrying out research in minority communities. These young researchers will benefit from the availability of STSMs. In addition, a summer school will be held at the end of Year 3 to further enhance capacity building.

## **F. TIMETABLE**

The Action will continue for four years. Within this time period, a total of 8 full-Action meetings will be held, with several bilateral and multilateral contacts taking place in between meetings within the WGs (principally using Information Technology (IT) communication systems, but also face-to-face where necessary).

The following elaborated timetable outlines the schedule of activities:

### **Year 1**

- a) Kick-off MC meeting to set up WGs.
- b) Broad-spectrum Workshop for all Action members to:
  - exchange of State of the Art knowledge about research already underway
  - invite experts from related fields
  - host a practitioners event to raise awareness of BISLI

- c) WGs workshops to discuss relevant topics and MC meeting to present the topics considered by the WGs
- d) WGs workshops to:
  - review the choice of structures and means for testing
  - narrow the domain of each WG
- e) MC meeting to compare WGs' decisions and evaluate the ability of each lab to study the chosen domains
- f) STSMs to enhance between-lab collaborations

## **Year 2**

- a) Two WGs workshops to:
  - discuss methodological issues in data collection, analyses, and interpretation in bilingual settings
  - reach agreement on selection of best tasks for testing BISLI.
- b) Two MC meetings to:
  - get appropriate feedback and comments on decisions made within WGs
  - discuss the development of assessment tools, based on the agreements achieved at this stage
- c) Assessment Committee will be appointed to ensure that the Action delivers the guidelines for assessment by the end of Year 4
- d) Practitioners event presenting findings which can be used for diagnostics and policymaking
- e) STSMs to support the development of tasks and train young researchers.
- f) End of Year 2: a report will be generated, approved and disseminated, defining the guidelines to be used in studying different language pairs, narrowing the linguistic and cognitive phenomena to be studied and tasks to be used. This report will be the basis for further collaboration and studies in Years 3-4.

## **Year 3**

- a) Two WGs workshops to report findings from different language pairs using the tasks agreed upon in Year 2

- b) Broad spectrum workshop for all Actions members as well as other scientific end users to present the state of art knowledge in each of the domains
- c) STSMs to less studied migrant populations in Europe
- d) End of Year 3: the MC meeting will discuss and update the final dissemination plans: publications, summer school and a final conference.

#### **Year 4**

The final year will be devoted primarily to dissemination and diffusion of knowledge towards the different end-users. To this end the Action will organize:

- a) WGs workshops followed by an MC meeting to discuss further research and prepare the work for publication.
- b) WGs workshops followed by an MC meeting to discuss position papers for decision makers and guidelines for assessment.
- c) STSMs to facilitate preparation of publications.
- d) Summer School for young researchers.
- e) Workshops for practitioners in the different countries, depending on available funding.
- f) Preparation of the closing conference.

#### **G. ECONOMIC DIMENSION**

The following COST countries have actively participated in the preparation of the Action or otherwise indicated their interest: Bulgaria BG, Denmark DK, France FR, Germany DE, Greece GR, Israel IL, Italy IT, the Netherlands NL, Poland PL, Sweden SE, Spain ES, Turkey TR, United Kingdom UK. On the basis of national estimates, the economic dimension of the activities to be carried out under the Action has been estimated at 52 Million € for the total duration of the Action. This estimate is valid under the assumption that all the countries mentioned above but no other countries will participate in the Action. Any departure from this will change the total cost accordingly.

## **H. DISSEMINATION PLAN**

### **H.1 Who?**

The overall dissemination strategy is to expand awareness of Bilingualism and SLI. The goals of the Action then involve additional researchers and practitioners; and finally, toward the end of the four years, a number of high profile dissemination activities will ensure a wide reach of the Action within the target communities.

The target audiences for the results of the Action are groups at different levels of the medical and educational/institutional systems in the countries taking part in the Action. Dissemination will focus on these groups, which are described below:

#### **1. Scientific level: Research groups and the scientific community**

Researchers in the fields of linguistics (especially psycholinguistics and neurolinguistics) and psychology (cognitive and neuropsychology) are the primary reference group for this Action and special sessions on Bilingual SLI will be organized at the annual/biennial conferences of ISB, European Second Language Association (EUROSLA), IASCL, GALA, International Association of Applied Linguistics (AILA).

#### **2. Clinical and educational practitioner level: speech and language professionals/ logopedists, physicians (e.g. pediatric neurologists), special educators, preschool and school teachers**

The clinical fields of Communication Disorders, Pediatric Medicine, Occupational Therapy, and Special Education are the primary target groups here. Research groups in this Action will target relevant groups in each country for this effort by making presentations at local and national conferences.

- Standing Liaison Committee of Speech and Language Therapists in the European Union/[www.cplol.org](http://www.cplol.org) (60,000 members in Europe)

- International Association of Logopedics and Phoniatics/[www.ialp.info](http://www.ialp.info)
- Special education faculty in Teachers Training Programs at Colleges and Universities/[www.edf-fehp.org](http://www.edf-fehp.org)
- Occupational therapists associations/[www.wfot.org](http://www.wfot.org), [www.cotec-europe.org](http://www.cotec-europe.org); ECOTROS (European Cooperation in Occupational Therapy Research and Occupational Science)
- Language teachers associations/ [www.iatefl.org](http://www.iatefl.org); [www.aatg.org](http://www.aatg.org); [www.goethe.de](http://www.goethe.de)
- Pediatricians, especially pediatric neurologists [www.epns.info](http://www.epns.info)

### **3. Policy level: International, European and national government policymakers**

This target group includes government ministries and non-government organizations. Widespread differences exist across Europe for assessing, treating and placing children at risk for language impairment. These range from ignoring the problem to special language preschools/kindergartens with therapy conducted in the framework of the school program. Policy is often made without access to information about available assessment tools, professionals and research results, and usually without taking into account the complexity of bilingualism in the home, the neighborhood or the school. In particular, the Action targets:

- EU Ministry of Education
- National Ministries of Education and Inspectors
- Lawmakers involved in writing special education legislation
- European and National Medical Associations
- Public and private foundations
- European Centre for Modern Languages/[www.ecml.at](http://www.ecml.at)

### **4. Public level: Parents**

This target group includes individual parents as well as grassroots parent groups which will benefit directly from a web portal with FAQs about bilingual development and language impairment, links to professional services and a discussion forum.

## 5. Publishers

Publishers who specialize in language and clinical assessment are the final target group:

- CTB/McGraw-Hill [www.ctb.com/](http://www.ctb.com/)
- Developmental Associates [www.devassoc.com](http://www.devassoc.com)
- Center for Applied Linguistics [www.cal.org](http://www.cal.org)
- Harcourt Assessment, Inc.
- Pearson Education [www.pearsoned.com](http://www.pearsoned.com)
- Karger Medical and Scientific Publishers [www.karger.com](http://www.karger.com)
- Elsevier
- Routledge/Taylor and Francis

### H.2 What?

In light of the secondary objective to bridge gaps among researchers, practitioners and the public, this Action takes a wide-scoped approach to dissemination. The dissemination methods that will be used for the above mentioned five levels are as follows:

<b>Dissemination Type</b>	<b>Activity</b>	<b>Target Groups (Level No. in brackets)</b>
<b>Web Portal</b>	Posting general information on a public website	Scientific, Clinical and Educational, Public (1, 2 and 4)
	Setting up of an electronic communication network (electronic discussion forum to be managed and monitored by a partnership of researchers and speech and language therapists/logopedists involved in the Action, e-mail interaction network, etc.)	Scientific, Clinical and Educational (1 and 2)

<b>Dissemination Type</b>	<b>Activity</b>	<b>Target Groups (Level No. in brackets)</b>
<b>Publications</b>	Articles and chapters in peer-reviewed scientific and technical journals and books	Scientific, Clinical and Educational (1 and 2)
	Published proceedings of some of the workshops and a book of the final conference	Scientific, Clinical and Educational (1 and 2)
	Interim report on domains and methods	Scientific (1)
	Final report with guidelines for assessment	Clinical and Educational, Policy, Publishers (2, 3 and 5)
	Textbook, manuals, assessment guidelines, diagnostic materials	Scientific, Clinical and Educational, Publishers (1, 2 and 5)
	State of the art report and recommendations for policy making	Policy (3)
	Non-technical publications (in newspapers, television, posting on websites) and electronic newsletters	Public (4)

<b>Dissemination Type</b>	<b>Activity</b>	<b>Target Groups (Level No. in brackets)</b>
<b>Events</b>	Workshops, symposia at scientific conferences	Scientific (1)
	Workshops and seminars for practitioners adjacent to the Action workshops in collaboration with the hosting institutes and with sessions for policymakers	Clinical and Educational, Policy (2 and 3).
	Workshops and focus groups for practitioners and policymakers organized by participating labs	Clinical and Educational, Policy, (2 and 3)
	Summer school to mentor new/young researchers	Scientific (1)
	A final conference in which researchers and practitioners will be brought together in a dialogue about applications of the research coordinated by this Action.	Scientific, Clinical and Educational, Policy, (1, 2 and 3)

### H.3 How?

The dissemination activities and methods for the above-mentioned audiences will proceed from research results to practical outcomes. This order means that the practical outcomes which are important for Levels 2 and 3 (Clinicians and Policymakers) will be created after the dissemination of research results. More specifically, bringing together the research results will be the basis for generating assessment guidelines and recommendations for policymaking and for creating manuals, diagnostic tests and course materials. The same order holds for workshops, advanced training modules for clinicians and training for preschool and primary school teachers. Thus, dissemination will be carried out in four steps:

- Step 0: Promotion of the Action and its expectations to general target groups
- Step 1: Amassing research results, publication of these results, continuing to generate research findings and additional publications.
- Step 2: Workshops for clinicians (logopedists, teachers, pediatricians)
- Step 3: Creation of consultation and assessment materials, guidelines, manuals

Although Step 1 is the starting point (and bound to research publications), a preliminary step (Step 0) is necessary in order to help generate the End User Interest Group, which can be kept informed of progress and invited to other information collection and analysis forums throughout the Action. All steps following Step 1 will interact with it. Workshops (Step 2) will be offered in parallel, and a committee to discuss guidelines for assessment (Step 3) will be convened at the end of Year 2.

Beyond dissemination via the general COST website and the Action website and national dissemination efforts, where State of the Art reports will be published, the Action will undertake the following major activities during and beyond the funding period, in line with the above steps:

#### **Publications**

1. The following publications are targeted:
  - Publications in the following high-impact journals, e.g., *Journal of Child Language*, *Language Acquisition*, *Studies in Second Language Acquisition*, *Second Language Research*, *Journal of Speech, Language and Hearing*, *International Journal of Language and Communication Disorders*, *Applied Psycholinguistics*

- Special Journal issues in: *International Journal of Language and Communication Disorders*, *Bilingualism: Language and Cognition*
- A reader / handbook on Bilingual SLI with chapters related to different language combinations

Books and chapters in books on: Bilingualism and Language Impairment: Research Findings, Issues in Bilingual Assessment: Research, Practice and Policy, Issues in Bilingual Intervention: Practice and Policy

- A volume of recommendations aimed at professionals
2. The Action will make its findings available to parents and policymakers in the form of brochures with FAQs in several languages, a newsletter for parents, Research Reports, and via press releases to the media.

## Events

1. Presentations at European conferences and national/local scientific workshops and symposia. Among the targeted conferences and meetings are the following: ISB, EUROSLA, IASCL, GALA, AILA, CPLOL (The Standing Liaison Committee of Speech and Language Therapists and Logopedists), IALP (International Association of Logopedics and Phoniatrics) Congress 2010, BAAL (British Association for Applied Linguistics), ASL (Association des Sciences du Langage), EARLI (European Association for Research on Learning and Instruction) [www.earli.org/](http://www.earli.org/). In addition, dissemination to Canada and the US, where bilingual issues are frequently debated, will not be ignored. On-going dissemination will be carried out through conferences organized by SLRF (Second Language Research Forum), AAAL (American Association for Applied Linguistics), ASHA (American Speech-Language-Hearing Association), Canadian Modern Language Association (MLA), GALNA (Generative Approaches to Language Acquisition North America), etc. The workshop at the end of Year 3 will be open to scientists outside of the Action and a final conference is scheduled for the end of Year 4 which will include a European-wide event to bring together researchers and practitioners in a dialogue about applications of the research coordinated by this Action.

2. The Action will interact with health and education professionals via their websites, discussion forums, blogs, conferences and professional associations in an attempt to bridge the wide gap between research and practice. Workshops for these end users are scheduled for Years 1, 2 and 4.
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