

Teaching English to Young Learners with Dyslexia

Developing Phonemic Awareness through The Sound Pathways

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Abstract Italian children with dyslexia often struggle with learning English because of its phonological and orthographic properties, which amplify the typical linguistic difficulties due to this learning disability. The present essay discusses the theoretical background and the methodological choices at the basis of the Sound Pathways Project, which consists of language teaching material designed to provide specific support to Italian pupils with dyslexia who are learning English as a foreign language. Published by Oxford University Press, the material aims at enhancing children's sound recognition and reproduction skills and ability to discover some regular patterns in English orthography. The Sound Pathways embrace a language teaching perspective which combines multi-sensory stimulation and playful experiences within a narrative context in order to engage pupils in phonological and orthographic tasks within a meaningful environment.

Keywords dyslexia, early foreign language teaching, phonemic awareness

1 The Sound Pathways: theoretical and methodological background

Learning a foreign language is proven to be a challenging task for students with dyslexia. The difficulties faced by pupils with dyslexia in approaching a new language are due to a variety of causes. The primary cause lies in the disorder itself, which makes it very painful for them to perform some language tasks, such as copying from the board, writing by dictation, performing role-plays, etc. However, some linguistic properties of the language being learned seem to affect the extent of pupil's difficulties. A secondary cause lies in some methodological choices in foreign language teaching which do not support students with a learning disability. Particularly, in English language teaching to very young learners, the importance of the areas of phonology and orthography seems to be underestimated in favor of a communicative approach. This methodological choice can have negative consequences for children with dyslexia, since it does not foster either early familiarization with difficult sounds or a guided and structured approach to an opaque orthography. On the basis of these considerations,

The present paper was conceived by the three authors together. Paragraph 1 was written by Michele Daloiso, whereas paragraphs 2 and 3 were written respectively by Verusca Costenaro and Luciana Favaro.

the present paper discusses the Sound Pathways Project, which consists of teaching material designed by the authors to provide English-language learners with dyslexia with specific support in the areas of phonology and orthography. The material, which is published by Oxford University Press Italy, is based on some of the most recent research studies in the fields of learning disabilities and foreign language teaching. The present paragraph will outline the theoretical and methodological framework within which the Sound Pathways have been designed.

1.1 Theoretical background supporting the need for Sound Pathways in EFL

As previously mentioned, current practices in English language teaching in Italian Primary Schools mostly aim at developing some basic communicative skills, e.g. listening to songs and stories, repeating language chunks, memorizing common words etc. However, little attention is devoted to the areas of phonology and orthography, and in most cases there is no explicit and structured teaching of new sounds and sound-letter patterns.

In teaching English to children with dyslexia the role of these areas needs to be reconsidered for both theoretical and practical reasons. From the point of view of theory, there are at least three hypotheses underpinning this need, which are worth discussing here.

The first theory is the Phonological Deficit Hypothesis (Snowling 1987), according to which the primary cause for dyslexia is a specific impairment in processing the phonological component of language. This, in turns, causes trouble with reading, because the human brain is only programmed to decode oral messages, so it relies on phonological processing also when cracking the written code (Brunswick, McDougall, Davies 2010). Although the Phonological Deficit Hypothesis has been recently referred to as an insufficient explanatory model of dyslexia (Nicolson and Fawcett 2008), to date it still remains a prevalent theory in the field which is able to explain many of the symptoms associated with this learning disability.

Statistics on the estimated incidence of dyslexia show that percentages vary considerably across countries (Brunswick 2010); while in Italy the incidence is approximately 3-4% of the population, in English-speaking countries the percentage varies from 10 to 15%. Although different percentages may be the result of different protocols for dyslexia assessment across countries, a key-factor to interpret these variations is also the language taken into consideration. The Psycholinguistic Grain Size Theory (Ziegler, Goswami 2005) outlines a framework of reference for considering how different phonological and orthographic factors can contribute to explaining cross-language variations in reading acquisition. If applied to the English language, the theory highlights some linguistic properties of English which can affect the reading process in this language.

Beside the evident orthographic inconsistency generating a one-to-many mapping between sounds and letters, some phonological features of English seem to affect the development of phonological awareness, which is regarded as an essential prerequisite to reading. Particularly, capturing the syllable is a challenging task in English because not only the typical syllable structures are more complex than in other languages – for instance, the CV structure, which is generally considered the most accessible pattern, is pretty uncommon in English – but also because English has a stress-timed rhythm, so only the stressed syllables of an utterance are fully pronounced. Becoming aware of phonemes is another difficult task for English-speaking children for two reasons: first, the phenomena of vowel reduction and sound blending caused by the stress-timed rhythm, which makes it harder to capture some phonemes in a single word; second, the granularity problem (Goswami 2010), i.e. the overall number of sound-letter mappings that need to be learned. Empirical research suggests that phonemic awareness improves when the child learns about letters, but the extent of such improvement largely depends on orthographic consistencies.

Thus, the Grain Size Theory supports the need for explicit and structured teaching of new sounds and sound-letter patterns in English, because it highlights some specific phonological properties which make it virtually impossible for a child with dyslexia to access the written code without specific intervention. The theory does not refer to English as a foreign language, but in our view it provides a linguistic framework independent of the teaching context.

The third theory supporting our proposal is the Differential Dyslexia Hypothesis (Smythe, Salter, Everatt 2004). The idea behind this theory is that dyslexia manifests itself in (partially) different ways across different languages, so a multilingual individual might have dyslexia in one language but not another.

Although the strong version of the hypothesis still lacks compelling evidence, a weak version has been formulated (Daloiso 2012) which takes into account the data so far available. According to the weaker version, it is known for a fact that dyslexia traits vary across languages according to the linguistic properties identified in the Grain Size Theory; as a result, Italian pupils with dyslexia mostly have troubles in reading fluently, while English pupils with dyslexia also lack accuracy and spelling skills. The weak version of the Differential Dyslexia Hypothesis claims that:

- a. dyslexic native speakers of a transparent syllable-timed language – such as Italian and Spanish – cannot fully decrypt an opaque stress-timed language – such as English – unless they receive specific instruction in the areas of phonology and orthography. In fact, the strategies for reading acquisition in their native language are largely inadequate for decoding the new language;

b. since the properties of a language can amplify or reduce the difficulties encountered, students with mild dyslexia in a transparent syllable-timed language face huge barriers in learning English as a foreign language, because the language itself amplifies their preexisting difficulties. As a consequence, foreign language learning is a pivotal area for diagnosis of mild dyslexia in transparent languages, which often remains hidden because of the individual's capacity of compensating it with personal strategies.

The three theories discussed in this paragraph lead to the necessity for specific sound-letter intervention in teaching English as a foreign language to pupils with dyslexia. Thus, they constitute the theoretical basis for the Sound Pathways material described in the next paragraphs.

1.2 Psycholinguistic choices

Sensitizing children to the sounds of a foreign language and teaching the correlations between sounds and letters is a challenging task for at least two reasons. Firstly, phonological awareness is tuned into the sounds of the native language, so it can be hard for children to discriminate the sounds of a new language if no explicit support is provided. Secondly, if the pupil's native language is a transparent one, students are likely to try to crack the new written code by applying the decoding strategies they have learned in that language, which will turn out to be mostly ineffective with opaque languages. As a consequence, it is common practice for some primary teachers to have students copy long lists of words in order to enhance the memorization of word spelling, which is a very painful and ineffective task for pupils with dyslexia.

Research on English language teaching suggests that students with dyslexia would benefit from a more structured approach which helps them not only recognize difficult sounds but also identify some regular spelling patterns, which are present even in opaque languages (Kvilekval 2007; Nijakowska 2010). Although it shows some limitations in that it does not help children decode the many irregular words in English, this approach provides pupils with strategies to decrypt unknown words that they might encounter while reading a text, since it will be impossible for them to memorize all the words of a foreign language.

The Sound Pathways designed by the authors of the present paper embrace this perspective and suggest a teaching procedure which goes from recognizing sounds to writing the corresponding letter(s). Particularly, the Sound Pathways are based on the RARE Model (Daloiso 2012), which draws inspiration from the above mentioned theories and recommends a methodological procedure for teaching sounds and letters. The acronym RARE synthesizes the four steps of the procedure:

- a. **recognize**: in this phase the teacher aims at helping pupils discriminate a new sound in a variety of phonetic contexts, starting with the easiest ones (for instance, beginning word sounds appear easier to be recognized than those in the middle of a word); from a phonetic point of view this is achieved by means of the traditional work on minimal pairs, but the methodological structure of the activities differs significantly from the mainstream ‘listen and repeat’ exercises (see 1.3);
- b. **associate**: after making sure that pupils are able to recognize a specific sound, the teacher introduces the most common orthographic representation(s) of that sound by helping students identify regular spelling patterns; in this phase pupils are also required to find their own strategies to memorize the spelling rule – for instance, creating a ‘crazy story’ by using the word(s) to be memorized, drawing pictures next to the word, associating words with movements etc. (see Schneider and Crombie 2003, for a review);
- c. **reproduce**: in this phase the teacher has students reproduce both the sound and its orthographic representation(s) by means of multi-sensory strategies (see 1.3); one of the techniques that best represents this phase is ‘air writing’, which consists in asking students to say a word, visualize its spelling and then reproduce ‘in the air’ the necessary movements to write it;
- d. **enrich**: the last phase consists in helping students apply the rules they have learned in new contexts, for instance by analyzing new words which contain the same sound-letter pattern previously learned. This phase could also include the creation of mind maps to sum up the sound-spelling rules studied, along with examples, which could be a useful support if students find new words and do not know how to read them.

The standard RARE Model has been adapted to take into account the specific features of very young learners of English as a foreign language. Considering that the target audience of the Sound Pathways has little or no previous knowledge of the English language, the model has been partially adjusted by the authors. Firstly, the oral and written practice were separated more clearly, in order for pupils to have the necessary time to work on oral recognition and reproduction and then associate sounds with letters. As a consequence, the first phase (‘Recognize’) was split in two (‘Recognize the sound’ and ‘Repeat the sound’). As for the last phase (‘Enrich’), it was not possible to include it in the Pathways, but the simple and recursive pattern of each Pathway allows for the creation on the part of teachers themselves of similar extension activities which could be used for review.

1.3 Methodological choices

From the methodological point of view, the Sound Pathways are based on

the Language Teaching Accessibility Theory (LTAT), according to which (Daloiso 2012):

Language Teaching Accessibility is a process involving strategic methodological choices made by teachers to grant special needs students equal opportunities for language learning. Equal opportunities are achieved by maximizing the student's access to materials, contents and activities from a physical, psychological, cognitive and linguistic point of view.

A corollary to the theory is that language teachers can maximize students' access to learning only if they are able to identify the barriers caused by a special need. The LTAT has been applied to foreign language teaching to children with dyslexia (Daloiso 2012), so the barriers to language learning faced by pupils with dyslexia have already been identified.

The methodological choices behind the Sound Pathways take into account these barriers, which are summarized in the following graph.

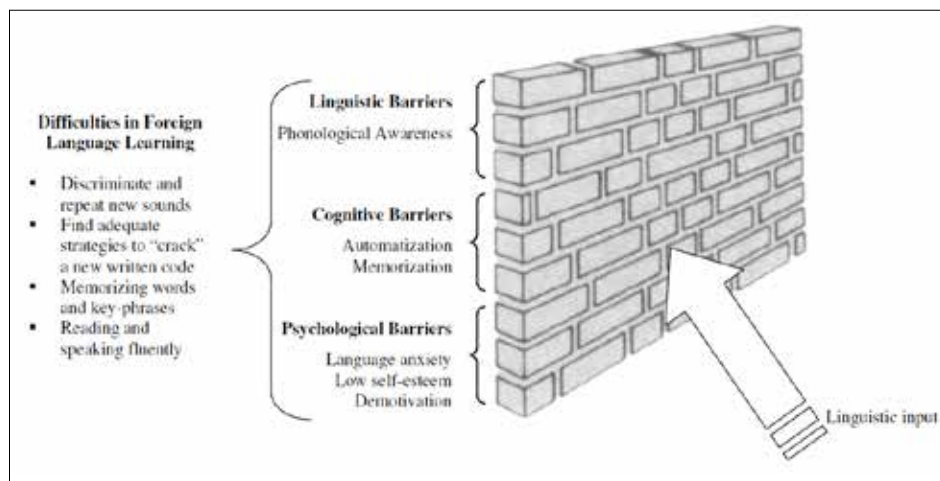


Figure 1. Barriers to Foreign Language Learning for pupils with dyslexia

The graph provides a general overview of the origins of the main difficulties that students with dyslexia can encounter in learning a foreign language. However, being specifically designed for primary pupils, the Sound Pathways concentrate on some of these barriers, particularly those regarding the linguistic and psychological dimensions.

In order to remove, or at least reduce, these barriers, the Sound Pathways are based on the following methodological principles:

- a. **multi-sensory stimulation:** research suggests that the activation of different sensory channels enhances learning in pupils with dyslexia (see Reid 2009, for a review); the principle has also been successfully applied to the foreign language context (Schneider, Crombie 2003; Nijakowska 2010), though not specifically to sound-letter intervention. The Sound Pathways have a strong multi-sensory basis: sounds are always associated with gestures and movements, and a variety of teaching strategies is used to help children ‘feel’ the sounds and ‘see’ their physical effects. This methodological basis stems from the assumption that phonological work requires a lot of effort for pupils with dyslexia because it focuses on an impaired channel, i.e. the linguistic barrier; nonetheless, the activation of other senses works as a compensatory channel which reinforces the impaired one. As a result, students with dyslexia will be able to cope with phonological tasks by relying on other channels;
- b. **playful methodology:** the traditional approach used to teach pronunciation skills is not only mono-sensory (children are required to listen and repeat, so only the acoustic channel is stimulated) but also tiresome, since it involves a lot of sound repetition. As a consequence, pupils with dyslexia do not benefit from this approach, which turns out to be anxiety-provoking and demotivating. To overcome these difficulties, the Sound Pathways are also based on a playful methodology, which engages pupils in phonological games and manipulative tasks;
- c. **narrative structure:** working with sounds, even if by means of games, could turn out to be an abstract task for very young learners, who generally focus on meaning and communicative efficacy when learning a new language. For this reason, the Sound Pathways also adopt a narrative structure: being the wood the general setting, in each unit pupils will encounter a pair of characters, each of whom ‘carries’ a key-sound in their name, performs a particular movement and has a specific personality trait. Throughout the activities, children come to know these characters and join their adventures by performing phonological tasks. Thus Sound Path takes the form of a journey, in which sound-letter intervention is realized within a concrete context stimulating children’s imagination.

2 The teaching material: an overview

After examining the theoretical principles underpinning the new teaching material published by Oxford University Press, we are now going to provide a description of the Sound Pathways, both in their contents, that is the sounds and associated letters included in each Pathway, and their overall structure, that is, the sections they consist of. Special attention will be devoted to discussing the main reasons underlying the selection of the words that are present in the Sound Pathways, as well as the most

effective ways in which teachers can introduce this teaching material in their classrooms.

2.1 The Sound syllabus

This new teaching material is composed of eight Sound Pathways. Apart from Sound Pathway 1 which focuses on the /h/ sound alone, the other seven Pathways include a sound pair, such as /θ/ and /f/, /p/ and /b/, /k/ and /tʃ/, or /æ/ and /ʌ/.

Each Sound Pathway opens with an introduction including two sections: *Why these sounds?* where teachers are explained the reasons behind the choice of a sound or sound pair. For instance, /θ/ has been paired to /f/ in Sound Pathway 2, as it is often confused with such similar sound by Italian-speaking pupils, who are unable to find (and thus reproduce) the /θ/ sound in what could be defined as their ‘sound storage’. What follows in the introduction is a section titled *How to pronounce these sounds*, a step-by-step description of the articulatory movements involved in the production of the sounds in reference.

The focus on sounds within this innovative teaching material has a two-fold goal. On the one hand, an explicit work on English sounds with young learners aims at helping them develop their meta-phonological skills, thus helping them become aware that words (in any alphabetic language) are made of small meaningless units (phonemes) that can be manipulated – as if they were toys (Costenaro 2013). On the other hand, such small abstract entities can be matched to letters – and this is important within a context of learning to read and write in any alphabetic language. Being aware of these two notions represents the foundation for becoming competent readers and writers in any alphabetic language. Consequently, within a wider framework of developing a communicative competence in a foreign language, the second important goal of a focus on English sounds, is not of making Italian children sound little native-like speakers of English. The main goal is to assist pupils in becoming more sensitive (and thus accustomed) to non-native sounds, help children’s ears become tuned to those sounds, and children’s articulatory organs articulate difficult or new sounds, so that they do not represent a barrier within any activity of oral comprehension or production. If children are not able to recognize or articulate sounds correctly, they will not be able to understand a message or make themselves be understood when interacting in English. This will prevent them from reaching one of the main goals in foreign language learning, that is, being able to interact in an intelligible manner when using a foreign language. Naturally, this goal will be reached throughout the entire school career of pupils – not necessarily in primary schools. However, the authors’ aim here is to lay those foundations that will be crucial when children will be

exposed to more complex tasks - including each ability, be it oral or written comprehension, and oral or written production, at an older age.

Some words should be spent on the English variety from which the sounds in the Sound Pathways are derived. Being English amongst the most widespread languages in the world, it tends to vary linguistically - be it at the lexical, morphosyntactic or phonetic level - depending on the English-language country where it is employed. Therefore, sounds themselves can vary within different varieties of English (Santipolo 2006). For consistency reasons, the authors' choice has been to present sounds from RP (Received Pronunciation), that is, Standard British English, the English model traditionally taught in most Italian educational contexts.

What follows is some considerations on the sounds and letters selected by the authors, and on the main reasons underlying their selection.

Sounds: the selection of the sound/sounds presented in the Sound Pathways is not random. Firstly, the sounds included in each Pathway have been drawn from words that are present in the related Unit of the Class Book. For instance, Sound Pathway 2 focuses on the /θ/ and /f/ sounds, which are present in the words *three* and *four* found in the related Unit in the Class Book, that is, Unit 2. Secondly, the selection of sounds has been carefully examined and planned by the authors, bearing in mind not only a context of early foreign language learning/teaching (Cameron 2001), but also some principles drawn from theories and research studies on language development (Stoel-Gammon 1985).

2.1.1 Sounds that are difficult for the whole classroom

Within a foreign language context, in particular the authors have selected those sounds which can be difficult to be recognized or pronounced by children, as they are not present in Italian, such as the English sound /θ/ in *thumb*. The selection also includes some sounds that are present in the Italian phonological system, but are articulated differently, such as /h/, which, unlike in Italian, is mostly aspirated in English. These two typologies of sounds have been chosen as they can cause problems not only to children with or at risk of dyslexia, but to the whole non-native English classroom.

2.1.2 Sounds particularly difficult for at-risk children

In other cases, sounds have been chosen, that are not easily recognizable and articulated especially by children with dyslexia. For example, according to research (Kvilekval 2007), distinguishing such pairs as /p/ and /b/ and /t/ and /d/ represents a difficult task for pupils with dyslexia, as such sounds only differ in the vibration or not of vocal cords, which cannot be

easily deciphered ‘visually’. Yet, in the course of their learning process, children will need to be able to distinguish those sounds, as they may encounter such English minimal pairs as *pat* and *bat*, or *town* and *down*, where the beginning sound completely modifies the meaning of a word.

2.1.3 Consonants

The authors have decided to primarily introduce consonant sounds, as they are more ‘visible’ on the articulatory level, as compared to vowels, and are thus easier to be recognized and reproduced by pupils, who can rely on the visual channel as a scaffolding tool (for instance, when working on the recognition of the /b/ sound, lips movement can be emphasized by teachers). A variety of stop consonants has been included in the Pathways, such as the previously-mentioned /p/ vs. /b/ (Sound Pathway 4), and /d/ vs. /t/ sounds (Sound Pathway 6), as well as the /k/ sound (Sound Pathway 7), not only because they are easier to be recognized and reproduced on the articulatory level, but also because, according to research on language development, stop consonants (together with glide sounds, such as /h/) are among the first sounds to be recognized and pronounced by infants learning a first (alphabetic) language (Stoel-Gammon, Dunn 1985; Stoel-Gammon, Sosa 2007). This consideration is crucial within an early foreign language context, where young learners can be introduced to a foreign language in a ‘natural’ manner – as if it were a first language (Costenaro 2013). Therefore, an early work on and exposition to stop consonants, also respects the principles of a ‘gradual’ and ‘natural’ learning process (Krashen, Terrell 1983). A work on such consonant sounds as /p/ and /t/ is also crucial, as these sounds have a feature which is not present in their Italian counterparts: in word-initial position, they are mostly aspirated. Thus, it is important to have children be exposed to this specific feature of the English language from an early age. Other consonants presented in Sound Pathways 7 and 8 include fricative and affricate sounds, that is, /tʃ/ in *chick* and /ʃ/ in *sheep*. From a developmental perspective, fricative and affricate are not amongst the first sounds to be mastered by children learning to speak a first language, and tend to be replaced by non-fricative sounds (English-speaking children themselves tend to substitute /θ/ with /f/ - which is easier to be articulated) (Stoel-Gammon 1985). Yet, within a context of Italian-speaking children of 6 years of age, these sounds should already be mastered quite correctly in Italian, and are expected to be ‘naturally’ transferred onto the English language (Zuanelli Sonino 1976). As will be discussed in the orthography section below, the /tʃ/ and /ʃ/ sounds have been mainly selected in relation to some similar sounds they can be confused with, i.e., the /k/ and /s/ sounds respectively, and to the different written realizations they have as compared to the Italian language.

2.1.4 Vowels

English vowels can also be found in the Sound Pathways. According to research on language development, vowels tend to be mastered earlier than consonants in one's first (alphabetic) language (Stoel-Gammon 1985). However, within a context of foreign language learning, English vowels represent a delicate issue for Italian children, who are accustomed to a smaller number of vowel sounds in Italian, which in addition are always fully and clearly pronounced in words. For instance, children can face difficulties with English vowels, due to the English phenomenon of vowel reduction, or the English distinction between short and long vowels, which are not present in Italian (Busà 1995). For these reasons, the authors have decided to include some English vowel sounds in two Sound Pathways (4 and 5), so that a first degree of 'vowel awareness' can be enhanced even in young learners of English as a foreign language (Costenaro 2013). The selection of the vowel sounds included in the Sound Pathways - /æ/; /ʌ/ and /e/ - is not only aimed at fostering children's ability to recognize and reproduce some English vowel sounds in isolation, but also at helping pupils distinguish similar words which only differ in one vowel sound, such as *cat* and *cut*, or *bad* and *bed*.

2.1.5 Letters

Orthography is the authors' concern here only in relation to the written realization of the sounds introduced in each Pathway, as the orthography of full words is normally systematically introduced during the last three grades of primary school. Following the assumption that regularities should be introduced first (Kvilekval 2007), in the section *Matching sounds and letters* of each Sound Pathway, pupils are explicitly introduced to the association between the sound in reference and its most frequent written realization, and are required to carry out multi-sensory tasks to understand and retain this association. For instance, in Sound Pathway 3, the /ʌ/ sound is associated with U, its most frequent written realization. Or in Sound Pathway 2, the /f/ sound is associated with the letter F, and not with the more complex realizations PH (*phase*) or GH (*rough*). On the other hand, in Sound Pathway 2, the /θ/ sound is associated with the digraph TH, or in Sound Pathway 7 the /tʃ/ sound is associated with the digraph CH, and children are explicitly guided to 'see' and be aware that, unlike other sounds, the written realization of /θ/ or /tʃ/ consists of two letters. The authors' decision of introducing only the most frequent written realizations of the sounds in reference is not only based on a principle of progressive complexity in first or foreign language learning (Krashen, Terrell 1983; Kvilekval 2007), but also on the consideration that Italian first

graders are in the very process of learning to write their own native idiom, and might be confused if introduced to a variety of irregular spellings. It is thus preferable to present spelling variations at a later stage.

2.2 Criteria for vocabulary selection

In selecting the words included in each Sound Pathway, which contain the sounds to be worked upon, the authors have mainly followed the criteria here below.

- a. **A connection to the Class Book:** the consonant or vowel sounds selected for each Sound Pathway have been primarily drawn from words found in each related Unit of the Class Book. For instance, Sound Pathway 1 presents the sound /h/ in words such as *Holly* and *Hedgehog*, who are amongst the main characters of the Treetops Wood, and are thus already known by children. This way, children should be able to focus on the /h/ sound in the characters' names, or in the word *hello*, one of the first introduced in Unit 1 of the Class Book. Another example is Sound Pathway 3, which introduces the /æ/ and /ʌ/ sounds in words such as *dad* and *mum*, *grandma* and *grandpa* which are present in the related Unit 3 of the Class Book. This way, pupils are introduced to words that they already know or are in the process of learning, thus making it easier for them to shift their attention onto the phonetic form of the words. All words presented are content-words (function words such as articles and prepositions have been avoided). No distinction has been made between categories, and the Sound Pathways include nouns, verbs or adjectives.
- b. **Phonetic reasons:** naturally, new words have been introduced that are not found in the Class Book. In this case, teachers are not supposed to teach the meaning of these new words to children – or at least not immediately. If teachers did, children would tend to focus on the meaning of the new word, and not its phonetic form. As children are naturally curious about the meaning of words, a strategy had been suggested in the Sound Pathways, namely, to tell pupils that these are 'magic words' that can only be fully known once pupils have carried out all activities on the phonetic form of words. Likewise, it is recommended to avoid the use of flashcards at this stage of work, or children would focus on the visual content of words. In order to find a way to assist children – who are impaired in their language channel – the tasks in the Sound Pathways have been designed so that they can activate the kinesthetic and imaginative channels instead: for instance, when pupils are required to associate a sound to a specific movement, or to imagine how the new character from the Treetops Wood will look like (children will only find pictures of the

new animals in the *Sound Poster* and in the worksheets, see 2.3). When possible, the authors have selected minimal pairs which only differ in one sound, such as *bag/bug; bank/bunk; bun/pun; bear/pear*. Again, the focus here is on the form of words – and precisely the discrimination of their initial or middle sounds, which represents a complex task for at-risk children. Once again, pupils are not required to know immediately the meaning of the minimal pairs presented. This will allow them to focus on phonemes only, in the attempt to make children able to distinguish the minimal pairs first, and at a later stage assign a meaning to each word.

- c. **Developmental reasons:** following the principles of a gradual and progressive path of language acquisition in one’s own first language (Oliviero Ferraris et al. 2004; Sabbadini 1996), the authors have tried to avoid long multi-syllabic words or words containing several complex sounds all together. It is in fact easier for young learners to recognize or reproduce shorter words. For instance, research on syllable acquisition has shown that children first acquire words with one or two syllables (Adams et al. 1988). This is one of the reasons why the authors have only selected mono-syllabic or words with two syllables in the Sound Pathways.

2.3 The Sound Pathways structure

Each Sound Pathway has the same structure, which includes:

- a. teaching notes for teachers, with a list of the learning goals in each Pathway, as well as clear guidelines on how to present and carry out each task;
- b. recordings contained in an audio CD;
- c. two worksheets for pupils;
- d. a ‘Sound Poster’, depicting a new version of the Treetops Wood, including all the characters encountered in the Sound Pathways. Each character has a speech-bubble containing the letter/s associated with the characters’ sounds.

Each Sound Pathway is divided into five stages. Here below is a scheme.

Stage	Description	Tools
Presenting sounds	The teacher presents the sounds to the classroom, by associating them with a specific movement. Each sound is also related to a character from the Treetops Wood, who contains the sound in his/her name.	Teaching notes

Recognizing sounds	Children are presented with two tasks, aimed at helping them recognize the sounds in reference, both in isolation or within words, by means of audio CD recordings, or songs and chants taken from the teacher’s Class CD.	Teaching notes Audio CD
Reproducing sounds	Children are presented with two tasks, aimed at helping them reproduce the sounds in reference.	Teaching notes Audio CD
Matching sounds and letters	Children are presented with activities from the first worksheet, aimed at helping them match sounds and letters.	Teaching notes Worksheets
Multi-sensory synthesis	Children are presented with one last task from the second worksheet, activating various sensory channels, and aimed at helping children retain what they have learned: the sounds and the sound-letter correspondence.	Teaching notes Worksheets

2.4 Sound Pathways in the EFL classroom

As already mentioned, the sounds in each Sound Pathway are drawn from words that are present in the related Unit of the Class book. This way, the Sound Pathways can be easily integrated with the activities already included in the Class Book. In particular, teachers can decide to propose the Sound Pathways:

- a. right after the manipulative activities in the ‘Round Up’ section of the Class Book. Each Sound Pathway can be carried out in one or two lessons at the end of the Unit;
- b. after listening to the story and carrying out the associated comprehension tasks. The sounds in each Pathway are often drawn from the dialogues/songs/chants in the Class Book, thus children will already have heard them. However, while listening to the story or the dialogues/songs/chants the focus was on the content, now the focus will be on the form, that is on the sounds in words.

In general, the Sound Pathways are to be conceived as ‘flexible’ teaching material. This means that teachers are not expected to carry out the whole Sound Pathway in one lesson only. When working on a specific Unit from the Class Book, teachers can devote 10 minutes of each lesson to one of the 5 stages included in the related Sound Pathway (see 2.3). This way, the Sound Pathway will be carried out in the same span of time devoted to the related Unit in the Class Book.

Lastly, as regards the stage *Matching sound and letters*, teachers are called to decide whether it is advisable to carry out it or not - within a particular moment of the school year. If teachers believe a focus on English letters can negatively affect the work on literacy (learning to read/write)

that is being done in Italian, than they can decide to postpone it, and concentrate on the oral activities of the Sound Pathways instead. However, it is not recommended to postpone the introduction of all English letters. Research studies (Adams et al. 1998; Kvilekval 2007) suggest that the introduction of the association between sounds and letters should follow a gradual process.

The following paragraph will provide a description of one of the Sound Pathways.

3 From theory to practice: a commented example

This last paragraph illustrates how we turned the theory presented above into practice. It describes some of the activities the authors have designed to help young learners develop their meta-phonological skills through an explicit work on specific English sounds. The Sound Pathway we will describe is number 2 and focuses on the /θ/ and /f/ sounds. As previously mentioned, these sounds have been selected because they are present in many words in the related Unit of the Class Book, that is, Unit 2.

Sound Pathway 2 opens with an Introduction made up of two sections. In the first one, teachers can find an explanation of the reasons behind the choice of this particular sound pair: while the /f/ sound is present also in Italian, /θ/ sound is not and is generally confused with the first. The /θ/ sound belongs to the first of the three categories described in 2.1: it is a sound difficult to recognize or pronounce for the whole classroom, not only for children with or at risk of dyslexia. It can easily undermine communicative efficacy as children can pronounce in the same way ‘you can have *free* books’ and ‘you can have *three* books’. In the second section of the introduction, teachers can find a detailed description of the articulatory movements involved in the production of the sounds in reference. It is explained that to pronounce the voiceless consonant /θ/, the tongue tip is brought forward just below the upper teeth to create a constriction and that air must then be forced between tongue surface and the cutting edge of the upper teeth, creating audible frictional turbulence.

After the introduction, teachers can find a large number of activities with teaching notes containing guidelines on how to propose them to the children. What follows is a step-by-step description of some of the activities designed by the authors for the five stages of Sound Pathway 2. The title of the Sound Pathway is *Froggy and Thumbby* as the sounds in reference are associated with two new characters: a female little frog and her friend, a male snake.

3.1 Sound Pathway 2: Presenting /θ/ and /f/ sounds

The first stage is devoted to the presentation to the classroom of the new characters who contain the two sounds in their names and of their association with two specific movements.

Activity	Sounds Presentation
Narrative level	Arrival in the wood of two new friends: the cute little frog Froggy and the little snake Thumbby.
Teaching objective	Explicit and structured teaching of the new sounds: /θ/ and /f/.
Learning objective	Awareness of the different ways in which the two sounds are pronounced and of the articulatory movements connected with the sound /θ/.
Procedure	Teacher presents Froggy saying that she will be associated with the sound /f/. Pronouncing the sound, teacher will fold his/her hands, approach them to his/her mouth and make them jump forward like two little frogs. Teacher presents Thumbby saying that he will be associated with the sound /θ/. Pronouncing the sound and emphasizing articulatory movements, teacher will approach his/her hands to his/her mouth and make them slide forward like two little snakes. The teacher should let the children freely imitate the sounds and the movements.
Materials	No materials needed

This is a crucial phase because it introduces an explicit and structured teaching of English sounds not present in Italian. As we already mentioned, little attention is generally devoted in Italian Primary Schools to this form of teaching. First, the teacher presents the two sounds explaining to the children how to pronounce the new /θ/ sound and emphasizing the articulatory movements. The words used by the teacher will differ from the technical phonological descriptions used by the authors in the Introduction. S/he will adopt a practical, descriptive register, saying something like: ‘it is necessary to stick the tongue out a little bit and blow air between the tongue and the front top teeth. Then adopting a multi-sensory strategy s/he associates the two sounds with specific gestures and movements. As we already mentioned, this will help children ‘feel’ the sounds and ‘see’ their physical effects.

3.2 Sound Pathway 2: Recognizing /θ/ and /f/ sounds

In the second phase the teacher aims at assisting children discriminate the two sounds in reference in different phonetic contexts. Children are presented with a warmer and two tasks, aimed at helping them recognize the two sounds, both in isolation or within words. What follows is the description of the first task.

Activity	Listen and jump
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Narrative level	Froggy and Thumby are really good friends and love to spend time together chatting. In this moment they are sitting comfortably close to a little lake and they can't stop chatting
Teaching objective	Assist children in discriminating the two similar sounds within words.
Learning objective	Children should recognize the two sounds without confusing them.
Procedure	Teacher creates two groups, the little frogs and the little snakes, and explains that they will listen to a list of words beginning either with the /f/ sound or with the /θ/ sound. When the little frogs hear a word beginning with /f/ they should jump. The little snakes should jump when they hear a word beginning with /θ. The words are: <i>thrill – free – three - funny - thick - fat – thin – five – frog - thumb-four – throw</i>
Materials	audio CD recording

In this phase the teacher aims at helping pupils discriminate the two sounds in a specific phonetic context: the beginning of the word. The activity described differs from the mainstream 'listen and repeat' exercises because of the multi-sensory association of the listening to an action. The teacher is suggested not to teach the meaning of the new words at this stage, to allow for focusing on the phonetic form of the words. As children are naturally curious about the meaning of words, the strategy suggested is to tell pupils that these are 'magic words' that can only be fully known once they have carried out all activities on the sound form of words.

3.3 Sound Pathway 2: Reproducing /θ/ and /f/ sounds

In the third phase, the teacher aims at assisting children reproducing the two sounds in reference in different phonetic contexts. Children are presented with two tasks. What follows is the description of the second one.

Activity	Sing along
Narrative level	Froggy and Thumby are still sitting at the lake shore chatting. Now they want to invite children to sing with them a song called 'Frogs and thumbs.'
Teaching objective	Assist children in reproducing the two similar sounds within words.
Learning objective	Children should be capable of reproducing the two sounds without confusing them.

Procedure	Teacher starts singing the song without the music and asks the children to make the two movements associated with the sounds (see 3.1). Teacher lets the children listen to the song a couple of times, gradually inviting them to sing along. When the children are ready, the musical arrangement can be added. The lyrics are: <i>Four, free, four, free, frogs.</i> <i>Three, thin, three, thick, thumbs.</i> <i>Three, thin, three, thick, thumbs.</i> <i>Frog, frog, frog, four, free, frogs!</i>
Materials	audio CD recording

In this activity, children are invited reproduce the two sounds through a playful methodology. Instead of teaching pronunciation skills through a traditional approach ('listen and repeat') in which only the acoustic channel is stimulated, pupils are engaged in a motivating phonological game where singing is combined to actions.

3.4 Sound Pathway 2: Matching sounds and letters

The fourth phase is devoted to teaching the correlations between the /θ/ and /f/ sounds and the letters F and TH, i.e., their most frequent written realizations. This means that the /f/ sound is associated with the letter F and not with the more complex realizations PH (*photo*) and GH (*tough*). The teacher assists children matching the two sounds with their written form presenting two activities: the first entails the use of the Sound Poster (see 2.3) and the second one the use of the first Worksheet. What follows is a description of the second activity.

Activity	Colour, trace and write
Teaching objective	Assist children in matching the /f/ sounds to the letter F and the /θ/ sound to the letters TH.
Learning objective	Children should be capable of matching the two sounds to their most frequent realizations.
Procedure	Teacher explains the children that they will now make some activities on the letters they have just seen in their Sound Poster inside Froggy and Thumbby's speech-bubbles. These activities involve the use of Worksheet 1 which contains four sections. In section 1 children are invited to colour the empty shapes of the letters F and TH; in section 2 they will trace the profile of the letters using two different colours: one for F and one for TH; in section 3 they will trace the letters joining little dots; in section 4 they will finally write the letters between two delimitation lines.
Materials	Worksheet 1

In the two activities of the fourth phase pupils are explicitly introduced to the association between the two sounds and their written realizations

and are asked to carry out multi-sensory tasks to understand and retain this association.

3.5 Sound Pathway 2: Multi-sensory synthesis

In the fifth phase, the teacher proposes one last task from the Worksheet 2 aimed at activating various sensory channels and at helping children retain the sounds and the sound-letter correspondence.

Activity **Join the dots and colour. Then write, touch, and say**

Teaching objective Assist children in retaining the /f/ and the /θ/ sounds and their written forms.

Learning objective Children should be capable of matching the two sounds to their most frequent realizations.

Procedure Teacher hands out coloured pencils and Worksheet 2, which is divided into two boxes. Box 1 contains a dotted illustration of Froggy and box 2 contains a dotted illustration of Thumbby. Children are invited to join the dots to obtain the two images. Each box contains also an empty speech bubble placed next to the mouth of the animal. The children will use recycled materials such as fabric, smooth or rough cardboard, etc. to make the letters F and TH associated to the sounds of the two animals and they will glue them inside the speech bubbles. Children will then be invited to touch the letter F inside Froggy's speech bubble while pronouncing the sound /f/. The same procedure will be applied to the /θ/ sound and the letters placed inside Thumbby's speech bubble.

Materials Worksheet 2

This final phase is particularly important because it synthesizes all the information the children have learnt during the Sound Pathway about the two sounds and the corresponding orthographic representations. This is not done through the traditional mono-sensory approach but through the proposal of manipulation tasks that activate different senses, in this case, sight, hearing and touch. Extra sensory channels can be added (for instance, in the activity described above, teacher can provide cocoa powder to glue on the letters to involve also the sense of smell).

4 Conclusion

An explicit work on English sounds with young learners, based on the proposal of playful and motivating activities, can support the development of their meta-phonological skills, thus providing special benefits to children with dyslexia. Meta-linguistic reflection combined with multi-sensory stimulation can play an important role in the learning process, especially for children with a learning disability. The Sound Pathways Project de-

scribed in the present paper has been designed by the authors to help Italian children with dyslexia develop phonemic awareness of English sounds not present in their native language. The narrative context and the playful experiences provided by the Sound Pathways can create a motivating learning environment, while the multi-sensory activities can help children with dyslexia cope with the phonological tasks proposed.

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