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Phonological Awareness and Reading Acquisition: An Educational Proposal for Introducing English in Italian Preschools

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Language is the defining element in our social and cognitive lives, and to the extent that we understand how languages are learned, used, and enjoyed, we will understand as well how individuals and societies interact and how we can make those interactions more harmonious and the induction of our children into these societies more seamless and productive for everyone.
(Bialystock, 2007b)

People often look at the limitations within classrooms, - the lack of resources, equipment, and so on. But as long as you have children, you have everything you need.
(A Kentucky teacher, 1999)

Acknowledgments and Dedication

My most grateful thanks are expressed to my family - Gianna, Carlo, Tatiana, and Pamela - for being there for me all the time, for being so unconditionally loving and caring, and for accepting all of my choices.

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This work is dedicated to children all over the World – the best part of life. May a growing number of children have a chance to experience, enjoy, and appreciate *linguistic and cultural plurality* by acquiring a foreign/second language from an early age, thus contributing to making this World more appreciative of *diversity* and *otherness*, and hopefully - in the long run - more tolerant and peaceful.

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Abstract

Phonological awareness refers to children's ability to distinguish and manipulate the auditory segments of spoken language, such as syllables and phonemes. This work investigates phonological awareness skills in preschool children in relation to children's later development of reading and writing abilities, both in an L1 and an L2. First of all, we explore the situation of early foreign/second language teaching/learning in Italy, as well as the issues that are unsolved or neglected within the field of early language teaching methodology. What follows is a detailed description of phonological awareness skills and development in English-speaking children, and of its role within children's process of learning to read and write an alphabetic or a non-alphabetic L1. We then review some of the most relevant evidence-based studies that give support to the role of phonological awareness as an emergent literacy skill in preschool children, and as a predictor of children's later literacy acquisition. The positive relationship between phonological awareness training programs for preschool children and their phonological awareness and literacy development is also examined. This study then investigates the development of phonological awareness in children acquiring a language other than English as their L1, or English as a second language, as well as the issue of transfer of phonological awareness skills across English and other alphabetic or non-alphabetic languages in plurilingual educational settings. The following section describes the general educational environment where phonological awareness tasks in English as a foreign language could be carried out in Italian preschools, as well as the features of these activities. Lastly, we present a set of newly designed teaching/learning activities and games in English aimed at fostering Italian preschool children' phonological awareness skills, as well as their overall oral skills (both listening/speaking skills and pronunciation skills) in English.

Riassunto

Il termine *consapevolezza fonologica* si riferisce alla capacità dei bambini di dintinguere e manipolare i segmenti uditivi della lingua parlata, come le sillabe o i fonemi. La presente tesi esamina le abilità di consapevolezza fonologica nei bambini in età prescolare in relzione al successivo sviluppo delle loro abilità di letto-scrittura, sia in lingua nativa che in una lingua seconda. Innanzitutto, viene esaminata la situazione dell'insegnamento/apprendimento precoce delle lingue straniere/seconde in Italia, nonché le problematiche ancora irrisolte o trascurate nel campo della glottodidattica precoce. Segue una descrizione dettagliata delle abilità di consapevolezza fonologica e del ruolo svolto da tali abilità nel processo di acquisizione della letto-scrittura in una L1, sia alfabetica che non. Vengono poi esaminati gli studi sperimentali di maggior rilievo che supportano il ruolo della consapevolezza fonologica in quanto abilità di alfabetizzazione emergente nei bambini, nonché indicatore dell'acquisizione delle abilità di letto-scrittura in età successiva. Viene analizzata la relazione positiva tra la somministrazione di programmi di sviluppo della consapevolezza fonologica nei bambini in età prescolare e lo sviluppo delle loro abilità di consapevolezza fonologica e di letto-scrittura. Viene poi affrontata la tematica dello sviluppo delle abilità di consapevolezza fonologica nei bambini che acquisiscono una lingua nativa diversa dall'inglese, o l'inglese come lingua seconda, nonché il fenomeno del transfer delle abilità di consapevolezza fonologica tra l'inglese e altre lingue alfabetiche o non alfabetiche, in contesti educativi plurilingui. Segue una descrizione del contesto educativo generale in cui si propone di inserire attività didattiche in lingua inglese di sviluppo della consapevolezza fonologica all'interno delle scuole dell'infanzia italiane. La sezione conclusiva presenta una serie di attività e giochi didattici in inglese, tesi allo sviluppo delle abilità di consapevolezza fonologica nei bambini in età prescolare, nonché delle loro abilità orali in generale (sia di ascolto/parlato che di pronuncia) in lingua inglese.

Introduction

The present thesis focuses on the notion of *phonological awareness* in preschool children, namely children's ability to detect, distinguish, analyze or manipulate the auditory segments of spoken language (e.g., syllables and phonemes). This work on phonological awareness derives from empirical research carried out in a wide range of adjacent disciplines of the broad field of Language Sciences and Educational Sciences. Its theoretical framework primarily includes experimentally verified studies in the domains of Developmental Psychology, Language Acquisition, with specific reference to Reading Acquisition and Emergent Literacy, Cognitive Psychology, Neurolinguistics, Early Language Teaching Methodology, and Bilingual Education. One of our main aims is to understand phonological awareness and its importance to reading and writing[1]. Since the 1970s, experimental research has been paying increasing attention to investigating phonological awareness. A vast selection of research studies that has employed a variety of methodologies and engaged populations with different alphabetic language backgrounds has led to conclusions concerning phonological awareness that have immense practical significance within several contexts (e.g., in the educational, health and clinical fields). For example, phonological awareness has been found to successfully predict children's reading ability, to cause reading disorder if impaired, to foster reading and spelling development for both children with and without reading difficulties or severe reading disorders. These findings highlight the importance to support the phonological awareness abilities developed by young children. Within an educational setting, this demands that teachers not only know what phonological awareness consists in, but that they are also aware of the importance of phonological awareness skills in young children, and acquire an in-depth understanding of

[1] Although phonological awareness is critical in relation to both reading and writing skills, this study focuses on the specific relationship between phonological awareness in preschool children and their later reading acquisition. Developmentally, the acquisition of reading skills precedes the acquisition of writing skills. Therefore, at the developmental level, the positive relationship between phonological awareness skills and writing acquisition can be said to 'follow' the positive relationship between phonological awareness skills and reading acquisition.

phonological awareness skills and development before addressing phonological awareness tasks to young children.

One of the main goals of this work is to provide a detailed description of phonological awareness abilities and their development in young children. One additional goal is to draw on the most significant findings derived from empirical research on the topic to present a set of newly designed teaching/learning activities in English as a Foreign Language (EFL). These activities are aimed at fostering phonological awareness skills in Italian preschool children, as well as preparing them for the later task of learning to read and write in English. In the course of our discussion, we will try to answer the following questions:

1. What are the projects that have been carried out up to the present time to introduce an L2 in the Italian elementary and preschool educational settings? How is the phonological aspect of the L2 normally tackled in these projects? Is there a focus on the development of phonological awareness skills in general, and as a prerequisite for later literacy acquisition in particular? Are there any linguistic or methodological issues left to be solved?

2. What is phonological awareness in an L1? What are the component elements of phonological awareness? How does phonological awareness typically emerge in children acquiring English or other alphabetic languages? Can phonological awareness be defined as a language-specific or a universal component of language development?

3. What is the role of phonological awareness within the most relevant theoretical models of reading and writing acquisition of both alphabetic and non-alphabetic languages?

4. How does phonological awareness contribute to children's reading and writing skills? What is the role played by phonological awareness as an emergent literacy

skill? What is the relationship between preschool children's phonological awareness and their later reading and writing development?

5. How is phonological awareness typically fostered within an educational setting of English as an L1? What is the role played by phonological awareness intervention and training programs to foster young children's later literacy development in the L1?

6. What is the relationship between phonological awareness in an L1 and development of phonological awareness and literacy skills in an L2? Do phonological awareness skills transfer across both alphabetic and non-alphabetic languages?

7. How can phonological awareness practices in EFL be inserted within a preschool educational setting? How can educators implement an early bilingual educational setting rather than a strictly early foreign language educational context? What are the most appropriate approach, methodology and operative models within which to insert phonological awareness tasks in EFL? What are the phonological awareness activities and games in EFL that can be designed and/or adapted from already existing materials in order to be included in the syllabus of Italian preschools?

Chapter 1 presents a historical overview of the experimental and non-experimental projects carried out in the field of Early Language Teaching Methodology (ELTM) from its emergence in Italy at the end of the 1970s to the present days. The first part of the chapter is devoted to a description of the projects experimented in Italian elementary schools and preschools, where an L2 was introduced for the first time. Both the positive results and the drawbacks of the projects are highlighted. The second part of the chapter discusses some of the weak points or issues that still distinguish the field of early language teaching methodology in Italy, as well as the typology of projects

experimented in early educational settings. The last paragraphs are devoted to some considerations on the role of the preschool language educator, as well as on the issue of the quality-quantity of the L2 input addressed to young learners.

Chapter 2 opens with a definition of what phonological awareness is, and a discussion on the use of this term since it first began to appear in research literature in the 1970s. The component levels of phonological awareness that are relevant to reading and writing are then described, and examples of phonological awareness tasks normally used in educational, health and clinical settings are presented. After examining some useful terminology generally associated with phonological awareness in the literature on reading and reading disorders, the chapter moves on to describe the typical sequences of phonological awareness development in English native-speaking children, drawing on experimental research on the topic. A last section examines the relationship between dyslexia and reading skills in English-speaking and Italian-speaking children, in order to highlight the role played by phonological awareness skills in reading disorders.

Chapter 3 presents a theoretical basis for understanding the importance of phonological awareness in an L1. The role of phonological awareness within childrens' process of learning to read and write an alphabetic language is discussed throughout the chapter. The most relevant theories and models of children's reading and spelling development in alphabetic orthographies are illustrated, as well as the role attributed to phonological awareness skills within the framework of each specific theory. The final section is devoted to considerations on the role of phonological awareness in reading non-alphabetic languages. In particular, the case of children's reading acquisition in the Chinese language is examined.

Chapter 4 introduces the notion of 'emergent literacy' and investigates the role of phonological awareness as an emergent literacy skill in preschool children, as well as a predictor of later literacy acquisition. Three theoretical models of emergent literacy development that include phonological awareness as an emergent literacy skill are first

presented. What follows is a description of the research literature synthesis carried out by the National Early Literacy Panel (NELP) to determine the relationship between children's emergent literacy skills and later conventional literacy skills. After a presentation of the Panel's data, the chapter moves on to describe some of the studies reviewed by the Panel which examine the predictive power of onset-rime awareness, syllable awareness, phoneme awareness, as well as the role played by rhyme knowledge, in relation to children's literacy development.

Chapter 5 is intended to present evidence-based research on the role of phonological awareness intervention and training programs as a fundamental tool to foster preschool children's phonological awareness skills in their L1, as well as their later literacy development. In the course of the chapter, three research literature synthesis carried out by individual researchers are reviewed, as well as the synthesis conducted by the National Early Literacy Panel. What follows is a description of the instructional framework within which phonological awareness tasks in an L1 are normally inserted. Within this framework are described such topics as the typology of tasks typically employed to foster phonological awareness abilities in an L1, as well as other aspects related to planning and curriculum design of phonological awareness activities. A last section focuses on the importance of integrating phonological awareness activities with alphabet knowledge tasks.

Chapter 6 introduces and explores the topic of phonological awareness abilities and development both in children acquiring a language other than English as their L1 and in children who are learning English as a second language. After introducing the theoretical framework of Cummins' Interdependence Hypothesis, the chapter moves on to present a vast array of empirical studies that investigated the role of phonological awareness and its relation to literacy learning in languages other than English, both in monolingual settings, or in settings where children speak an L1 other than English and are acquiring English as an L2. Special attention is devoted to available research

comparing the English language and the Italian language. The last section of the chapter focuses on the issue of transfer of phonological awareness skills across English and other alphabetic languages, as well as non-alphabetic languages, both in bilingual and plurilingual educational settings.

Chapter 7 is intended to describe the general educational environment where phonological awareness activities and games could be carried out in Italian preschools. After considering the current blurring of the boundaries between an early foreign language and an early second language context, the chapter moves on to analyze the critical notions of bilingualism, early bilingual education, emergent biliteracy, and the relationship between oral language skills and literacy acquisition. What follows is a description of the educational approach and methodologies chosen to propose phonological awareness tasks in Italian preschools. In an attempt to define the most appropriate operative model for preschool children, the chapter sets to investigate the introduction of an L2 from a neuro-linguistic and neurodevelopmental perspective. The chapter closes with a consideration on the role played by preschool language educators within a learning context where an L2 and phonological awareness tasks in the L2 are experimented.

Chapter 8 focuses on the specific features of phonological awareness activities in English as a foreign language within an Italian preschool setting. After considering young children's ability to acquire two different phonological systems simultaneously, the chapter moves on to examine the different psychological units of the English language and the Italian language. The largest section is devoted to summarizing the features of phonological awareness tasks in English within an Italian preschool setting, drawing on the scientific findings presented in the preceding chapters. After investigating the relationship between phonological awareness activities and drilling, as well as the topic of speech perception and segmenting in an L2, the chapter moves on to describe in detail the types of activities that are presented in chapter 9 and chapter 10. A

final section is devoted to subjects such as the materials employed in phonological awareness tasks, the use of book sharing to foster phonological awareness, differences in the cultural practices and values related to children's education in general and to emergent literacy in particular, as well as the involvement of children's families in the development of children's emergent literacy skills.

Chapter 9 presents a set of activities and games in English aimed at fostering young children's sound awareness, sentence awareness, word awareness, syllable awareness, rhyming awareness, onset-rime awareness, and one-to-one correspondence awareness. After briefly introducing how these activities are meant to be inserted and carried out within an Italian preschool setting, the chapter presents a set of tables. Each table contains one phonological awareness activity and its detailed description.

Chapter 10 proposes a set of activities and games in English aimed at developing young children's phoneme awareness skills, passing trough phoneme identification and isolation, phoneme blending, phoneme segmentation, and phoneme manipulation. A final section is devoted to presenting an activity of storybook sharing where phoneme awareness skills are fostered.

It is important to keep in mind and be aware, however, that nowadays' framework of educational policies is not primarily devoted to implementing the introduction of an L2 in early education (if not at the elementary level) (cf. 1.5). Therefore, this thesis' attempt to define the most appropriate preschool setting where to insert phonological awareness tasks in EFL for Italian preschool children is to be mainly viewed as an 'ideal', but hopefully not 'idealistic,' proposal. Within this 'ideal' proposal, preschool educators are called to draw on their school's possibilities and to gather their strength to create the most appropriate teaching and learning environment for their children. The current proposal is also perfectly aware of the difficulty in finding preschool educators who have such a mastery of EFL as to be self-confident and qualified enough to carry out phonological awareness tasks in the foreign language. This problem could be

partially solved by encouraging the creation of workshops led by qualified experts where preschool educators are trained both in the English language and in how to teach English to very young children. Furthermore, due to the specific nature of this work, preschool educators should also be trained in all that concerns phonological awareness, e.g., what phonological awareness is, how it develops in young children, how it transfers across languages, what are the types of tasks that can foster it in preschool children. Bearing all this in mind, the present work intends to give a boost to all the people involved in early education in general and early language education in particular, and propose new scientifically grounded means to support the introduction of a foreign language within the preschool setting.

One additional point to be stressed is that this research work proposes the adoption of General American, i.e., Standard American English[2], as the reference teaching model in Italian preschools. The growing spread of English worldwide, as well as the growth in the use of English as a 'lingua franca,' or the medium of communication between speakers whose L1 is not English, may raise both theoretical and practical issues for English teachers. For example, the model of English to be taught to learners has already become an issue of debate (Jenkins, 2003). The term 'model' is here used to refer to the pronunciation characteristics of the language an English teacher presents to learners in a classroom (Kelly, 2000). The preferred model for teaching in Britain, or among British teachers abroad, has traditionally been Received Pronunciation (RP). The variety of Standard British English includes several different accents, most of which give clues as to the regional origins of the speaker. RP is more about social standing than geography, as it is generally perceived as representing status and education. It is also referred to as 'The Queen's English' or 'BBC English.' Yet, the number of people who speak with an RP accent in Britain was recently estimated at approximately only 3% of the population, and keeps declining (Kelly, 2000). One more reason for its decline is that few British teachers naturally speak with this accent. Outside Britain, the two English models that

[2] Unless otherwise specified, in this work the word 'English' refers to the American variety of English.

have historically prevailed in schools are Standard British English and General American. While internationally Standard British English has typically been the model for countries such as South Africa, India or Nigeria, as well as the majority of countries where English is taught as a foreign language (including Italy), General American has traditionally been the model for several Asian countries, for Latin America, and has recently become the model for the Scandinavian countries (Santipolo, 2006). There is a whole series of extra-linguistic reasons, e.g., socio-economic, commercial, technological, cultural and political, that have contributed to the role of General American as a key variety worldwide nowadays. In Italy, for instance, the increase in the number of universities offering courses in American Language and Literature seems to confirm this trend and the acceptability of the American model as a 'valid' alternative to the British model in education (Santipolo 2006). This shift in trends, as well as the current spread of General American worldwide, represents the main reason for this thesis to propose the adoption of General American as the teaching model in Italian preschools. Nevertheless, the relevance of other models is here acknowledged and not neglected. Preschool language educators themselves should be aware of variations and differences within the English language, at least at the receptive level. The more knowledge teachers have with regard to the existence of different accents and varieties of English, the more informed - and thus effective - their teaching is likely to be.

Lastly, we are aware of the lack of a section devoted to testing the phonological awareness activities designed within one or more specific Italian preschools. However, the aim of this typology of activities would have been not only to verify the immediate comprehension or production skills on the part of the children, but principally to verify the development of their phonological awareness skills, and, in the long run, of their reading and writing skills. This would have consequently implied the carrying out of a longitudinal project where children would have been exposed to phonological awareness tasks when in preschool, and tested on their phonological awareness abilities

and literacy skills once in elementary school. Unfortunately, such typology of project was not feasible in the course of the research time at our disposal.

Chapter 1

Early Language Teaching Methodology: A Historical Overview

> *Mi name, iscrem, blac en wit* - Luca, 8 years old, is reading English words as they are spelt. And his parents cannot help shivering at listening to him: after three years elementary school[3], they would expect him to pronounce simple English words – expressions, colors - with more accuracy.
> (Lacava, 2009, translation ours)

1.1 Early Language Teaching Methodology: The Emergence of the Field in Italy

The expression 'Early Language Teaching Methodology' (ELTM) (which in Italian is normally defined as '*glottodidattica precoce,*' Balboni, Coonan, & Ricci Garotti, 2001; Porcelli & Balboni, 1992, or '*glottodidattica infantile,*' Taeschner, 1992) is generally acknowledged to refer to the branch of Language Teaching Methodology (LTM)[4] applied to the study of the language acquisition process in children (Daloiso, 2007). The main goal of ELTM is to analyze and identify operative procedures and strategies to teach a non-native or foreign language to children.

Italy had to wait until the end of the 1970s to see the emergence of a research field aimed at elaborating language teaching methodologies specifically addressed to children. Its origins can be found in Freddi's (1987, 1988, 1990a, 1990b) and Titone's works (1978, 1990). The emergence of this new field can be especially understood if seen

[3] The present study will employ 'elementary school,' the American lexical variation of British English 'primary school.'

[4] LTM is a branch of applied linguistics that developed in the Department of Language Sciences at the University of Venice, Italy (Balboni, 2006). Despite its definition in English, this discipline is not restricted to 'methodological' issues. Methodology in language teaching has been characterized in a variety of ways. The most common formulation suggests that methodology is that which links theory and practice. Theory statements would include theories of what language is and how language is learned or, more specifically, theories of second language acquisition (SLA). Such theories are linked to various design features of language instruction. These design features might include stated objectives, syllabus specifications, types of activities, roles of teachers, learners, materials, and so forth. Design features in turn are linked to actual teaching and learning practices as observed in the environments where language teaching and learning take place. This whole complex of elements can be said to define LTM (Balboni, 2002).

in the wider Italian socio-historical context of that time. That was the right moment for this research area to emerge due to some positive factors (Daloiso, 2007: 9-10):

- In several Italian elementary schools, languages such as English and French were already being taught, and had been since the 1960s.
- The topic of early bilingualism had begun to arouse a certain interest, although many teachers and psychologists still believed there could be negative consequences if children were exposed to a non-native language from an early age.
- The Department for Education of the Italian State was starting considering the possibility of including foreign language teaching in the elementary school curriculum. And this is what officially occurred in 1985 nationwide (although the L2 was meant to be introduced only at the second or third grade of elementary schools).

It is within this specific context that the first 'pioneers' in the field of ELTM started operating. Among them were R. Titone, G. Freddi, and their students in the Venetian school and elsewhere in Italy, such as B. Cambiaghi, G. Porcelli, G. Mazzotta, and P. E. Balboni. Their studies and considerations on the field of ELTM led to the creation of pilot-projects and operative procedures that were extensively experimented in schools throughout the 1970s and 1980s. The implementation of these practices turned out to be particularly significant for several reasons: it represented a concrete answer to new socio-cultural demands, it created a connection between scientific research and educational practice, and it allowed foreign languages to be progressively introduced in elementary schools through a series of practices that had been experimentally verified (Daloiso, 2007).

Following the results of these experimentations, which were presented in several scientific publications (Freddi, 1987, 1988, 1990a, 1990b; Porcelli & Balboni, 1992; Porcelli, 1993, Titone, 1978, 1990), the research in the field of ELTM received a strong

boost in the following years and until the early 1990s. It is this precise socio-historical context that saw the emergence of new ideas and notions, such as the application of a playful methodology (cf. 7.1.6.2) to early language teaching, the role played by an L2 in the general growth of young learners, and the formalization of operative models for young children (Daloiso, 2009). The second half of the 1990s saw a decrease in the number of significant scientific publications in the field of ELTM, which led research to a temporary standstill. Other more urgent issues were being tackled, such as teaching Italian to immigrants or teaching languages to adults for professional purposes. It was during the first years of the current millennium that the ELTM received a renewed boost, to which especially contributed the solicitations from the Council of Europe on the urgency and importance to acquire an L2 from an early age. The Council's Resolution issued in 1997 says that:

"early acquisition can be a quality factor in the acquisition of foreign languages […] It can, in the medium-term, allow every citizen to access the cultural richness underlying the linguistic pluralism of Europe. […] Furthermore, early acquisition of foreign languages can foster better comprehension and more reciprocal respect by knowing other cultures, as well as favor an open approach to the cultural richness of Europe." (Daloiso, 2009: 203, translation ours).

Concretely, the Council of Europe solicited member countries to implement cooperative projects among European schools, to design and share appropriate methodological materials, as well as to make families aware of the advantages of early language acquisition, and to design specific training workshops for language teachers. This led to the creation and implementation of several projects, which were experimented especially in local preschools, and contributed to giving a first systematic character to language teaching methodology practices in the preschool educational context (Daloiso, 2009).

1.2 Foreign Languages in Italian Early Education: The First Historical Phase

Generally speaking, three main phases can be distinguished in the introduction and implementation of L2 practices in the Italian elementary and preschool[5] educational setting. The first phase can be defined as a stage of 'spontaneous projects' in Italy and in Europe. At the international level, a certain interest in the field of teaching an L2 to young learners started growing between the 1950s and the 1960s. Some European countries such as Germany, France, Holland, and Sweden were already leading the path with the implementation of experimental practices in elementary schools. Around the end of the 1950s, the ministries of the Departments for Education of the countries belonging to the European Union were solicited to implement L2 training workshops for elementary school teachers, in view of the introduction of a foreign language in the school curriculum (Daloiso, 2009).

In Italy, two important conferences were held at that time: the VII International Congress of the FIPLV (*Fédération Internationale des Professeurs de Langues Vivantes*) and the V Congress of ANILS (*Associazione Nazionale Insegnanti Lingue Straniere*). These conferences contributed to highlighting the emerging role of Italy in implementing local projects for early language teaching. Yet, at that time these projects were managed mainly privately and locally, without any support from higher institutions (Daloiso, 2009). At the same time, numerous scientific conferences on the topic of bilingualism started to be held, especially in Bolzano. They played a critical role in spreading an interest in early language teaching, as well as in removing doubts about the disadvantages of learning more than one language in infancy (Daloiso, 2009).

This socio-historical context saw the emergence of several experimentations in several Italian cities, such as Arezzo, Florence, Pisa, Pistoia, Padua, Verona, Varese, Modena, and Bari. The courses experimented varied from complimentary to non complimentary, from curricular to extra-curricular courses. These experimental projects experienced a tough time during the end of the 1960s, when, in order to regulate them,

[5] The present study will employ 'preschool,' the American lexical variation of British English 'nursery school.'

the Department for Education of the Italian State established that they had to be extra-curricular activities only. Nonetheless, this regulation did not affect the interest in the field as well as the enthusiastic job carried out by teachers (Daloiso, 2009). In general, this first phase was positively distinguished by an increasing interest in and a positive attitude towards the field of teaching an L2 to children, as well as by the implementation of successful local, operative pilot-projects. On the other hand, the Department for Education of the Italian State was still hesitant in is its role in the subject, and there was a lack of cooperation between schools where experimentations took place and Italian universities (Daloiso, 2009).

1.3 Foreign Languages in Italian Early Education: The Second Historical Phase

The second phase in the introduction and implementation of L2 practices in Italy, which went from the end of the 1970s to the first half of the 1990s, was characterized by the experimentation of projects for introducing an L2 in elementary schools throughout the Italian State. It was at that time that pilot-projects turned into real experimentations carried out on a large scale, through a cooperation between scientific experts and scholars and Italian schools, and that the L2 found its steady place in the school curriculum. The study of the role and functions of an L2 in the overall development of learners led to the elaboration of appropriate teaching approaches, methodologies, and materials. Furthermore, the study of the double nature, i.e., both linguistic and educational, of the professional skills of L2 elementary school teachers, led to the elaboration of new in-service training procedures aimed at achieving both goals.

1.3.1 *ILLSSE*

The *ILSSE* (*Insegnamento della Lingua Straniera nella Scuola Elementare, Teaching Foreign Languages in Elementary Schools*) project of 1977 was the first nationwide experimentation aimed at teaching an L2 to young learners in elementary schools. It was elaborated by a committee chaired by R. Titone, and was encouraged by the Italian Department for Education, which adopted a supportive attitude towards the need to regulate local

projects and towards the new educational needs of the society. The project was developed in two phases. From 1977 to 1980 it was experimented in 17 classes in four Italian cities, i.e., Milan, Rome, Turin and Naples. In the following three years it was extended to other forty cities and the classes involved became 500. The L2 was taught in modules of thirty minutes, four times a week, by the class teacher. The guidelines of the project were as follows (Daloiso, 2009: 21):

- The adoption of the communicative approach (cf. 7.1.6), and more precisely of its notional-functional variant, which meant an emphasis on communicative functions, i.e., what speech/language forms to choose and employ in varied communicative contexts.
- The use of newly designed materials specifically addressed to children, instead of adapting already existing materials for teenagers and adults.
- The direct involvement of learners through techniques such as 'Total Physical Response',[6] dialogues, dramatization, games.
- The importance attributed to oral language and oral language skills.

Despite some drawbacks (e.g., the lack of qualified teachers), the *ILSSE* project contributed to consolidating a positive approach towards carrying out educational research and experimenting procedures (Daloiso, 2009).

1.3.2 *Ianua Linguarum*

In 1985, an L2, i.e., English, was officially included in the curriculum of state elementary schools nationwide. It was that the time when a new project, *Ianua Linguarum*, was carried out in Veneto, under the lead of G. Freddi. The first two years, from 1985 to 1987, were devoted to defining the guidelines of the English syllabus, of materials and

[6] 'Total Physical Response' (TPR) is a method developed by Dr. James J. Asher to support second language learning. During TPR students are normally required to respond physically to the words of the teacher. TPR is very useful to teach classroom language and other vocabulary connected with actions.

assessment, as well as of the theoretical and methodological framework. The following years, from 1989 to 1992, saw the experimental phase in around 500 classes of the third, fourth and fifth grades of elementary school, within 300 school districts in Veneto (Daloiso, 2009). The tenets of the project were as follows (Daloiso, 2009: 23):

- Introduction of the L2 as a curricular subject from grade 3, and taught by the specialist teacher.
- Definition of the new professional figure of the L2 teacher (the specialist teacher), of the required skills to be qualified as such, and of the educational courses to be attended to be qualified as such.
- Definition of the different skills required in each grade, i.e., third, fourth and fifth, and an emphasis on the ability to relate communicative competence skills with the ability to distinguish between various communicative events and genres.
- Use of the notional-functional approach in the elaboration of the syllabus, and an emphasis on both linguistic and educational goals.
- Introduction of the Teaching Unit[7] (cf. 7.1.7.4) as a guideline for teachers, but possibility to employ the most appropriate materials chosen by teachers themselves.
- Use of precise and objective assessment materials.

This project, like the one that preceded it, presented some drawbacks (e.g., the ambivalent results of the final assessment; the gap between foreseen results and achieved results), yet, it represented a significant contribution to the definition of some crucial guidelines, such as the stable introduction of an L2 in the elementary school curriculum, and the definition of the role of the specialist teacher. Furthermore, the

[7] The Teaching Unit has its theoretical foundation on the Gestalt theory of the 1930s, and views the process of language learning as based on three different phases, i.e., global perception, analysis, and synthesis (Balboni, 2002).

project led to the publication of a large number of scientific studies on the subject (Daloiso, 2009).

1.4 Foreign Languages in Italian Early Education: The Third Historical Phase

The second half of the 1990s in Italy saw the emergence of new educational needs, such as the phenomenon of globalization, the emergence of multicultural societies in Italy, and the linguistic and educational policy undertaken by the European Union. This gradually led to projects aimed at introducing the L2 in the preschool setting, in addition to the elementary setting. Despite this new interest in the subject, however, some crucial issues remained to be solved, such as the lack of well-planned and controlled early language teaching methods and methodologies, or the professional training of preschool educators in charge of teaching the L2 (Daloiso, 2009).

1.4.1 *Hocus and Lotus*

An important study in the area of teaching/learning English as an L1 and L2 was carried out at the end of the 1980s by Traute Taeschner. She first elaborated a theoretical methodology derived from first language acquisition, and later experimented it in a classroom of English as a foreign language (EFL) in an elementary school in Rome over a period of three years (Taeschner, 1986). This experience led to the elaboration of an important project called *Hocus and Lotus* (Taeschner, 1992) based on the 'narrative *format*' (Daloiso, 2009) and experimented in hundreds of preschool sections nationwide. The project also included the training of preschool educators.

The most important tenet of Taeschner's theoretical framework is that routinized actions are critical in order for children to be motivated to communicate with adults, and create an affective relationship, not only when learning their L1, but also when learning an L2. Bruner's notion of *format* was thus taken by Taeschner as a starting point and applied to the field of early foreign language methodology. She especially included *formats* within a narrative educational context. This narrative *format* consisted in the repetition of oral narrative events (stories and fairy tales) in English, which were then

turned into dramatizations or role plays (Daloiso, 2009). The project seemed to be successful at first: all L2 educators improved their language skills, and most preschool learners (68%) acquired more than 100 English words. Yet, as stressed by Daloiso (2009), the emphasis was mainly on vocabulary, to the detriment of the phonological and morphological systems, as well as on the guided reproduction of speech forms, rather than on spontaneous production.

1.4.2 *Progetto Lingue 2000*

One additional project was proposed at the beginning of the new millennium: the *Progetto Lingue 2000* (*Language Project 2000*), whose aim was to contribute to renewing foreign language educational practices in every school grade and system, from the preschool to the secondary education level. With reference to preschools, this project was meant to carry out a survey of the experimental projects carried out in such setting up to that time. Thirty-six preschools were found to have started experimental projects for introducing an L2. This showed evidence of the growing interest in the field of ELTM. The *Progetto Lingue 2000* also made it possible for another 150 language projects to be experimented with a total of 30,000 preschool children. These implementations were mainly aimed at making children gradually aware of the existence of an L2, within a meaningful learning context focused on daily expressions useful to satisfy young learners' concrete needs. Additional goals included the achievement of a communicative competence at the beginner level, i.e., the A1 level of the Common European Framework, as well as the development of extra-linguistic skills preparatory to the achievement of a communicative competence at that level (Daloiso, 2009). After an analysis of the results, the impression is that this project generally had more drawbacks than advantages (e.g., the projects experimented in the schools could not be defined as empirical, due to the lack of data collection and comparison of data). Nonetheless, this project greatly contributed to the introduction of an L2 in Italian preschools (Daloiso, 2009).

1.4.3 *LESI*

The *LESI* (*Lingue Europee nella Scuola dell'Infanzia, European Languages in Preschools*) project represented a very important experimentation at the regional level. It was promoted and carried out by the network of preschools in the province of Trento, and experimented in three schools between 1998 and 2001. It is still carried out in the region of Trentino Alto Adige. The small number of schools involved allowed the project to be conducted under the most rigorous cooperation and control. The L2 was introduced with short lessons of approximately 30 to 40 minutes, every day or every two days. The L2 was tentatively employed during regular school routines as well. The main results of the project can be summarized as follows (Balboni, Coonan, & Ricci Garotti, 2001; Daloiso, 2009):

- The introduction of two foreign languages (i.e., German and English) in preschools following the path of acquisition of an L1 was especially effective for the German language, and less effective for the English language, due to the lack of continuity between the preschool and elementary school syllabus.
- The L2 was made to be regular part of the preschool educational context, and was positively felt as such by learners, educators and parents.
- Despite some issues with the data collection and the analysis of the relation between early language acquisition and overall learners' development, the project was the first to make use of a solid experimental system, based on the affective-humanistic approach and the playful methodology (cf. 7.1.6; 7.1.6.2).

1.4.4 *LiReMar*

One additional project of action-research, experimentation and teacher training, *LiReMar* (*Lingua Inglese in Rete nelle Marche, The English Network in the Marche Region*), was conducted in some preschools in the Marche Region, and was particularly supported by F. Sisti, Professor of Language Teaching Methodology at the University of Urbino. The main tenets of the project were new technologies (as referred the training of language

teachers, the sharing of school practices and educational counseling), and the introduction of English as an L2 at an early age. The need to find a solution to the restrictions imposed by the preschool setting (limited time of exposition to the L2, lack of a 'natural' integrative and instrumental motivation in children exposed to an L2) led to a first use of the narrative *format*, which, being based on constant and rigid repetitions, slowly became tedious for children. This is why some break phases were introduced, where learners could re-employ the acquired language forms through games, riddles, communicative activities, and so forth. The project gradually became more autonomous in the choice of its teaching materials, by abandoning the *Hocus and Lotus* materials and by creating some new ones (e.g., *Puck&Co.*), where teachers could have a chance to develop their stories autonomously (Daloiso, 2009).

1.4.5 *Inglese Dinamico*

This is an interesting program that was conducted in some daycares (ages 2-3), preschools (ages 4-5) and elementary schools (ages 6-7) in Venice during the scholastic year 2005/2006. It cannot be defined as an experimentation though, due to the paucity of experts involved and the lack of a carefully planned collection and analysis of data. Having been actively involved in the project in the role of language facilitator, the author of this thesis is able to present some of its innovative features, as well as some of its drawbacks. *Inglese Dinamico* (*Dynamic English*) was designed by N. R. Steinbock, who in 2003 relocated to Venice to begin a program to develop new teaching practices for early English language teaching based upon the approach she had developed as a speech-language pathologist and a language-learning specialist in the U.S. for many years. Her approach and methodological choices were mainly derived from research studies on reading and reading disabilities (for a review of studies, see Adams, 1990; Catts & Kamhi, 2005), which stress the importance of mastering the phonological system of a language as an essential basis for both speech production and literacy acquisition. This program was first informally experimented in one single preschool in Venice, and one year later received funding to be experimented in some pilot-schools in Venice, i.e.,

two daycares, two preschools and two elementary schools. The program was run in small group interaction, i.e., one language facilitator to approximately four children, who met two times per week for one hour in preschools and elementary schools, and two times a week for half an hour in daycares, during a cycle of eight sessions. The team of language facilitators was mainly composed of TLM graduates from Ca' Foscari University, as well as a number of experienced Italian/English bilingual teachers (Steinbock & Costenaro, 2005). The approach of this program focuses on the importance of a strong phonological basis as a fundamental basis for being able to code and produce English forms in a natural and solid way. It makes use of an interactive and dynamic methodology, aimed at developing the phonological, lexical and grammatical knowledge that is embedded in the language used during play and book sharing activities (Costenaro, 2006; Steinbock & Costenaro, 2005). All the facilitators that joined the program were trained in weekly training sessions during the summer of 2005. Training sessions were considered crucial, as one of the key points of *Inglese Dinamico* is that the L2 is transmitted through the facilitators' enhanced awareness of the phonological foundation necessary for speech production. This is why the focus of the training workshop was, for instance, on the awareness of the articulatory movements associated with specific sounds (e.g., lip retraction for short /i/), on the prosodic patterns associated with English, as well as on the importance of working on accent reduction in one's speech forms, when not native speakers of English (Costenaro, 2006; Steinbock, & Costenaro, 2005).

One of the most interesting aspects of the program is that, in any educational context, from daycares to elementary schools, children were encouraged to produce age-appropriate and context-appropriate English forms from the outset. Facilitators were constantly engaged in monitoring children's production, giving a feedback to children, and encouraging their production, in a 'risk-free' manner (e.g., through enthusiastic responses and interjections), and also through a kinesthetic strategy such as engaging learners' eye-contact for additional visual information regarding their speech production (Costenaro, 2006; Steinbok & Costenaro, 2005). One of the main drawbacks

of this project was that data collection was not carefully planned and homogeneously and systematically conducted throughout the school year. Some data were mainly collected through classroom observation, videotaping and diaries. Additionally, the program did not make use of a well-planned, fixed syllabus in the L2 that would function as a guideline for language facilitators. The overall results, though, were significant. Not only was the majority of children (approximately 80%) able to produce some age-appropriate speech forms embedded in the contexts of use (e.g. greeting forms such as *Hi*, presentations forms, such as *I am Mattia*, play language, such as *My turn*), but they developed an enthusiastic and positive disposition towards the L2, as well as a growing ability to learn, remember and re-employ new speech forms. What is innovative in this program is the attempt to put an emphasis on the development of phonological skills, in addition to the development of more traditional aspects of study such as vocabulary and morpho-syntax.

1.4.6 *Progetto Infanzia*

The *Progetto Infanzia* (*Infancy Project*) represents one of the most recent L2 experimentations carried out at the preschool level. It was conducted in the school year 2007/2008 in seven pilot- preschools in Venice, under the scientific supervision of a team of language teaching methodology experts from Ca' Foscari University, and led by Professor C.M. Coonan. The project, expressly solicited by the Council for Educational Policies, was meant to train preschool educators in order to be able to introduce the English language in their educational practices, to verify the affective and emotional effect of those practices on children, as well as to integrate those practices in the overall context of children's daily routines. After verifying the insufficient L2 skills possessed by the preschool educators involved, the project leaders decided to ask for the collaboration of external experts, i.e., interns graduated in English as a Foreign Language. Furthermore, they designed a training workshop for interns and educators, in order to supply them with the appropriate tools to elaborate, carry out and manage L2 activities and strategies within a preschool context. A first 3-month preliminary

experimentation was conducted in order to verify if the project had a positive impact on children. During that time, the team of experts went into preschools and constantly monitored the work being done, was constantly in touch with the teachers involved in the project, and regularly met to discuss issues and results. Due to its effectiveness, the project was confirmed for the school year 2008/2009 as well. One of the main goals now is to gradually remove the figure of the intern and let preschool educators work autonomously, as well as introduce the English language steadily in the syllabus of the seven pilot-preschools. Furthermore, the team of experts conducted and is presently conducting a training course to develop educators' skills in English as a foreign language in general, as well as in those skills that are crucial to conduct activities in English in a preschool setting (Daloiso, 2009).

1.4.7 Italian as an L2 in Italian Preschools

As refers the Italian language being learned in Italy by immigrant children whose L1 is not Italian, an action-research project worth mentioning was designed and carried out by G. Pallotti and G. Favaro, in collaboration with the association *La Casa di tutti i Colori* of Milan. This project was experimented in one preschool in Milan during the scholastic year 2007/2008, and it involved two groups of children: one experimental group made of 18 5-year-old immigrant children, and a control[8] group made of 18 5-year-old[9] Italian-speaking children. The project included (Favaro, 2010, personal communication):

- The first year: a phase of direct observation of and research on the speech production in Italian of the group of immigrant children.

[8] 'Control group' is normally employed in the field of medicine to refer to the group of individuals, involved in a medical experimentation, who do not receive the treatment, in order to determine the effectiveness of the treatment being tested. The 'treatment group,' on the other hand, receives the treatment.

[9] In the U.S., a project carried out with 5-year-old children would be considered a 'kindergarten project,' and not a 'preschool project.' In the U.S., kindergarten refers to education for 5-year-olds, whereas preschool (or 'Pre-K') refers to earlier age-group education. In Italy, however, there is no distinction between preschool and kindergarten.

- The second year: the creation of language workshops addressed to both immigrant children and Italian-speaking children, where narrative skills where especially fostered. These workshops were aimed at both fostering the development of Italian as an L2, and highlighting the fundamental role played by immigrant children's L1s.
- At the same time, the preschool educators involved in the project received a training course on topics such as *interlingua*[10], the methods of observation of children's language development and acquisition, and the operative procedures that could most effectively foster children's language development.

This project was especially intended to help educators become aware of their learners' learning process, improvements and difficulties, so as to be eventually able to plan and design appropriate and effective learning activities for their classes. Furthermore, this experience, as well as the knowledge and skills acquired and the methodologies learned by preschool educators, were intended to be shared and spread among the wider preschool teaching community, in an attempt to create more effective intervention programs for children learning Italian as an L2. All the materials about this project are currently in course of printing.

1.4.8 Additional Projects Promoted by *IRRE*

2001 saw the establishment of a work team of representatives from ten Italian *IRRE* (*Istituti Regionali di Ricerca Educativa, Regional Institutes for Educational Research*), in order to discuss issues related to the field of early language teaching methodology. The main goal was to define the guidelines for designing a continuous syllabus between preschools and elementary schools. The various representatives shared the results of the local experimentations being conducted in their Regions (Daloiso, 2009: 35):

10 'Interlingua' is a 'personal' language system, which has its specific rules, and is used by an individual learning a second language, before mastering that language (Pallotti, 1998).

- *APPLE* (*Apprendimento Precoce Lingue Straniere, Early Foreign Language Acquisition*), coordinated by the Lombardia *IRRE*. Its main goal was to encourage research on applied linguistics, as well as to document projects and experimentations conducted in various Italian preschools, focusing on both teaching/learning an L2 and training language teachers.
- *LiReMar,* coordinated by the Marche *IRRE*, already presented above (cf. 1.4.4).
- Several operative procedures aimed at fostering the introduction of an L2 in preschools, coordinated by various *IRRE*. In particular, in 2003 the Piemonte *IRRE* coordinated a project that led to the elaboration of a vertical L2 syllabus between preschools and elementary schools, being currently experimented in 40 schools.

Nowadays, the interest in introducing an L2 from an early age is significantly growing, due to some crucial factors (Daloiso, 2009: 9):

- Teaching an L2 to children is beginning to assume a strategic political value for the European Union. In fact, knowing European languages is viewed as an essential prerequisite to be fully recognized as European citizens.
- The new social model that is prevailing today is a multicultural model, based on plurilinguism. This consequently leads to the importance attributed to foreign language learning/teaching from an early age.
- In 2003 the Department for Education of the Italian State established that an L2 could be introduced already at the first grade of elementary schools.
- Generally speaking, teachers and parents have changed their attitude towards bilingualism and are now curious and enthusiastic about it, and willing to know more.

- Additional procedures of L2 introduction are being experimented in some Italian preschools, although they usually rely more on teachers' willingness rather than on solid theoretical and methodological foundations.

It is within this socio-historical context that the research on ELTM is presently engaged in facing new challenges in order to answer new contemporary issues and exigencies.

1.5 The L2 in Italian Preschools: Some Issues and Considerations

The present paragraph presents some issues that can be said to still inform the educational setting of early language teaching and learning.

1.5.1 The Scientific Foundation of ELTM Activities

First of all, during the past 10 years, the attempts to introduce an L2 in preschools made by several agents, e.g., single schools, universities, research institutions, both at the local and national level, did not seem to rely on a solid scientific approach and methodology, so that they resulted in spontaneous, unstructured early language teaching programs rather than structured experimentations. Additionally, most programs often neglected to take into account research studies on early language acquisition in general, and therefore resulted in being unrelated to the actual debate within the ELTM field (Daloiso, 2009).

In the present study, on the contrary, all the ELTM activities proposed to be experimented in preschools (cf. 9; 10) are scientifically grounded and drawn from evidence-based studies. In particular, the operative procedures here proposed rely on scientific research conducted in the field of reading and reading disabilities (for a review of studies, see Adams, 1990). In general, the findings in this field of research have shown that the knowledge of the phonological system of a language is a foundational basis for speech/language acquisition, and that phonological awareness in an alphabetic

language, as an essential component of the decoding process[11] in reading that language (cf. 3.2), is one of the emergent literacy skills (cf. 4.1) positively associated with later reading development (cf. 4). In this light, phonological awareness development in an alphabetic L2 (e.g., English), as well as a focus on the L2 phonological system, within a preschool setting, may represent an essential prerequisite not only for the development of oral skills in the L2, but also for later reading acquisition in the L2. This is further supported by research studies (e.g. August & Hakuta, 1997; Durgunoglu, Nagy, & Hancin-Bhatt, 1993; Gottardo, 2001) showing that phonological awareness skills can positively transfer across an alphabetic L1 and an alphabetic L2 (cf. 6.4). The most significant findings on these topics are discussed in the following chapters.

1.5.2 The Role of Phonology and Phonological Awareness in Italian Projects

The relevance of the development of an L2 phonological system as well as of L2 phonological awareness skills in preschool children does not seem to be explicitly tackled or function as a theoretical support in the procedures experimented to introduce an L2 in Italian preschools during the last 10 years. Most projects relied on a playful methodology (cf. 7.1.6.2), and often made use of teaching activities that were in fact aimed at developing children's oral language skills (and thus phonological skills). The *LESI* Project and *Hocus and Lotus*, for instance, employed useful techniques and activities such as dramatization, Total Physical Response, songs, nursery rhymes, riddles, fairy tales, and mini-musicals (Balboni, Coonan, & Ricci Garotti, 2001; Taeschner, 1997). Yet, the activities proposed were never related to the importance of fostering phonological awareness skills at an early age, and most often the theoretical foundation for choosing these activities seemed to be restricted to the notion of 'meaningful methodology,' i.e., choosing activities that were significant for young learners and their experiential world, activities they knew well as they were experiencing them in their daily lives. One additional theoretical key point in the projects was the use of a multisensory approach,

[11] 'Decoding' includes word recognition processes which turn printed words into spoken words (cf. 3.2) (Catts & Kamhi, 2005).

where the activities employed allowed learners to experience the L2 globally, i.e., with all their senses (Ricci Garotti, 2001). Most of the times, the impression is that the real focus on acquisition was knowing vocabulary and language functions (e.g., in the *LESI* Project, see the tables of the language functions to be acquired, Ricci Garotti, 2001: 34, and of the vocabulary domains to be acquired, Ricci Garotti, 2001: 35-36), rather than fostering the development of the phonological system of the L2. Within the *LESI* Project, Coonan (2001) only referred to the phonological aspect of the L2 in relation to the input employed by the teacher. When discussing the features of the language variety of *motherese* (Ellis, 1984) or *teacher talk* (Ellis, 1985) in the preschool setting, Coonan (2001) indeed presented phonological traits such as a reduced speed of speech, an exaggerated intonation, and longer pauses. Yet, the main aim of this focus on the phonological aspect of the L2 was to make the language more comprehensible to learners (Coonan, 2001). No reference was made to the key points discussed above, i.e., the importance of knowing the phonological system of a language and of phonological awareness skills as a foundational basis for speech/language acquisition and later literacy acquisition. The only program that seems to have put an emphasis on the phonological aspect of the L2 within a preschool environment is *Inglese Dinamico*. However, as discussed above, the program presents some other issues (e.g., syllabus design and data collection) that should be tackled if there were to be a possibility of experimenting it again.

Furthermore, the importance of fostering phonological skills when introducing learners to an L2 is related to the crucial issue of intelligibility. The main goal of having an appropriate pronunciation is not to sound like a native-speaker of the L2, rather to allow for communication to be successful when interacting with other speakers. Success in communication exchanges, both in an L1 and an L2, is strictly associated with language phenomena that have not been extensively studies yet, such as segment (e.g., phone or phoneme) pronunciation, and intonation (Zanola, 1999a; 1999b). An unclear pronunciation often requires a high attention level on the part of the listener, thus making it harder to follow the speaker, and in the end making the communication exchange unsuccessful (Busà, 1995). Within the academic context, some significant work

on phonetics and pronunciation in several languages has been carried out by Canepari (2007), who developed the so-called canIPA Natural Phonetics. This is a method that aims at helping learners achieve appropriate phonetic and pronunciation skills, in any language, through a 'natural' awareness of sounds, e.g., by becoming aware of the articulatory movements required to pronounce sounds. Phonetics is thus somehow viewed as an act of 'reflection,' an analysis of linguistic sounds and suprasegmental features that learners can do by themselves. Phonemes, according to Canepari, may become 'toys' in the hands of learners to play with and have fun while learning a language. Methodologically, especially at the elementary level, Simionato (2004) suggested that this method would for instance include instructional techniques where children are guided to 'represent' sounds through their body, as in the following examples (Simionato, 2004):

- Children pronounce phonemes while looking at themselves in a hand mirror, and express the various stages of phonemic production, e.g., "*I can see my teeth, my mouth is rounded.*"
- Children 'kiss' a piece of paper while articulating a certain phoneme, to which they will later associate the corresponding grapheme or a common object beginning with that sound.
- When in the school gym, children represent the 'shape' of sounds with their body, e.g., the phoneme /θ/ can be represented with a group of children standing in an 'egg—shaped' circle, and another group standing in a line that 'cuts' the circle in half.

1.5.3 The Role of Phonology and Phonological Awareness in the Preschool Syllabus

With reference to the L2 syllabus, in his work on the role of the L2 in the Italian preschool setting, Daloiso (2009) stresses the importance to know and follow the nationwide guidelines for the preschool syllabus in the L1 issued by the Italian Department for Education in 2007, in order to promote a harmonious introduction of the

L2 at the preschool level. Here below is what the guidelines report in relation to the L2 (MPI, 2007, translation ours):

"[…] children can efficiently acquire an L2, provided that the context is meaningful for them, and that acquisition takes place naturally, is inserted in the daily educational setting and becomes an opportunity to reflect and discuss about the L2."

Concretely, this means that the L2 syllabus should be designed and adapted in order to follow the guidelines of the L1 syllabus, i.e., the Italian syllabus. Yet, although the section 'Discourse and words' of the guidelines of the Italian syllabus indicates as preschool children's goals the ability to learn to communicate verbally, interact and dialogue, reflect on their L1 and be introduced to the written language, there are no explicit references to the importance of developing the phonological system and phonological awareness skills in the L1. The research conducted on the topic in the Italian language, however, highlights the relevance of phonological awareness skills in the acquisition of later reading skills (e.g., Cossu *et al.*, 1988; Pinto, 1992, 1993). The phonological aspect of the language that is stressed in the guidelines is only what children are expected to have already acquired in their L1, i.e., its intonation and rhythms (MPI, 2007). There is an explicit reference to being generally aware of one's L1 (MPI, 2007), as one of the goals within the experiential domain of 'discourse and words.' However, the lack of reference to the importance of developing phonological awareness skills in the Italian language might be related to the recognition of Italian as a mainly 'transparent' language[12] (cf. 6.3.3.3), where the decoding process in reading comes quite easily in children, as the correspondences between graphemes and phonemes are mostly regular. On the other hand, the English language is distinguished by more irregular letter-sound correspondences (cf. 6.3.2; 6.3.3.3), which may be the reason why in the preschool syllabus of most American States (e.g., New York, North Dakota, Texas), for

[12] Transparent orthographies are those where sound-symbol relations are highly consistent (e.g., Italian, German, Turkish).

instance, there is a strong emphasis on the development of phonological awareness skills in relation to the reading and writing process. Furthermore, the emphasis on the development of phonological awareness skills in English as an L1 may be associated with the growing number of dyslexic children (i.e., children having difficulty in acquiring efficient reading skills) in varied English-speaking educational settings, as will be discussed in more detail later on in the present study (cf. 2.5). What is interesting mentioning here, is that within Italian educational preschool settings, the development of children's phonological awareness skills seems to become an explicit focus in the syllabus only in relation to the issue of dyslexia (e.g., in training programs on dyslexic children offered to teachers of any school grade and system by the Italian Association for Dyslexia).

Within a context of learning/teaching English as an L2, on the other hand, the latest research on ELTM (e.g., Daloiso, 2007, 2009) indeed indicates among the main linguistic goals of ELTM the ability to discriminate and reproduce the phonological system of the L2. Yet, there is no explicit reference to phonological awareness skills, and how the ability to discriminate sounds can be positively correlated to later reading acquisition. Additionally, the following linguistic activities drawn from the playful methodology (cf. 7.1.6.2) (Caon & Rutka, 2004; Caon, 2006, Freddi, 1990b) are suggested to be inserted in the L2 syllabus of Italian preschools (Daloiso 2007, 2009):

- *Functional games*: repetitions; linguistic compositions and decompositions; word assemblage puzzles; set theory games (e.g., comprehending exclusion, inclusion, and sequence games).
- *Symbolic games*: expressive, rhythmical and musical activities; nursery rhymes; trans-codification exercises; mnemonic games; dramatization; simulation; role-play.
- *Regulatory games* (only with older children): schematic games (*Snakes and Ladders*, *Bingo, Naval Battles*, *Three Cards of a Kind*, associated with language exercises);

outdoor games (*Hide-and-seek*, *Blind-man*, *Grab the Handkerchief*, associated with language exercises).

Yet, in order to support the adoption of the above activities, there is no reference, for instance, to empirical research (e.g., Bryant *et al*., 1989; Treiman, 1992) focused on the positive relationship between nursery rhymes and the development of phonological awareness skills. Bearing in mind the above considerations, as well as the experimental studies of positive transfer of phonological awareness skills from L1 to L2 (e.g. August & Hakuta, 1997; Durgunoglu, Nagy, & Hancin-Bhatt, 1993; Gottardo, 2001, 2002), the present study suggests that this aspect should not be neglected neither in an L1 nor in an L2 syllabus.

As a summary of what discussed above, here is a list of those aspects that seem to be presently neglected in the field of ELTM, and that represent instead the scientific basis for the present discussion and for the ELTM activities and games that are proposed in this study (cf. Chapter 9 and Chapter 10):

- There is no reference to scientifically grounded studies drawn from empirical research on reading and reading disabilities (for a review of studies, see Adams, 1990), to be potentially included in the theoretical framework of ELTM.
- There is no explicit emphasis on the phonological system of an L2, as a foundational basis for speech/language production, for developing appropriate language oral skills and conversational skills, as well as interpersonal intelligibility. The phonological system of the L2 is generally neglected, in the hope or conviction that children will spontaneously acquire appropriate phonological skills simply by having the L2 teacher as a 'speech model' (and regardless of the quality of the teacher's input in the L2).

- There is no explicit emphasis on the importance of developing phonological awareness skills in an L1, as an essential prerequisite to later reading and writing acquisition (for a review of studies, see Adams, 1990).
- There is no direct reference to empirical research studies (e.g. August & Hakuta, 1997; Durgunoglu, Nagy, & Hancin-Bhatt, 1993; Gottardo, 2001) on how phonological awareness skills developed in an alphabetic L1 can transfer to an alphabetic L2 and facilitate later literacy acquisition both in the L1 and the L2.

Furthermore, there are currently other issues within the early language teaching setting, which may be somehow related to the issues examined above. These are discussed in the following paragraphs, although not in detail, and should not be neglected in the overall context of ELTM and its current challenges.

1.5.4 The Preschool Educator[13] and the L2

Within a communicative educational framework, preschool educators in charge of introducing the L2 should be able to foster the development of children's linguistic and communicative skills, as well as to contribute to the overall children's growth and instruction. This practically means that educators should be able to constantly relate the activities in the L2 to other areas of children's development. They should be also able to propose gradual paths of language acquisition, with reference to both linguistic and educational goals within the syllabus. Educators should thus possess appropriate skills at several levels: the strictly linguistic level (appropriate knowledge of the L2), the methodological level, and the pedagogic level. The question of educators' training represented a crucial issue in all the experimental projects that were conducted in the last 10 years and that were reviewed in the previous paragraphs. All these projects in fact showed that the number of qualified educators was rather small, especially as far as language skills in the L2 were concerned. Within the elementary setting, the issue of

[13] In the present study the word 'educator' will be preferred to 'teacher' when referring to the staff working with preschool children in Italy.

improving teachers' language skills in an L2 has been debated in Italy for several years. With reference to the English language, the latest document issued (*Prosecuzione del Piano di formazione per lo sviluppo delle competenze linguistico-comunicative e metodologico-didattiche in lingua inglese degli insegnanti di scuola primaria*, 2010) introduces a 3-year training program addressed to 5,000 in-service elementary school teachers in Italy. It establishes that an initial number of 2,000 in-service teachers who possess at least some knowledge of English at the A1 level of the Common European Framework of Reference will follow a 50-hour blended course aimed at making them achieve a B1 level. After this course, these teachers will be qualified to teach English in first and secondary grades of elementary schools (*Prosecuzione del Piano di formazione per lo sviluppo delle competenze linguistico-comunicative e metodologico-didattiche in lingua inglese degli insegnanti di scuola primaria*, 2010). The question remains whether 50 hours (half of which are long-distance self-learning) focused on both improving skills in the English language and on language teaching methodology will be sufficient to be able to teach appropriate English and teach it appropriately to young learners. A tentative solution to this crucial issue could come from an intervention of competent institutions. As suggested by current research on ELTM (e.g., Daloiso, 2009), competent institutions could support a policy of early training already with those students that are studying to become elementary school teachers, i.e. students attending the Italian Faculties of Elementary Educational Sciences. As refers preschools, being the L2 not officially recognized as a compulsory subject in the syllabus, nowadays only little attention is being 'officially' paid to the language and methodological training of preschool educators.

1.5.5 The Input in L2

This issue is closely associated with the training of teachers and preschool educators previously discussed. As proposed in the previous discussion, within a preschool setting there should be more explicit emphasis on children's development of the phonological system and phonological awareness skills in the L2. In order to do so, more attention should be devoted by educators to both the *quantity* and the *quality* of the

L2 input. With reference to the 'quantity,' exposition of learners to the L2 should not be restrained to short games and activities, but supported within the overall educational setting and daily communicative events and activities (cf. 7.1.5). As research shows that inferential and mnemonic skills are already developed in preschool children (cf. 7.1.7.2), educators should not be afraid of exposing children to the L2 as often as they can. In addition, educators should make sure that the exposition to the input is frequent, redundant, active and interactive, so that children can be facilitated in the memorization, elaboration, internalization and re-use of the input (Daloiso, 2009). The 'quality' of the input should also be taken care of: it is commonly believed within the preschool context that it is not necessary to have excellent skills in an L2 in order to teach it to young learners. Yet, as the activation of implicit memory mechanisms in children tents to create automated language habits that are hard to be modified (cf. 7.1.7.2), the speech/phonological model used by educators when speaking the L2 should be as correct and appropriate as possible. Educators should not only be aware of this aspect, but also constantly try to work on accent reduction by means of tools such as videotapes, DVDs, CD-roms, tapes in the L2 (Daloiso, 2009; Steinbock & Costenaro, 2005).

It is within the general field of ELTM, and the particular setting of Italian preschools (ages 3-6), that the ELTM activities and games proposed in this study (cf. Chapter 9 and Chapter 10) are inserted, in an attempt to carry on, improve and implement the work already done and that is being done in preschools to sustain the introduction of an L2. In particular, this proposal refers to the English language, due to the critical role played by this language in today's societies (Santipolo, 2006). Despite all issues to be solved in Italian educational environments, it is generally acknowledged that there exists a global need and challenge for teaching EFL to young learners today, and to do it appropriately. Yet, as underlined by the European Commission in 2007 (http://ec.europa.eu/education/policies/lang/key/foreign_en.html):

"[…] an early start doesn't itself guarantee better results than a later one. For success to be possible, certain conditions in terms both of pedagogy and of resources must be created."

The key words in the European Commission's consideration above seem to be *pedagogy* and *resources*. Likewise, one of the main goals of this study can be said to be related to both pedagogy and resources, namely, support and propose the use of a set of new scientifically grounded operative practices (*resources*) in the introduction of English as a Foreign Language in Italian preschools (*pedagogy*), or support the use of already existing practices, but include them within a broader evidence-based framework (cf. Chapter 7 and Chapter 8).

Chapter 2

Phonological Awareness Skills and Development

> […] the mere fact that a child understands what is said to him tells us little about what speech segments he perceives.
> (Savin, 1972)

2.1 Phonological Awareness

In this study, phonological awareness is investigated within the framework of literacy acquisition, with particular reference to reading and spelling development. It is universally acknowledged that the main purpose of literacy is comprehension of ideas expressed through a written medium. If the meaning of a text is not accessed, there is little value in being able to decode (recognize) written sentences or write well-formed letters in a sentence. Becoming a competent reader and writer in a language represents a complex and 'unnatural' process (not as natural as learning to speak, for instance). Simply being surrounded by good models of written text will not ensure the development of literacy skills. The interrelation and integration of a wide variety of domains of knowledge and skills, both decoding skills (i.e., the ability to recognize individual words in print, and more specifically the ability to match a printed word to its underlying mental representation, to translate written symbols into sounds) and spelling skills (i.e., the ability to spell words utilizing conventions that can be deciphered by the reader), are central to the process of literacy acquisition. It is within this context of word recognition and spelling development that the role of phonological awareness and its relation to reading and writing has been analyzed and recognized (Gillon, 2004).

The role of phonological awareness has been systematically investigated in relation to early literacy acquisition since the early 1970s (e.g., for a review of these studies, see Adams, 1990; Blachman, 1997; Brady & Shankweiler, 1991; Bryant & Goswami, 1987; Goswami & Bryant, 1990; Liberman & Shankweiler, 1977; Liberman *et al.*, 1980; Rieben &

Perfetti, 1991; Shankweiler & Liberman, 1989; Share, 1995; Shaywitz, 1996; Stanovich, 1988, 1992; Wagner & Torgesen, 1987). A vast body of research employing different methodologies and conducted in a variety of alphabetic languages has convincingly demonstrated that a powerful relationship exists between phonological awareness and literacy development. Indeed, a child's knowledge of phonological awareness has been described as the best single predictor of reading performance (Lundberg, Olofsson, & Wall, 1980). The findings of this investigation have been defined as 'a scientific success story' (Stanovich, 1987). This enthusiastic reaction is clearly associated not only with the findings from the general field of research in language acquisition, but in particular with the findings from research in reading disabilities. As explained by Stanovich (1991: 22),

"One exciting outcome of research in reading […] is that researchers have isolated a process that is a major determinant of the early acquisition of reading skills and one of the keys to the prevention of reading disability."

Phonological awareness is often discussed in texts amid related concepts such as 'phonology,' 'phoneme awareness,' 'phonological processing,' and 'metalinguistics.' The following paragraphs seek to define the notion of phonological awareness, as well as to clarify the relation between phonological awareness and interrelated terminologies.

2.1.1 Defining Phonological Awareness

The term 'phonological awareness' started appearing in the research literature (e.g., Bradley & Bryant, 1983; Marcel, 1980; Tunmer & Fletcher, 1981; Zifcak, 1981) in the late 1970s and early 1980s Phonological awareness refers to an individual's awareness of the sound structure, or phonological structure, of an alphabetic language (Gillon, 2004), or as explained by Blachman (1994: 253): "Simply stated, phonological awareness is an awareness of, and the ability to manipulate, the phonological segments represented in an alphabetic orthography." In particular, phonological awareness refers to the ability to detect, manipulate or analyze the auditory segments of spoken language, as well as to

the ability to distinguish or segment words, syllables, or phonemes. Virtually, most 3- or 4-year-old children whose L1 has an alphabetic orthography understands a simple spoken work like *cat*. Yet, if we ask them about the sounds in that word, i.e. how many sounds there are in the word *cat*, or to discriminate between the words *cat* and *bat*, or to pronounce the word *cat* without the first sound, children of this age will find it hard to answer these questions. Normally, most children of this age would not be able to tell us autonomously what the middle sound in the word *cat* is, or how that word ends. When children learn to talk, they are naturally interested in the meaning of the words that they speak and hear. It is of no interest to them the fact that these same words can be analyzed differently, i.e., that each of them is made up of a unique string of identifiable sounds (Goswami & Bryant, 1990).

According to Torgesen, Al Otaiba and Grek (2005), phonological awareness is both a conceptual understanding about language, and a proper skill. On the one hand, the term undoubtedly implies a kind of understanding or conscious attention that, for instance, a word is composed of a series of individual components of sounds. However, this awareness also functions as a proper skill, which means that with time, children become more and more capable of reflecting on and manipulating single phonemes in words (Torgesen *et al.*, 2005). The term phonological awareness replaced earlier definitions such as 'phonetic analysis of spoken words' (Bruce, 1964), which referred to children's knowledge of words as comprised of smaller, discernible units (Gillon, 2004). Some scholars (e.g., Bowey 1994; Stanovich 1992) prefer to name phonological awareness 'phonological sensitivity,' in that they suppose that children may be able to perform phonological processor skills without a high degree of awareness. Phonological awareness has traditionally been associated with the reading process; indeed, the term derives from early research (Calfee, Lindamood, & Lindamood, 1973; Fox & Routh, 1975; Liberman, 1971; Liberman *et al*., 1974) showing that understanding the sound structure of a word would enable children to decode (or sound out) a word in print. Marcel (1980) was one of the first researchers to relate the term 'phonological awareness' to spelling, demonstrating that individuals with spelling disorders performed poorly on

phonological awareness tasks. Research studies investigating the importance of phonological awareness skills in relation to reading and spelling have grown rapidly and significantly during the 1990s, leading to the adoption of the term in the scientific literature and in education, speech-language pathology, and psychology clinical practices (Gillon, 2004).

2.1.2 Phonological Awareness and Language Awareness

For a learner of an L1 or an L2, language awareness refers to explicit knowledge about language, and conscious perception and sensitivity in language learning, as well as sensitivity to the forms and functions of language (Carter, 2003). The 'language awareness approach' has been developed in contexts of both second and foreign language learning, as well as in mother-tongue education. In the 1980s, this approach was mainly associated with a reaction to more prescriptive approaches, which were realized in narrowly formalistic methodologies, such as grammar translation, drills, and pattern practice. On the other hand, the language awareness movement also developed a similar impetus in reaction to the general neglect of language forms by more communicative approaches. More recently, the approach has evolved as to include attention to larger stretches of discourse, such as literary discourse (Carter, 2003). Language awareness has been strongly advocated as an essential component in teacher education as well (James & Garrett, 1992).

After having defined what phonological awareness is, and before analyzing its component elements, we propose to include phonological awareness into the broader field of language awareness. The introduction of an L2 to young learners can gradually make them aware of the general notion of language, make them become slowly sensitive to what a language consists of, and to the existence of other languages other than their L1. In this perspective, then, becoming gradually aware of the phonological system of a language, and being able to segment spoken words into smaller units, can be viewed as one specific goal for learners to acquire within the broader goal of language awareness acquisition.

2.1.3 Phonology

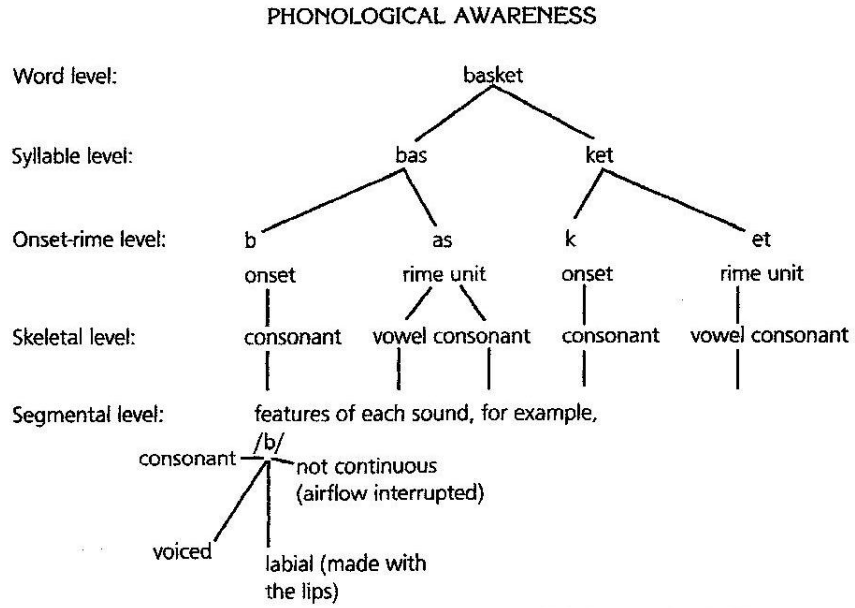
It is important to gain a perspective of phonological awareness within the broader context of phonology, as the notion of children's phonological awareness development in L1 cannot be separated from children's development of their L1 phonological system. Long before children become explicitly aware of the phonological structure of words, they have developed implicit phonological knowledge. This allows them to become able to speak and listen to their L1. For example, what is commonly referred to as 'phonological grammar'[14] enables children to make a judgment about whether a word belongs to their L1, to self-correct their speech errors, or to discriminate between acceptable and unacceptable variations of a spoken word (Yavas, 1998). For example, a child learning English as his/her L1 will naturally and gradually learn that the sound /ŋ/is always in syllable-final position as in *thing*, or that if a syllable-initial cluster has three elements, the first must be /s/, the second must be a voiceless stop, and the third must be a liquid or a glide (i.e., /l, r, w, j/), as in *string* (Edwards & Shriberg, 1983). On the other hand, a child acquiring Italian as his/her L1 will learn that the sequence /lt/ is permissible within a word (e.g., *salto*) but not at the beginning of a word, or that the letter /q/ is always followed by the semivowel /w/ and by the vowels *a*, *e*, *i*, or *o*, as in *quaderno* (Dardano & Trifone, 1989).

Phonology is the area of linguistics that focuses on understanding the speech-sound system and the sound pattern of spoken language (Gillon, 2004), as well as the rules that govern the distribution and sequencing of speech sound (Catts & Kamhi, 2005). Phonology includes (Catts & Kamhi, 2005: 2) "a description of what the sounds are, and their component features (phonetics) as well as the distributional rules that govern how

[14] 'Phonological grammar' refers to one of the types of grammar acquired during language acquisition. Phonological grammar is spontaneously and unconsciously acquired in the acquisition of an L1. As refers the acquisition of an L2, according to the model of communicative competence proposed by Balboni (2002), one of the skills that a learner of an L2 is expected to acquire is 'to know the L2.' This is viewed as the ability to use the various grammars (e.g., graphemic, lexical, textual) or set of rules of the L2, including phonological grammar.

the sounds can be used in various word positions, and the sequence rule that describe which sounds may be combined." As already remarked, distributional rules are different in different languages (e.g., in English the /ẑ/ sound in the word *measure* is never used in the initial position of a word, whereas in French it can, as in *jouer*). Phonology and the other areas of language, i.e., syntax, semantics, morphology, and pragmatics, are important to consider when investigating children who have written language disorders. Yet, phonology is the area that has received special attention in relation to early literacy development, because explicit awareness of the phonological structure of a word helps children draw connections between the spoken form of a word and its written representation. Understanding the phonological system of a child's language forms a basis from which to interpret phonological awareness development (Gillon, 2004). Several theories have been postulated as to how children acquire the phonological system of their environmental language. However, it is not the main aim of this study to present and discuss such variety of theories (for a review of phonological acquisition theories as well as models for describing disordered phonological systems, see Bernthal & Bankson, 1998). What in our opinion is worth mentioning here are some of the most recent theories (e.g., Bernhardt & Stoel-Gammon, 1994) which focus on the nonlinear or hierarchical nature of phonological form, rather than viewing the relationship between phonological units in words in a linear fashion. Understanding the phonological structure of a word in a hierarchical manner is useful in appreciating the concept that phonological awareness can be represented at distinct levels. Bernhardt and Stoel-Gammon, for instance, applied the non linear theory of phonology to children's phonological system. In doing so, the scholars explained that a word is (Bernhardt & Stoel-Gammon, 1994: 126) "composed of a number of progressively smaller units each with its own representational tier/level." Figure 2.1 below adapts Bernhardt and Stoel-Gammon's description (1994) of how a word can be subdivided in a hierarchical structure, and illustrates the various separate representational levels of the phonological structure of the word *basket*.

Figure 2.1 Representation of the phonological structure of the word *basket* (Adapted from Bernhardt and Stoel-Gammon, 1994: 127, in Gillon, 2004: 4)



In the example above, the word *basket* can be divided at the syllabic level into a strong or stressed syllable (*bas*) and a weak or unstressed syllable (*ket*). Each syllable can then be divided into an onset (*b*; *k*) and a rime unit (*as*; *et*). The rime is made of a vowel and any consonant sounds that comes after it. The onset is made of any consonant sounds that comes before the vowel sound (Treiman, 1992). The onset-rime unit can be further segmented into individual speech sounds or phonemes. The features of each phoneme (e.g., that /b/ is a voiced sound made by the lips closing together and interrupting the airflow) can also be represented hierarchically. Phonological awareness, as well as tasks used to measure phonological awareness skills, are consistent with this hierarchical structure of words (Gillon, 2004). The following paragraphs focus on how, just as a word can be described in terms of its syllable structure, onset-rime structure, and phoneme structure, so can phonological awareness be described in terms of syllable awareness, onset-rime awareness, and phoneme awareness.

2.2 Phonological Awareness and its Component Levels

Phonological awareness is a multilevel skill of breaking down words into smaller units (Hoien, Lundberg, Stanovich, & Bjaalid, 1995; Stahl & Murray, 1994). There are three levels at which words can be divided into their inner constituents, and thus three possible forms of phonological awareness (Goswami & Bryant, 1990). Table 2.1 shows the three constituent levels of phonological awareness, that are discussed in the following sections.

Table 2.1 Three ways to divide words into component sounds (adapted from Goswami & Bryant, 1990: 2)

Word	*Syllable*	*Onset and Rime*	*Phoneme*
cat	cat	c – at	c- a- t
string	string	str – ing	s- t- r- i- n- g
wigwam	wig – wam	w – ig – w – am	w - i - g - w - a - m

2.2.1 Syllable Awareness

Phonological awareness at the syllabic level requires an awareness that words can be segmented into syllables. This typically represents an easy task for most children (Liberman *et al*., 1974). According to the most widely accepted hierarchical view of the English syllable (Fudge, 1969, 1987, 1989), structurally a syllable may have three parts: an *onset* (or *releasing consonant*), a *peak* or *nucleus* (most commonly a vowel), and a *coda* or *offset*. The *peak* and *coda* are often considered together as the *core* (Edwards & Shriberg, 1983). The only part of the syllable that must be present is the *nucleus*. This means that a syllable must have at least one or more vowels. The vowel is the most prominent part of the syllable and it takes the stress (Edwards & Shriberg, 1983). Treiman (1993) discusses the three main principles of syllable division in English that have been tested in experimental studies investigating children's spelling development:

1. Each syllable in a word contains a vowel (or vowel sound, such as that produced by the letter *y* in *baby*).
2. Syllable division follows the stress pattern of a word, with as many consonants as possible beginning a stressed syllable (e.g., *patrol* is divided in *pa-**tr**ol*, and not in *pa**t**-**r**ol*).
3. Syllables are divided to ensure that consonants that cannot be clustered together in English do not begin or end a syllable (e.g., *only* is segmented in *on-ly*, not *onl-y* or *o-nly*, because *nl* is not a 'legal cluster' in English).

Syllable awareness in a language like English shows a realization of the above principles (cf. 8.2.2.3). Tasks normally used in educational, health and clinical settings to evaluate children's awareness of the syllable structure of a word include the following (Gillon, 2004):

- *Syllable segmentation*, e.g., "How many syllables (or parts) in the word *coffee*?" (Dodd *et al*, 1996)
- *Syllable completion*, e.g., "Here is a picture of a rabbit. I'll say the first part of the word. Can you finish the word *ra*_____" (Muter, Hulme, & Snowling, 1997)
- *Syllable identity*, e.g., "Which part of *compete* and *compare* sound the same?" (Dodd *et al*., 1996)
- *Syllable deletion*, e.g., "Say *finish*. Now say it again without the *fin*." (Rosner, 1999)

Research (Lundberg, Olofsson, & Wall, 1980) has additionally shown that the ability to detect syllables in speech or to segment syllables from speech may predict future reading (cf. 4.8).

2.2.2 Onset-Rime Awareness

Words can also be segmented into units which are smaller than the syllable but larger than the single phoneme. These units themselves, namely onset-rime units, are made up

of two or more phonemes. Demonstrating awareness that syllables and words can be divided at the onset-rime level shows phonological awareness at the intrasyllabic level and is often defined as 'onset-rime awareness' (Goswami & Bryant, 1990; Moats, 2000). In the onset-rime unit, the opening unit is called *onset*, while the closing unit is called *rime*. The *rime* is made up of a vowel and any consonant sounds that come after it (e.g., in *task* the rime is *ask*, in *sting* the rime is *ing*). The *onset* is not obligatory, and consists of any consonant sounds that come before the vowel sound (Treiman, 1992). The onset may be a single phoneme (e.g., the *t* in *task*), a two-phoneme cluster (e.g., the *st* in *sting*), or a three-phoneme cluster (the *str* in *string*) (Treiman, 1992). In a word like *train*, for instance, the onset is *tr* and the rime is *ain*. This level of awareness is normally measured through rhyming tasks, because in order to understand that words rhyme, children must be aware that (Gillon, 2004; Goswami & Bryant, 1990):

- Words rhyme when they share common rimes.
- Words share a common ending (rime unit) that can be separated from the initial part of the word (onset unit).

Tasks employed to test children's levels of onset-rime awareness normally include (Gillon, 2004):

- *Spoken rhyme recognition*, e.g., "Do these words rhyme: *shell, bell*?" (Dodd *et al*., 1996)
- *Spoken rhyme detection or rhyme oddity task,* e.g., "Which word does not rhyme: *fish*, *dish*, *hook*?" (Bradley & Bryant, 1983)
- *Spoken rhyme generation*, e.g., "Tell me words that rhyme with *bell*." (Muter *et al*., 1997)
- *Onset-rime blending* (Wagner *et al*., 1993), e.g., blend *tr-* and *–ain* to form the word *train*.

van Kleeck and Bryant (1984) found that some of the children involved in their study began showing conscious awareness of the rhyming process as young as 2;8, e.g., "*Annie, Mannie. That's the same*" (by a child aged 2;8) and "*Newspaper, bewspaper. That rhymes*" (by a child aged 3;1). This was confirmed in another study by MacLean and colleagues (1987), where 3-year-old children required to identify which word did not rhyme in a group of three were found to be able to perform this task and alliteration[15] tasks at a conscious level.

2.2.3 Phoneme (or Phonemic) Awareness

The term 'phoneme awareness' often tends to overlap with 'phonological awareness.' Yet, the crucial distinction is that phonological awareness is an 'umbrella term' referring to all aspects of the sound structure of a spoken word (e.g., its syllables, its phonemes, its prosodic pattern), thus implying conscious attention to anything about the sound structure in a spoken word. On the other hand, 'phoneme awareness' is a more specific term referring to a single aspect of the sound system, namely, phonemes. Phoneme awareness implies explicit knowledge that words consist of individual meaningless sounds that combine to create units of meaning. A phoneme in fact represents the smallest unit of sound that influences the meaning of a word. *Cat* and *mat* sound different and have different meanings because they differ in terms of one phoneme (Gillon, 2004; Goswami & Bryant, 1990).

Research has shown that measures of preschoolers' level of phoneme awareness strongly predict their future success in learning to read. This has been demonstrated for several languages (cf. 6.3): English (Liberman *et al.*, 1974), Swedish (Lundberg, Olofsson, and Wall, 1980), Spanish (deManrique & Gramigna, 1984), French (Algeria, Pignot, & Morais, 1982; Morais *et al.*, 1986), Italian (Cossu, Shankweiler, Liberman, Tola, & Katz, 1988), and Russian (Elkonien, 1973). Research has shown that measures of schoolchildren's ability to manipulate phonemes yields a strong correlation with their

[15] Alliteration refers to repetition of a particular sound (phoneme) in the first syllables of a series of words and/or phrases.

reading achievement all the way through the twelfth grade (cf. 4.6; 4.7.3) (for a review of studies, see Adams, 1990). Phoneme awareness in children can be measured with the following types of tasks (Gillon, 2004):

- *Alliteration awareness* (also called *phoneme detection*, or *sound/phoneme categorization*), e.g., "Which word has a different first sound: *bed, bus, chair, ball*?" (Torgesen & Bryant, 1994)
- *Phoneme matching*, e.g., "Which word begins with the same sound as *bat*: *horn*, *bed*, *cup*?" (Torgesen & Bryant, 1994)
- *Phoneme isolation*, e.g., "Tell me the sound you hear at the beginning of the word *food*." (Stahl & Murray, 1994)
- *Phoneme completion*, e.g., "Here is a picture of a watch. Finish the word for me: *wa* _____" (Muter *et al*., 1997)
- *Phoneme blending with words or non-words*, e.g., What word do these sounds make: *m…oo…n*?" (Wagner *et al*., 1999)
- *Phoneme deletion*, also referred to as *phoneme elision*, e.g., "Say *coat*. Now say it again but don't say /k/." (Rosner, 1999)
- *Phoneme segmentation with words or non-words*, e.g., "How many sounds can you hear in the word *it*?" (Dodd et *al*., 1996)
- *Phoneme reversal*, e.g., "Say *na* (as in *nap*). Now say *na* backwards – *an*." (Wagner et al., 1999)
- *Phoneme manipulation*, e.g., "Say *dash*. Now say it again, but instead of /æ/ say /ɪ/ - *dish.*" (Rosner, 1999)
- *Spoonerism*, a deliberate play on words in which corresponding consonants, vowels, or morphemes are switched, e.g., *felt made* becomes *melt fade* (Dodd *et al*., 1996).

Several researchers (Rosner & Simon, 1971; Stanovich, Cunningham, & Cramer,

1984; Treiman & Baron, 1981) have found that initial phonemes are easier for children to segment or substitute than final phonemes, perhaps because the initial phoneme, if it is a consonant, is also the onset of the syllable it occurs in (van Kleeck, 1994). In addition, it has been found to be easier for children to substitute one single initial consonant for another rather than substitute one phoneme of a cluster for another (Rosner, 1974), e.g., say *cat* instead of *rat* rather than *brown* instead of *crown*. Furthermore, it is acknowledged by research that, although some form of phoneme awareness may develop in children prior to formal schooling (cf. 2.4.1), it does not develop automatically with age. For example, adult illiterates generally lack phoneme awareness (Morais *et al*., 1979). On the contrary, phoneme awareness seems to depend largely on direct instruction in reading and spelling an alphabetic orthography (Liberman *et al*., 1974), or on training sessions at the phoneme level (cf. 4.5; 5.2.1.1; 5.2.2.3) (Byrne & Fielding-Barnsley, 1991b, 1995). Phoneme development can be rapid once instruction begins, especially in mainly transparent languages such as German (Wimmer & Hummer, 1990) and Italian (Cossu *et al*., 1988) (cf. 6.3.3).

2.2.4 Phonological Awareness above the Word Level

In this study, phonological awareness is mostly viewed as awareness of a spoken word at the syllable, onset-rime and phoneme level. However, phonological awareness was often referred to in the past as awareness of the sound structure of spoken language in general, which also included awareness above the word level, e.g., understanding that sentences are comprised of individual words (Gillon, 2004). At the highest level, first children learn to segment sentences into propositions or phrases, and then into words (Karpova, 1955). Segmenting sentences into words is a skill that is both semantic (as words are individual units of meaning) and phonological (as children are required to detect individual words in the acoustic stream of speech). As explained by Liberman and Shankweiler (1991), words, whether written or spoken, are always formed by a phonological structure, so that when they are perceived, it is the phonological structure that is accessed. Words seem an obvious and accessible unit of speech to us. Yet,

research (Chaney, 1989; Karpova, 1955) has interestingly shown that young children are not 'naturally' prepared either to consider spoken language as a string of individual words or to treat words as individual units of meaning. They are first tuned to listen to the full meaning of an utterance. Words and sounds boundaries cannot thus be easily detected in the acoustic signal. The phenomenon of overlapping sounds, or *coarticulation*, is discussed in depth by Lieberman and Shankweiler (1991). The advantage of this phenomenon is that it allows speech to proceed at a pace that matches our perceptual mechanism for understanding it. So coarticulation is certainly advantageous for the perception of speech. The disadvantage especially concerns the reader, because there is no neat correspondence between the sounds heard by the reader and the underlying phonological structure of the word. Thus, for instance, though the word *bag* has three phonological units or phonemes, and three letters in print, it has only one pulse of sound. The three phonemes have been thoroughly overlapped and merged into that one sound, *bag* (Liberman & Shankweiler, 1991). Furthermore, being spontaneously exposed to spoken language does not necessarily lead to being aware that speech is made of words, and especially of phonemic units. Fortunately, words are relatively easy to be interpreted within one's first language structure. It should not then be too complicated to induce children to attend to them. Research studies (Fox & Routh, 1975) have shown that, when guided, children are able to improve their skills in segmenting sentences into words.

What is important within the scope of this discussion, though, is that there is currently little evidence to support a relation between awareness above the word level and word recognition or spelling ability. Within a phonological awareness intervention context in an L1, for instance, it is not normally recommended to focus on developing awareness above the word level (Brady *et al*., 1994). The same may not be true within an L2 learning setting, where children are guided to become accustomed to a new phonological system, and consequently to perceive new speech forms and recognize words within the L2 continuous stream of speech. Within an L2 setting, it may be crucial for children to develop their phonological awareness skills not only at the syllable,

onset-rime and phoneme level, but also above the word level (cf. 8.2.2.2). Therefore, the activities and games in EFL proposed in chapter 9 and 10 focus not only on awareness of syllables, onset-rime units and phonemes, but also on awareness of words and sentences (cf. Chapter 9 and Chapter 10).

2.3 Phonological Awareness and Interrelated Terminology

The following paragraphs are meant to introduce some terminology that is often found in the literature in relation to phonological awareness, reading and reading disorders. In order to have a broader understanding of what phonological awareness is and why it is such a crucial skill in relation to reading and spelling development, it is important to consider the following notions as well.

2.3.1 Phonological Awareness and Phonological Processing Skills

The term 'phonological processing' can be frequently found in the literature in association with reading development and reading disorders. This term sometimes tends to overlap with 'phonological awareness,' but the two notions are in fact distinct from one another (Gillon, 2004). Phonological processing skills refer to the use of phonological information in processing spoken and written language. These skills are more appropriately related to the field of cognitive psychology, and should thus be interpreted as a series of cognitive processes. Phonological processing ability encompasses phonological awareness ability as one construct but also distinguishes two other constructs: (1) coding phonological information in working memory, and (2) retrieving phonological information from long-term memory. The types of tasks used to measure the efficiency of phonological coding in memory are normally 'digit span tests,' i.e., recalling series of digits presented by the examiner. 'Rapid naming tasks' (i.e., naming alphabet letters, common animals, colors or objects as fast as possible) are used to measure the efficiency of retrieving phonological information. In his model of the relation between phonological awareness and phonological processing, Gillon (2004) proposes the introduction of phonological awareness as a subset of more general

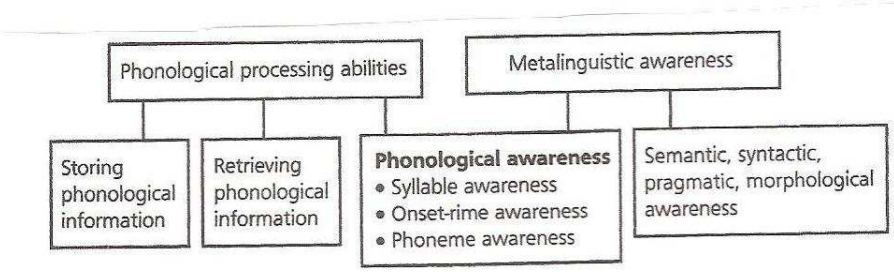
phonological processing abilities (see Figure 2.2). In this study, phonological processing skills such as storing or retrieving phonological information are not discussed, as they relate to a strictly cognitive aspect of children's reading acquisition and skills. Yet, it is important to know about their existence and the role they play in the acquisition of reading skills.

2.3.2 Phonological Awareness and Metalinguistic Awareness

In addition to being viewed as a component of language awareness (cf. 2.1.2), phonological awareness can be also considered an aspect of the broader category of metalinguistic awareness. 'Metalinguistic awareness' refers to the ability to think about and reflect upon the structural features of language. Mattingly (1972) was one of the first researchers who investigated the relationship between children's awareness of language structure and their progress in reading development. According to Mattingly (1972), reading is a language-based skill dependant upon awareness of the primary linguistic activities of listening and speaking.

Phonological awareness is the aspect of metalinguistic knowledge that has undoubtedly been given the most attention in relation to literacy acquisition. However, other elements of metalinguistic awareness can be associated with literacy achievement, e.g., syntactic awareness, semantic awareness, pragmatic awareness, and morphological awareness. Once the reader has mastered basic word recognition skills, all these areas of metalingustic awareness become crucial. Syntactic and semantic awareness, for instance, allows a beginning reader/writer to decide whether a word used makes a logical or grammatical sense within a spoken/written text. Morphological awareness allows a reader/writer to identify the main parts of a word, such as recognize the word *eat* in *eating*. This can become an important strategy as spelling knowledge develops (Carlisle, 1995; Cazden, 1974; Masterson & Apel, 2000). Figure 2.2 illustrates the intersection of metalinguistic and phonological awareness in relation to word recognition processes (Gillon, 2004).

Figure 2.2 Phonological awareness in relation to phonological processing and metalinguistic awareness (Gillon, 2004: 10).



2.3.3 Phonological Awareness and Phonics

From a teaching perspective, the terms phonological awareness and phoneme awareness are sometimes confused with the term 'phonics.' All these terms have some relation with sounds within words. Phonics refers to a teaching/learning method, i.e., teaching sound-letter correspondences for reading and spelling. "*A* is for *apple*, *b* is for *bat*, *c* is for *cat*" are examples of phonic activities. On the other hand, phonological awareness tasks differ in that they require an awareness of the sound structure of a word, e.g., understanding that the word *apple* has two syllables, the word *bat* has three phonemes, or that *bat* and *cat* are rhyming words. As can be noticed, these phonological awareness tasks differ from being taught the sound-letter relationship for *a*, *b*, and *c*. Historically, phonics was taught as a skill-and-drill workbook activity (cf. 8.2.1). Instructional practices did not focus on fostering children's awareness of the sound structure of words, thus phonics was taught in isolation from phonological awareness. Phonological awareness tasks can be carried out in isolation as well, e.g., when asking children to segment words into individual phonemes or blend phonemes to make words without any reference to letters (Gillon, 2004). Yet, as discussed later in this study (cf. 5.2.1.1; 5.2.2.3; 5.3.4), research (Hatcher, Hulme, & Ellis, 1994) has shown that the best achievement in reading occurs when phonological awareness and phonics are

integrated. An example of this would be a phoneme blending task where children are required to blend /k/ /æ/ /t/ into the word *cat*, and at the same time are taught to map each sound into its corresponding grapheme by using plastic letters. This is why nowadays many phonological awareness programs also include phonic learning activities.

2.4 Phonological Awareness Development in English

Some of the earlier investigations into phonological awareness explored the developmental nature of these skills. According to findings derived from studies (e.g., Fox & Routh, 1975; Liberman *et al*., 1974; Rosner & Simon, 1971; Savin 1972) that were carried out in the early 1970s and used a variety of experimental tasks, the ability to manipulate segments of speech tends to follow a developmental pattern in children. Furthermore, research (for a review of studies see Adams, 1990) has shown that, as the phonological unit being processed becomes smaller (e.g., from syllables to phonemes), the level of awareness becomes more refined and the task becomes more difficult, moving from a general recognition of sound patterns to a more explicit, conscious manipulation of the phonemes in words.

Within the theoretical framework of this study, an understanding of how children develop an explicit awareness of a word's sound structure is critical. In order to propose a set of activities and games to foster young learners' phonological awareness skills in EFL, it is essential to understand *when* preschool children are normally able to carry out specific tasks, and *what* these tasks can be (cf. 5.3.1). Children's phonological awareness development is closely interlinked to development of phonological knowledge in their L1 (cf. 2.1.3). While phonological awareness requires children to make explicit the knowledge they have acquired about the sound structure of spoken words and to consciously reflect upon elements of the spoken word without relating them to the word's meaning, the perception of speech sounds from infancy occurs at an unconscious level (cf. 8.2.3) (Mattingly, 1972; Orsolini, 2000). Children's first approach to the sound structure of their L1 has some biological basis, in that they learn about it as a result of

their biological predisposition to acquire a spoken communicative system (Chomsky, 1965). By 4 months of age, infants are already sensitive to the sound structure of their native language: a range of speech perceptual skills that contribute to children's representations of the sound structure of adult words develops (Jusczyk, 1992; Orsolini, 2000). This set of skills include being able to (Jusczyk, 1992):

a. Distinguish their mother's voice from other female voices; discriminate between speech contrasts (e.g., distinguish /dʌ/ in *dug* from /bʌ/ in *bug*) .

b. Distinguish utterances heard in their native language from utterances heard in a non-native language.

c. Recognize the same syllable in different utterances (e.g., *ba*-na-na; *ba*-*ba*).

d. Identify intonation changes (e.g., distinguish between "*No*" spoken with slightly dropping pitch, signaling neutral agreement, and "*No*" produced with rising pitch to signal surprise).

2.4.1 From Syllable to Phoneme Awareness Development: Evidence from Research

There is evidence of a developmental progression in the emergence of phonological awareness skills, although there are variables in the age at which each specific skill is thought to start emerging in children. Research on the topic has proposed contrasting and variable findings, especially on the age at which phoneme awareness develops. Yet, a typical trend of phonological awareness development has been generally identified. Liberman and her colleagues (1974) provided the first evidence of the developmental progression of phonological awareness. When the researchers began investigating developmental trends in phonological awareness, they did so by testing the ability of young children to segment words into their constituent elements. Their hypothesis was that children's ability to segment words into syllables would be achieved earlier than the ability to segment words into individual phonemes. This was based on the consideration that, unlike words or phonemes, syllables are distinctly marked in the speech stream, in that they all include a vocalic nucleus (cf. 2.2.1). In spoken language,

this vocalic nucleus corresponds to a peak of acoustic energy. This loudness provides physical cues for the child to distinguish one syllable from the next (Fletcher, 1929). In this way, syllabic awareness of a word should be facilitated at a younger age (Liberman *et al*., 1974). Additionally, research (Bertelson & de Gelder, 1991, 1994; Lukatela *et al*., 1995) has shown that, unlike phonemes, syllable and onset-rime awareness develops spontaneously with speech prior to reading instruction. In order to verify their hypothesis, Liberman and her colleagues (1974) involved in their study 135 children from preschool, kindergarten, and first-grade classes in middle socio-economic areas of Connecticut. The children from each grade were divided into two experimental groups. Children with speech, hearing or behavioral disorders were not included in the experiment. Children in group 1 were asked to perform a phoneme segmentation task in which they had to tap out the number of phonemes in stimulus items with one, two, or three phonemes (e.g., *I* = one phoneme, *out* = two phonemes, *book* = three phonemes). Children in group 2 were required to perform a syllable segmentation task, where they had to tap out the number of syllables in words with one, two, or three syllables (e.g., *dog* = one syllable, *birthday* = two syllables, *superman* = three syllables). The findings indicated a task and age effect. Children found it easier to segment words into syllables at each grade level. At the preschool level (average age 4 years, 11 months), for instance, 46% of children were able to divide words into syllables, but not into phonemes. Only 17% of the 5-year old children could segment by phoneme. By the end of first grade (average age 6 years, 11 months) 90% of the children were able to successfully segment words into syllables and 70% into phonemes (Liberman *et al*., 1974). Liberman and colleagues (1974) concluded that, although ability in both syllable and phoneme segmentation increased with grade level, analysis into phonemes, the basic units of alphabetic orthographies, was significantly harder to achieve and perfected later than analysis into syllables. The researchers suggested that phoneme awareness, unlike syllable awareness, develops at about the age children are introduced to reading instruction in formal schooling.

Segmenting words into phonemes has been found to represent a difficult task for children in all alphabetic languages (cf. 6.3.3), in that individual phonemes are not perceptually available in the acoustic signal of speech. They are an abstract concept. When words are spoken, for instance, children do not hear the separated phonemes in each word. Rather, phonemes are blended into syllables within the sound system. Phonological awareness at the phoneme level requires that children understand that words are comprised of these individual sounds (Liberman *et al*., 1967, 1974). Syllable segmentation, on the other hand, can be regarded as the first real segmentation ability to emerge which is only based on phonological awareness, as syllables do not carry meaning themselves (except one-syllable words). Yet, as previously mentioned, syllables are still removed from meaning, and closer to phonemes. This suggests that children's conscious attention to syllables might be more difficult to foster than attention to words, but easier than attention to phonemes. In addition, syllable awareness appears to develop 'naturally' (Treiman & Zukowski, 1991), and most children across cultures with alphabetic orthographies have been found to normally master syllable awareness by 5 or 6 years of age (Mc-Bride *et al*., 2004).

Additional research (Caravolas & Bruck, 1993; Chaney, 1992; Fox & Routh, 1975; Johnston, Anderson & Holligan, 1996; Stanovich *et al*., 1984; Treiman & Zukowsky, 1991) has confirmed a developmental growth in acquiring phonological awareness: from larger units to smaller units. Some researchers (e.g., Fox & Routh, 1975) interestingly suggested that whether or not young children demonstrate phonological awareness at the phoneme level may depend critically on the nature of the task used. Fox and Routh (1975), for instance, found some evidence that phoneme awareness may occur earlier than the age at which reading is taught. In an experimental study, 3- to 6-year old children were required to listen to monosyllabic words, and say 'just a little bit' of the word. Even 3-year-old children were able to segment at least some words into their beginning and remaining sounds for over half of the words (Fox & Routh, 1975). As refers onset-rime awareness, in one experimental study (Treiman & Zukowsky, 1991), children's ability to deal with the intrasyllabic units of onset and rime was assessed

through word pair comparison tasks. In the study, the researchers introduced children to puppets that liked pairs of words that shared some sounds. For example, puppets in the study liked pairs of words such as *plank* and *plea*, which share a CC onset (*pl*). The puppets also liked pairs of words such as *spit* and *wit*, which share a VC rime (*it*). On the other side, puppets did not like pairs like *twist* and *brain*, or *rail* and *snap*. Children were asked to hear each pair of words and judge whether the puppet liked it or not. Correct answers were praised, and wrong ones were corrected. Findings showed that 6% of the preschoolers (average age of 5 years, one month) and 74% of the kindergarteners (average age of 5 years, 9 months) were able to perform the task successfully. This last finding shows that children may be able to divide syllables at the boundary between the onset and the rime before learning to read (Treiman & Zukowsky, 1991).

The syllable, onset-rime and phoneme levels were investigated in the most comprehensive study on phonological awareness development in young children in the United States (Lonigan, Burgess, Anthony, & Barker, 1998). This study involved a total number of 356 children between 2 and 5 years of age: 238 were mainly Caucasian children from middle-to high-income families, and 118 were chiefly African American children from low-income families[16]. The tasks proposed were meant to investigate children's ability to detect rhyme and alliteration, blend letters to form words (e.g., *b* + *a* + *t* = *bat*), blend words to form compound words (e.g., *cow* + *boy* = *cowboy*), and delete parts of a word (e.g., "say *batman* without *bat*, say *heat* without /t/") (Lonigan, Burgess, Anthony, & Barker, 1998). The findings showed that, without significant differences in performance between girls and boys:

[16]The distinction between children coming from middle-to-high-income families and low-income families is crucial in the United States. Researchers often identify a correlation between school achievement in children and the socioeconomic status of children's families, i.e., children from low-income families typically perform less well than children from middle or high-income families. This means the children's socioeconomic status may play a role in children's success in school. This is why, it is important for researchers to specify the socioeconomic (SE) status of the children involved in their studies.

- Age influenced achievement on all tasks for children from middle-income families. In these children, there was evidence of accelerated phonological awareness between the ages of 3 and 4 years. The same was true for children from low-income families but occurred in a less evident way.
- The linguistic complexity of the task affected children's performance. Across all age groups, stronger achievement was reached in blending and deleting items at a whole word level first (e.g., *cow* + *boy* = *cowboy*), secondly at the syllable level (*sis* + *ter* = *sister*), and only ultimately at the phoneme level (e.g., *b* + *a* + *t* = *bat*).

Stability in phonological awareness task performance was found to emerge only from 4 years of age. In general, 2- and 3-year-old children showed low performance on all tasks and variability within and across tasks. On the rhyme oddity task, only in the 5-year-old age group the majority of children (75%) from middle-income families achieved significant scores. Nearly half of the 5-year-old children demonstrated confidence on the phoneme detection task, thus showing that sensitivity to phonemes may in fact emerge before formal reading instruction (Lonigan, Burgess, Anthony, & Barker, 1998).

In a more recent study (Dodd & Gillon, 2001), findings on phonological awareness assessment measures for young British and Australian children showed that most 4-year-old children particularly exhibited phonological awareness at the syllable level, as well as the emergence of rhyme. One more study (Gillon & Schwarz, 1999), where approximately 1,000 6-year-old New Zealand children were assessed on phonological awareness tasks, revealed that rhyming knowledge was mastered at 4 years of age, and phoneme segmentation and blending ability were still emerging. According to Gillon (2004), such findings are consistent with those involving children from the United States, and generally indicate universal trends in phonological awareness development for the English language. The issue whether children younger than 4 years already have a certain degree of phonological awareness has been frequently debated. Some studies (e.g., Maclean, Bryant & Bradley, 1987) showed that some 2- and 3-year-old children can

demonstrate phonological awareness knowledge. In Mclean and colleagues' study (1987), 66 British 3-year-old children were given a rhyme oddity task developed by Bradley and Bryant (1983), accompanied by pictures in order to reduce the memory demands on children. Children were asked to name three pictures (e.g., *cat*, *hat*, *bell*), and indicate which one did not rhyme. After two training sessions, they were exposed to ten stimulus items. Nearly 25% of children scored significantly above chance level (i.e., at least seven of the ten items were correct). This study provided evidence that 3-year-old children can perform well in a rhyme detection task. In another study by Lonigan and colleagues (1998), the same rhyme oddity task was utilized with 55 2-year-old children from the United States, and 25% of them scored significantly above chance, thus indicating that some very young children can demonstrate a certain degree of phonological awareness.

The progressive theory of phonological awareness development has been criticized by some researchers (Duncan & Johnston, 1999, Muter, 1994). For example, data from individual cases of older weak readers who performed better on phoneme manipulation tasks than on rhyme judgment tasks are inconsistent with the developmental progression previously discussed (Duncan & Johnston, 1999). Yet, as remarked by Gillon (2004), heterogeneity among good and poor readers must be considered in phonological awareness development. Furthermore, understanding whether there is a smooth progression from one level of phonological awareness to the next, and whether awareness of larger units is necessary to facilitate awareness of smaller units for children, requires continued investigation and research. The following list is a summary of the developmental progression of phonological awareness in an L1 , as demonstrated by available research studies[17] (Candace, 1998):

At 3 years of age, children are usually able to:

[17] It must be remember that this sequence is neither fixed nor the same for every single child. Research has not yet come to a definite conclusion on this sequence, and further experimental studies are needed in order to investigate and discover more about it.

- Recite known rhymes.
- Produce rhyme by patterns, e.g., give the word *cat* as a rhyming word for *hat*.
- Recognize alliteration, e.g., "Mommy, Michele, they're the same."

At 4 years of age, children are usually able to:

- Segment syllables, e.g., know there are two parts in the word *cowboy*.
- Count the number of syllables in words.

At 5 years of age, children are usually able to:

- Count syllables in words.
- Count phonemes within words.

At 6 years of age, children are usually able to:

- Match initial consonants in words, e.g., be able to recognize that *shoe* and *sheep* begin with the same first sound.
- Blend two or three phonemes, e.g., recognize that the sounds /d/, /ɑ/, /g/ form the word *dog*.
- Count phonemes within words.
- Identify rhyming words, e.g., *pit* rhymes with *mit*.
- Divide words by onset, e.g., divide the word *stop* into *st-op*.

At 7 years of age, children are usually able to:

- Blend phonemes to form words.
- Segment three to four phonemes within words.

- Spell phonetically.
- Delete phonemes from words, e.g., omit the /t/ sound in the word *cat*.

2.5 Phonological Awareness and Dyslexia

According to some recent data (Planty *et al*., 2009), since 1980-81 in the United States a larger percentage of children and youth aged 3-21 have received special education services for specific learning disabilities than for any other disability type (e.g., autism or developmental delay). A specific learning disability is defined as (Planty *et al*., 2009: 20) "a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations." Among these disorders are conditions such as perceptual disabilities, developmental aphasia, and dyslexia. In 2006-07, about 40% of all children and youth receiving special education services in the U.S. had specific learning disabilities (Planty *et al*., 2009). Furthermore, statistics have shown that approx. 80% of children with language disorders have reading disabilities (Dollaghan, 2009). This data is of interest to this discussion, as further evidence of the crucial role played by phonological awareness, together with such phonological processing skills as verbal memory and naming, can be found in experimental studies of English-speaking disabled or poor readers. For many poor readers, in fact, difficulties in word recognition seem to stem from a lack of awareness that speech can be segmented into the phonemic units that are more or less represented in an alphabetic script (for a review of studies, see Adams, 1990; Catts & Kamhi, 2005). Among speech-language disorders, the one that has been a topic of research for more than 100 years is developmental dyslexia. A variety of factors such as visual-perceptual deficits, verbal memory deficiencies, neurological damage, and language deficits have been investigated in an attempt to identify the cause of dyslexia (for a review of these studies, see Catts & Kamhi, 1999a; Thomson, 1984). The relation between phonological processing skills, and phonological awareness in particular, and dyslexia has especially dominated reading research literature in the last

few decades. Attempts to understand the role of phonological processing deficits as a cause for dyslexia have increased the general interest in phonological awareness as well (Gillon, 2004).

2.5.1 Defining Dyslexia

The definition of dyslexia does not represent an easy task, and has traditionally been focused on exclusionary factors. In general, the term is used to describe (Gillon, 2004: 61) "a child's significant difficulty, for no clearly apparent reason, in acquiring efficient reading skills." Research (e.g., Vellutino, 1979) has revealed that these difficulties cannot be attributed to sensory, intellectual, or neurological impairments, obvious speech and language disorders, emotional or behavioral disorders, or lack of education opportunity. Researchers have been trying to define dyslexia in a more accurate and adequate manner during the last 30 years. In doing so, they have focused their attention on the relationship between children's linguistic skills and their reading achievement (Gillon, 2004). This was a significant shift of perspective in research, as it was visual-perceptual theories that had dominated the scene for a number of years (Birch, 1962; Myklebust & Johnson, 1962). This shift in perspective can be well captured in Catts and Kamhi's definition of dyslexia, where the language basis for the disorder is stressed (1999b: 63-64):

"Dyslexia is a developmental language disorder whose defining characteristic is difficulty in phonological processing. This disorder, which is often genetically transmitted, is generally present at birth and persists throughout the lifespan. Phonological processing difficulties include problems storing, retrieving, and using phonological codes in memory as well as deficits in phonological awareness and speech production. A prominent characteristic of the disorder in school age children is difficulties learning to decode and spell printed words. These difficulties, in turn, often lead to deficits in reading comprehension and writing."

Furthermore, this definition is consistent with the one given by the International Dyslexia Association (IDA, 1994), where dyslexia is defined as a specific language-based

disorder and phonological processing deficits are viewed as central to it. In the United States, estimates of dyslexic individuals range from 6 to 17% of the school age population, depending largely on criteria for the severity of reading difficulties (Fletcher *et al*., 2007). The role of phonological processing in reading disorders that is stressed in recent definitions has frequently been defined as a 'phonological deficit hypothesis' for dyslexia. According to this hypothesis, a deficit in the phonological processing domain results in children experiencing difficulty in two areas (Gillon, 2004):

1. Understanding the phonological structure of spoken language.
2. Holding phonological information in short-term memory.

What results if there are deficits in the above areas is that children have difficulty reading and spelling (Rack, Snowling, & Olsen, 1992).

2.5.2 Dyslexia and Phonological Awareness Deficits

One approach to research in reading disorders has investigated the phonological awareness abilities of children identified as having dyslexia, often by comparing measures of their skills to those of age-matched good readers. Most studies have been carried out with an English-speaking population. Findings from these studies (Beech & Harding, 1984; Bowey, Cain, & Ryan, 1992; Bruck, 1992; Catts, Gillispie, Leonard, Kail, & Miller, 2002; Dodd, Sprainger, & Oerlemans, 1989; Duncan & Johnston, 1999; Fawcett & Nicholson, 1995; Fletcher *et al*., 1994; Gillon & Dodd, 1994; Joanisse, Manis, Keating, & Seidenberg, 2000; Lundberg & Hoien, 1990; Manis, Custodio, & Szeszulski, 1993; Mayringer & Wimmer, 2000; Pratt & Brady, 1988; Swan & Goswami, 1997; Vellutino & Scanlon, 1987; Yap & Van der Leij, 1993) have shown that the phonological awareness achievement of older children who have specific difficulty reading and/or spelling is significantly inferior to that of their peers. In general, experimental research conducted with English-speaking children has demonstrated weak performance in phonological awareness in poor readers on a variety of tasks (Gillon, 2004):

- 7- to 9-year-old poor readers performed poorly on phoneme deletion tasks (Fletcher *et al*., 1994; Bruck, 1992), and in counting the number of syllables and phonemes in non-words[18] (Bruck, 1992).
- 8- to 10-year-old poor readers performed poorly on phoneme manipulation tasks (Pratt & Brady, 1988).
- 10- to 14-year-old poor readers performed poorly on syllable segmentation, rhyme, judgment, phoneme identity, and phoneme segmentation tasks (Swan & Goswami, 1997).
- 8-, 13-, and 17-year-old children with dyslexia performed poorly on rhyme, phoneme identification, and syllable and phoneme deletion tasks (Fawcett & Nicholson, 1995).

Furthermore, longitudinal studies investigating dyslexic children (Gillon & Dodd, 1994; Landerl *et al*., 1997; Manis *et al*., 1993; Snowling & Hulme, 1989) and adults with developmental reading difficulties (Bruck, 1992; Pratt & Brady, 1988) have shown that poor readers' deficits in phonological awareness tend to persist over time and are not readily resolved through classroom instruction. Some studies (Duncan & Johnston, 1999; Hesketh *et al*., 2007; Lencher *et al*., 1990) revealed that tasks such as phoneme manipulation and segmentation are the most complex for children with reading problems. For instance, performance on a phoneme deletion task was found to be the poorest among all other poorly performed types of task, thus indicating that the greatest disparity between poor and good readers in the study was at the phoneme level (Duncan & Johnston, 1999). One recent study (Kroese *et al*., 2000) revealed that phoneme

[18] Non-words or nonsense words are novel letter strings composed of familiar units. They can reflect phonology both at the sub-syllabic level of the rime, as in the nonsense word *tix* (similar to the real English word *six*), and at the sub-syllabic level of the phoneme, as in the nonsense word *zafol*. This last word must be read by using grapheme-phoneme correspondences, as there are no English monosyllables with the larger sub-syllabic rime units *af* and *ol* (Goswami *et al*., 1997).

deletion and reversal measures were stronger predictors of spelling and reading performance in 8-12-year-old poor readers than phoneme blending or phoneme segmentation tasks.

The difficulties poor readers experience in phonological awareness tasks restrict children's ability to use phonological information in the word recognition process (cf. 3.2.2). Phonological ability in non-word reading tasks was investigated in Rack and colleagues' review of studies (1992). The researchers hypothesized that children with dyslexia would have difficulties in non-word reading. These difficulties were thought to be related to either delayed development (i.e., develop at a slower rate but are consistent with level of reading ability), or the presence of a specific deficit (i.e., performance is lower than expected for reading ability). The researches conducted a review and investigation of 16 experimental studies that employed a reading-age-matched design[19] on non-word reading tasks. They found that in any given study the older poor readers performed better than the younger readers in their ability to read non-words. In 10 out of 16 studies there was evidence that poor readers demonstrated a specific deficit in non-word ability, and that their achievement was significantly inferior to that of typically developing readers. In this light, the researchers remarked that the studies reviewed provided strong evidence for the phonological deficit hypothesis (Rack *et al.*, 1992). A meta-analysis[20] of the research findings from the studies reviewed by Rack and colleagues (van Ijzendoorn & Bus, 1994) further support Rack and colleagues' conclusions. This meta-analysis was meant to measure differences in phonological skills between good and poor readers. The individuals involved in the investigation were 1,183, half of whom were dyslexic. Children with dyslexia were found to perform more poorly on non-word reading tasks than younger children matched for word recognition

[19] In order to verify whether differences in phonological awareness skills between chronologically age-matched poor and good readers were the result of differences in reading experiences, Bradley and Bryant (1978) introduced the reading-age-matched design. They compared the performance of 10-year-old poor readers with typically developing children who were three years younger in chronological rate but were reading at the same level.

[20] A meta-analysis is a research process where independent studies on a certain topic are collected, in order to determine the average findings on that topic, as well as analyze variations in those findings to determine the cause for those variations (Schatschneider, Westberg, & Shanahan, 2008).

skills. This validates the hypothesis that children with dyslexia have a phonological coding deficit (as opposed to a phonological delay) (van Ijzendoorn & Bus, 1994).

Instead of phonologically decoding an unknown word phoneme by phoneme, children may use an alternate strategy, i.e., an orthographic analogy strategy (cf. 3.2.4), where the word is decoded based on spelling patterns knowledge of a known word (e.g., using the known word *kite* to read the unknown word *bite*). Phonological awareness at the onset-rime level is closely associated with the ability to use an analogy strategy (cf. 3.2.4) (Goswami & Mead, 1992). One study (Hanley, Reynolds, and Thornton, 1997) attempting to determine whether poor readers with weak onset-rime knowledge were able to make analogies between words, revealed that 9-11 year-old children with dyslexia were less likely to use the analogy strategy than reading-age-matched children who were good readers. This means that a phonological awareness deficit may restrict not only the use of phonological decoding, but also the use of orthographic analogies in word recognition development. Research (Sawyer, 1992; Scarborough, 1990; Vellutino & Scanlon, 1987) has shown that, in addition to phonological decoding difficulties, children with reading disabilities may display deficits in other areas, e.g., the areas of syntactic, semantic, or morphological knowledge. What is of interest within the scope of this discussion is the relationship between skills in the mentioned areas and phonological awareness skills in the reading disabled. One study (Gillon & Dodd, 1994) which used both a longitudinal and reading-age-matched design, showed that 8-10 year-old poor readers had concurrent difficulties in semantic, syntactic and phonological processing skills, and these persisted over time. What is significant is that children displayed a pattern of particular deficit in phonological processing, whereas their semantic and syntactic skills showed general delayed development that was consistent with their level of reading experience. In this light, deficits in semantic and syntactic skills may be a consequence, rather than a cause, of reading disability (Gillon, 2004). This was demonstrated in subsequent studies (Gillon & Dodd, 1995; 1997), where training that was successful in improving these children's semantic and syntactic skills had no effect on their reading skills. On the other side,

training in phonological processing significantly improved both their reading accuracy of connected text and reading comprehension achievement.

As discussed in this section, children with dyslexia show significant difficulties in acquiring efficient reading skills. Dyslexic children have been found to perform poorly on a range of phonological awareness tasks (especially at the phoneme level). Phonological awareness skills restrict children's word recognition development by limiting the use of phonological decoding and orthographic analogy strategies. This data is of interest to us as it once more highlights the fundamental role of phonological awareness in the acquisition of efficient reading skills. However, the empirical studies reviewed in this section mostly involved an English-speaking population, thus linking the overall findings to the English language in particular. One major study (Zoccoletti *et al.*, 1999) was carried out in order to examine the characteristics of dyslexia in Italian, a language which, unlike English, has high phoneme-grapheme correspondences (cf. 6.3.3.3). The results of 4 dyslexic Italian-speaking children aged 11 to 15 assessed showed that the most pervasive reading symptom was sever slowness, which was associated, in some cases only, with reduced text comprehension. The researchers stressed how in languages with less regular grapheme-phoneme correspondences (e.g., English) when the phonological analysis of words is insufficient, a variety of errors is produced (e.g., in reading words with irregular grapheme-phoneme correspondences, or in discriminating homophones such as *bare* and *bear*). On the other hand, in languages with considerably more regular grapheme-phoneme relationships (e.g., Italian), the number of errors may be small since phonological reading is generally correct, and the most conspicuous symptom seems to be slowness in reading (Zoccoletti *et al.*, 1999). These considerations seem to be supported by the number of school-aged children that are said to be dyslexic in Italy, i.e. 3-4% (http://www.aiditalia.org/it/cosa_e_la_dislessia.html), as compared, for instance, to the English-speaking dyslexic population of the United States, i.e., 6 to 17%. The difference between the average percentage of dyslexic children in Italy and the U.S. may in fact reflect different demands made by different phonological and orthographic

systems on children's emerging reading skills, i.e., the two languages may require the activation of different levels of phonological awareness in beginning readers. This factor is discussed in more detail in chapter 6 (cf. 6.3.3.2; 6.3.3.3). This may also explain why the guidelines for the Italian preschool syllabus does not include nor mention phonological awareness among the skills to be strengthened in preschoolers, whereas the preschool syllabus of most American States does (cf. 1.5.3).

2.6 Phonological Awareness Development: Implications for ELTM

This section is meant to draw some conclusions from the most significant scientific research findings on phonological awareness presented in the previous paragraphs. This is only a short list of teaching implications, as more detailed suggestions are proposed in chapter 7 and in chapter 8. The research findings reviewed thus far have been tentatively applied to the area of studies of Early Language Teaching Methodology, and the following conclusions have been drawn:

- Knowledge that phonological awareness in children typically emerges in a developmental sequence, from larger units (syllables) to smaller units (phonemes) can help preschool educators employ and implement instructional practices in EFL that follow this developmental order.
- Knowledge that most children show evidence of accelerated phonological awareness development between the ages of 3 and 4 years should encourage preschool educators to reap the benefits of children's readiness at that age, and start presenting children of this age with some phonological awareness activities.
- Knowledge that most 4-year-old children can demonstrate knowledge of syllable awareness and begin to show awareness at the onset-rime level should encourage preschool educators to employ tasks focusing on syllable (e.g., syllable segmentation, syllable completion, and syllable identity), and onset-rime (e.g., spoken rhyme recognition, rhyme oddity task, onset-rime blending) with 4-year-old children.

- Knowledge that research has shown that levels of preschoolers' phoneme awareness can predict their future achievement in learning to read should encourage preschool educators to introduce 4-year-old children to tasks focused on phoneme awareness. This is further supported by research suggesting that, as with kindergarteners of 5 years of age, preschoolers can learn phoneme-level skills and these appear to be beneficial for literary acquisition.
- Knowledge that the specific nature of tasks focused on phoneme awareness may facilitate children's performance should be taken into account when working with younger children, and lead to selection of simple activities first.
- Knowledge that initial phonemes have been found to be easier for children to segment than final phonemes should encourage preschool educators to prefer tasks that first focus on initial phoneme segmentation.
- Knowledge that children start being aware of rhyming and alliteration at around 3 years of age can encourage preschool educators to employ rhyming activities in EFL with 3-year-old and older children.

Chapter 3

Phonological Awareness and Theories of Word Recognition

> […] the history of reading research is a thing of many colors.
> (Venezky, 1984)

3.1 The Reading Process

For millions of years, humans have spoken and understood languages. Their ability to read and write, however, has been investigated and established only in more recent times. From a psycholinguistic perspective, reading must be considered as a secondary process (as compared to auditory perception) which, apart from the visual identification of the word form, relies in its consecutive processes on the primary language system (Perfetti, 1998; Perfetti & Sandak, 2000). The language system provides the phonological, morphological, semantic and syntactic information over which comprehension processes operate. The processes and components that are specific to reading as compared to auditory language comprehension are (Friederici & Lachmann, 2002: 9):

1. The identification of visual features relevant to define letters.
2. The identification of a visual word form.
3. The transcoding from orthography to phonology.

Thus, there are a number of functionally distinct subprocesses that have to be considered when examining the reading process. Reading involves the extraction of meaning from a written text, and so substantial information processing is involved. When reading, a child does not aim at reading and remembering every word, rather to extract the gist and focus on content and meaning. To do this, children need to both process the visual data, and to understand it (Taylor, 2005). There are some significant differences in the processes and knowledge involved in spoken and written comprehension that should be considered in order to better understand the complexities

underlying the process of learning to read in an alphabetic language (Catts & Kamhi, 2005: 16-17):

1. Learning to read requires *explicit* knowledge of the phonological aspects of speech. In order to become efficient readers, children have to learn the various correspondences between phonemes and graphemes. In order to construct phoneme-grapheme correspondence rules, the knowledge that words consist of discrete phonemes (i.e., phonological awareness) is crucial. Spoken language also requires analysis of utterances into smaller phonological units, but this is carried out below the level of consciousness and by evolutionarily old and highly adapted auditory perceptual processes (Lieberman, 1973).
2. This leads to the second main difference between spoken and written language: the human perceptual system is biologically adapted to process speech, whereas the human visual system is not biologically adapted to process written text. In this light, reading is viewed as a comparatively new and arbitrary human ability for which specific biological adaptation does not exist (Catts & Kamhi, 2005).
3. Human beings are normally reared in environments in which spoken language is the main means of communication, which requires that they are socialized to use spoken language to interact and communicate amongst themselves. This is not the same for written language. More than 40% of the world's adult population is unable to read or write (Catts & Kamhi, 2005), and 25% does not have sufficient mastery of a writing system to be able to use it for practical purposes (Stubbs, 1980, cited in Perera, 1984). This high rate of illiteracy is due to the fact that these individuals are raised in environments where literacy is not culturally valued, and is thus neglected.
4. Because the biological and social bases of reading are not as strong as they are for spoken language, psychosocial factors, such as motivational and attentional states, often play a more significant role in learning to read than in learning to speak (Catts & Kamhi, 2005).

5. Cognitive factors play an essential role in both learning to speak and read, because spoken and written language are mainly cognitive achievements, relying on basic cognitive processes to encode, store, and retrieve information. Yet, metacognitive skills play a more important role in learning to read. This is due to the fact that learning to speak requires little if any metalinguistic ability, whereas learning to read requires awareness of the phonological properties of speech (i.e., phonological awareness) (Catts & Kamhi, 2005).

Contemporary research on reading draws on a rich mixture of more or less correlated disciplines, e.g., cognitive psychology, developmental psychology, social psychology, linguistics, anthropology, computer sciences, learning theory, and educational practice. The influences of each discipline range from the most abstract, theoretical contributions to the most practical, applied ones. This is why current research in reading presents two precise focuses and trends. On the one hand, research is aimed at understanding the basic nature of the reading process. This focus has led researchers to propose models and theories of the reading process (Chall, 1983; Gough & Juel, 1991; Samuels & Kamil, 1984). The second trend, on the other hand, is aimed at searching for better methods of teaching reading skills, with the ultimate goal of improving education and reducing illiteracy (e.g., Kamil, 1984). The following paragraphs present the most relevant theories of word recognition and spelling development, as well as highlight the role that is attributed to phonological awareness in each theory. Most theories are referred to the English language, but researchers have proposed their applicability to all alphabetic languages.

3.2 Phonological Awareness and Theories of Word Recognition

First of all, it is important to mention the strong increasing interest in phonological awareness that is being currently shown in the educational, health and clinical fields, especially in English-speaking countries. This interest has been stimulated by a variety of research studies demonstrating the relationship between phonological awareness task

performances and reading ability (cf. 4) (for a review of studies, see Adams, 1990). In particular, this interest has been promoted by the results from intervention studies, which show the effectiveness of phonological awareness training in fostering reading accuracy and reading comprehension achievement (cf. 5). The positive correlation between phonological awareness and spelling development is being recognized as well (cf. 4). Spelling is no longer defined as an exercise in visual memorization, but is now considered a proper language-based skill, in which knowledge and awareness of the sound structure of a spoken word play a crucial role (Kahmi & Hinton, 2000; Oerlemans & Dodd, 1993; Treiman & Bourassa, 2000). These results are discussed in more detail in chapter 4. In this light, it is necessary to discuss a theoretical framework for phonological awareness within alphabetic languages. The main question is: how does awareness that a spoken word is comprised of smaller sound units contribute to a child's ability to accurately read and comprehend connected text or to spell words correctly?

Before proposing a series of phonological awareness tasks to be conducted with Italian preschool children learning English as an L2, it is crucial to understand the theoretical foundation for phonological awareness, and in particular theories regarding decoding/word recognition and spelling development in an alphabetic language. *Decoding* includes word recognition processes that turn printed words into spoken words, and identifying individual words in orthographic text (Catts & Kamhi, 2005). Thus decoding involves processes that translate written representation into a sound-based system, to arrive at the meaning of words in the lexicon (stored vocabulary) in long-term memory, or, in simple words, the transformation of visual code into speech code (Hung & Tzeng, 1981). Decoding words requires blending skills to transform graphemes into recognizable words. Word recognition is the level of the reading process that has been the predominant focus of research during the last few decades. Its relevance to investigations of reading development and reading disorders is crucial, in that descriptions of poorly performing readers normally stress their inability to recognize and pronounce printed words accurately (for a review of these studies, see

Gillon, 2004). As will be seen in the following sections, most theories of word recognition and spelling development propose a reading model. Generally speaking, a reading model is a tool for clarifying reading behavior. It represents in ordinary language or graphic form the components of the process of reading and explains how the components function and interact with one another. Even though the model is built on a supportable theoretical foundation, it is still an artifact. It is a metaphor that helps us visualize and understand research and theories that explain components of the reading process. Models of reading range from the basic to the highly sophisticated, and represent specific aspects of the reading process, such as word recognition. They often describe more globally an integrated and interacting network of specific components, all of which contribute to the mind making meaning from a text. A model is never absolute, but should be considered tentative and open to changes (Hittleman, 1978; Ruddell & Unrau, 2004). As many as seventy-seven models of reading have been proposed. About forty-eight of them meet the strict definition of a model as stated above (Hittleman, 1978). Most models reflect an information processing point of view. They focus on the cognitive aspects of the reading process, with a consensus of opinion that reading is a complex cognitive skill. It is universally acknowledged that reading is a language process, a psychological process, a psycholinguistic process, and a physiological process combined (Gibson & Levin, 1975; Goodman, 1970/1976; Hittleman, 1978; Huey, 1968; Javal, 1879; Rayner & Pollatsek, 1993). The following sections present the most influential competing models that have been developed by researchers in order to explain word recognition ability in alphabetic languages.

3.2.2 Dual-Route Model

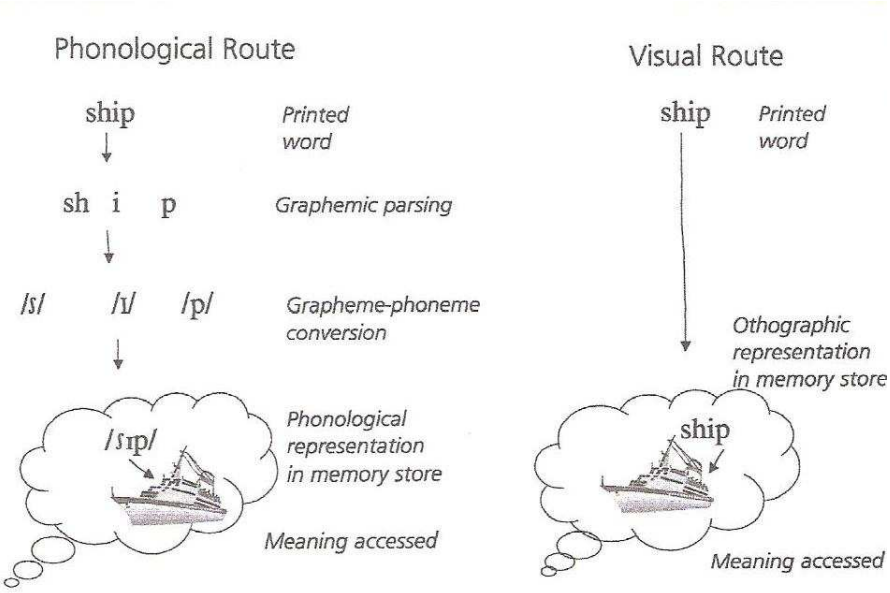
The two models of word recognition that have dominated the literature are the so-called 'dual-route' (Coltheart, 1978; LaBerge & Samuels, 1974; Marshall & Newcombe, 1973; Morton & Patterson, 1980; Patterson & Morton, 1985), and 'connectionist' (Patterson, Seidenberg, & McClelland, 1989; Rumelhart & McClelland, 1986, Seidenberg & McClelland, 1989) models. Within the framework of this study, an understanding of

these models is essential, in that it provides a theoretical context for how phonological awareness may affect the ability to process words at the single word level. These models have been developed primarily to explain how the ability to recognize printed words is acquired. They have also been used in relation to spelling skills acquisition, i.e., to conceptualize how a child can translate a spoken word into its printed form.

A dual-route model for explaining how skilled readers access meaning from printed words has been widely used in studies of reading and reading disorders (for a review of studies, see Adams, 1990, and Gillon, 2004). This theory, despite having received heavy criticism in recent years, has played a significant and influential role in the emergence of subsequent models. Furthermore, and interestingly from a methodological perspective, this theory provides an understanding of some current teaching practices, e.g., the teaching practice of reading flashcards is associated with learning to read via the visual route in the dual-route model. The dual-route theory poses that there are two routes to accessing the meaning of an isolated printed word: a phonological (non-lexical) route and a visual (lexical) route (Coltheart, 1978, 1986; Morton & Patterson, 1980). Comprehending a word in print via a phonological route involves a series of subskills. The first skill involved is called 'graphemic parsing', i.e., analysis of the string of letters in the printed word into those letters or sets of letters that correspond to a single phoneme (e.g., *sh*, two letters are parsed to one phoneme, /ŝ/). In the next step, letter-sound translation rules (grapheme-phoneme conversion) are applied to access the phonology of the word (e.g., to access the word *cat*, the graphemes *c*, *a*, and *t* are translated into the phonemes /k/, /æ/, /t/). This involves the subprocessing of maintaining the phonemic codes in working memory and assembling the phonemes into a complete phonological representation. Once this phonological representation has been accessed (based upon the reader's experience and knowledge of the word in spoken form) the meaning of the word is realized. Figure 3.1 shows the process from analysis of the orthographic form of the word, to applying grapheme-phoneme rules, to accessing the word's phonological representation, and finally to attaching meaning to

the word (Coltheart, 1978, 1986). Putting it simply, the phonological route involves 'decoding the word' or 'sounding out the word' to access its meaning.

Figure 3.1 Dual-route theory of word recognition, illustrated by Gillon (2004: 16)



With reference to those English words that do not conform to regular grapheme parsing or grapheme-phoneme conversation rules (e.g., irregularly spelt words, such as *sword*), Coltheart (1978) argues that they cannot be accessed via the phonological route. A different route, a visual/lexical route, must be used instead to access the meaning of such words. The visual route is independent of phonological processing and allows the reader to form a direct association between the written form of the word and the meaning of the word, drawing on the reader's vocabulary. The features that can help the reader access the orthographic representation of the word in memory store (i.e., memory for what the word looks like in print) are the word's orthographic shape, letter cues, and legality of letter patterns. The association between the visual, orthographic form of a word and its meaning is arbitrary and must be rote learned, because letter-sound relations cannot be of help (Ehri, 1992). Figure 3.1 above depicts the direct link from the

printed word on the page to an orthographic representation in memory (established from frequent exposures to what the word looks like in print), and to the subsequent meaning of the word. Skilled readers are considered to have appropriate skills to select the phonological or visual routes, depending on the nature of printed words and the purposes of reading. The phonological route is thought to be activated when reading unfamiliar or low-frequency words. Once words become familiar through exposure and practice in reading, they can be accessed directly by the visual route, i.e., by sight (Coltheart, 1978).

Within the context of the dual-route model, phonological awareness would be necessary only when accessing words via the phonological route. Understanding how a word can be broken down into smaller units can assist the reader in understanding how letters/graphemes map out sounds/phonemes (i.e., the grapheme-phoneme conversion process), and can thus allow the reader to decode the word. For instance, when trying to read an unfamiliar word such as *ileosigmoidostromy* from a medical dictionary, a reader can rely on a series of skills: e.g., awareness that the word can be broken into syllables (syllable awareness), awareness that syllables are composed of single phonemes (phoneme awareness), knowledge of which specific phonemes map to specific graphemes, and phoneme blending skills. All these skills can help the reader decode the word. Yet, a semantic representation can be accessed to attach meaning to the pronunciation of the word only if the reader has some knowledge of medical terminology (Gillon, 2004). On the other hand, within the context of the dual-route model, a reader with no phonological awareness can access its meaning via the visual route. If an individual learns that a certain pattern of letters represents a particular word by visual rote learning, then access to the meaning of that word is enabled. This is what normally occurs in so-called 'whole-word reading approaches'[21], and the teaching practice of reading flashcards: a child is exposed to the view of a word on a card, and the teacher articulates the word. By seeing and hearing the word simultaneously several

[21] The whole-word approach is a method to teach reading by introducing words to children as whole units, without analysis of their subword parts (Beck & Juel, 2002). It involves teaching children to 'sight read' words, i.e., to be able to pronounce a whole word as a single unit.

times, the child can learn that the visual pattern of the letters on the card is attached to a specific word without any understanding of the word's sound structure (Calfee & Drum, 2006; Ellis 1984, 1985; Gillon, 2004). This is a useful teaching practice that is frequently employed in Italian educational settings, e.g., in elementary schools, when introducing new English words. Children are required to look at a word on a card while listening to the teacher pronounce it several times, e.g., *mouse*. Children are then asked to repeat the word with the teacher several times, in order to interiorize its pronunciation, while at the same time focusing on its spelling.

A dual-route model of skilled spelling is described by Barry (1994) and essentially mirrors the two routes involved in the dual-route model of work recognition. A child may spell a word via an assembled (phonological) route, or via a lexical (visual) route. The assembled route involves segmenting the word and applying a process of converting from sounds to letters, based on the knowledge of how single sounds in words are represented in spelling. Both phonological information and knowledge of phoneme-grapheme relationships are necessary to assemble the word's spelling. From a methodological perspective, teaching strategies that require listening to the initial sound in a word, segmenting a word into parts, or sounding out the word while spelling it, are all related to the phonological route theory of spelling (Barry, 1994). However, as discussed above for word recognition, the phonological route facilitates successful spelling of words with regular sound-to-spelling correspondences (e.g., *hot*), whereas the lexical route would be involved with irregularly spelt words (e.g., *yacht*). The lexical route to spelling requires that a child retrieves a whole word from a stored orthographic representation in memory. Whenever the writer hears or thinks of a spoken word to be spelt, an orthographic representation of the word is enhanced. The next step for the writer is to engage in the mechanics of writing, typing, or spelling aloud the sequence of letters to match the orthographic representation of the word (Barry, 1994). Stating it simply, the writer retrieves the visual form of the word from memory, without any relation or reference to the sounds in the word. Looking at a word, covering the word and then spelling it are all teaching tasks related to the visual route theory of spelling.

3.2.3 Modified Dual-Route Models

A number of researchers (Barron, 1986; Ehri, 1992; Humphreys & Evett, 1985) have criticized the standard dual-route model of word recognition and spelling. Alternate versions of the models have been proposed (Ehri 1991; Norris & Brown, 1985; Patterson and Morton, 1985). Ehri (1991), for instance, specifically criticized the dual-route theory for not including phonological processing in the visual route to word recognition. Most irregular words are only partially irregular, remarks Ehri (1991). For example, in the word *sword* only the *w* does not follow regular sound-spelling correspondences, and knowing the grapheme-phoneme relations for *s*, or *d* might help the reader recognize the word (Ehri, 1991). Instead of rote learning the entire form, and placing heavy demands on memory, the reader could utilize the acquired knowledge of the systematic relations between spelling and pronunciation offered by the word as cues to access, at least partially, the stored orthographic representation of the word (Ehri, 1991). In Ehri's model of word recognition the visual route thus includes phonological processing and is referred to as the 'visual-phonological route.' Drawing from the reader's knowledge of letter-sound correspondences and orthographic information, specific associations between the visual form of the printed word and its pronunciation stored in memory (phonological representation) are formed. These associations occur immediately, with no need to use individual letter-sound translation rules, as in the standard phonological route (Ehri, 1992). This means that it is not the arbitrary visual cues of the word (e.g., the shape of a particular letter) that are associated with the meaning of the words in memory, but the letter-sound cues (e.g., the association of the grapheme *b* with the phoneme /b/) that relate the visual form of the word to its pronunciation in memory. Furthermore, these associations can occur due to the prior phonological recoding knowledge used to read the word by the phonological route when it was a novel word (Ehri, 1991). Basically, this view states that children first learn to read a word via the phonological route and decode the word using letter-sound conversion strategies. After experience in decoding the word, children learn to recognize the word at once by sight.

Yet, this sight recognition is assisted by phonological cues in the word (e.g., the initial phoneme of the word) as well. In general, Ehri's theory stresses the crucial contribution of phonological processing skills in the reading process and has thus important implications at the educational and methodological level. If the process of decoding *any* word (both regular an irregularly spelt words) relies on some degree of phonological processing knowledge, then children with inadequate phonological awareness skills will have difficulty at more than one level, i.e., both recognizing printed words via a phonological route, and reaching age-appropriate levels of sight reading (Gillon, 2004). The spelling strategies consistent with Ehri's model are those where children are required to look at a word, listen to the sounds in the word, cover the word, and try to spell it. In thus doing, children are encouraged to access the visual form of the word utilizing some phonological cues as well (Gillon, 2004).

3.2.4 Analogy Model

According to Ehri's (1992) proposed phonological-visual route for sight-word reading, spelling-pronunciation connections are activated from knowledge of onset-rime units. Knowing other words that have similar spelling patterns and pronunciation can assist the reader form those connections as well. For example, the reader may recognize the word *cap* because of its spelling and phonological similarities to already known words such as *cat* or *map*. Recognizing words in this way has been defined as 'reading by analogy' (Goswami, 1991; Goswami & Bryant, 1992; Marsh, Desberg, & Cooper, 1977; Treiman, 1992). Theories of reading analogy (e.g., Glushko, 1979; Goswami, 1994; Marcel, 1980) propose that readers access the stored pronunciation of words with similar spelling patterns rather than mapping each individual letter or letter pair to its corresponding phoneme. Both regularly and irregularly spelt words are thought to be processed by analogy. According to initial research in this field (Marsh; Desberg, & Cooper, 1977; Marsh *et al*., 1980), analogy may be especially important in the later stages of reading development, when readers have consolidated memory for a variety of spelling-pronunciation patterns, through practice at the grapheme-phoneme conversion

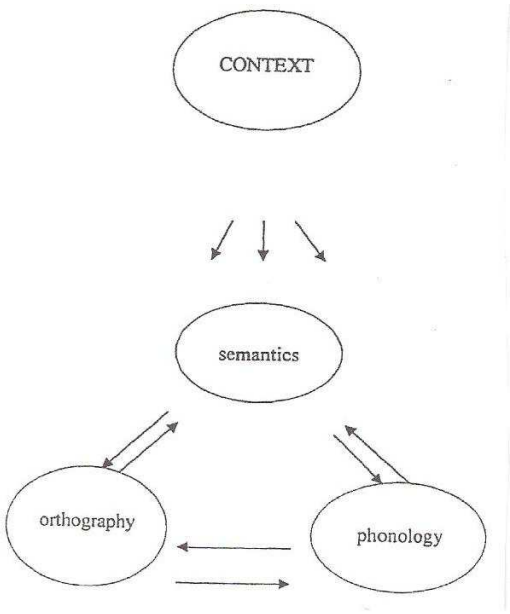
level. Evidence supporting this view is provided by Marsh and colleagues' studies (1977). Their findings showed that 7-year-old children made fewer analogies of non-words to real words than 10-year-old readers. According to other researchers (Goswami & Bryant, 1991), if young children are given knowledge about how a word can be divided into linguistic units at the onset-rime level, they can apply this knowledge to decode new words. Thus, relying on this knowledge of the onset-rime unit, children can avoid decoding a new word phoneme by phoneme. In Goswami and Bryant's (1991) view, children's phonological awareness at the onset-rime level makes a significant contribution to their formation of an orthographic category of common spelling patterns. In this light, phonological awareness at the onset-rime level comes to play a fundamental role in facilitating the reading process. At the methodological level, the analogy theory of reading is supported by teaching tasks such as identifying rhyming words, producing rhyming words, and segmenting or blending words at the onset-rime unit (Goswami & Mead, 1992). These are strategies to assist children in learning to read and spell new words through analogy to already acquired words (Gillon, 2004).

3.2.5 Connectionist Models

The development of more recent models of word recognition, referred to as 'connectionist' or 'parallel distributed processing' models, has been influenced by both the dual-route and the analogy models of word recognition. Despite the criticism they have been subjected to (for a critical review, see Coltheart, Curtis, Atkins, & Haller, 1993), these models may provide a useful framework to explain both typical and atypical reading spelling achievement (Ehri, 2000; Treiman, 1993). Connectionist models of word processing based on the influential Seidenberg and McClelland's model (Seidenberg & McClelland, 1989, see figure 3.2 below) stress the importance of phonological information to word recognition. In these models, both regularly and irregularly spelt words are thought to be processed in the same way, through a highly interrelated system of orthographic, phonological, and semantic knowledge acquired by the reader. Within this framework, then, phonological knowledge plays a fundamental

role. Phonological knowledge is necessary to the processing of a. unfamiliar words, b. learned words that can be decoded grapheme-by-grapheme (e.g., *sheep*), and c. known words that involve irregular elements (e.g., *sword*). In connectionist models, accurate grapheme-phoneme associations are viewed as a developing feature of the learning process (Bjaalid, Hoien, & Lundberg, 1997; Stemberger, 1992).

Figure 3.2 The Seidenberg and McClelland (1989) framework of reading (adapted from Snowling, 2002)



In a connectionist model, the connections between spoken and written words are gradually learned through distributed patterns of activity represented by orthographic, phonological, and semantic processors. When an individual reads the word *shop*, for instance, the orthographic pattern, i.e., the printed word on the page, needs to generate an appropriate phonological representation. This occurs due to excitatory and inhibitory interactions among orthographic, phonological, and semantic units. This means interactions between the letters in the words (orthographic units), the speech-sounds represented by the letters (phonological units), and the reader's vocabulary knowledge (semantic units). In early stages of reading acquisition, limited phonological knowledge is normally available. Thus, the orthographic pattern of the word *shop* may stimulate

any phonological representation starting with the letter /s/. Once phonological knowledge increases and associations between specific graphemes and phonemes are strengthened through the learning process, only connections from the orthographic pattern close to phonological representations (e.g., *ship*, *shoe*, *show*) are activated. Continued learning and access to a complete phonological representation of the word *shop* will then contribute to strengthening the correct associations between the orthographic, phonological, and semantic patterns. In this way, all other connections will be gradually inhibited (Seidenberg & McClelland, 1989). In a type of model that has been implemented using a computer program (for a review of how connectionist models have been implemented using computer programs, see Harm & Sedenberg, 1999; Baker, Croot, McCleod, & Paul, 2001), the orthographic, phonological, and semantic connections are strengthened by increasing the 'weights' between particular input units (orthographic units to code the letter strings) and output units (to code phonological information). The weights represent learning. The connections become stronger with exposure to and practice in making a connection between a letter or a string of letters and its phonological form. The connections between the input and output units in the computer stimulation of the model are generated via a set of 'hidden units.' These units allow for complex connections (e.g., phonemes represented by more than one grapheme, as *f* and *ph* for /f/) to be made between the orthographic and phonological units (Gillon, 2004). Harm and Seidenberg (1999) elaborated an earlier connectionist model to examine the role of phonological information in early reading acquisition, as well as to analyze how impairment at the phonological level may interfere with reading acquisition. Using computational modeling of their theory, they showed that by impairing the phonological input in the computer model, in which the phonological structure of words is learned (i.e., phonological awareness), there was a decrease in the computer's ability to read non-words and generalize learning to untrained words. Thus, as a consequence to severe impairment to the phonological unit, there was difficulty in reading non-words and irregular words from which the model could not recover (Gillon, 2004). With reference to spelling development, connectionist

models can be used to explain poor spelling achievement as well (Brown & Lossemore, 1994). It was shown, for instance, that by decreasing the number of connections between activity representing the phonological from of a word and activity representing the orthographic form of a word, the spelling achievement of the computer model greatly resembled the performance of children with dyslexia (cf. 2.5) (Brown & Lossemore, 1994).

It is not easy to immediately grasp an understanding of a model like the connectionist model, that is expressed in computational terms of 'weights' and 'hidden units.' Yet, this is not the main concern in this discussion. A dual-route model, on the contrary, might appear easier, with its direct practical meaning, i.e., decoding a word letter by letter or visually remembering a whole word. Yet, as Gillon (2004) remarks, connectionist models are more relevant to understanding the role of phonological awareness in reading and spelling acquisition. Connectionist models are consistent with Ehri's (1991) modified dual-route model and analogy models, which generally state that skilled readers utilize knowledge about a word's phonological structure, either at the phoneme or onset-rime level, to access both regularly and irregularly spelt words in print. Furthermore, these models are consistent with practical knowledge gained by professionals from educational, health and clinical fields who witness the struggles that older poor readers face when acquiring an alphabetic language such as English (cf. 6.3.2). In fact, most children who are unable to rapidly associate the orthographic and phonological forms of words do not become fluent readers in the long run. In the early stages of reading learning words visually by rote may be a good strategy, but once texts become more complex and articulate, learning the arbitrary shape of each word and attaching some meaning to it, without any cues from phonological information, may be too demanding for memory (Gillon, 2004). As a consequence, at the methodological level, reading teaching practices for children who struggle to recognize words in print should be aimed at reinforcing connections between all patterns, i.e., orthographic, phonological, and semantic information networks. Within this framework, supporting and reinforcing phonological awareness knowledge in children can help them utilize

phonological information in making connections with orthographic and semantic information during reading and spelling tasks (Gillon, 2004).

3.3 Stage Models in Word Recognition

The models presented in the preceding paragraphs represent the theoretical framework in order to understand how skilled readers recognize printed words. Within this study, it is also crucial to understand the *developmental process* leading to the acquisition of word recognition and spelling. Developmental models of reading and spelling growth (e.g., Ehri, 1991; Frith, 1985; Gough & Hillinger, 1980; Marsh *et al*., 1980) traditionally rely on sequential and progressive stages of development that children are supposed to pass through in order to acquire efficient and adequate skills in word recognition and spelling. In stage models, it is the understanding of the 'alphabetic' nature of written (alphabetic) languages that is seen as the major obstacle for most children beginning to read. Spelling-sound correspondences, while not thought to be easily learned, are thought to significantly reduce what a child must learn to read an alphabetic, as compared to a non-alphabetic (cf. 3.9), writing system (Juel, 1984). Stage models thus share the notion that understanding the alphabetic system is at the heart of learning to read, yet they differ in what is learned and how what is learned is used in the reading process. According to stage models, there are qualitative different cognitive processes involved in each stage (Ellis, 1994). Some researchers (e.g., Treiman & Bourassa, 2000) have questioned this notion recently. Others have also criticized the failure of stage models to account for the complex interactions between different sources of knowledge in word recognition and spelling. This is why it has been proposed that 'stages' should instead be viewed as a period in the child's development in which a particular strategy/skill may prevail. This strategy, though, does not prevent the child from utilizing other strategies or processes of different stages/periods simultaneously (Treiman & Bourassa, 2000). As will be seen in the following sections, phonological awareness turns out to be critical to word recognition, because it helps readers decode

words and use phonological information to access orthographic representations of words and their meaning.

3.3.1. Logographic Stage

Three stages are typically proposed in stage models of word recognition, namely logographic, alphabetic, and orthographic. Some researchers (Catt & Kamhi, 2005; Chall, 1983) have included an emergent literacy or prereading stage (cf. 4.1). In most stage theories of reading, the initial stage is referred to as a visual, logographic or pre-alphabetic stage (Ehri, 1991, 1995; Frith, 1985). Frith (1985) has proposed a logographic stage which marks the end of the emergent literacy period, and a transition to an alphabetic stage of reading. During this phase, children remember how to read sight words by forming connections between one or more salient graphic features of printed words or their surrounding context and their pronunciations, and by storing these associations in memory (Catts & Kahmi, 2005; Ehri, 1995). Gough and Hillinger (1980) describe this as a process of 'paired associate learning'. Ehri and Wilce (1983) call this process 'visual cue reading.' Gough, Juel and Griffith (1992) showed that in this stage beginning readers choose single salient visual cues to remember words. In one case, the salient cue was found to be a thumberprint appearing next to a word. Only when the thumberprint was next to the word, were children able to read the word. In the word *look*, the two round 'eyes' were found to be visual cues used by readers to form connections. In *dog*, the visual cue was the 'tail' dangling at the end of the word. In *camel*, the visual cues were the two 'humps' in the middle of the word (Gough, Juel, & Roper/Schneider, 1983). In an experimental study (Masonheimer, Drum, & Ehri, 1984), a group of children who could read environmental print[22] was selected, and presented the print with one letter altered, e.g., *Xepsi* for *Pepsi*. Children did not notice the change. This happened, not because they had not paid enough attention to letters in the signs, but because they had not stored the letters in memory as part of the connections that

[22] Environmental print is the print of everyday life: the symbols, signs, numbers, and colors found in places such as McDonald's or Coop supermarkets and on websites, for instance. These are thought to offer excellent entry points for young children to begin to learn to read and write.

supported their reading of the signs. This confirms that the associations formed in lexical memory are between salient visual cues and meanings of words. As a result of this, children are unable to read new words, and can be easily fooled by switching visual cues (Catts & Kahmi, 2005).

In a discussion on the phases of development in learning to read words by sight, Ehri (1995) argues in favor of the label 'pre-alphabetic' rather than 'logographic,' because, unlike the following phases, letter-sound relations are not involved in the connections. Children do not use knowledge of letter names or sound-letter relationships to recognize words yet; whereas in later phases the involvement of letter-sound connections restricts the word accessed in memory to a single pronunciation linked to the word's spelling. Other researchers such as Gough and Juel (1991) also discard the term 'logographic,' on the basis that beginning readers do not read words like mature readers of logographic orthographies such as Chinese (cf. 3.9.1). True logographic readers remember sight words as analyzed 'gestalts,' i.e., shapes, and not by selecting visual cues (Ehri, 1995). Gough and Juel (1991) share with other scholars (Samuels, 1976) the assumption that children beginning to read master first words through 'paired-associated learning', i.e. a selective association process. In this process, beginning readers examine a stimulus, and select from it some cue, some property (e.g., the font, the number of the letters, the left-most or the right-most letter in the word), which can distinguish it from the other stimuli. The response is thus associated only with one particular cue. When that cue is next encountered, the associated response is retrieved. If it is correct, the association is retained, while if it is wrong, it is discarded and another cue is selected (Gough & Juel, 1991).

There has been controversy about the role of logographic reading on the development of word recognition skills. According to Share and Stanovich (1995), it has no functional properties, as it does not take into account associations between print and sound at the sub-lexical level. The two scholars reviewed a large number of experimental studies that showed no positive correlations between logographic reading and later reading skills. This means that, in relation to the acquisition of proficient word

recognition skills, the logographic phase can be defined as a pre-reading one. It also means that children are not required to be able to read logographically in order to later be able to read phonetically (Share & Stanovich, 1995).

3.3.2 Alphabetic Stage

Each stage theory (Chall, 1983; Ehri & Wilce, 1983; Frith, 1985) proposes a certain number of developmental stages in order for a child to develop proficient word recognition skills. Ehri (1991; 1995; Ehri & McCormick, 1998), for instance, has identified five phases of children's knowledge of the alphabetic system: pre-alphabetic, partial alphabetic, full alphabetic, consolidated alphabetic, and automatic alphabetic. However, all stage theorists generally agree that, once children start reading words by processing sound-letter correspondences, they move into the alphabetic stage. During this stage, children normally acquire alphabet knowledge and become able to use sound-letter correspondences to decode novel words. Most theories of reading development acknowledge that constructing associations between sounds and letters is the most crucial (if not challenging) task for beginning readers. Yet, recognizing letters and coupling them with appropriate sounds is not enough. Nor is it enough to memorize the sounds that go with each word. The child must additionally realize that it is the sounds that make up spoken language (phonological awareness development) and be able to link the letters to the particular set of phonemic sounds that comprise spoken language. This last is the alphabetic insight – called 'alphabetic principle' – that underlies the ability to phonologically decode words (Kamhi & Catts, 2005). This allows children to analyze words into their component sounds and synthesize sounds together to form words.

In her model, Ehri (1991; 1995) distinguishes between a pre-alphabetic and an alphabetic phase. In the pre-alphabetic stage, children begin to learn connections between written and spoken forms. Partial spelling-sound connections (at first with only one or two letters) are made, causing the substitution of words that have similar visual-phonetic cues (e.g., *jail* for *jewel*) (Ehri, 1992). During the first stages, readers make many

errors as the letter cues used appear in a number of other words. As they gain more reading experience through practice and exposure, children's attention is focused more closely on the spelling-to-sound relations which are established in memory (Ehri, 1992). During Ehri's (1991; 1995) mature or full alphabetic stage, readers acquire the ability to analyze spelling fully, thus allowing for accurate translation of graphemes to phonemes to occur. In this phase, words with similar pronunciations are no longer confused. Within the theoretical foundation of this discussion, phonological awareness skills can be viewed as crucial both at the pre-alphabetic and alphabetic stages of word recognition development, because they allow readers to analyze the word at the sub-word level.

3.3.3 Orthographic Stage

As discussed in the previous paragraph, the alphabetic insight and learning of letter-sound associations mark the transition into the alphabetic stage and the true beginning of word recognition. As remarked by Harris & Coltheart (1986), reliance upon phonics procedure (i.e., in *cat*, *c* corresponds to /k/, *a* to /æ/, and *t* to /t/) may be an appropriate way to acquire reading, but cannot be sufficient as a way of becoming skilled in reading, since skilled reading is achieved if the reader can adequately cope with homophones (e.g., *sea*, *see*) and with irregularly spelt words (e.g. *busy, said*). Thus, orthographic knowledge is necessary in order for children to develop automatic, effortless word recognition skills. Progress from being a beginning reader to a skilled reader implies a progressive increase in reliance upon an orthographic (visual) recoding. This means that words are recognized directly in terms of their spellings, and not indirectly in terms of their pronunciations (Harris & Coltheart, 1986).

According to Ehri (1991) and Frith (1985), the orthographic phase begins when children accumulate sufficient knowledge of spelling patterns so that they are able to recognize words visually without phonological conversion. Orthographic knowledge accumulates as readers phonologically decode different words that share similar letter sequences, recognize these similarities, and store this information in memory (Kamhi &

Catts, 2005). It is during the orthographic stage that children start using letter sequences and spelling patterns to recognize words visually. Through experience, for instance, children begin to recognize common letter patterns such as *ing*, *ment*, *ed*. They can read these segments as whole units based on phonological knowledge, rather than using grapheme-phoneme conversion strategies for each letter in the unit. This phonological knowledge allows speed and efficiency in reading to be achieved. In contrast to the logographic stage, the grapheme-phoneme connections are now analytic and systematic (Gillon, 2004).

3.4 Word Recognition as an Automatic Process

Most theorists define fluent word recognition as an automatic process. Yet, the notion of automaticity is a complex one. The difficulty of determining what automatic word recognition actually involves has been discussed by Stanovich (1990, 1991). The concept of automatic word recognition brings together features that can actually be differentiated, such as speed, capacity usage, conscious control, obligatory execution, and influence of higher level knowledge. These factors do not develop at the same time. In this light, the notion of 'modularity' seems to define the development of word recognition skills more accurately (Kamhi & Catts, 2005). A modular process operates quickly, without being affected by higher level processes. The concept of modularity was first proposed by Fodor (1983). According to the researcher, modular systems have functional autonomy and are cognitively impenetrable. Proficient word recognition then can be defined as a modular process, in that it is fast, requires little capacity and conscious attention, and is not controlled by higher level knowledge sources. In favor of this view, research (Gough, 1983) has shown that context effects decrease as word recognition skills improve. This means that readers rely less on higher level knowledge sources as their word recognition skills become more modularized. As stressed by Kahmi and Catts (2005), theorists will probably continue to refer to automatic word recognition skills, but it could be useful to include modular notions when talking about proficient word recognition skills.

3.5 Stage Models in Spelling Development

Spelling as a developmental phenomenon has received less attention than reading. Recent thinking (Ehri, 2000; Kamhi & Hinton, 2000) has emerged, though, on similarities between reading and spelling. In a review of studies that measured both spelling and reading, Ehri (2000) concluded that they were 'two sides of a coin,' in that both processes are based on the same basic alphabetic, orthographic, and morphological knowledge. However, more information from memory is required for spelling. As will be seen in the following sections, phonological awareness can be said to be critical to early spelling, as it helps the speller map phonemes to graphemes and recognize common spelling units within words. Research that investigated and categorized children's spelling attempts (for a review of these studies, see Ellis, 1994, and Henderson & Beers, 1990; Peters, 1967) has identified distinct stages of spelling development. The concept of developmental stages in spelling has been subjected to criticism, as with stage models of word recognition (Treiman & Bourassa, 2000). However, a general understanding of spelling stages provides a useful framework by which developmental aspects of children's spelling attempts are described (Gillon, 2004). The 4-stage model of spelling development proposed by Ellis (1994) generally follows the same stages as those illustrated for word recognition. Ehri's (1987, 1979; 1989) model of spelling and word recognition as well as the one proposed by Frith (1985) both reflect the interactive relationship between reading and spelling and suggest that these two processes mutually influence each other. The following sections briefly present each stage as per Ellis (1994) and Ehri's (2000) descriptions.

3.5.1 Pre-Communicative Spelling

By the age of 3 or 4 years, children normally start recognizing writing as distinct from drawing, and can reliably sort cards containing one or the other (Lavine, 1977). One of the classic studies of this period is Ferreiro's (1979; 1984) work with young Mexican children aged 3 to 5. The researcher asked children open-ended questions about their

drawing and writing, to explore children's understanding, to get children to explain what they were doing, and thus provide insights into what they were trying to do. Initially, children considered letters as objects with names. Children were not aware yet that writing stands for speech-sound symbols (Ferreiro, 1979; 1984).

At this stage, children's attempts to write may have a scribble-like nature and only partially resemble real letter forms. Children normally know how to write some letters, e.g., the letters in their names. Yet, letters used in their creative writing attempts represent random strings of letters with no resemblance to the phonology of the word in reference. Children may accurately copy a whole word as a result of teaching, but they have no understanding or awareness of the association between letters and phonemes in the word (Ehri, 2000; Ellis, 1994). One spelling example of this phase is the word *boenybsbun* for *dinosaur*, which represents a sequence of random strings of letters (Gillon, 2004). In this light, this stage of spelling can be associated with the logographic stage of word recognition previously discussed (cf. 3.3.1), in which children's attempts to read are based on the association of visual features and environmental contexts of the word, with no involvement of phonological information. Likewise, during this phase of spelling growth, there is no evidence of phonological awareness knowledge (Gillon, 2004).

3.5.2 Semi-Phonetic Spelling

Once children start showing evidence that they understand how letters are used to represent sounds in words, they are beginning to make use of their semi-phonetic skills. There is evidence of partial mapping between letters and sounds, as well as of letter-name strategy (e.g., the word *are* spelt as *R*, or *you* as *U*) (Ellis, 1994). Highly salient initial consonants are the first letters to appear (e.g., *f*, *s*, *r*), and harder-to-hear sounds (e.g., vowels, nasals, and certain members of consonant clusters) are frequently omitted. This phase in spelling is consistent with Ehri's (1991) partial alphabetic stage of word recognition, where partial-decoding attempts of words in print are evident. Semi-phonetic spelling attempts in children indicate the emergence of phonological

awareness. Initial phonemes in words or stressed syllables may be accurately written, thus showing that children are becoming aware that words are comprised of individual phonemes. There is no evidence that their phoneme segmentation ability is complete though. Spelling examples of the semi-phonetic phase are *shat* for *shark*, *fre* for *fish*, and *rern* for *rain*, where partial phoneme-to-grapheme mapping is evident The word *rern* for *rain* especially suggests the child's development toward the phonetic stage with the marking of the salient consonant sounds of the word in the correct order and attempt at the vowel sound (Gillon, 2004).

3.5.3 Phonetic Spelling

Children's phonetic spelling attempts indicate closer approximation to spelling the word the way it sounds. Children can normally represent the main phonological traits of the word, but they lack knowledge of the complex grapheme-phoneme connections and spelling conventions (e.g., represent final /k/ in the word *back* with a *ck*). Marking of vowels in unstressed syllables may not be present. Children tend to orally segment the word and spell the segmented form (sometimes inserting additional vowels) (Ehri, 2000). This behaviour indicates that children are using their knowledge of the alphabet and regular phoneme-grapheme relations. This stage of spelling growth can be associated with the alphabetic stage of word recognition (cf. 3.3.2), in which children are able to use alphabetic knowledge to decode words. Phonetic spelling attempts show children's phonological awareness skills at play. Now children are able to use their knowledge about a word's sound structure to connect the phonemes they hear in the word to associated graphemes or closed approximations (Gillon, 2004). According to research (for a review of studies, see Ellis, 1994, and Frith, 1985), the development of phonological awareness at the pre-phonetic and phonetic stages of spelling positively influences the use of the alphabetic strategy in reading.

3.5.4 Transitional Stage

This phase, which corresponds to Ehri's (2000) consolidated alphabetic stage, is distinguished by children's closer adherence to orthographic conventions, helped by reading experience and exposure (Ehri, 1994; Frith, 1985). There is evidence of phonological awareness at the syllable level; e.g., syllable awareness in spelling multisyllabic word. Each syllable is now represented with a vowel (e.g., *dinisore* for *dinosaur*). Differences in vowel sounds are marked with the use of diagraphs (e.g., spelling the word *cake* as *caik* or *caek*). Children also tend to overuse the final *e* pattern at this stage (e.g., *rane* for *rain*). They start applying morphological knowledge to spelling through the use of phonological cues (e.g., representing *ed* as *id*, or *ment* as *mint*). The transition from phonetic spelling to morphological and orthographic spelling suggests that children are integrating phonological awareness knowledge with visual orthographic knowledge (Ellis, 1994). Correct spelling skills emerge with the development of complete orthographic and phonological representation of words. In order to achieve true fluency in the transcription process, then, it is necessary for children to learn the patterns that characterize English orthography (e.g., doublets, as in *will*, occur at the end of a word but not at the beginning). It takes several years before children can successfully spell long vowel patterns, consonant diagraphs and trigraphs (e.g., *-tch*), r-controlled vowels (e.g., when a vowel is followed by *r*, the letter *r* affects the sound of the vowel, as in *bird*), and other orthographic patterns. It takes even longer for readers to learn about patterns that occur at syllable boundaries, e.g., whether there is one or two *r*s in *carries* and the fact that the plural ending is spelt *–ies* after dropping the *y*. At this advanced stage, children are learning to apply their developing semantic and morphological knowledge to the spelling task (Kahmi & Catts, 2005). Spelling examples of the transitional phase are *shiak* for *shark*, *kaek* for *cake*, *kagaro* for *kangaroo*, *tethe* for *teeth, brigsh* for *bridge* (Gillon, 2004).

3.6 From Stage Models to the Self-Teaching Hypothesis

Stage models of word recognition and spelling have received strong criticism (Share & Stanovich, 1995). As observed by some scholars (Share & Stanovich, 1995), although the stages of word recognition and spelling acquisition describe in detail the skills and domains of knowledge required to become a proficient reader, these stages do not seem to be supported by empirical evidence. Furthermore, these stages tend to focus on the domains of knowledge that children need to posses to become proficient readers, rather than the mechanisms underlying changes in reading proficiency. One additional problem with stage theories is that each stage is associated with only one kind of reading, e.g., logographic, alphabetic, orthographic. As a consequence, children should read all words with the same method at every specific stage, which is not what normally occurs in reality. Additionally, research has not examined yet how the domain of knowledge in each stage actually develops. In the initial phases of the alphabetic stage, for instance, children do not posses much alphabetic knowledge, while they are able to phonologically decode most words by the end of the stage. The process by which this increase of knowledge occurs is not typically described by most theorists (Kahmi & Catts, 2005). One additional aspect that is often neglected is individual differences in how children become proficient readers. In general, it can be argued that the development of word recognition skills tends to be oversimplified (Kahmi & Catts, 2005).

As recently remarked by Share (2008), some doubts have been raised about the applicability of these stages to languages and orthographies other than English. In some experimental studies (Landerl, 2000) researchers observed evidence for partial alphabetic strategies (e.g., *twenty* for *twelve*) among English first graders, but not among their German-speaking peers. Another longitudinal study by Sprenger-Charolles and Bonnet (1996) showed no evidence of logographic reading among French-speaking children from early kindergarten to the end of first grade. Austrian children were also found to progress quickly from nonreading to fully alphabetic reading, without developing strategies of the logographic approach (Wimmer & Hummer, 1990). Similar

phenomena have been found to occur in other languages, such as Greek (Porpodas, 2006), or Kannada (Karanath, 2006). On the basis of these considerations, Share (1995) and Share and Stanovich (1995) have proposed an alternate view called 'self-teaching hypothesis,' where children become proficient in recognizing printed words through a self-teaching process rather than passing through well-defined stages. The self-teaching hypothesis, unlike stage models, tries to explain *how* children become proficient at word recognition. According to this theory, phonological decoding functions as a self-teaching mechanism that enables the beginning reader to independently acquire the detailed orthographic representations necessary for fast and accurate word recognition and for proficient spelling. Share and Stanovich (1995) do not deny that direct, explicit instruction and contextual guessing may play a role in developing orthographic knowledge. Yet, they argue that phonological decoding represents the most viable mechanism for the acquisition of fast and accurate visual word recognition and for proficient spelling. Direct instruction is useful, but children have to deal with too many unfamiliar words. Nagy and Herman (1987) discovered that the average English-speaking fifth grader encounters approximately 10,000 new words per year. It is impossible to imagine how teachers and peers can help children learn all of the unfamiliar words. Contextual guessing also is somehow problematic. According to Gough (1983) and Share and Stanovich (1995), context may be a false friend, as it works best for high-frequency function words (e.g., determiners), but not very well for content words. Yet, function words do not contribute much to the meaning of a text. In addition, the inadequacy of contextual guessing is partly due to the large number of synonyms or near-synonyms present in the English language (Share & Stanovich, 1995). The self-teaching hypothesis proposes that, from each successful decoding attempt, children learn specific information about the word's orthography, from which they acquire an orthographic representation of the word. High frequency reading words, i.e., words that children encounter and decode frequently in early reading experiences (e.g., *the*, *of, is*, Blevins, 2006) allow for well-established orthographic representations that children can access efficiently, with little decoding required. On the other hand, less familiar words

require decoding until a sufficient number of exposures to the word allow for the orthographic representation to be accessed (Share, 1995; Share & Stanovich, 1995). At first, children may learn simple one-to-one phoneme-grapheme correspondences, but with increased decoding experiences and exposure to printed words they acquire knowledge of more complex phoneme-grapheme associations. Initially, consonants (*m, l*) are more likely than vowels to be decoded successfully, because grapheme-phoneme connections are generally more consistent (except for initial consonant clusters, which pose more difficulties). Final consonant decoding normally follows successful initial consonant decoding (Share, 1995). With print exposure, early sound-letter correspondences become 'lexicalized,' i.e., they come to be associated with particular words. As children become more attuned to spelling regularities beyond the level of simple one-to-one phoneme-grapheme associations, this orthographic information is used to modify the initial lexicalizations developed by children (Share & Stanovich, 1995). Basic knowledge of simple sound-letter correspondences is used as a starting point for the beginning reader, as a scaffold for acquiring (Share & Stanovich, 1995: 25) "complex lexically constrained knowledge of spelling-sound relationships that characterize the expert reader." Therefore, according to the self-teaching hypothesis the primary component involved in the development of fluent word reading is the ability to decode words using knowledge of grapheme-phoneme relationships. The ability to process visual information, i.e., store and retrieve orthographic information, is viewed as a secondary component dependent on successful phonological processing. This view is consistent with the previously presented modified dual-route model of word recognition (cf. 3.2.3) (Ehri, 1992), where the ability to recognize words by sight is related to the ability to make connections between phonological and orthographic information and not arbitrary rote learning of orthographic cues. In the self-teaching hypothesis, the ability to recognize words by sight is considered the result of accumulated phonological and orthographic knowledge following successful decoding attempts (Gillon, 2004). More recent studies by Share and colleagues (Share, 1999; Shatil & Share, 2003) still support the primary role of phonological decoding in word

recognition. The findings of one study, for instance (Share, 1999) showed that pure visual exposure to a novel word did not facilitate orthographic learning, thus indicating the critical role played by phonological decoding. In this light, phonological awareness skills play a fundamental role in the self-teaching hypothesis. At a first stage, children who approach decoding with a degree of phonological awareness and letter-sound knowledge will be successful in their decoding attempts of printed words, on which visual and orthographic processing are dependent. Consequently, this decoding success will increase children's knowledge of how phonemes in words can be segmented and blended together. This, in turn, will lead to increased success in decoding and the establishment of accurate orthographic representations of words (Gillon, 2004). Thus, the self-teaching hypothesis, likewise Ehri's (1992) modified dual route theory, contributes to attributing an essential role to phonological awareness skills.

Treiman's (1993) description of children's spelling development seems to be consistent with Share's (1995) self-teaching hypothesis of word recognition. The spelling skills of 43 6-to 7-year-old children were analyzed in detail, and important conclusions about children's early spelling growth were drawn (Treiman, 1993). It was shown, for instance, that first-grade children were more likely to spell correctly those words (and phoneme-grapheme relationships) to which they had received more exposure in print. The frequency of the word's exposure, as well as the context of the phoneme within the word, thus influenced children's spelling development. Complex connections (e.g., one phoneme but two letters in the grapheme, as *sh*) were harder to be accurately achieved, and connections between initial and final phonemes were stronger than those with internal phonemes (Treiman, 1993).

3.7 Connected Text Reading Model

The models and theories proposed in the previous sections illustrate how children normally read and spell words *in isolation*. However, when reading connected text, there are some factors, e.g., contextual features, that can facilitate word recognition. Word recognition is only one of the skills required in order to comprehend texts. Others

include, for instance, understanding semantic relationships in sentences, semantic association skills, using context to determine the appropriate meaning of words with multiple meanings, utilizing knowledge of sentence and narrative structure, and acquired knowledge of the world (Roth & Spekman, 1989; van der Broek *et al*., 2005). This integration of word-level processing and higher-level processing is normally considered within an interactive model.

Rumelhart's (1977) interactive model integrates two opposing views that dominated earlier research. One view is defined as the *bottom-up* processing view. The bottom-up model (Gough, 1972) describes the reading process in a linear way that includes a series of hierarchical steps. This reading model emphasizes the printed text, states that reading proceeds from the parts to the whole, and is driven by a process resulting in meaning. Within this process, decoding skills are highlighted in the translation of the printed string of letters to spoken form and access to meaning. Another view is termed the *top-down* processing view. Unlike the bottom-up model, this reading model emphasizes what the reader brings to the text, proposes that reading is driven by meaning and proceeds from whole to part. Processing of a text begins in the mind of the reader with meaning-driven processes and assumptions about the meaning of the text (Goodman, 1985). This view poses that contextual knowledge provides cues for the reader in the word recognition process (Athey, 1997, Goodman, 1985), and stresses the importance of higher cognitive processes (e.g., syntactic and semantic skills) in ruling lower-level information processes (Smith, 1971). Both views have received strong criticism (Rumelhart, 1977). A number of experimental findings related to the effects of semantic and syntactic contexts on word recognition were criticized, as they cannot be explained by the bottom-up reading model, which provides no mechanism whereby higher-level processes can influence lower-level processes (Rumelhart, 1977). On the other hand, the prediction from the top-down view that a skilled reader should be more dependent on contextual information to speed word recognition has been disproved as well, as the strategy of relying on contextual cues is likely to be used by poor readers as well (Stanovich, 1984, 1986). In order to conceptualize reading of connected text, most

researchers now support some form of interactive model. An interactive model proposes that when reading, skilled readers use information from different processing levels simultaneously, and lower-level processes are not necessarily completed before higher-level processes are activated (Gillon, 2004). At the practical level, for instance, during the reading of a storybook about farm animals, children may read a sentence like *The horse likes to eat grass*, without knowing the word *grass*. If children only employ top-down strategies, they may rely on their knowledge of the world, i.e., of what horses typically like to eat (e.g., hay, carrots, straw). As there is a large number of words semantically and grammatically acceptable in the context, there is a high chance for children to make errors. On the other hand, if children integrate phonological and orthographic information, i.e., know that the letters *gr* make a /gr/ sound, and that the word *grass* starts with a /gr/ sound, then children are more likely to choose the correct word (Gillon, 2004). Thus, if children access several sources of information at the same time, as proposed by interactive models, their reading accuracy is increased. An understanding of interactive reading models is not the main focus of this study. However, what is crucial for our purposes is that phonological awareness can be viewed as a fundamental component of the interactive model as well, in that it contributes to the ability to integrate phonological information with semantic and syntactic knowledge when reading connected text.

3.8 The Simple View of Reading

One basic model of reading comprehension referred to as the 'simple view of reading' (Gough & Tunmer, 1986; Hoover & Gough, 1990) is worth a mention here, as it stresses the relevance of decoding skills in early reading acquisition. In this view, phonological awareness is considered an essential component of the reading comprehension process, via the importance attributed to word recognition skills. It is universally acknowledged that a variety of linguistic skills is necessary for written text comprehension, yet, as shown by research (Stanovich, 1985; Stanovich *et al*., 1988), differences in word decoding skills account for much of the variance in reading comprehension achievement, and

inefficient word decoding skills have been shown to be critical to the comprehension issues of many poor readers (Rispens, 1990; Stanovich, 1991). According to the simple view of reading (Gough & Tunmer, 1986; Hoover & Gough, 1990), the reading comprehension process consists of two distinct yet interrelated components: decoding and linguistic comprehension. As previously seen (cf. 3.2), decoding refers to the (Hoover & Gough, 1990: 130) "ability to rapidly derive a representation from printed input that allows access to the appropriate entry in the mental lexicon, and thus, the retrieval of semantic information at the word level." The representational skill that must be acquired by beginning readers is phonologically based (Gough & Hillinger, 1980), as their major task is to access the mental lexicon for known words they have never seen in print. If beginning readers are able to derive appropriate phonological representations for such novel printed inputs, then a lexicon already accessible on the basis of phonological codes through the course of language acquisition can also start being accessed on the basis of print. This process does not coincide with but relies mainly on knowledge of print form. On the other hand, linguistic comprehension, or listening comprehension, includes the process by which spoken language, at the word, sentence and discourse level, is understood and interpreted (Gough & Tunmer, 1986) or (Hoover & Gough, 1990: 131) "the ability to take lexical information (i.e., semantic information at the word level) and derive sentence and discourse interpretations." Linguistic comprehension usually requires higher-order reasoning and inference skills and relies on graphic-based information arriving through the eye. If decoding is more dependent on print knowledge, linguistic comprehension is more dependent on oral language comprehension. Decoding and linguistic comprehension have been proven by experimental research to be of equal importance, as well as crucial for becoming skilled readers (e.g., they have been shown to account for differences in reading comprehension) (Hoover & Gough, 1990). Decoding and linguistic comprehension can be dissociated (Gough & Tunmer, 1986). There are, for instance, cases showing average and even superior linguistic comprehension in the absence of decoding skills, as demonstrated by the phenomenon of dyslexia (cf. 2.5) (Hoover & Gough, 1990). On the

other hand, there are cases of individuals who possess high decoding skills but low linguistic comprehension, as in the syndrome known as hyperlexia (Healy, 1982). A model of reading comprehension based on two main components does not mean that it denies the complexities underlying the reading process. On the contrary, it implies that such complexities are restricted to either of the two components. Linguistic comprehension, whether accomplished in reading or listening, is undoubtedly a complex process. So is decoding, as proven by the extreme difficulties faced by some children in acquiring it. These two complex processes are both important in the model. Reading is not reduced to decoding, as the reading process necessarily involves the full set of linguistic skills, such as parsing (i.e., syntactic analysis), bridging reading with writing, and discourse building. However, decoding skills are crucial in the reading process, as without them linguistic comprehension would be of no use. This implies that both decoding and linguistic comprehension are necessary for reading success, neither being sufficient by itself (Hoover & Gough, 1990).

The simple view of reading has been welcomed positively by several researchers and practitioners. Some scholars (Crowder, 1982) argue that the definition of reading should be restricted to the decoding component only. This can be defined as a narrow view of reading. The simple view of reading and its narrow scope has the advantage of proposing a restricted set of processes to be examined by researchers (Perfetti, 1985, 1986). The whole notion of literacy seems to be affected by the simple view of reading. Basic literacy is generally associated with a narrow definition of reading, while skilled literacy is associated with a broader definition, where reading comprehension is viewed as (Gates, 1949: 3) "a complex organization of patterns of higher mental processes […] that should embrace all types of thinking, evaluating, judging, imagining, reasoning, and problem-solving." The simple view of reading here presented seems to correspond to an 'in-between' level of literacy. As remarked by Catt and Kamhi (2005: 4): "Developmentally, the decoding and simple views of reading are more applicable to children learning to read, whereas the complex thinking definition is more applicable to older children and adults who read to learn." As a consequence, word recognition skills

(and consequently phonological awareness) are considered critical in early reading acquisition, whereas listening comprehension may be important in later stages of reading acquisition, when children have mastered basic decoding skills and reading texts increase in complexity (Hoover & Gough, 1990). This is an important consideration, in relation to our focus on fostering phonological awareness skills in children even before they are exposed to formal reading instruction.

3.9 Word Recognition in Non-Alphabetic Languages

As previously discussed, dual-route models (cf. 3.2.2) provide separate pathways for phonological and orthographic information to access the lexicon; analogy models (cf. 3.2.4) claim that orthographic information is only used to activate some phonological forms (e.g., words with rare spellings such as *antique*); and connectionist models (cf. 3.2.5) claim there is only one pathway along which both sources of information interact. In summary, most models of skilled reading in alphabetic orthographies allow for the processing of both orthographic and phonological information. One might wonder whether the same is true for non-alphabetic scripts such as Chinese or Japanese, i.e., whether processing of both orthographic and phonological information is similarly activated in beginning readers of non-alphabetic scripts. Experimental research (Ellis *et al.*, 2004; Holm & Dodd, 1996; Hung & Tzeng, 1981; Katz & Frost, 1992; Lam, Perfetti, & Bell, 1991) has shown that the use of both orthographic and phonological information in reading is not limited to alphabetic orthographies. There is a general consensus that both information sources are activated to read alphabetic, syllabic[23], and logographic[24] scripts. Both alphabetic and logographic orthographies have been shown to involve phonological processing (although at different levels, i.e., at the syllable level for Chinese, rather than at the phoneme level as in alphabetic languages), and in particular phonological decoding (Ellis *et al.*, 2004; Huang & Hanley, 1995; Hung & Tzeng, 1981;

[23] A syllabic script is a phonetic writing system made of symbols representing syllables (e.g., the Japanese script).

[24] A logographic script is a writing system made of symbols representing morphemes or words (e.g., the Chinese script).

Katz & Frost, 1992; Lam, Perfetti, & Bell, 1991; Perfetti *et al*., 1992; Tzeng, Hung, & Wang, 1977; Wagner & Torgesen, 1987). This does not mean that phonology mediates identification in all orthographies, rather, it is a *component* of identification in all orthographies.

3.9.1 The Case of Word Recognition in Chinese

The Chinese language represents an interesting case when exploring word recognition skills in non-alphabetic languages. Chinese (also called Mandarin) uses an ideographic script, where written signs express the words or morphemes of the spoken language. Chinese logographs map out spoken language at the morphemic level, i.e., there are not grapheme-phoneme correspondences as in alphabetic languages, but grapheme-morpheme relations (Hung & Tzeng, 1981), where each morpheme is also a syllable. Chinese characters contain stroke patterns which have particular representational functions. They can be either semantic radicals or phonetic components (Chan & Nunes, 1995). The degree of semantic information provided by semantic radicals varies, but in general they are helpful in deriving partial meaning of the characters. The relationship between the phonetic components and the pronunciation of the characters also varies. The sound of some characters can be derived directly from their phonetic component, while there is another group of characters with phonetic components whose sound can only be derived by analogy with other characters that contain the same phonetic component (and these can be homophones, partial homophones, rhyming syllables, or completely different syllables) (Ho & Bryant, 1997). The predictive accuracy of the pronunciation of a character from its phonetic component has been found to be only about 39% (Zhou, 1980, quoted in Chan & Nunes, 1998). An added difficulty is that the phonological component gives no clue as to the tone[25] of the characters (Chan & Nunes, 1998). Thus, these variations seem to weaken the connection between the components of a character and the reading of the character as a whole, so that for Chinese children the

[25] Chinese is a tonal language, where every syllable is pronounced with one of four tones or voice inflections. Tones distinguish syllables that otherwise would be homophones (Shu, Anderson, & Wu, 2000).

task of learning to read typically relies on visual (lexical) cues, as they are required to learn to associate each spoken word with a particular character. Generally, beginner readers have no other way to learn to read than master the thousands of distinctive characters through rote memorization (Tzeng & Hung, 1980). In addition, grapheme-morpheme connections are the most prominent mappings in Chinese, morphological or syllabic awareness has been found to be a stronger predictor of children's initial reading success than is phonological awareness (Ku & Anderson, 2003; Li *et al*., 2002; McBride-Chang *et al*., 2004). Current models of Chinese reading (Perfetti *et al*., 2005; Taft, Zhu, & Peng, 1999) stress the importance of a fully specified orthographic representation prior to the activation of phonological and meaning information in reading Chinese. A series of studies has additionally suggested that orthographic processing is the basic processing component in reading Chinese (Peng, Li, & Yang, 1997; Shu & Anderson, 1999; Taft, Zhu, & Peng, 1999).

While in Taiwan and Hong Kong children are taught to read in the traditional Chinese script (i.e., through rote memorization of the characters), in Mainland China children are taught to read through a Roman script, i.e., the *pinyin* system (García, 2009). *Pinyin* is currently the most commonly used Roman version for Standard Chinese, and is used not only to teach Chinese as an L1 in Mainland China, but also internationally to teach Chinese as an L2. The *pinyin* alphabet allows children to read words through phonological decoding. Children are expected to be competent in reading and writing in Chinese through the alphabetic system by the end of elementary school. Once they have acquired a sufficient ability in the *pinyin* alphabet, they are introduced to reading the ideographic script. In order to make the transition from an alphabetic to an ideographic script easier for children, at first ideographic characters are matched with their *pinyin* version (Harris & Coltheart, 1986). As a consequence, it can be assumed that, just as phonological awareness skills play a crucial role for children prior to reading alphabetic scripts, so do phonological awareness skills play a crucial role for Chinese-speaking children prior to reading instruction in the *pinyin* script. At the same time, the formal

exposure to reading the *pinyin* script will contribute to developing and strengthening children's phonological awareness skills.

One important 4-year longitudinal study (Ho & Bryant, 1997) was carried out to explore the relationship between Chinese children's phonological awareness skills and their success in reading. One hundred Hong Kong 3-year-old children were initially assessed on visual and phonological skills before they could read[26], and on reading tasks with real and pseudocharacters when they had been introduced to reading instruction. Pseudocharacters were introduced in order to directly test children's use of the phonetic component in reading, as the only way to read such pseudocharacters was on the basis of their phonetic component. The mean rate of correct responses for this last task was significantly positive (59%). In addition, the study's findings showed that prereading phonological skills significantly predicted children's reading outcomes in Chinese two and three years later. The researchers suggested that, once children know the two orthographic components in a Chinese character, i.e., the semantic and the phonetic component, they tend to rely on the phonetic component for sound cues, and their success in doing so is to some extent dependent on their phonological awareness skills. Furthermore, the fact that the visual measures predicted Chinese word reading in the earlier sessions, whereas the phonological measures predicted word reading in later sessions, suggested that children initially learn to read Chinese characters on a purely visual-logographic form, whereas later they tend to do so on a phonological basis (Ho & Bryant, 1997). The researchers concluded that there are similarities between the way children learn to read alphabetic and non-alphabetic scripts. In fact, similarly to Ehri's (1991) suggestion for English-speaking children (cf. 3.3.1), Chinese children learn to read at the first logographic stage by forming arbitrary connections between some visual cues in characters and their meaning and pronunciations. At a second stage, Ehri (1991)

[26] The majority of preschools in Hong Kong start teaching children to read in the first year, when they are 3 years old. Others (like the one in the study by Ho and Bryant) do not start until the second year. Children normally begin by learning to read single Chinese characters, and, later, multiple-character words and short phrases. Teachers usually use a whole-word approach in reading instruction (Ho & Bryant, 1997).

suggested a visual-phonological route, by which children begin to read words on the basis of some rudimentary connections between spelling patterns and sounds (cf. 3.3.2). Similarly, by learning to read more Chinese characters, Chinese children may begin to realize that some stroke patterns recur in different characters, and that stroke patterns are sometimes associated with semantic categories, and sometimes with pronunciations (Ho & Bryant, 1997). Interestingly, Chinese children are not explicitly taught about the phonetic component of Chinese characters, but typically learn it by exposure to and practice in reading (Ho & Bryant, 1997). One additional study (Chan & Nunes, 1998) has confirmed that, although Chinese children normally memorize Chinese characters holistically when exposed to reading instruction, they also develop an implicit understanding of the formal (i.e., the type and position of the elements used in the script) and functional (i.e., the type of information conveyed by the elements) characteristics of their script, namely, they become gradually sensitive to the rule-based structure of the semantic and phonetic radicals that comprise the characters of Chinese (Chan & Nunes, 1998). A more recent study (Shu, Anderson, & Wu, 2000) investigated the development of phonetic awareness over the elementary school years of 113 second, fourth, and sixth-grade Chinese-speaking students in Mainland China. Children were required to represent the pronunciation of 60 semantic phonetic compound characters. The researchers interestingly referred to the insight into the structure and function of the phonetic component of semantic phonetic compound characters as 'phonetic' awareness, compared to 'phonological' awareness in alphabetic languages. While phonological awareness entails paying attention to the units of speech, phonetic awareness is inextricably tied to orthographic units (Shu, Anderson, & Wu, 2000). As expected, both character familiarity and character regularity[27] affected children's performance. Results indicated that children as young as second graders were better able to represent the pronunciation of regular characters than irregular characters, thus revealing a degree of phonetic awareness. Phonetic awareness was then found to

[27] A regular compound character was considered one in which the character had the same pronunciation as its phonetic component (Shu, Anderson, & Wu, 2000).

continue to develop over the elementary years. What Shu and colleagues lastly suggested is that Chinese children who are phonetically aware have insights into the principles that govern orthography-phonology relationships in Chinese, which may be compared to the alphabetic principle in alphabetic languages (Shu, Anderson, & Wu, 2000).

In general, the results of the experimental studies reviewed above reveal that there are indeed some similarities in the processes underlying word recognition in alphabetic and non-alphabetic languages, namely, reading in both types of languages relies on phonological awareness skills (although at different degrees). This can have some important implications for our overall discussion, as in the Italian preschool context where we propose to introduce phonological awareness tasks in English the number of immigrant children with various language backgrounds is currently booming (Di Rienzo, 2009). For example, 39.3% of children in Italian preschools were non native Italian speakers over the scholastic year 2008/2009 (MPI, 2009). The findings revealing that phonological awareness skills have been found to play an essential role in both alphabetic and non-alphabetic languages make it crucial for language educators to involve *all* children with various language backgrounds in phonological awareness activities and games.

3.10 Phonological Awareness and Theories of Word Recognition: A Summary

The theoretical framework of reading and spelling development presented in these paragraphs is essential in its relation to phonological awareness. As a review of all the theories here proposed, it can be said that phonological awareness plays a fundamental role in all the most relevant models of word recognition and spelling development in alphabetic languages, as well as in reading acquisition in non-alphabetic languages. Following is a list that summarizes the ways in which phonological awareness gives its fundamental contribution in each of the reading models presented. Each point includes some teaching implications for those educational settings where an L2 (in our case

English) is introduced to young learners. To summarize, phonological awareness contributes to:

- The decoding of regular words (e.g., *dog*) by the phonological route in the dual-route theory (Gillon, 2004).
  Teaching implications: within a preschool setting where an L2 is introduced, this stresses the importance of fostering phonological awareness skills in the L2, in that understanding how a word can be divided into smaller sound units can assist future readers in the decoding process. At the methodological level, activities related to the phonological route include listening to initial sounds in regular words, blending sounds to form regular words, or segmenting regular words into smaller sounds. In choosing or designing phonological awareness tasks, educators should initially include regularly spelt words only (e.g., *cat*, *hot*, *bug*).
- The recognition of both regularly and irregularly spelt words in the modified dual-route theory and connectionist models (Gillon, 2004).
  Teaching implications: phonological awareness is viewed as a crucial component in the recognition not only of regular words but also of irregularly spelt words. This once again stresses the importance of fostering phonological awareness skills within an L2 preschool context, as those skills will be activated by children at an older age when reading irregularly spelt words. For example, when encountering the word *women* children might be able to infer the regular relations between *w*, *m*, *e*, and *n* first, and use this knowledge to recognize the whole word. Therefore, phonological awareness skills become crucial in the 'partial' yet critical role they play in recognizing irregularly spelt words.
- Understanding common spelling units in analogy models (Gillon, 2004).
  Teaching implications: if Italian preschool children are introduced to tasks fostering onset-rime awareness, they will gradually gain knowledge that English words can also be divided at the onset-rime level. When children are introduced to

formal reading and have consolidated memory for a variety of spelling-pronunciation patterns, this knowledge and awareness at the onset-rime level may help them avoid decoding each novel word phoneme by phoneme. For example, children may be able to recognize the novel word *map* because of its spelling and phonological similarities to already acquired words such as *cap* and *mat*. Within a preschool environment, onset-rime awareness can be developed through activities involving the identification of rhyming words, the production of rhyming words, or, with older children, the segmentation or blending of words at the onset-rime level.

- The pre-alphabetic stage of word recognition, facilitating transition into the alphabetic and orthographic stages.

  Teaching implications: within this stage, development of phonological awareness becomes crucial for preschool children to grasp an understanding of the alphabetic principle, not only in the L2, but also in their L1. If phonological skills are not accurately fostered or are neglected, and children are not guided in the discovery that words can be analyzed in smaller parts, children might find it harder to transit from the pre-alphabetic/logographic stage of word recognition to the alphabetic and successive stages.

- The semi-phonetic stage of spelling development, facilitating transition into the phonetic and transitional stages.

  Teaching implications: the role of phonological awareness played during this developmental phase is critical, in that it is normally positively related to the later development of spelling abilities. Therefore, preschool educators should foster phonological awareness skills not only in relation to later reading success, but also in relation to future spelling achievement.

- The successful decoding attempts that represent the foundation of the self-teaching hypothesis for word recognition acquisition.

  Teaching implications: if children acquire some degree of phonological awareness during the preschool years, they may feel more confident and successful when

attempting to decode English words during formal reading instruction. Children's success may in turn not only increase their phonological skills (e.g., segmenting and blending skills), but also lead to increased success in reading.

- The ability to integrate phonological information with semantic and syntactic knowledge when reading connected text.

  Teaching implications: if children's phonological awareness abilities are fostered during the preschool years, they may help children successfully tackle the more demanding task of integrating phonological information with semantic and syntactic information when decoding connected text in elementary school.

- Reading comprehension, together with linguistic comprehension, in the simple view of reading.

  Teaching implications: fostering phonological awareness skills in preschool children becomes essential in assisting not only their decoding skills, but also their future reading comprehension. Thus, phonological awareness can be viewed as a fundamental component not just *per se*, but alongside linguistic comprehension, the second crucial element that is thought to promote reading comprehension in older children.

- The ability to learn to read non-alphabetic orthographies in children speaking a non-alphabetic language.

  Teaching implications: if preschool children with non-alphabetic language backgrounds are engaged in phonological awareness tasks, they may be assisted in developing critical skills that can in the long run help them become plurilingual readers in both their L1 and other languages (Italian as an L2; English as an L1, L2 or L3[28]).

[28] There may be children in Italian preschools originally coming from countries such as India or Nigeria, where English is an official language, who may already have a certain oral knowledge of English, be it at the receptive or productive level, depending on their ages, and if English is their L1 or L2. Within an Italian preschool setting, for these children English may be an L1 or an L2 rather than an L3.

Understanding the theoretical contexts of how phonological awareness help foster word recognition and spelling knowledge, and, consequently, as increased word recognition skills encourage reading comprehension, provides the framework within which to evaluate activities and practices in phonological awareness, especially addressed to preschool children. Phonological awareness activities and games that help develop preschool children's later word recognition and spelling skills first, and reading comprehension ultimately, can be viewed as effective practices.

Within the scope of the present study, the role played by tasks fostering phonological awareness abilities in preschoolers becomes an essential issue that has not been tacked by research on ELTM in Italy yet. Thus far, our main concern has been to investigate this particular topic in relation to an L1, as well as to make it available and known within the field of ELTM in Italy. However, this discussion cannot be limited to an investigation of phonological awareness in children's L1. It will be our goal to investigate, later in this work (cf. Chapter 6), the relationship between phonological awareness in a children's first language and phonological awareness in a second or a foreign language, in order to see if what is being or has been acquired in an L1 can be transferred to an L2.

Chapter 4

Phonological Awareness as a Predictor of Literacy Development

> There can be little doubt that phonological awareness plays an important role in reading. (Goswami & Bryant, 1992)

4.1 Emergent Literacy

Some researchers on reading (Chall, 1983, Catts & Kamhi, 2005) include an 'emergent literacy' stage in their stage models of word recognition and spelling development (cf. 3.3). Chall (1983: 13), for instance, proposes what she defines as 'Stage 0. Prereading: Birth to Age 6.' This is the time when children develop visual, visual-motor, and auditory skills required to learn to read. This phase covers the longest period of time, and involves the greatest developmental changes in children. From birth to formal schooling, children who are raised in literate cultures with an alphabetic writing system accumulate knowledge about letters, words, and books (Chall, 1983; Kamhi & Catts, 2005; Teale & Sulzby, 1986). Children develop mastery of many aspects of language, such as vocabulary and syntax. Additionally, they gain some insights into the nature of words. For example, they learn that some words sound the same at their ends or beginnings (rhyme and alliteration), that they can be broken into parts, and that parts can be put together to form whole words (Chall, 1983). Most researchers are now unanimous that becoming able to read and write in a first language is not an all-or-nothing phenomenon (Clay 1966, cited in Whitehurst & Lonigan 1998; Ferreiro & Teberosky 1979; Pinto 1993; Sulzby 1985; Teale & Sulzby 1986). On the contrary, this process can be defined as a 'developmental continuum' originating early in the life of children, well before they are exposed to formal instruction in schools (Clay 1966, cited in Whitehurst & Lonigan 1998). This prolonged process during which children learn skills foundational to later literacy prior to formally learning how to read is often referred to in the literature as *emergent literacy*, a term that is traditionally attributed to

Clay (1966, cited in Teale & Sulzby, 1986). Emergent literacy is normally defined as (Whitehurst & Lonigan, 1998: 849) "the skills, knowledge, and attitudes that are presumed to be developmental precursors to conventional forms of reading and writing and the environments that support these developments." This definition is discussed in detail in a seminal volume on the topic edited by Teale and Sulzby, *Emergent Literacy: Writing and Reading* (1986). The two scholars initially reflect on the fact that the term 'literacy' has always been mainly defined as 'the ability to read.' Traditionally, researchers and teachers have paid more attention to reading than writing (Graves 1978, cited in Teale & Sulzby 1986). With reference to the term 'emergent,' Teale and Sulzby explain that it implies development, something in the process of becoming, and can thus be suitably applied to the first years of a child's life, where reading and writing development is taking place. The two scholars prefer 'emergent' to another term frequently found in the literature, namely 'preliteracy,' arguing that the period of reading and writing development, the skills, knowledge and behaviors acquired by children, are not *pre*-anything (Teale & Sulzby, 1986). On the contrary, they conclude that (Teale & Sulzby, 1986: xix) "at whatever point we look, we see children *in the process of becoming* literate, as the term *emergent* indicates," and (Teale & Sulzby, 1986: xx) "we use *emergent* to suggest that development is taking place, that there is something new emerging in the child that had not 'been' there before." In the present discussion, the scholars' view will be supported.

Little attention has been paid to writing development (Taele & Yokota, 2000). It is not until the late 1970s and early 1980s that empirical work on early writing indicates that emerging reading and writing should not be considered as separate processes (e.g. Ferreiro & Teberosky, 1979; Sulzby, 1985). There is now considerable evidence to show that there exists a dynamic relation between writing and reading, because each influences the other in the course of development, and that reading comprehension is engaged in during writing (Ferreiro & Teberosky, 1979; Lombardino *et al*., 1997; Oerlemans, & Dodd, 1993; Sulzby, 1985). During the emergent literacy period, children in literate cultures accumulate literacy knowledge. How much knowledge they

accumulate depends on literacy artifacts and events, as well as their interest and facility in learning. At one end of the literacy continuum are those children from low-print homes, who have little exposure to literacy artifacts and events. They tend to begin formal schooling with little literacy knowledge. At the other hand of the continuum are those children raised in high-print homes, who might be at an early stage of word recognition when they begin formal instruction (Catts & Kamhi, 2005). The following paragraphs describe three models of emergent literacy development and skills in alphabetic languages, in order to see if any role is played in each of them by the skill under investigation in this study, namely phonological awareness.

4.2 Three Independently Developed Models of Emergent Literacy

This section presents the three most popular independently developed models of literacy development in alphabetic languages proposed so far: Scarborough's model (2001), van Kleeck's model (1998; 2007; 2008a), and Whitehurst & Lonigan's model (1998; 2001). All three are based on findings taken from experimental studies on reading and reading disabilities (for a review of studies, see Adams, 1990, and Gillon, 2004).

4.2.1 Whitehurst and Lonigan's Model

In 1998, Whitehurst and Lonigan proposed a model of emergent literacy, drawing their conclusions on data taken from evidence-based studies available at that time. Whitehurst and Lonigan (1998) distinguish between the expressions 'emergent literacy' (i.e., preschoolers' skills that may be associated with later conventional literacy); 'emergent literacy environments' (i.e., experiences that may affect emergent literacy development) and 'emergent literacy movement' (i.e., advocacy of activities that increase socialization in a literate context for preschoolers). They classify emergent literacy skills into two main categories: *outside-in* and *inside-out* units. Outside-in processes include sources of information from outside the printed world. These sustain children's understanding of the meaning of print. The inside-out units represent sources of information within the printed world. These support children's ability to translate

print into sounds and sounds into print (Whitehurst & Lonigan, 1998). The following table summarizes the components of emergent literacy as proposed by Whitehurst and Lonigan (1998: 850).

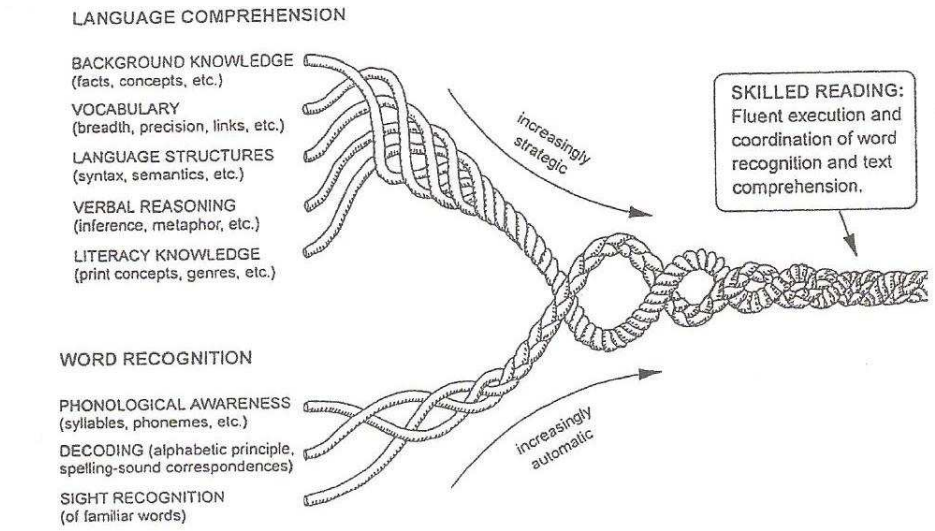
Table 4.1 Components of Emergent Literacy (adapted from Whitehurst & Lonigan, 1998: 850)

Component	Description
Outside-in processes	
Language	Semantic, syntactic and conceptual knowledge
Narrative	Understanding and producing narrative
Conventions of print	Knowledge of standard print-format
Emergent reading	Pretending to read
Inside-out processes	
Knowledge of graphemes	Letter-name knowledge
Phonological awareness	Detection of rhyme; manipulation of syllables; manipulation of individual phonemes
Syntactic awareness	Repair grammatical errors
Phoneme-grapheme correspondence	Letter-sound knowledge; pseudoword decoding
Emergent writing	Phonetic spelling
Other factors	
Phonological memory	Short-term memory for phonologically coded information
Rapid naming	Rapid naming of serial lists of letters, numbers, or colors
Print motivation	Interest in print shared reading

4.2.2 Scarborough's Model

In 2001, Scarborough proposed a picture (see Figure 4.1 below) illustrating what she defined as the major 'strands' that are woven together in the course of becoming skilled readers. She emphasized how it is customary to distinguish between the strands that have been identified in the literature on reading and reading disabilities involved in word recognition (i.e., recognizing individual printed words), and the strands included in language comprehension (i.e., comprehending the meaning of the strings of words). This is done even though these two processes develop and operate interactively. Following is Scarborough's visual representation of emergent literacy development.

Figure 4.1 Strands of early literacy development (Scarborough, 2001: 98)



Scarborough presented the results she gathered from a meta-analysis she performed in 1998 as evidence for her model. She analyzed findings from 61 studies of kindergarten children, who were first assessed prior to formal schooling, and were followed up after receiving one or two years of reading instruction. Scarborough was interested in identifying correlations[29] between kindergarten predictor variables and later reading achievement (cf. Table 4.2). As remarked by the researcher (Scarborough, 2001), even though the average correlations of individual kindergarten predictor measures were not strong but overall moderate (e.g. 0.46[30] for phonological awareness), these results demonstrated that the important cognitive-linguistic strands that must be

[29] Correlational studies look for relationships between variables, and are frequently used in areas such as psychology research. The validity of correlational studies is often debated. Although they can suggest that there is a relationship between two variables, finding a correlation does not prove that one variable *causes* a change in another variable. For example, a correlational study might suggest that there is a relationship between academic success and self-esteem, but it cannot prove that a change in the first variable causes a change in the second variable.

[30] According to the values suggested by Cohen (1988), average correlations that are 0.50 or larger are considered 'strong' correlations. Average correlations that are between 0.30 and 0.49 are viewed as 'moderate' correlations. Average correlations that are below 0.30 are referred to as 'weak' correlations (cf. 4.4.1.7).

coordinated in reading acquisition were already in place before formal school instruction (see Table 4.2 below).

Table 4.2 Correlations between kindergarten predictor variables and later reading outcomes (adapted from Scarborough, 2001: 99)

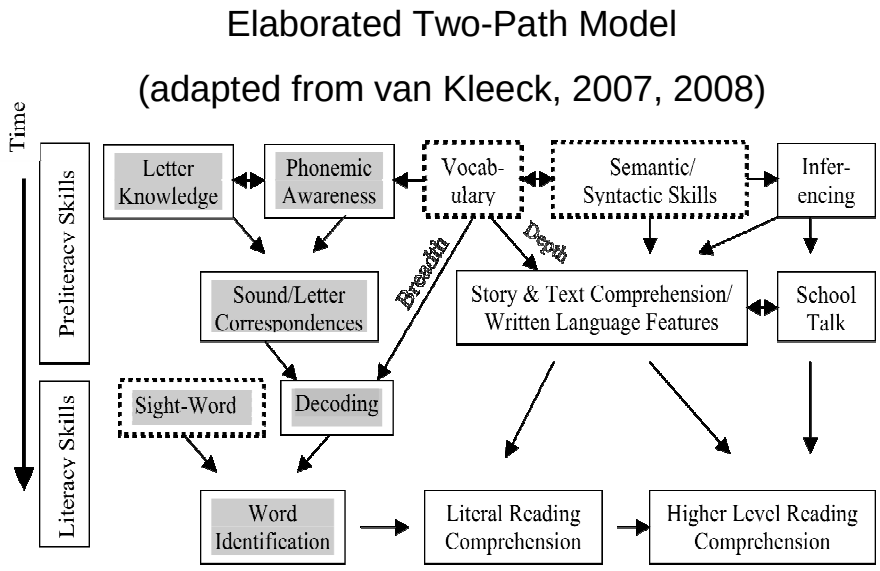
Predictor variable	*No. of samples*	*Mean r*
Measures requiring the processing of print		
Rudimentary reading: letter-sound knowledge	21	0.57
Letter identification	24	0.52
Print concepts	7	0.46
Measures of oral language proficiency		
General language index: expressive and receptive skills	4	0.46
Phonological awareness	27	0.46
Expressive vocabulary	5	0.45
Sentence or story recall	11	0.45
Rapid serial naming speed	14	0.38
Verbal IQ	12	0.37
Receptive language (syntactic)	9	≤0.37
Receptive vocabulary	20	0.33
Expressive language skills	11	0.32
Verbal memory	18	0.33
Receptive language (semantic)	11	0.24
Speech production	4	----
Speech perception	11	0.22
Measures of nonverbal abilities		
Visual memory	8	0.31
Nonverbal IQ	8	0.26
Motor skills	5	0.25
Visual discrimination	5	0.22
Visual-motor integration	6	0.16

4.2.3 van Kleeck's Model

In 1998, van Kleeck proposed a model of emergent literacy derived from the model of later reading process developed by Seidenberg and McClelland (1989, cf. Figure 3.2), and further elaborated by Adams (1990). There are four emergent literacy components that are at the heart of van Kleeck's model (1998; 2003) and they always work in concert: the 'orthographic processor,' the 'phonological processor,' the 'meaning processor;' and the 'context processor.' The orthographic and phonological processors include a set of skills that are foundational for later development of the *form* aspect of print. They are

specific to reading an alphabetic language system such as English. A solid knowledge of these skills can facilitate children's transition to the early stages of decoding print, namely reading texts themselves (van Kleeck 1998). On the other hand, the meaning and the context processors contain abilities foundational to the *meaning* aspect of print. Their knowledge can assist children in deriving meaning from texts read aloud to them and can be of use in contexts other than reading, e.g., syntactic knowledge, one of the skills related to the context processor, can be used by children in several contexts (van Kleeck 1998). van Kleeck's (2007; 2008a) latest model of emergent literacy development is presented below in Figure 4.2.

Figure 4.2 Elaborated Two-Path Model (van Kleeck, 2009)



In 2009 (see Table 4.3 below), van Kleeck elaborated a summary including what she viewed as the main components of emergent literacy, drawing on experimental studies on reading and reading disabilities (for a review of studies, see Adams, 1990). In her summary, van Kleeck differentiated between what can be strictly defined as emergent literacy skills (e.g., letter knowledge, or phonemic awareness), cognitive processes involved in the development of emergent literacy (e.g., rapid naming, or auditory

perception), the contexts/activities in which knowledge and skills are learned and practiced (e.g., book sharing, or emergent writing), as well as the cultural beliefs and practices underlying literacy (e.g., conversational socialization).

Table 4.3 Preliteracy Development (adapted from van Kleeck, 2009)

Components	
Print specific	
Letter knowledge	Knowing the names, shapes and sounds of letters
Print conventions	Such features as the left-to-right and top-to-bottom direction of print on the page, the progression from front to back across pages, the difference between the covers and the pages of a book, etc.
Sight word recognition	
Phonemic awareness	
Rhyming	
Sound-letter correspondences	
Book conventions	Knowing how books are created and how they work; knowing that books are for reading and not manipulating; knowing that pictures are not things but representations of things, etc.
Functions of print	
General cognitive and linguistic	
Vocabulary	
Word awareness	Being aware that words are units of language; being able to segment sentences into component words; being conscious that words are independent from their referents
Semantic-syntactic skills	the ability to reflect on syntactic rules; to produce increasingly complex syntactic constructions; to recognize grammatical functions of words
Story narrative skills	Knowing that stories normally follow a story grammar format, that they are constructed in terms of story elements and cohesive devices
Book conventions	
Inferencing	During book-sharing, being able to go beyond the information directly provided by the text, being able to make predictions beyond the text level, before, during and after reading, and recognize different kinds of relationships between different parts of the text
Written language features	
School talk	
World knowledge	
Cognitive processes	
Verbal short-term memory	Regular word; exception word; non-word
Rapid naming	Letters; numbers; colors; simple objects; high frequency words; low frequency words
Auditory temporal processing	
Auditory temporal processing	
Auditory perception	Speech and non-speech
Visual processing speed	

According to van Kleeck (2009), within an educational preschool setting, it is the print specific components and the general cognitive and linguistic components of emergent literacy development that can be especially strengthened in young children.

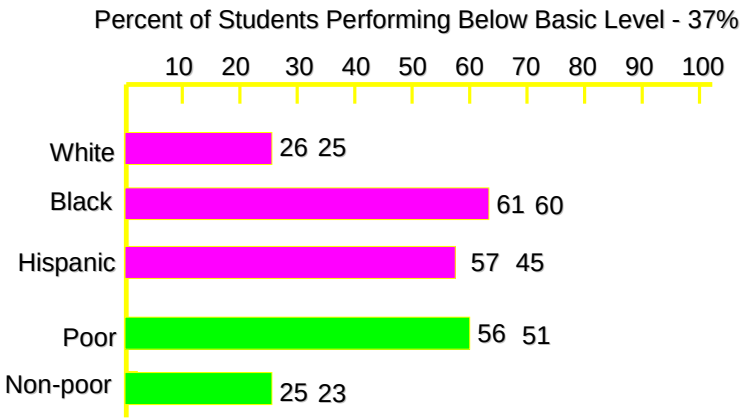
The three models of emergent literacy introduced here present some similarities and some differences regarding the main emergent literacy skills they include. A full discussion of these similarities and differences, while interesting, runs the risk of detracting from the main point; all three include *phonological awareness* as a component of emergent literacy skills in children. The following sections present data from the meta-analyses on emergent literacy skills carried out by the National Early Literacy Panel in 2002. This represents the most recent and most comprehensive review of the scientific literature on the component elements of emergent literacy and other related issues. In this chapter, only the meta-analysis on the component skills of emergent literacy will be presented and discussed. Before presenting NELP findings, though, it is necessary to throw some light on the reasons *why* this Panel was established in 2002.

4.3 Literacy in the United States: Data from the Reading Achievement Report

Literacy is universally recognized as a crucial foundational skill permeating nearly every sphere of our lives as agents and citizens. Being able to read and write allows us to fully participate in everyday social interactions and activities, as well as to have access to varied forms of individual and shared knowledge, learning, and information. The latest findings presented by the National Assessment of Educational Progress (NAEP), a periodic assessment of student progress conducted in the United States by the National Center for Educational Statistics, reveal that 37% of U.S. fourth graders fail to achieve basic levels of reading achievement (Lonigan & Shanahan, 2008). In order to reach a basic level achievement, fourth graders should be able to demonstrate an understanding of the general meaning of age-appropriate texts. In addition, they should be able to relate what they read to their personal life experiences as well as extend the text contents by making simple inferences (see the NAEP Reading Achievement Levels

by Grade at http://nces.ed.gov/nationsreportcard/reading/achieveall.asp). The reading achievement percentage gets even higher when it is referred to children coming from low-income families, English-language learners (i.e., students whose first language is other than English), and ethnic minority groups, especially Hispanic[31] and African American children (Lee, Grigg & Donahue, 2007). Furthermore, the National Assessment of Educational Progress reveals that the average reading score for fourth-graders in public school, who represent 90% of fourth-graders, namely the vast majority of children, is lower than for students in private schools, who represent only 10% of fourth-graders (Lee, Grigg & Donahue, 2007). Following is a table with the percentage of students performing below basic reading level:

Figure 4.3 Percentage of students performing below basic level (van Kleeck, 2009)



The National Reading Panel (NRP) was established in 1997 to find out what could be done to improve literacy achievement in school-aged children, and consequently guide reading-education policy and practice in the Unites States. The Panel was also asked to carry out a review of the scientific research literature on reading, but it only

[31] The term *Hispanic* tends to be used interchangeably with *Latino* in the United States for people coming from Spanish-speaking countries, e.g., Mexico.

focused on school-aged children, without investigating the implications of instructional and learning practices addressed to preschool children, i.e., from zero to five years of age. Yet, as shown by experimental research on reading and reading disabilities (cf. Chapter 2 and Chapter 3), knowledge and skills acquired before formal schooling are crucial in order to perform successfully in school at an older age.

4.4 The National Early Literacy Panel

The National Early Literacy Panel (NELP) was established in 2002 to fill the gap in the work conducted by the National Reading Panel. The main task of the NELP was to conduct a synthesis on the scientific research of emergent literacy learning and instruction in children from the age of zero through the age of five, following a similar methodological process as the one used by the National Literacy Panel (cf. 4.4.1). The final research review was intended to contribute to choices and decisions in education policy and practice that foster emergent literacy development, and to establish the role that parents and teachers could effectively play in this process. The team of panelists was chosen from expert researchers in the fields of reading, emergent literacy, language, cognition, English as a second language, pediatrics, special education, research methodology, and early childhood education: Timothy Shanahan, Anne E. Cunningham, Kathy C. Escamilla, Janet E. Fischel, Susan Landry, Christopher J. Lonigan, Victoria J. Molfese, Chris Schatschneider, Dorothy Strickland. In its work, the NELP was supported by some collaborating agents, namely, the National Institute for Literacy, in collaboration with the National Institute of Child Health and Human Development, the U.S. Department of Education, the Department of Health and Human Services, and the National Center for Family Literacy (Lonigan & Shanahan, 2008).

4.4.1 Research Methodology

In order to understand the relevance of the NELP findings, and why these findings can be said to rely on the most comprehensive and scientifically grounded synthesis of studies on emergent literacy development available thus far, the research methodology

adopted by the panelists is presented in this section. The NELP conducted a series of meta-analyses on the topic of emergent literacy development and instruction. A meta-analysis is a research process aimed at finding out the average findings of a collection of independent studies on a certain topic, as well as of analyzing variations in those data to determine the cause for those variations (Schatschneider, Westberg, & Shanahan, 2008). A meta-analysis is an independent research study in its own right that uses existing studies as the data for its investigation. Meta-analysis can be regarded as a reliable and objective methodological tool, as it summarizes external evidence across multiple independent studies that have been selected and examined according to explicit and transparent procedures. By using meta-analysis, researchers aim at including, excluding and evaluating studies through more objective criteria. The main goal is to provide a well-founded, less biased outlook on evidence-based research concerning a certain issue (Dollaghan, 2007). Findings from meta-analysis are presented quantitatively, through a summary statistic that averages the results from the individual studies. Meta-analysis is especially valued because it shows how crucial it is to collect multiple studies, as data from a single study cannot be said to be definite. In this light, meta-analysis is often assigned the highest level of evidence by several external evidence rating systems (Dollaghan, 2007). The Oxford Centre for Evidence-based Medicine Levels of Evidence, for instance, one of the first and most important evidence rating systems, ranks evidence that has been found consistently across multiple studies at the highest level (Dollaghan, 2007). Further evidence of the position of meta-analysis within the various levels of evidence can be found in The Scottish Intercollegiate Guidelines Network (SIGN)[32], as described in the figure below:

[32] The Scottish Intercollegiate Guidelines Network develops evidence-based clinical practice guidelines for the National Health Service (NHS) in Scotland. SIGN guidelines are derived from a systematic review of the scientific literature and are designed as a vehicle for accelerating the translation of new knowledge into action to achieve the goal of reducing variations in practice, and improving patient-important outcomes (http://www.sign.ac.uk/).

Figure 4.4 Scottish Intercollegiate Guidelines (www.sign.ac.uk)

Scottish Intercollegiate Guideline Network (SIGN); www.sign.ac.uk

Best	**I a**	**Meta-analysis of >1 high quality randomized controlled trial (RCT)**
	I b	Well-designed randomized controlled study
	II a	Well-designed controlled study without randomization
	II b	Well-designed quasi-experimental study
	III	Well-designed non-experimental studies, i.e., comparative, correlational, and case studies
Worst	IV	Expert committee report, consensus conference, clinical experience of respected authorities

These considerations on the tool of meta-analysis give us indications of the relevance of the data collected by the NELP through its search, and make it possible to consider it as the most comprehensive and evidence-based data summarized on the topic in the United States thus far. However, although evidence collected through meta-analyses is currently assigned the highest level by several evidence rating systems, and although meta-analysis is increasingly being used to summarize research evidence for a variety of purposes, there are still controversies about how best to conduct and interpret meta-analytic work. The NELP employed a methodology consistent with the one used by the National Reading Panel. The main goal of the NELP was to identify the most comprehensive set of obtainable data in an unbiased way and to examine those data in a straightforward manner with a minimum of manipulation or recalculation of the original data. This meant that the researchers had to (Schatschneider, Westberg, & Shanahan, 2008: 2):

a. Identify a collection of studies that addressed a particular research question.

b. Develop rules for systematically selecting which studies could be combined or compared.
c. Code key comparative information from the original studies.
d. Analyze these results statistically to determine the size of an effect[33] and which variations in study procedures, subject samples, or instructional circumstances were correlated with differences in these effects.

4.4.1.1 Research Questions

Before starting its review of studies, in order to have some clear guidelines and framework, the NELP designed four main research questions to be answered throughout the project (Schatschneider, Westberg, & Shanahan, 2008: 2):

1. "What are the skills and abilities of young children (age birth through five years or kindergarten) that predict later reading, writing, or spelling outcomes?
2. Which programs, interventions, and other instructional approaches or procedures have contributed to or inhibited gains in children's skills and abilities that are linked to later outcomes in reading, writing, or spelling?
3. What environments and settings have contributed to or inhibited gains in children's skills and abilities that are linked to later outcomes in reading, writing, or spelling?
4. What child characteristics have contributed to or inhibited gains in children's skills and abilities that are linked to later outcomes in reading, writing, or spelling?"

[33] An effect size (ES) is the difference between mean performance of treatment and control groups in standard deviation units (Dollaghan, 2007). The standard deviation of a statistical population, a data set, or a probability distribution, is the square root of its variance. It shows how much variation there is from the 'average' (mean, or expected value). A low standard deviation indicates that the data points tend to be very close to the mean, whereas high standard deviation indicates that the data are spread out over a large range of values.

The panelists carefully revised the research questions and resolved that the answer to Question 1 represented a necessary foundation to be able to answer the subsequent questions. This meant being able to adequately identify those skills and scopes of knowledge that can be considered prerequisites in learning to read, write, or spell, before investigating the influence of contextual and instructional practices on emergent literacy development. The following sections describe the methodology adopted to answer Question 1, but a similar methodology was used to tackle the subsequent questions as well.

4.4.1.2 Search Terms and Search Procedures

A rigorous methodology was adopted by the NELP in the identification, selection, analysis and evaluation of the published studies relevant to Question 1. A list of search terms in nine categories, i.e. *language*, *cognition*, *motivation*, *schooling*, *home and family*, *word learning*, *fluency*, *reading comprehension*, *miscellaneous*, was created by the project staff and approved by the panelists. After the panelists' review and revision of the terms and categories, a final list was drawn with 284 key search terms identified across the nine categories. Two additional categories were created for age group and literacy outcomes with a total of 67 terms identified in these categories. The Education Resources Information Center (ERIC) and PsycINFO databases were used to conduct electronic searchers of the articles that could be indexed by the categories identified as search terms. A careful process of review led to the elimination of 7,038 out of the 7,313 initially selected studies.

4.4.1.3 Inclusion and Exclusion Criteria

Most of the initially identified articles were eliminated because of the series of strict criteria and rationales formulated by the NELP in order to ensure the selection of studies of high quality and relevance to Question 1. This was also done in order to allow for the highest degree of comparability between the data in the articles selected. The

inclusion and exclusion criteria can be summarized as follows (Schatschneider, Westberg, & Shanahan, 2008: 3-5):

1. The study had to be published in English, as the panel did not have the resources to examine articles in other languages.
2. The study had to be published in a refereed journal. This ensured a minimum level of quality, as such articles had previously been evaluated by a panel of experts and judged to be of sufficient methodological rigor to warrant publication.
3. The study had to include empirical research that provided quantitative data on the emergent literacy development of groups of children who were representative of the normal range of abilities and disabilities that would be common to regular classrooms. This allowed for the statistical data to be combined across the studies to ensure the generalizability of results to the largest portion of young children. Studies were excluded if they were only descriptive or did not contain usable data (e.g., correlations), they did not contain relevant variables (e.g., no reading- or writing-related outcome variable), they did not specify the age group under investigation (e.g., children from preschool or kindergarten), they were case studies, reported only demographic information (i.e., information about subjects, languages, maternal education, family structure), they were qualitative studies, they included children with neurological or degenerative disorders (e.g., autism or AIDS), or children who were blind or deaf. This was done in order to ensure the generalizability of combinable data that would be appropriate to the research questions.
4. The study had to focus on English and other alphabetic languages. This ensured that the study findings would be maximally relevant and valid to English acquisition, as English uses an alphabetic writing system.
5. The study had to include children between the ages of 0 and 5. Studies were included only if they addressed these ages, if they included data on children from

this age group that could be analyzed separately, or if they included data on children from this age group that had been combined with the data of older children, provided that the original research had shown that both groups performed the same.

Additional searching was undertaken to identify studies that met the above criteria but may not have been identified in the electronic searchers. This was done by the panelists by reviewing the articles cited in nine previously published research reviews or meta-analyses. Furthermore, the panelists searched the reference lists of all studies identified electronically that had been selected, or they nominated articles they were aware of. A set of research journals (e.g., *The British Journal of Educational Psychology*, *Child Development*, *Reading Research Quarterly*) was also identified, and all issues from 2001 to 2003 were hand searched to identify relevant articles.

4.4.1.4 Article Review

The panelists screened the 7,038 articles using the above selection criteria, and categorized them according to their relevance to Question 1. The results of this initial screening let to a set of 1,824 studies from which panel members, in pairs, reviewed article abstracts to ascertain the study's relevance to Question 1. To be relevant to this research question, a study had to focus on a child skill measured any time from birth through the beginning of kindergarten, and this skill had to be statistically associated with a reading, writing, or spelling outcome measured from the conclusion of kindergarten to any time later, usually through a correlational procedure. If both panelists determined that an article was potentially relevant to the research question, it was added to the list of articles to be selected. When the panelists' opinions were in disagreement concerning an article's status, the panelists were contacted and asked to review their decisions and come to agreement about the study's inclusion. Occasionally, the two panelists would request a third panelist's opinion about the

status of a particular article. The review process produced a final total of 234 articles relevant to the first research question.

4.4.1.5 Early Literacy and Conventional Literacy Skills

In their search, panelists distinguished between skills assessed in children between zero and five years of age or in kindergarten, that they termed *early literacy skills*, and literacy skills assessed in kindergarten or beyond, that they termed *conventional literacy skill*. Conventional skills include abilities such as decoding, oral reading fluency, reading comprehension, writing and spelling. These are universally and easily acknowledged to be crucial and foundational components of literacy. These are also the skills upon which elementary and secondary teachers explicitly focus and work with their students, in order to develop their literacy achievement. On the other hand, there seems to be a different set of skills, those defined by the NELP as early literacy skills (e.g., phonological awareness), which are not always the explicit focus of literacy practice. However, this latter group of abilities represents an essential precursor to the later growth of conventional literacy skills (for a review of studies, see Adams, 1990, and Gillon, 2004). Furthermore, the Panel specified those criteria that had to be met in order for a skill to be defined as an early literacy skill (Lonigan, Schatschneider, & Westberg, 2008: 56):

1. The skill had to be present *before* the conventional literacy skill (temporal precedence).
2. The skill had to be related or predictive of a conventional literacy skill (covariation).

Conventional literacy skills were examined both in the receptive and expressive domains. The receptive domains included the ability to decode print, which in its turn included such outcomes as decoding words and nonwords, fluency, and measures of reading comprehension. The expressive domain included spelling and composition. The

studies reviewed contained findings both in the receptive and expressive domains, but not for composition. The answer to the first research question is particularly crucial, as it represents the foundation for answering NELP's subsequent questions. Without knowing the skills indispensable in order to become competent readers, it is impossible to determine what instructional programs and practices can be the most successful within a preschool educational or family context.

4.4.1.6 Coding Scheme and Coding Studies

The panelists identified seven categories for classifying study features (Schatschneider, Westberg, & Shanahan, 2008: 5-6):

1. Report identification: ID number, citation (i.e., author, title, source, year, volume, pages), study coder, whether study rejected and reason.
2. Setting: program type (e.g., daycare, preschool, kindergarten), ages or grades, country of sample, population density (e.g., urban, rural, mixed).
3. Demographics: information about subjects, languages, maternal education, family structure.
4. Research design: experimental, quasiexperimental, correlational, with a control group or no control group.
5. Experimental design features: subject assignment, components of treatment, treatment fidelity (e.g., ongoing supervision/consultation and observation; audiotapes; videotapes; use of manual).
6. Nonexperimental design features: correlational information, sample selection, measurement issues.
7. Measurement information: all research designs, test names and categories, reliability, measures, means and standard deviations, effect sizes.

A coding instrument was developed using the above coding scheme. The panelists decided to combine various measures used in the original studies into more general

conceptual categories for the purposes of coding. For example, the panelists coded several articles that measured aspects of reading that occurred in kindergarten or beyond. These measures were grouped into the larger categories of (Schatschneider, Westberg, & Shanahan, 2008: 6):

1. Reading, including measures of individual word identification, decoding of nonsense words.
2. Reading comprehension, i.e., measures of students' understanding of a written passage.
3. Reading fluency, which was represented by assessments that measure learners' ability to accurately and quickly read a series of words or sentences.

Many larger categories were defined in this manner, for the purposes of coding, as well as to allow for the highest degree of comparability between the data in the articles. Once studies were coded, the following step was for the panelists to compare effect sizes and classify outcome measures based on description of variables. Among the outcome measures determined by the panelists were alphabet knowledge (AK) [34], concepts about print[35], and decoding words[36]. As articles were coded, it became apparent to the panelists that several articles were missing data that were critical to carry out the meta-analysis. After unsuccessfully trying to contact article authors to retrieve the missing data, studies with missing essential data were excluded from the meta-analysis. After all the studies were identified and coded onto code sheets, they were entered into a database designed by the National Center for Family Literacy (NCFL). The unit of analysis was defined by the panelists as the effect sizes obtained from independent

[34] The knowledge of the names and sounds/phonemes of each printed letter/grapheme.
[35] Knowledge of print conventions (e.g., left–right, front–back) and concepts (book cover, author, text).
[36] Use of symbol-sound relations to verbalize real words or use of orthographic knowledge to verbalize sight words (e.g., *have*, *give*, *knight*).

groups. One single article often represented one independent group[37]. In some cases, a particular group of participants was used in more than one study (e.g., as in longitudinal studies with multiple assessments across time). In this case, results were grouped from across these studies and treated as a single group. Some articles included data from multiple independent groups. In this case, if groups were defined as distinct from one another, they were treated as independent groups (Schatschneider, Westberg, & Shanahan, 2008).

4.4.1.7 Analysis

Within the framework of the present study, the main interest lies in the Panel's answer to the first research question, i.e., the identification of children's skills and domains of knowledge predicting later reading, writing, or spelling outcomes. The main aim is to verify whether phonological awareness was found to be one of children's emergent literacy skills, and if so, whether its correlation to later literacy achievement was a significant one. These data are crucial, as they are derived from the most recent and comprehensive review of relevant and scientifically grounded research studies on the topic. As remarked by the panelists (Lonigan, Schatschneider, & Westberg, 2008), there has been a variety of theoretical writing, professional opinions, and best-practice documents proposing skills that should be considered the precursors to conventional literacy. Yet, prior to the Panel's research work, there had been little systematic empirical review of research showing that these skills predict later conventional skills. Two institutions, The National Center for Education Statistics, and the Early Childhood Longitudinal Studies had been undergoing a series of significant longitudinal studies, monitoring children's acquisition and growth from kindergarten and birth on since the late 1990s. The main objective was to determine growth path in school learning and their relation to children's and other environmental variables. However, these studies did not examine the predictability of children's literacy achievement on the basis of emergent

[37] Independent groups contain data on two unrelated samples. For example, comparison of male and female subjects would be independent groups.

childhood variables (Lonigan, Schatshneider, & Westberg, 2008). This is why the first goal of the Panel turned out to be the search for those early literacy skills that could be strongly proved to be positively correlated to later literacy achievement.

Before conducting their first meta-analysis, the panelists grouped preschool predictor and outcome variables of later literacy development according to the construct measured by using either the identified standard test of the construct (e.g., for decoding, the *Woodcock Reading Mastery Test*[38]), or the description of the measure included in the method section of the studies (e.g., a measure described as one where the examiner uttered a word and children were required to delete a sound from that word was considered as a Phonological Awareness measure). There had to be at least three empirical studies in order for an effect size for a predictor variable to be calculated (Lonigan, Schatshneider, & Westberg, 2008). An effect size (ES) is the difference between mean performance of treatment and control groups in standard deviation units (Dollaghan, 2007). An effect size of 1, for instance, indicates that the treatment group is one standard deviation unit higher than the control group, revealing a strong effect of a certain condition. There are several ES metrics, but the one adopted by the NELP is the so-called *R*-squared. The NELP collected studies aimed at determining the correlation between variables in a sample, and in this case, an ES measure of variance accounted for like *R*-squared represents the most appropriate tool to describe the strength of the correlation, or the extent to which the value of one accurately predicts the value of the other (Dollaghan, 2007). In the NELP research, values suggested by Cohen (1988) were used: average correlations that were 0.50 or larger (i.e., at least 25% of the variance in the outcome variable is explained by the predictor variable) were considered *strong* correlations. Average correlations that were between 0.30 and 0.49 (between 9% and

[38] The *Woodcock Reading Mastery Test* is an individually administered diagnostic battery of tests which provides various measures of reading achievement. This set of tasks measures an individual's ability to recognize words at sight, and identify nonsense words. It also measures knowledge of word meanings through formats utilizing antonyms, synonyms, and analogies, it measures student's ability to read and understand a short passage and then supply a key word missing from the passage. Additional subtests provide a measure of some word recognition skills, of understanding of text read, and of reading achievement (Woodcock, 1987).

25% of the variance in the outcome variable is explained by the predictor variable) were considered *moderate* correlations. Average correlations that were below 0.30 (i.e., less than 9% of the variance in the outcome variable is explained by the predictor variable) were considered *weak* correlations (Lonigan, Schatshneider, & Westberg, 2008).

The following paragraphs present tables showing the correlations between a predictor variable and a conventional literacy outcome. For each predictor variable, tables include the average correlation across all studies, the number of studies on which the correlations were based, the number of children tested in the study, the 95% confidence interval (CI) for the average correlation (i.e., - 95% CI, +95% CI), and the *Q* statistic for the average effect (Lonigan, Schatshneider, & Westberg, 2008). Yet, as stressed in the NELP report itself, no statistical measure is ever perfect. Additionally, findings in studies are collected from small samples, relative to the total population. In this light, CI turns out to be an essential tool to be added to the calculation of the ES. Confidence intervals are an estimate of the measurement error surrounding the effect size statistic. 95% CI indicates the span of values within which the true value would be expected to fall 95 times out of 100 if the measurement were hypothetically repeated 100 times (Dollaghan, 2007). The *Q* statistic represents (Lonigan, Schatshneider, & Westberg, 2008: 58) "a metric of the heterogeneity of observed correlations across the studies that contributed a value to the average correlation." As indicated in the NELP report, a high *Q* statistic shows that (Lonigan, Schatshneider, & Westberg, 2008: 58) "the observed correlations were unlikely to be sampled from the same population of correlations (i.e., the observed correlations have a high degree of heterogeneity)."

4.4.2 Preschool Skills Related to Decoding

The preschool predictor skills that were found to be most highly correlated with later decoding were other conventional literacy variables (e.g., decoding words or nonwords, spelling, alphabet knowledge). This means that, when studies evaluated a conventional literacy skill in preschool or kindergarten children, e.g., decoding, this skill was related

to measures of decoding obtained when children were in kindergarten or later. Following is a table summarizing the NELP's findings.

Table 4.4 Average correlations for prediction of decoding by variables measured in kindergarten or earlier, organized by size of correlation (adapted from Lonigan, Schatschneider, & Westberg, 2008: 59)

Predictor Variable	**Average Correlation Rate**
Decoding nonwords	0.72
Spelling	0.60
Invented spelling	0.58
Reading NOS[39]	0.57
Decoding NOS	0.53
Decoding words	0.52
Reading comprehension	0.52
Alphabet knowledge (AK)	0.50
Readiness	0.50
Writing or writing name	0.49
Arithmetic	0.45
IQ	0.45
PA	0.40
RAN letters and digits	0.40
Concepts about print	0.34
Oral language	0.33
RAN objects and colors	0.32
Phonological NOS	0.31
Performance IQ	0.30
Print awareness	0.29
Environmental print	0.28
Phonological STM	0.26
Visual motor	0.25
Visual memory	0.22
Visual perception	0.22

[39] Non Otherwise Specified: phonological task with insufficient information provided to determine whether phonological awareness, phonological memory, or a combination of both determined the final outcome (Lonigan, Schatschneider, & Westberg, 2008).

As can be seen in Table 4.4 above, decoding of nonwords or words revealed a strong relationship to later decoding (0.72; 0.53; 0.52), followed by spelling abilities (spelling: 0.60; invented spelling: 0.58). Reading comprehension also yielded a strong relationship of 0.52, as well as alphabet knowledge (AK) (0.50). Moderate relationships were provided by children's ability to write or write their names (0.49), which was defined as the ability to write letters in isolation when requested to, or to write one's own name. Phonological awareness (PA) also revealed a moderate relationship with decoding (0.40), as well as oral language skills (0.33), which were defined as the ability to produce or comprehend spoken language as a whole (including grammar and vocabulary/semantics). Measures of readiness, defined as a combination of factors from alphabet knowledge, concepts of print, vocabulary, memory, and phonological awareness, revealed quite a moderate relationship, yet the panelists could not determine which component skill or skills exactly contributed to this outcome. Within the framework of the present discussion, the most interesting finding is the significant role played by phonological awareness in relation to later decoding achievement. This finding provides evidence that fostering children's phonological awareness skills during the preschool years may positively affect their later word recognition skills.

4.4.3 Preschool Skills Related to Reading Comprehension

In their search for relevant information, the Panel members could find a small number of studies focused on reading comprehension, as compared to those on decoding. Furthermore, most of the studies were not conducted within a longitudinal basis. This means that there were few studies that investigated the relationship of skills assessed at the beginning of kindergarten with those assessed when children were older. This implies that what the Panel found in this area is limited to the constrained conceptualizations of reading comprehension that can be assessed in young children. This represents a limitation in this research area. Nonetheless, it is important to consider the Panel's final data on the correlations (see Figure 4.5 below). The two variables that revealed the strongest relationships to later reading comprehension were readiness

measures (0.59) and concepts about print (0.54). However, readiness skills are composed of different types of skills, thus making it hard to identify the specific skills contributing to later reading comprehension outcomes. The measures that yielded moderate correlations were children's alphabet knowledge (0.48), print knowledge (0.48), children's phonologicalawareness (0.44), RAN of letters and digits (0.43) and of objects and colors (0.42). Moderate relationships with later reading comprehension were yielded by measures of decoding nonwords (0.41), decoding words (0.35) and performance IQ (0.34).

Table 4.5 Average correlations for prediction of reading comprehension by variables measured in kindergarten or earlier, organized by size of correlation (adapted from Lonigan, Schatschneider, & Westberg, 2008: 62)

Predictor Variable	**Average Correlation Rate**
Readiness	0.59
Concepts about Print	0.54
AK	0.48
Print awareness	0.48
PA	0.44
RAN letters and digits	0.43
RAN objects and colors	0.42
Decoding nonwords	0.41
Phonological STM	0.39
Arithmetic	0.35
Performance IQ	0.34
Oral language	0.33
Writing or writing name	0.33
Visual perception	0.26
Visual motor	0.22
Concept knowledge	0.20
Visual memory	0.17

As can be deduced from the above findings, phonological awareness revealed significant moderate correlations to later reading comprehension. These results highlight the important role played by phonological awareness not only in the

development of decoding skills, but also in the development of reading comprehension. This has some important implications as far as phonological awareness instruction is concerned, as it stresses the relevance of phonological awareness abilities not only in facilitating the word recognition process, but the successive process of connected text reading comprehension.

4.4.4 Preschool Skills Related to Spelling

The variables that yielded the strongest relationships to later spelling outcomes were early measures of spelling (0.78), invented spelling (0.69), decoding (0.54), and children's AK (0.54). Following is a table summarizing the NELP's findings.

Table 4.6 Average correlations for prediction of spelling by variables measured in kindergarten or earlier, organized by size of correlation (adapted from Lonigan, Schatschneider, & Westberg, 2008: 65)

Predictor Variable	**Average Correlation Rate**
Spelling	0.78
Invented spelling	0.69
AK	0.54
Decoding nonwords	0.54
Decoding words	0.54
IQ	0.54
Arithmetic	0.50
Visual perception	0.44
Concepts about print	0.43
PA	0.40
Oral language	0.36
Writing or writing name	0.36
Phonological STM	0.31
RAN objects and colors	0.31
Performance IQ	0.29
Visual motor	0.27
Environmental print	0.25

Among the variables that revealed moderate relationships were children's visual perceptual skills (0.44), concepts about print (0.43), children's PA (0.40), oral language

skills (0.36), writing or writing name (0.36), phonological STM (0.31), and RAM of objects or colors (0.31). The role played by phonological awareness as a moderate predictor variable (0.40) in later spelling development represents an additional contribution to this discussion. This implies that fostering children's phonological awareness skills during the preschool years may positively affect not only later decoding skills (cf. 4.4.3) or reading comprehension skills (cf. 4.4.4) but also those skills related to spelling/writing development. Below is a table summarizing the above findings.

4.4.5 Summary of NELP Findings on Emergent Literacy Skills

According to the above findings, the Panel grouped emergent literacy skills into two main sets. In the first set the NELP included six variables which were shown to be significantly correlated with and consistently related to later conventional literacy outcomes in the form of decoding, reading comprehension and spelling. The Panel derived its data from a large number of experimental studies. This means that the relationships between the early literacy variables identified and later conventional literacy outcomes are likely to be extremely reliable and stable. The following emergent literacy skills were found to have medium to large predictive relationships with later measures of literacy development, and keep their predictive power even when taking into account the role played by other variables (e.g., IQ, i.e., Intelligent Quotient, or SES, i.e., socio-economic status) (Lonigan, Schatschneider, & Westberg, 2008: 67):

1. *Alphabet knowledge*
2. *Phonological Awareness*
3. *Rapid Automatic Naming of letters or digits*,
4. *Rapid Automatic Naming of objects or colors*
5. *Writing or writing name*
6. *Phonological Memory*

In addition to the above-listed skills, five more variables were found to be moderately correlated with at least one measure of later literacy growth. However, less consistent evidence exists for the importance of these variables, mainly because they did not maintain their predictive power when other factors such as alphabet knowledge or phonological awareness were controlled. These skills include (Lonigan, Schatschneider, & Westberg, 2008: 78):

1. *Concepts about print*
2. *Print knowledge*
3. *Reading Readiness*
4. *Oral Language*
5. *Visual Processing*

As can be noticed, the Panel combined the set of early literacy skills under one single category, without differentiating between domains of knowledge (e.g., alphabet knowledge), different cognitive abilities involved in reading (e.g., rapid automatic naming or phonological memory), and literacy activities (e.g., writing or writing name). What is of interest within the scope of this discussion is that the role of phonological awareness as an emergent literacy skill predicting later literacy acquisition is supported by the latest systematic review of the most significant scientifically grounded studies available in the research literature.

4.4.6 NELP Research Study: Limitations

After conducting their search, the panelists made some remarks on what they defined as some limitations in their review of studies, and consequently on the final report data (Lonigan & Shanahan, 2008):

- It is not possible to be certain that every meta-analysis will identify and collect all the studies available on a particular topic, and studies that are not included could

provide information and findings that could be at odds with the conclusions drawn after carrying out the meta-analysis. This implies that, despite their relevance, findings should not be considered definite.

- In some studies, data on crucial variables such as race or socio-economic status were either missing or confounded. These data might have influenced the final results, and/or moderated the effectiveness of the various interventions. It would be helpful if research studies reported their data separately for children from different demographic categories (e.g., second-language learners or children being raised in poverty). This could make it possible for future meta-analyses to make sense of any learning patterns that may exist. Thus, meta-analysis can provide clues to what might be influencing the effectiveness of an intervention, but cannot provide the final word on such findings.
- Additional research is needed in certain areas of emergent literacy skills. For instance, certain aspects of phonological awareness have been shown in previous research to be casually connected to literacy development (i.e., when these abilities are taught, children attain higher levels of literacy), but this is not true for all emergent skills. For example, further research is needed to determine whether enhanced early instruction aimed at fostering skills such as alphabet knowledge, concepts of print, or oral language development, would consistently lead to higher later literacy outcomes.
- Not all studies selected by the panelists were experimental studies, i.e., included treatment and control groups that could show that the emergent literacy skill or skills under investigation were in fact a direct cause in relation to children's reading development. Most of the studies collected were correlational studies, i.e., they looked for relationships between variables and were not 'true' experiments, and included participants whose different characteristics were compared usually at one or a few points in time rather than over long time spans (Dollaghan, 2007). This means that their final results can be open to alternative interpretations, e.g., other factors other than emergent literacy skills that may be

associated with reading achievement are not ruled out. Yet, this was not due to some negligence on the part of the panelists, but to the fact that most of the evidence currently available on the relationship between emergent literacy skills and reading achievement is in fact correlational (cf. 5.2.2.2). However, all findings in *any* type of study should be generally considered 'tentative' and subject to review by future research.

Despite the above limitations, the NELP report represents a meticulous and broad investigation of the published research literature concerning children's emergent literacy skills, and provides a rich set of findings about the relationship between children's emergent skills and later literacy attainment. The meta-analyses conducted by the panelists showed that a wide range of intervention had a positive impact on children's emergent literacy abilities (cf. 5.2.3.2). The NELP report can provide educators and policymakers with fundamental data on the emergent literacy abilities implicated in later literacy learning, as well as information about the type of instruction that can best foster emergent literacy skills. The results presented by the NELP also identify those areas where additional future research is needed. It is the data on phonological awareness as an emergent literacy skill that are of concern to the present study, and the fact that this skill was found to be among one of the most positively associated with later literacy achievement. This finding will be taken as the latest scientific evidence of the fundamental role played by phonological awareness, bearing in mind that it is not a conclusive finding and that further research is needed in this field. The following sections present data from some of the most significant studies selected by the NELP that relate skills of phoneme awareness, onset-rime awareness, and syllable awareness to later reading development.

4.5 The Nature of the Relationship between Phonological Awareness and Reading

Before discussing the results of some of the most relevant studies on the predictive power of phonological awareness in relation to reading and spelling achievement, it is

crucial to stress how the nature of this relation has been debated since the early 1970s. Researchers (Calfee *et al*., 1973; Fox & Routh, 1975; Rosner & Simon, 1971) started exploring the relationship between phonological awareness and beginning reading in the 1970s. Since these early studies, extensive evidence has been accumulated that how children perform on measures of phonological awareness is a strong predictor of future reading achievement (for a review of studies, see Adams, 1990; Blachman, 1984, Bradley & Bryant, 1983, 1985). However, the correlational studies available, even when the findings are highly consistent, still leave some questions unanswered. For instance, one issue that has been extensively debated is whether phonological awareness facilitates learning to read *or* is developed by learning to read (Blachman, 2000). Some researchers (e.g., Bryant *et al*., 1989; Elkonin, 1973; Fox & Routh, 1976) believe phonological awareness to be a precursor to reading. Others (e.g., Liberman *et al*., 1985; Morais *et al*., 1979; Read *et al*., 1986) argue it is a consequence of learning to read. Experimental studies (Bowey & Francis, 1991; Perfetti *et al*., 1987; Vellutino & Scanlon, 1987) have shown that initial phonological sensitivity is indeed refined progressively through exposure to reading instruction and decoding experience. However, as remarked by Blachman (2000), the findings supporting these differing hypotheses are not in conflict. A third view poses that phonological awareness is *both* a cause and a consequence of learning to read, a phenomenon often referred to as 'reciprocal causation' (McGuinness *et al*., 1995; Tunmer, 1991). As Perfetti and colleagues (1987: 41) were able to show in their longitudinal study:

"The reciprocity hypothesis (i.e., that reflective phonemic knowledge and reading competence develop in mutual support) is not a denial of a causal role for phonemic awareness. It is instead a suggestion that the casual connection is only half the picture. The other half is that advancement in reading promotes increased reflective phonemic awareness, which in turn promotes further gains in reading."

This means that learning to read strengthens the awareness that spoken words are made up of sounds, just as acquiring the ability to identify and segment word components provides a foundation for attaching letters to sounds and knowing the

function that letters serve in words (Gillon, 2004). Exploration of the exact nature of the reciprocal interplay between phonological awareness and word recognition is still in the early stages. This reciprocal relationship surely needs further investigation, yet, it does not deny the fact that children beginning their reading instruction with deeper levels of phonological awareness have a powerful bootstrapping mechanism to reading progress (Stanovich, 1992). It is additionally essential to bear in mind that, as indicated by the NELPS findings (cf. 4.4.6), phonological awareness is a *necessary* but not *sufficient* condition for learning to read.

4.6 Predictive Power of Early Phonological Awareness Development

One of the first significant studies investigating the predictive power of phonological awareness in relation to later reading and spelling performance is by Bradley and Bryant (1983). The two scholars utilized both longitudinal and training study designs in their investigation. The children involved in the experiment were 118 British 4-year-olds and 285 British 5-year-olds. During the first assessment they were all nonreaders. They were required to perform a phonological awareness task at the phoneme level, i.e., to listen to a group of words and decide which word started with a different sound. The 4-year-old children had to select among a group of three words (e.g., *hill*, *pig*, *pin*). The 5-year-old had to select between a group of four words (e.g., *bud*, *bun*, *bus*, *rug*). Three years later, a significant relationship was found between scores on the preschool phonological awareness task and scores on standardized reading and spelling tests, even when differences in intellectual ability and memory performance were controlled. What the two researchers did in order to establish if this relationship was casual in nature was design a training study for 65 children who had shown weak phonological awareness skills in the longitudinal study. The children were divided into four groups matched for age, verbal intelligence, and their achievement on the initial phonological awareness assessment tasks. The groups received different training: group 1 on categorizing words based on common phonemes (e.g., finding pictures of words that started or ended with the same sound); group 2 received the same training and was

additionally taught letter-sound knowledge; group 3 was trained in semantic categorization (e.g., "Find all the farm animals"); and group 4 received no training at all. The children received 40 training sessions over a 2-year period. Group 1 and 2, who had received training on phonological awareness, turned out to develop into stronger readers than children from group 3 and 4 who received no training on phonological awareness. The researchers' conclusion was that phonological ability prior to formal schooling has a powerful influence on later reading and spelling performance.

Subsequent studies (Share *et al*., 1984) confirmed this predictive power. Share and colleagues (1984) administered a series of tests to 543 Australian children at the beginning of their kindergarten year (5 years of age), in order to identify the strongest predictors of reading performance. At the end of kindergarten and of grade 1, standardized reading and spelling tests administered to the children confirmed that performance on a phoneme segmentation task was one of the strongest predictors of reading performance at the end of kindergarten and of reading and spelling performance at the end of grade 1 (Share *et al*., 1984). Ten years later, some researchers (Torgesen *et al*., 1994) set about examining how different constructs of phonological processing may contribute to reading ability. In Torgesen and colleagues' study (1994), 288 American children (where approximately 25% of them were African American) were assessed, 12 months apart from kindergarten to grade 1, on phonological processing and reading measures on three assessment trials. The constructs of phonological processing that were measured were 1. phoneme awareness involving analysis skills (i.e., identifying sounds in words), 2. phoneme awareness involving synthesis skills (i.e., blending sounds together to form a word), 3. phonological memory, 4. rapid serial naming (i.e., accessing phonological information when items are presented in a series), 5. rapid isolated naming (i.e., accessing phonological information when items are presented in isolation). The researchers' findings demonstrated that all five constructs of phonological processing were significantly correlated with later reading achievement in grades 1 and 2. In particular, phoneme analysis performance in kindergarten was found to be the strongest predictor of word recognition in grade 1,

while phoneme synthesis skills in grade 1 were found to be the strongest predictors of word recognition in grade 2 (Torgesen *et al*., 1994). This once more confirms the essential role played by phonological awareness in predicting later reading performance. One additional study (MacDonald & Cornwall, 1995) examined by the NELP investigated the relation between phonological awareness and later literacy success. The phoneme awareness skills of 24 Canadian children were measured 11 years after they took part in a study during their kindergarten year, where their early phonological awareness, reading and spelling development were investigated. Analysis of results revealed that performance during kindergarten on a 40-item phoneme deletion task was significantly correlated with performance on word decoding and spelling ability at 17 years of age, even after differences in socio-economic levels and receptive vocabulary scores were controlled.

4.7 Predictive Power of Onset-Rime Awareness

Studies that have examined the predictive power of phonological awareness skills at the onset-rime level show results that are less consistent that those found in studies examining the predictive power of phonological awareness at the phoneme level. On the one hand, some researchers (e.g., Bryant *et al*., 1989; Wood & Terrell, 1998) have argued that rhyme knowledge is important for reading and spelling development. Rhyme awareness in preschool has been found to be a predictor of reading and spelling achievement in the early school years. Additionally, it has been suggested that developing sensitivity at the onset-rime level in preschool fosters awareness at the phoneme level at an older age. In this light, onset-rime awareness is viewed as a developmental precursor to phoneme awareness (Bryant *et al*., 1990). On the other hand, others (e.g., Hulme *et al*., 2002; Muter, Hulme, Snowling, & Taylor, 1997; Muter & Snowling, 1998) have argued that rhyming knowledge has little predictive power for literacy development. Rhyming knowledge as a predictor of later literacy performance has been a debated issue for years. However, as Gilson (2004) remarked, it is essential to

clarify some points within this area of investigation. These points are discussed in the following sections.

4.7.1 Clarification of Rhyme Knowledge

A clear definition of rhyme knowledge can be useful in order to tackle the confusion regarding the importance of rhyme to literacy development. The common understanding of rhyme is that rhyming words sound the same at the end of the word (rime unit), e.g., *cat*, *hat*, *bat* are rhyming words because they sound the same at the end (*-at*). Goswami and Bryant (1990) have described children's ability to isolate the onset from the rime unit as a measure of rhyme knowledge, e.g., in a test item asking "Which word starts with a different sound: *fan*, *fit*, *bit*?", the child may be required to isolate the onset from the rime unit (*f-an*, *f-it*, *b-it*) to find the answer. As noted by Muter and colleagues (1997), this type of task is not a 'clean' measure of rhyming ability, but may be better considered within early awareness at the phoneme level, as it requires awareness of a single phoneme within a word. As remarked by Treiman (1992), when the onsets and rimes coincide with single phonemes, the analysis into onsets and rimes might appear, at a first glance, to be a phoneme analysis. Thus, some findings that support the relevance of rhyme knowledge for reading have in fact revealed that awareness of initial phonemes in words influences early word recognition skills. This means that, when interpreting research findings, it is essential to carefully examine the types of rhyme tasks employed by researchers in their experiments (e.g., whether the task involves rhyme detection or production, onset awareness of single phonemes or cluster phonemes, blending, segmenting or manipulating words at the onset-rime level) (Gillon, 2004).

4.7.2 Nursery Rhymes and Early Phonological Awareness Development

Bryant *et al*'s important longitudinal study (1989) examined by the NELP showed that knowledge of nursery rhymes is important to reading and spelling ability, as such knowledge may help children develop early phonological awareness skills. In this

study, 64 British children were monitored from the ages of 3-6 years. At the beginning, children were assessed in their ability to recite five popular nursery rhymes (e.g., *Humpty Dumpty*, *Twinkle, Twinkle, Little Star*), and required to perform a rhyme detection task. When they were 5 and 6 years of age (Bryant *et al*., 1990), children were given measures of phoneme awareness and reading and spelling. The findings indicated that children's knowledge of nursery rhymes at 3 years of age was strongly correlated with performance on rhyme detection at 4 years and with phoneme detection at 5 and 6 years of age. Rhyme detection performance at age 4 years, 7 months, was found to strongly predict reading and spelling achievement at 5 and 6 years of age, even after factors such as social background and IQ were controlled. The researchers' conclusions were that knowledge of nursery rhymes fosters phonological awareness (i.e., rhyme and phoneme detection), which in turn is related to later success in reading and spelling (Bryant *et al*., 1989; 1990).

An additional 15-month longitudinal study (MacLean *et al*., 1987) reviewed by the NELP showed a significant connection between rhyming skills at age 3 and single word reading at 4 years and 6 months, even after differences in IQ and social background were controlled. In a more recent study (Cronin & Carver, 1998), an onset oddity task (e.g., "Which word does not rhyme: *fish*, *dish*, *hook*?") and a rhyme matching task were employed to measure phonological sensitivity in a group of 57 5-year-old children. It was found that phonological sensitivity significantly discriminated the three different achievement levels used to group the children in terms of reading ability at the end of grade 1, even when vocabulary levels were controlled. In general, all the studies presented in this section show that when children start formal schooling and reading instruction, those who understand that two rhyming words share a common feature, i.e., the ending sound, may have an advantage for decoding words within word families.

4.7.3 Rhyme Knowledge Compared to Phoneme Level Knowledge

In one study (Muter & Snowling, 1998) examined by the NELP, a group of 34 British children were assessed on phonological awareness tasks at 4, 5, 6, and 9 years of age. Early rhyme detection ability (e.g., "Which word rhymes with *cat*: *fish*, *gun*, *hat*?") was not found to predict reading performance at 9 years of age. On the other hand, phoneme deletion skills (e.g., "Say *bus* without the /b/") at 5 and 6 years was found to significantly predict individual variation in reading skills at 9 years of age (Muter & Snowling, 1998). Two further studies (Duncan & Johnston, 1999; Muter *et al*., 1997) reviewed by the panelists reached the same conclusion, namely, that skills at the phoneme level are stronger predictors of reading outcomes than rhyming skills. In the first study (Duncan & Johnston, 1999), the researchers could not find a relationship between rhyme oddity (e.g., "Which word does not rhyme: *fish*, *dish*, *hook*?") and rhyme judgment tasks and reading ability in 10-year-old good and poor readers. The findings in the latter study (Muter *et al*., 1997) showed that phoneme segmentation skills were a strong predictor of reading and spelling performance. Yet, this study also revealed that rhyming ability did have some influence on spelling ability during the second year of formal schooling. One recent study (Hulme *et al*., 2002) showed that awareness of the initial phoneme in a word, as opposed to awareness of an initial phoneme cluster, was a strong predictor of early reading development. A set of 10 stimulus non-words was used to measure differing levels of phonological awareness and different types of tasks (e.g., detection and deletion). Awareness of onsets was measured by a cluster sound (e.g., "Which word starts the same as *blaip*: *bleug*, *suk*, *tad*?"). Awareness at the phoneme level was measured by the initial phoneme in a cluster (e.g., "Which word starts the same as *blaip*: *beug*,*suk*, *tad*?"). Results demonstrated that (Hulme *et al*., 2002):

a. Initial phoneme awareness was the strongest predictor of reading skills in 5- and 6-year-old British children.

b. In general, awareness of initial and final phonemes in non-words was a much more powerful predictor of children's reading performance than awareness of onset (e.g., initial cluster sound) and rime units in non-words.

To summarize, the following general pattern can be drawn from the available literature examined by the NELP on the relationship between rhyme and literacy development in English:

- Knowledge of nursery rhymes positively influences rhyme awareness.
- Rhyme awareness in pre-readers (e.g., 4-year-olds) has some influence on early reading and spelling development, possibly because it contributes to stimulating phoneme awareness.
- In young school-age children (e.g., 5 and 6 years olds), phonological awareness skills at the phoneme level (e.g., phoneme analysis and deletion tasks) are stronger and longer predictors of children's reading and spelling outcomes than measures of onset-rime awareness.

4.8 Predictive Power of Syllable Awareness

Few studies have directly investigated the predictive power of syllable awareness to reading and spelling. This may be one of the reasons why there were not many studies on this topic in the search carried out by the NELP. Additionally, the panelists' focus was more on investigating phonological awareness as an *overall* emergent literacy skill, rather than its various components elements (e.g., syllable awareness). Lundberg and colleagues' 1988 major study suggested that syllable games may provide the necessary foundation for isolating phonemes during segmentation. In a later study (Wood & Terrell, 1998) examined by the Panel, researchers were not able to find a predictive relationship between preschool children's syllable awareness and literacy achievement during the first two years of formal schooling. In a more recent study (Engen & Hoien, 2002), syllable awareness explained variance in word recognition and reading

comprehension performance in average and poor grade 1 readers that were native Norwegian speakers. Yet, the impact of phoneme awareness on literacy development was found to be much stronger. In another study (Denton *et al*., 2000), researchers suggested that syllable knowledge may be a more important predictor of later reading ability in languages that are phonetically regular, such as Spanish, rather than in English, while other researchers (Gonzalez & Garcia, 1995) also speculated that syllable segmentation skills may be an important predictor in reading a language like Spanish, where there is a high number of multisyllabic words and a well-defined syllable structure. A few studies (DeBaryshe & Gorecki, 2007; Hatcher *et al*., 2004) revealed that segmenting words at the syllable level can be effective in some comprehensive packages where children are introduced not only to syllable tasks but also to rhyme and first sound tasks. Yet, these studies did not reveal which skills were most important. In her review of studies on phonological awareness abilities, Adams (1990) suggested that the ability to hear and see syllables in words makes decoding longer words easier for beginning readers and is a strategy that continues to be useful throughout adulthood. Researchers agree, though, that further and continued research on this specific topic is necessary.

4.9 Phonological Awareness as an Emergent Literacy Skill: Implications for ELTM

The findings discussed above are significant within the scope of the present work, i.e., define what phonological awareness is composed of, investigate the role of phonological awareness in preschool's development and as a precursor of preschool children's later reading and spelling development and achievement. Related teaching considerations and implications will be presented in more detail in chapters 7 and 8. In the meantime, the main points that should be taken into account when considering the field of Early Language Teaching Methodology are presented below:

- Phonological awareness has been shown to be one of the component skills of emergent literacy in alphabetic languages: this can encourage Italian preschool

educators to consider including and implementing activities on phonological awareness in the EFL preschool syllabus.

- Phonological awareness at the preschool level has a powerful influence on early reading and spelling acquisition: this represents one more valid argument to introduce and implement EFL phonological awareness tasks in Italian preschools.
- Nursery rhymes positively influence rhyme awareness can encourage preschool educators to implement the use of this activity in EFL.
- Rhyme awareness in pre-readers (e.g., 4-year-olds) has some influence on early reading and spelling development (because of its possible contribution to stimulation of phoneme awareness): this can encourage preschool educators to sustain the use of EFL tasks aimed at fostering rhyme awareness.
- School-age children's phonological awareness skills at the phoneme level (e.g., phoneme analysis and deletion tasks) are strong predictors of children's reading and spelling outcomes: this can encourage preschool educators to start working on simple phoneme awareness tasks even at the preschool level.

Chapter 5

Phonological Awareness Tasks in L1

> [...] more than two decades of research on emergent literacy have emphatically demonstrated that children can, and many do, learn a great deal about reading during the preschool years before they read independently.
> (van Kleeck, 1998)

5.1 Phonological Awareness Intervention[40] and Training

An issue that has been intensely debated, together with the relationship between phonological awareness and beginning reading, is whether phonological awareness can be fostered in young children, and, if so, whether phonological awareness training has a positive impact on reading and spelling acquisition (Blachman, 2000; Blachman *et al.*, 1994). Interest whether phonological awareness could be taught to kindergarten and young school-age children began in the 1970s (Elkonin, 1973; Wallach & Wallach, 1976). Auditory training and reading programs that included tasks to foster phonological awareness were introduced at a commercial level (Lindamood & Lindamood, 1971, 1998; Wallach & Wallach, 1976), and the first debates on the type of phonological awareness tasks that should be included in training programs appeared in the literature (Lewkowicz, 1980). However, it was Bradley and Bryant's 1983 longitudinal training study (cf. 4.6) that successfully demonstrated a casual relationship between phonological awareness and reading development which contributed to the growing research interest in phonological awareness intervention. A number of other early studies (Content *et al.*, 1986; Elkonin, 1963; Fox & Routh, 1976; Helfgott, 1976; Olofsson & Lundberg, 1983; Rosner, 1974) demonstrated that indeed phonological awareness abilities could be improved by direct instructional activities. Several experimental studies (Ball & Blachman, 1991; Blachman *et al.*, 1994; Byrne & Fielding-Barnsley, 1991a,

[40] The term 'intervention' is mainly used in health and clinical fields, while in the educational field the term 'training' is often preferred.

1993, 1995; Cunningham, 1990; Lundberg, Frost, & Petersen, 1988; Treiman & Baron, 1983) have also shown that fostering preschool, kindergarten, and first-grade children's awareness of the phonological structure of speech facilitates early reading and spelling development. The ultimate goal of phonological awareness training programs is to enhance word recognition and spelling skills, which, in turn, should lead to improvements in reading comprehension and writing (Gillon, 2004).

Numerous studies have successfully worked with various populations over the years, e.g. older children with dyslexia (Gillon & Dodd, 1995), young children at risk from low socio-economic backgrounds (Blachman *et al*., 1994), kindergarten children and children starting school with poor phonological processing skills (Torgesen *et al*., 1999), and school-aged children with spoken language impairments (Warrick *et al*., 1993). The following populations demonstrated positive reading and/or spelling achievement in response to phonological awareness intervention (Gillon, 2004: 134):

- Preschool children (3 and 4 years of age) with expressive phonological impairment (Gillon, 2002).
- Preschool and/or school-age native speakers of:
  English (Ball & Blachman, 1991; Brady *et al*., 1994; Torgesen, Morgan, & Davis, 1992)
  Spanish (Defior & Tudela, 1994)
  German (Schneider *et al*., 1997)
  Danish (Borstrom & Elbro, 1997; Lundberg, Frost, & Petersen, 1988)
  Swedish (Olofsson & Lundberg, 1983)
  Hebrew (Bentin & Leshem, 1993)
  Dutch (Bus, 1986)
  Italian (Pinto, 1993)

5.2 Phonological Awareness Intervention: Results from Three Meta-Analyses

Three meta-analyses (Bus & van Ijzendoorn, 1999; Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh, & Shanahan, 2001; Developing early literacy: Report of The National Early Literacy Panel, 2008) conducted a review research of experimental and quasiexperimental training studies to determine whether phonological awareness instruction either in English or other European languages was effective and whether characteristics of the instruction, the participants, or the context contributed to better results. As previously discussed (cf. 4.4.1), meta-analysis can be considered a reliable and objective methodological tool, being it positioned at the highest level of the most important evidence rating systems (e.g., The Oxford Centre for Evidence-based Medicine Levels of Evidence). Therefore, the findings of the following meta-analyses are of particular relevance for the purpose of this work. It should be remarked that none of the meta-analyses include Italian studies, or studies focusing on phonological instructional practices in the Italian language. Two Italian researchers, Pinto and Carta (1989) conducted a review of the main and most widespread instructional practices carried out in Italian preschools in order to foster emergent literacy skills in children. The two scholars however concluded that most of the projects experimented nationwide in Italy were mainly aimed at developing oral language skills and vocabulary knowledge, rather than making children aware of the phonological aspect of language. Unfortunately, therefore, their findings are not relevant for this study.

5.2.1 Bus and van Ijzendoorn's Meta-Analysis

Two hypotheses tested by Bus and van Ijzendoorn (1999) in their quantitative meta-analysis are of relevance within the scope of this study:

1. Phonological awareness training affects learning-to-read processes in a positive and substantial way.
2. Phonological awareness training is more effective when it is combined with tasks on letters or written words.

In the course of their investigation, Bus and van Ijzendoorn searched the major databases in the disciplines of education and psychology, e.g., PsychLit and ERIC, using different combinations of the key words, e.g., *phonological awareness*, *phonemic awareness*, *phonological sensitivity*, also in combination with *teach*, *training*, *intervention*, etc. The two scholars also searched the references of the collected papers and other relevant books on the topic in order to find additional titles. At the end of their search, 32 experimental training studies were found from which pertinent data could be derived. Unpublished articles were discarded. Most studies focused on intervention at the phoneme level. The studies could be divided in subgroups, depending on the type of treatment, i.e., purely phonetic, or combined with letter training and reading or writing. Studies differed on some other levels, namely whether they occurred in the context of reading and writing instruction or not. This led the researchers to test the interactions between type of training and setting of occurrence as well (Bus & van Ijzendoorn, 1999). In the analysis of their data, Bus and van Ijzendoorn always refer to 'phonological awareness.' Yet, as per our previous clarification (cf. 2.2.3), what they are actually referring to is 'phoneme awareness,' as all the tasks examined tackled this specific sound level. Phoneme awareness in the meta-analysis was assessed by three measures, namely, phoneme segmentation, phoneme blending, and sound deletion. These three specific measures were not included in every study, which led the researchers to create an overall variable of phonological awareness, based on any combination of the said indicators, or on one single indicator. The statistical tests derived from the studies reviewed were transformed into some of the most common metrics for effect size, i.e., Cohen's *d* (or the standardized difference between the means of two groups) (cf. 4.4.1.7). For studies comparing mean scores from different groups (as in the case of Bus and van Ijzendoorn's meta-analysis), Cohen's *d* provides a simple and robust way to describe how much their mean scores differ (Dollaghan, 2007).

5.2.1.1 Discussion of Results

The researchers' findings showed that training of phoneme awareness improved not only children's phoneme awareness skills, but their reading skills in general. The combined effect size of U.S. training studies was d = 0.73 for phoneme awareness, and d = 0.70 for reading. Compared with Cohen's (1988) criteria of weak (d = 0.20), medium (d = 0.50), and large (d = 0.80), both effect sizes were significant, and revealed a medium-to-strong effect of phoneme awareness on reading skills. The correlation was r = 33. This means that experimentally manipulated phonological awareness explained about 12% of the variance in children's reading abilities. The two researchers clarified that, although phoneme awareness resulted to be a strong predictor of reading development, it was not the single predictor of reading development. For instance, the correlation between early storybook reading and children's literacy skills was found to be about d = 0.59, which explained about 8% variance in children's literacy skills (Bus & van Ijzendoorn, 1999). Additionally, the meta-analysis revealed that a purely phoneme awareness training program is less effective than a program which includes a letter training (e.g., letter-sound correspondence, or reading and writing practice), not only in terms of reading skills, but also in terms of phoneme awareness itself. Letters seem to function as an intermediary, a tool that facilitates the discrimination of phonemes. As explained by research on the topic (Adams *et al*., 1998a), letters may draw children's attention to the sounds in spoken words, and a distinct visual symbol for each phoneme may anchor the phonemes perceptually. Another important finding concerns the individuals who benefit more from phoneme training. Data from the meta-analysis revealed that preschool children tended to profit more from the intervention than kindergarten or elementary school students. This means that the process of learning to read may be facilitated by an early start with phoneme awareness training. Furthermore, contrary to the researchers' expectations, children from special groups (e.g., children with language disorders) did not show to benefit more from training than 'typically developing' children (Bus & van Ijzendoorn, 1999).

5.2.2 Ehri *et al.*'s Meta-Analysis

Ehri and colleagues' meta-analysis was carried out in the aftermath of the research work on literature on reading conducted by the National Reading Panel (NRP) in 1997 (cf. 4.3). The main goal of the group of researchers in their study was to examine NRP's scientific evidence supporting claims about instruction at the phoneme level in particular. In order to evaluate the adequacy and strength of the evidence, the researchers conducted a further meta-analysis, aimed at answering the following questions (Ehri *et al.*, 2001: 250):

1. "Is phonemic awareness instruction effective in helping children learn to read?
2. Under what circumstances and for which children is it most effective?
3. Were studies showing its effectiveness designed to yield scientifically valid findings?
4. How applicable are these findings to classroom practice?"

5.2.2.1 Summary of Results of NRP's Meta-Analysis

Before examining Ehri and colleagues' (2001) findings, it is useful to briefly review the results of the findings collected by the NRP members in the course of their research. One of the subgroups of the NRP was charged with conducting two quantitative meta-analyses, one on phoneme awareness instruction, and one on phonics instruction (cf. 2.3.3), in order to evaluate the effects of these types of instruction on learning to read and spell. Ehri and colleagues did not select studies focused on phonics instruction in their meta-analysis. The NRP examined 52 studies published in peer-reviewed journals, which involved 96 cases comparing the outcomes of treatment and control group. Following is a summary of the main results of NRP's meta-analysis (Ehri *et al.*, 2001: 251):

- Phoneme awareness instruction revealed a high statistically significant effect size (d = 0.86) on helping children develop phoneme awareness itself.

- Phoneme awareness instruction revealed a statistically moderate yet significant impact on developing reading skills (d = 0.53) and spelling skills (d = 0.59). Reading comprehension was found to benefit from phoneme intervention as well (d = 0.26).
- Various types of children benefited from phoneme awareness instruction: normally developing readers, at-risk and disabled readers, at the preschool, kindergarten and first-grade levels, from low socio-economic status as well as mid-high socio-economic status.
- Phoneme awareness instruction resulted more effective in combination with letter instruction.
- Phoneme awareness instruction resulted more effective when one or two phoneme awareness skills were taught rather than multiple skills.
- Phoneme awareness instruction resulted more effective when children where taught in small groups rather than individually, or in classrooms.
- Phoneme awareness instruction resulted more effective when it lasted between 5 and 18 hours rather than longer.

To summarize, the above results confirm that phoneme awareness intervention has a statistically significant impact on developing word recognition, spelling skills, and reading comprehension. In their meta-analysis, Ehri and colleagues (2001) first identified all the experimental studies that met some specific criteria, such as:

- They administered phoneme instruction to children.
- They included a control group receiving non-phonological instruction or no special instruction.
- They measured the impact of phoneme awareness instruction on reading achievement.

The researchers identified 52 published studies that met these criteria. Variations were present in the reviewed studies, e.g., the types of phoneme awareness tasks experimented, the age of the participants (from preschoolers to sixth graders), the size of the group receiving instruction (e.g., small groups or larger classroom groups). The main aim was to verify whether phoneme training had a significant impact on reading skills across all these variations and whether these variations influenced the size of the impact. Furthermore, as clarified by Ehri and colleagues themselves, their study was meant to replicate and extend the meta-analysis conducted by Bus and van Ijzendoom (1999) (cf. 5.2.2).

5.2.2.2 Methodological Rigor of Studies: Some Considerations

One important point stressed by Ehri and colleagues (2001) is that most of the evidence to date of the critical importance of phonological awareness in reading is correlational (cf. 4.4.6), and is thus open to alternative interpretations. Correlational studies are normally considered insufficient to show that phoneme awareness is in fact the underlying 'cause' allowing some readers read better than others. This is because correlational findings usually do not rule out other factors that might also be the cause. It is evidence from experimental studies including treatment and control groups that can show that phoneme awareness acts as a direct cause in relation to children's reading development. This is why Ehri and colleagues decided to limit their attention to experimental studies that included treatment and control groups in their design. In particular, the researchers only selected studies that met the following criteria (Ehri *et al*., 2001: 256):

1. They adopted an experimental or quasi-experimental design with a control group.
2. They had been published in a refereed journal.
3. They tested the hypothesis that phoneme awareness instruction improves reading achievement as compared to other forms of instruction or no instruction.

4. They provided instruction on phoneme awareness that was not confounded with other instructional methods or activities.
5. They reported statistics permitting the calculation of effect sizes.

In all the studies under review, researchers had used tasks based on awareness at the phoneme level, such as phoneme isolation, phoneme blending, and phoneme segmentation. The studies collected by the Ehri and colleagues included phonological awareness instruction conducted not only in English-speaking countries, but also in countries speaking languages other than English. This aspect is especially relevant for this study.

5.2.2.3 Discussion of Results

The overall effect size of phoneme awareness instruction on the acquisition of phoneme awareness was large and significant (d = 0.86), whereas the overall effect on reading was moderate, yet still significant (d = 0.53). In general, the results indicated that (Ehri *et al.*, 2001: 259-280):

- Phoneme awareness instruction was more effective than alternative forms of instruction or no instruction in helping children acquire phoneme awareness and in facilitating transfer of phoneme awareness skills to reading and spelling.
- Effects were statistically larger for segmentation and deletion outcomes than for blending.
- Phoneme awareness benefited decoding skills (d = 0.56), as indicated by studies measuring reading performance with pseudowords to assess children's ability to decode unfamiliar words.
- Phoneme awareness instruction extended a small-to-moderate impact on children's ability to comprehend text (d = 0.34).
- Phoneme instruction transferred to spelling (d = 0.59).

- Preschoolers (d = 2.37) and kindergarteners (d = 0.95) gained the most phoneme awareness, as compared to children in first-grade (d = 0.48) and second-sixth grades (d = 0.70).
- Phoneme instruction transferred to reading to a similar extent for preschoolers, kindergarteners, first graders, and second-sixth graders.
- Transfer of phoneme awareness was greater for kindergarteners (d = 0.97) than for first-graders (d = 0.52).
- Socio-economic status (SES) levels did not have an impact on the acquisition of phoneme awareness, but they did influence reading and spelling outcomes, i.e., transfer to reading and spelling was greater for mid-high-SES students. This may be due to the fact that mid-high-SES children are typically raised in high-print homes, where they have more chances of being exposed to literacy artifacts and events that may positively affect their later literacy achievements (cf. 4.1).
- Phoneme awareness instruction showed a greater impact on the acquisition of phoneme awareness by English-speaking students (d = 0.99) than by non-English-speaking students (d = 0.65).
- When reading-disabled comparisons were removed from the database, the English-speaking comparisons revealed a larger effect size on spelling (d = 0.95) than the non-English-speaking comparisons (d = 0.51).
- Focusing instruction on one (d = 1.16) or two (d = 1.03) skills was more effective for teaching phoneme awareness than focusing on multiple skills (d = 0.70).
- Transfer for reading was much greater when phoneme awareness focused on one (d = 0.71) or two (d = 0.79) than on multiple skills (d = 0.27). The researchers suggested that teaching multiple skills may impair the attainment of phoneme insight, i.e., that words are made up of phonemes. They proposed that programs should teach one skill at a time until it is mastered, before moving on to the next skill.

- Blend-and-segment instruction benefited children's reading (d = 0.67) and spelling (d = 0.79) more than a multiple-skill approach (d = 0.27 and d = 0.23 respectively).
- Teaching non-reading-disabled children to manipulate phonemes using letters is more effective for acquiring phoneme awareness than teaching them without letters (d = 1.11).
- Phoneme awareness instruction with letters promoted superior transfer to reading and spelling (d = 0.67 and d = 0.59 respectively) than teaching phoneme awareness without letters (d = 0.38 and d = 0.36 respectively).
- Phoneme awareness instruction was more effective in small groups (d = 1.38) than in tutoring settings (d = 0.60) or in classroom settings (d = 0.67), and it fostered reading and spelling performance more than tutoring or classrooms. According to the researchers, this may be due to enhanced attention, social motivation to achieve, or observational learning opportunities.
- Phoneme instruction does not need to be lengthy to exert its strongest effect on reading and spelling. In fact, effect sizes were statistically stronger for two middle-time period of instruction lasting from 5 to 9.3 hours (d = 1.37) and from 10 to 18 hours (d = 1.14). According to the researchers, this point may have very important implications in educational settings, where time is a precious resource. The length of each single teaching session was found to be crucial as well. Most sessions in the studies lasted no longer than 30 minutes.
- Phoneme instruction delivered by teachers produced a large effect size on phoneme awareness performance (d = 0.78), although not as large as that produced by researchers (d = 0.94).
- The use of computers produced a moderately strong effect on phoneme awareness development (d = 0.66), and a moderate effect on reading performance (d = 0.33). Yet, they did not contribute to improving reading as other forms of instruction did (d = 0.55).

- Not only did phoneme awareness instruction improve children's reading and spelling acquisition, but it was found to be acquired by children in the course of learning to read and spell. This confirms the existence of a causal relationship between phoneme awareness and literacy acquisition (cf. 4.5).

According to the researchers, these findings carry important implications for practice in educational contexts. They suggested that the 'ideal' conditions for effective phoneme awareness instruction are (Ehri *et al*., 2001: 276):

- One or two phoneme awareness skills are taught, in combination with letter instruction.
- Phoneme awareness skills taught especially include blending and segmenting.
- Phoneme awareness instruction is provided to small groups of preschool learners.
- Phoneme awareness instruction is provided in sessions lasting from 5 to 18 hours.
- Age-appropriate activities to teach phoneme awareness are included in the preschool curriculum.

The researchers stressed that, although phoneme awareness was found to contribute significantly to literacy acquisition, there is much more that children need to be introduced to before formal instruction begins. This is of relevance to this study. The researchers calculated the proportion of variance in reading performance explained by phoneme awareness. In general, the variance was 6.5%. It rose to 10% when instruction was combined with letters, and to 28% for preschoolers. These findings suggest that it remains much variance in reading left to be explained by other types of instruction, e.g., print awareness, letter naming and writing, decoding, sight words learning, spelling, vocabulary, and comprehension of text by listening and reading (Snow *et al*., 1998).

One interesting finding is the one related to the greater impact of phoneme awareness instruction on the acquisition of phoneme awareness by English-speaking (*d* = 0.99) than by non-English-speaking students (*d* = 0.65), as well as to the spelling outcomes in English-speaking (*d* = 0.95) and non-English-speaking children (*d* = 0.51). The researchers suggested that this might be associated with the exposure to different writing systems (cf. 6.3.3). Being the English writing system not as transparent in representing phonemes as in the majority of the other languages in the study, explicit phoneme awareness instruction might make a bigger contribution to clarifying phoneme units and their linkage to graphemes in English. This consideration seems to provide additional support for introducing children speaking a mainly transparent language such as Italian to phoneme awareness tasks in a not mainly transparent language such as English (cf. Chapter 7 and Chapter 8).

5.2.2.4 Some Limitations

In the course of their discussion, the researchers intended to stress some of the limitations of their findings. It is important to include these considerations in this work, as they show that findings on the topic should mostly be considered tentative and in a constant 'in progress' phase. The researchers' considerations include the following (Ehri *et al.*, 2001: 280):

- Conclusions that phoneme instruction had a stronger effect on reading and spelling achievement more under some circumstances than under others must be viewed as tentative.
- The findings were not derived from treatment-control comparisons within studies, but from correlations between studies.
- Teaching phoneme awareness is not the only key to reading success nor does it constitute a complete beginning reading program.
- It cannot be assumed that all teachers know how to teach phoneme awareness by virtue of being readers and writers themselves.

As the researchers themselves underlined in their final remarks (Ehri *et al.*, 2001: 280), "Not all the answers have been provided by research on PA [phoneme awareness] instruction. There are many additional questions and issues awaiting investigation." Yet, for our specific purposes, Ehri and colleagues' meta-analysis presents some recent and essential evidence-based findings on the relationship between phoneme awareness instruction and children's word recognition and spelling acquisition.

5.2.3 NELP's Meta-Analysis

The most recent meta-analysis on the relationship between emergent literacy skills and later literacy development is the one carried out by the National Early Literacy Panel (cf. 4.4). The Panel was charged with the review of those studies that employed experimental or quasiexperimental methods in order to identify the instructional practices, programs or procedures that proved to be the most effective in fostering emergent literacy skills or conventional literacy skills (i.e., decoding, oral reading fluency, reading comprehension, writing and spelling) in preschool children. Among emergent literacy skills is phonological awareness. Our interest lies in the findings related to the tasks that can foster phonological awareness in particular. The Panel's research question that is of our interest is the following (Schatschneider, Westberg, & Shanahan, 2008: 2) (cf. 4.4.1.1):

2. "Which programs, interventions, and other instructional approaches or procedures have contributed to or inhibited gains in children's skills and abilities that are linked to later outcomes in reading, writing, or spelling?"

The methodology employed by the panelists to answer Question 2 was the same as the one used to answer Question 1 (cf. 4.4.1). However, this time, searching studies that associated a child skill to reading outcomes through a correlational procedure was not sufficient. It was necessary to review the articles to identify all studies of *interventions*

that evaluated the impact of those interventions on reading, writing or spelling measures (Lonigan & Schatschneider, 2008; Schatschneider, Westberg, & Shanahan, 2008). Following the same procedures for review of articles for Question 1, the Panel selected a total of 136 articles for Question 2. These studies were then subdivided into five intervention categories. Here below is a list of the categories and the number of studies identified in each category (Lonigan & Shanahan, 2008: 4-5):

- *Code-focused interventions* (*n* = 78): interventions aimed at teaching preschoolers skills related to 'cracking' the alphabet code. Almost all of them included some form of phonological awareness intervention.
- *Shared-reading interventions* (*n* = 19): interventions focused on reading books to children. The studies included interventions of simple shared reading and more complex reading encouraging forms of reader-child interaction.
- *Parent and home programs* (*n* = 32): interventions where parents were the main agents. They involved, for instance, teaching parents instructional practices to use with their children at home to foster children's linguistic and cognitive development.
- *Preschool and kindergarten programs* (*n* = 33): studies evaluating preschool/kindergarten programs. Most of them concerned one particular intervention called the Abecedarian Project[41]. Others evaluated effects of educational programs, curricula, or policies on kindergarteners.
- *Language-enhancement interventions* (*n* = 28): studies that examined the effects of instructional practices aimed at fostering children's language development in particular.

[41] The *Abecedarian Project* was a controlled experiment conducted in 1972 in North Carolina by the Frank Porter Graham Child Development Institute, to study the potential benefits of early childhood education for poor children to enhance school readiness.

Since the main goal of this work focuses on phonological awareness instructional practices, only NELP's meta-analysis on code-focused interventions are discussed in the following sections.

5.2.3.1 Typology of Code-Focused Interventions

In the course of its research, the Panel carefully reviewed 83 studies that examined the effectiveness of interventions aimed at teaching children code-related skills. The main focus of these interventions was teaching aspects of the alphabetic principle, i.e., knowing that letters in print represent sounds in spoken words. In particular, most of the interventions attempted to develop children's phonological awareness (PA), alphabet knowledge (AK), and early decoding skills (e.g., phonics). In order to be included in the meta-analysis, studies had to meet the following criteria (Lonigan, Schatschneider, Westberg, & The National Early Literacy Panel, 2008: 107):

- They had to use a group-comparison design, i.e., a comparison between an experimental group and a control group.
- They had to use outcome measures that were assessments either of a conventional literacy skill (e.g., decoding, reading comprehension), or one of the skills that had been identified by the NELP as emergent literacy skills (cf. 4.4.5).
- They had to report sufficient information to allow an effect size to be calculated.

Virtually, all the studies focused on some form of phonological awareness training. These included training children tasks such as identification of sounds in words (e.g., match words with the same initial sound), or more often, manipulating sounds in words (e.g., combine sounds to form words, segment or delete parts of words). In some cases, phonological awareness training activities were conducted together with other code-focused training activities. One category included studies where phonological awareness activities were combined with activities teaching children alphabet knowledge (e.g., letter names, or both letter names and letter sounds) (cf. 5.3.4). Another

category included studies where phonological awareness tasks were combined with activities focusing on some aspects of phonics (e.g., teaching children about letters) or decoding (e.g., simple tasks involving the use of letter sounds). Three studies involved activities focused on alphabet instruction alone, and mainly the impact of Sesame Street®[42]-like video materials as instructional tools. Therefore, code-focused interventions were classified into four categories (Lonigan, Schatschneider, Westberg, & The National Early Literacy Panel, 2008: 112):

1. Interventions that included phonological awareness instruction only.
2. Interventions that included both phonological awareness and alphabet knowledge instruction.
3. Interventions that included alphabet knowledge only.
4. Interventions that included both phonological awareness and phonics instruction.

The interventions mostly included children that were attending a preschool or kindergarten program, and were added to the instructional activities normally conducted in their everyday programs. Children were exposed to activities either individually or in small groups. Children in the comparison groups were usually exposed to the regular activities in their programs, or to alternative interventions focused on a program contrasting the code-focused teaching. The question the Panelists tried to answer in their search was whether these code-focused interventions were successful in fostering preschoolers' emergent literacy and conventional literacy skills across a range of outcome measures.

[42] *Sesame Street* is an American children television series which has been on TV since 1969 and combines both educational content and entertainment. It is well knows for its human actors and puppets called *Muppets*. The show deals with issues such as music, song, alphabet, numbers, and teaching children basics in learning.

5.2.3.2 Discussion of Results

The results showing the overall effect of the studies selected across all outcome variables are presented in Table 5.1. This table includes the outcome variables, an estimate of the effect seizes based on a fixed-effect model and on a random-effect model[43], and the 95 percent CI, establishing the likely true values of the effect size (cf. 4.4.1.7).

Table 5.1 Estimates of effect sizes across outcome domains for interventions classified as code-focused for each dependent variable (adapted from Lonigan, Schatschneider, Westberg, & The National Early Literacy Panel, 2008: 109)

Dependent Variable	Fixed ES	Random ES	95% CI		*N of Studies*	*p* for ES
			Lower Bound	Upper Bound		
AK	0.31	0.38	0.18	0.58	24	0.0002
Cognitive ability	-0.47	-0.41	-0.78	-0.01	2	0.04
Memory	0.20	0.27	0.06	0.48	9	0.01
Oral language	0.27	0.32	0.09	0.56	14	0.008
PA	0.76	0.82	0.68	0.96	51	<0.0001
Print knowledge	0.44	0.47	0.18	0.76	5	0.0013
RAN	0.35	0.38	0.08	0.69	8	0.013
Reading readiness	0.20	0.20	0.02	0.38	3	0.034
Reading	0.41	0.44	0.27	0.60	36	<0.0001
Spelling	0.55	0.61	0.43	0.80	15	<0.0001
Writing	0.43	0.61	0.18	1.04	5	0.006

In general, results from the Panel's meta-analysis showed that phonological awareness interventions yielded significant (moderate to large) effects both on children's emergent literacy skills (e.g., phonological awareness, alphabet knowledge) and on conventional literacy skills (e.g., reading, spelling). In particular, the largest impact of code-focused interventions was on phonological awareness, with an average effect size of 0.82. These effects did not change if there was a variation in the type of code-focused intervention (e.g., phonological awareness training only or phonological

[43] A 'fixed-effect' model is a statistical model that represents the observed quantities in terms of explanatory variables that are all treated as if those quantities were non-random. This is in contrast to 'random-effect' models in which either all or some of the explanatory variables are treated as if they arise from random causes.

awareness and alphabet knowledge training), in the level of complexity of phonological awareness intervention (e.g., deletion tasks or blending tasks), in children's ages (e.g., preschool age or kindergarten age) and children's developmental levels (e.g., from minimal alphabet knowledge to being able to read), or in the socio-economic status of the children's families, in children's ethnicity and living environments (e.g., population density). As previously mentioned, the majority of code-focused interventions involved some form of phonological awareness training activity. The positive effects of this form of instruction on children's emergent literacy (e.g., phonological awareness) and conventional literacy skills (e.g., reading and spelling) should thus be interpreted within this context. This suggests that some form of phonological awareness intervention, either alone or in combination with other instruction involving print knowledge (e.g., letter-name instruction, instruction in early decoding skills) is likely to have a positive effect on children's later literacy achievement. These findings have some important implications for a tentative application of this form of instruction to the field of early foreign language teaching methodology, with specific reference to the English language (cf. Chapter 7 and Chapter 8). Of particular concern is the finding that the majority of code-focused interventions summarized by the NELP's meta-analysis were conducted either individually or in small groups. There was no evidence that whole-class or large-group interventions would produce similar-sized effects on children's literacy development. Further research is needed in order to investigate how to make such type of instruction effective when delivered to large groups. This has important implications for the application of these findings to the Italian preschool educational context (cf. 7.1.5; 8.2). It basically implies that within an Italian preschool setting, phonological awareness activities in English as a foreign language should be addressed to small groups of children, and not to large groups or the whole class. This is not always easily achieved, as the number of preschool educators in each preschool may be small. However, well-planned cooperative teaching between educators could become a strategic tool and allow for one educator to work with a small group of children at a time, for a short period of time every day, while the rest of the class is taken care of by another educator.

In general, NELP's results on code-focused interventions make a significant contribution to this discussion, as they represent the most comprehensive and recent review of evidence-based studies on the relationship between phonological awareness instruction and the development of phonological awareness and literacy in young children.

5.3 Phonological Awareness Intervention in L1: Instructional Framework

After having examined the three meta-analyses currently available on phonological awareness intervention and literacy development in English and other European languages, it is important to discuss the typology of phonological awareness tasks normally employed in L1 intervention or training programs. Phonological awareness tasks in this context are to be considered those activities that require the ability to perceive a spoken word as composed of smaller sound units, and particularly at the phoneme level, by a sequence of individual sounds (Lewkowicz, 1980). Naturally, other skills, e.g., listening and speaking skills, are developed and strengthened as well during the execution of phonological awareness tasks.

5.3.1 Typology and Complexity of Tasks

Phonological awareness is recognized as varying at least along two independent dimensions (Adams, 1990; Developing early literacy: Report of The National Early Literacy Panel, 2008):

1. *Level of linguistic complexity*. This refers to the size of the sound unit on which phonological awareness is demonstrated, and it ranges along a continuum from word-level units to phoneme-level units. Along this continuum, tasks are generally split between phoneme-level tasks (e.g., phoneme awareness) and other sub-word tasks (e.g., syllable awareness, onset-rime awareness). Tasks at the phoneme level are considered the most advanced and complex from a developmental perspective.

2. *Cognitive operation*. This refers to the type of task performed on the linguistic unit, and can involve identity (e.g., rhyme oddity tasks), synthesis (e.g., blending tasks), or analysis (e.g., deletion or counting tasks). Analysis tasks are considered the most advanced and complex from a developmental perspective.

A common way to classify phonological awareness tasks has been to distinguish between those requiring synthesis and those requiring analysis. Analysis implies starting with a spoken word and carrying out a number of operations requiring perception of its individual sounds. Synthesis implies starting with a sequence of isolated speech sounds and combining them to produce a recognizable whole word (Lewkowicz, 1980). Adams (1990: 67-80) divided tasks assessing phonological awareness in children in a scale going from cognitively simpler to more complex tasks:

- *Knowledge of nursery rhymes*. This task simply involves an ear for the sounds of words. The advantage of this easy task is that it can be administered to young children, e.g., 3- and 4-year-old children.
- *Oddity tasks*. Children are presented with a set of three or four words and asked which of the word is different or does not belong. Children can be asked to decide depending on the first sound of the word (e.g., *pig*, *hill*, *pin*) the final sound of a word (e.g., *doll*, *hop*, *top*), or the internal sound of a word (e.g., *pin*, *gun*, *bun*). When internal sounds are tested, the task in fact amounts to one of *rhyme detection*. In a simpler version, children are given picture cards and asked to identify the names of the pictures beginning with the same sound. In these tasks children are required to methodically compare and contrast the sounds of words for rhyme and alliteration. Not only are they required to be sensitive to similarities and differences in the overall sounds of words, but also to focus attention on the components of the sounds that make words similar or different. Yet, children are not required to do a more complex task such as consciously

divide a syllable into a string of phonemes or be aware that it could be so divided.

- *Phoneme blending tasks.* These tasks (which are considered synthesis tasks) require children to listen to a sequence of separately spoken sounds (e.g., "/m/ … /æ/ … /p/") and combine them to form a recognizable word (*map*). Blending tasks are in some respect easier than segmentation tasks, in that they do not require children to be aware of what phonemes are, but only that such little sounds can be combined together into a word. Generally the degree of complexity in blending tasks proceeds as follows:
    a. blending phonemes into real words,
    b. blending phonemes into nonwords.

  Blending has been found by research (Lewkowicz, 1980) to be one of the most closely associated with reading and therefore most clearly deserving an inclusion in phonological awareness programs. Blending tasks play a central role in learning to read and spell as they help children decode unfamiliar words (Williams, 1980).
- *Syllable-splitting tasks*. Children are required to break off the first phoneme of a one-syllable word. In some versions, they are then asked to pronounce the phoneme in isolation (e.g., "b-b-b-b" of *bear*) or to say what is left of a word without its initial phoneme (*ink* for *pink*). Syllable-splitting tasks are generally easier than manipulation or segmentation tasks, in that children are 'only' required to attend carefully to the sounds of a one-syllable word and apply the insight that its initial sound can be broken away. Yet, syllable-splitting tasks might not be necessarily easy for preschoolers. Success may depend on the way in which instructions are given at child-level. When working with 3- to 6-year-old children, Zhurova (1963), for instance, employed toy animals and a 'magic bridge.' In order for animals to cross the bridge, they had to say the first sound of

their name (e.g., "dog, d-d-d-dog, d-d-d"), or the bridge would collapse. Visual aids can be provided, e.g., picture cards, in order to support children's memory.

- *Phoneme segmentation tasks*. Segmenting phonemes is a compound skill, as children must hold the word in memory *and* isolate a portion of the word in order to correctly segment it (O'Connor *et al*., 1998). These tasks require children to break a word into its sounds by tapping out or counting the sounds, by pronouncing and positioning a marker for each sound, or by 'stretching' or repeating the sounds of a word. They require attention to articulatory clues as well as auditory clues, and are intended to verify whether children can decompose a syllable into its component phonemes. Children are required not only to have a thorough understanding that words can be completely analyzed into a series of phonemes, but also to be able to analyze them, completely or on demand. A phoneme segmentation task is for instance the *tapping task* devised by Liberman and colleagues (1974). Given a series of words or syllables, each composed of one to three phonemes, children are required to tap out the number of phonemes in each syllable with a wooden dowel stick. In general, segmentation tasks have been found to be among the most closely associated with reading acquisition. Segmenting words into phonemes plays an essential role in learning to read and spell in that it helps children spell unfamiliar words and retain spellings in memory.
- *Phoneme manipulation tasks*. In these tasks children are given instructions to manipulate the phonemes in a word. These include *deletion tasks*, requiring children to recognize what word remains when a specific phoneme is removed (e.g., "What is *smile* without the /s/?"). The main difference between syllable-splitting tasks and deletion tasks is that the first only involve the ability to delete the initial sound from one-syllable words, whereas the latter involve the ability to delete any designated phoneme (e.g. an internal phoneme) from any word (e.g. multisyllabic words). As Adams (1990) remarked, the knowledge and skills required to carry out these two tasks may be very different. Syllable-splitting

tasks are normally easier than manipulation tasks such as deletion tasks, in that children do not have to focus on the syllable-word as a string of phonemes to succeed. In a deletion task originally developed by Bruce (1964), for instance, children were asked to pronounce a word after they have removed its first (*hill* without the /h/), internal (*monkey* without the /k/), or last phoneme (*nest* without the /s/). Deletion tasks may be easier if children first orally segment the word into the target sound plus everything else and then repeat the 'everything else' (Lewkowicz, 1980). In other versions, children may be asked to reorder the phonemes of a word (Lundberg *et al*, 1980), add some extra phonemes to it (Lindamood & Lindamood, 1971), or replace a phoneme with another (e.g., "Say *meat*. Now say it with /f/ instead of /m/"). Substitution of a sound within a word requires all the operations of deletion, plus blending, and may put a considerable strain on children's memory (Lewkowicz, 1980). Children are required to have sufficient proficiency with the phoneme structure of words so that they are able to add, delete, or move any designated phoneme and create a word or a nonword from the result. In general, tasks involving initial phonemes have found to be easier for children to carry out than tasks on final phonemes (Rosner & Simon, 1971; Stanovich, Cunningham, & Cramer, 1984; Treiman & Weatherston, 1992), and single consonant onsets to be easier to handle than consonants in clusters (Anthony & Francis, 2005). Manipulation tasks are considered analysis tasks.

A guide for teachers to adjust difficulty levels of a particular task within a setting of L1 phonological awareness intervention has been proposed by Gillon (2004). As can be seen in Table 5.2 below, this differentiation of tasks generally follows Adam's scale previously presented. It is however more complete and detailed in that it indicates for each task three task variations based on complexity levels, and it includes tasks at the level of the syllable (e.g., syllable segmentation). When tentatively applied to a different

setting, i.e., early foreign language teaching and learning, the scheme below can represent some helpful guidelines to be adopted by language teachers. Within a context where English is introduced as a foreign language to very young children, preschool educators can rely on Gillon's scheme in order to design and/or select phonological awareness tasks based on varying levels of difficulty. Naturally, educators will have to take into consideration the specific needs of their groups of learners as well as the educational goals within the preschool curriculum.

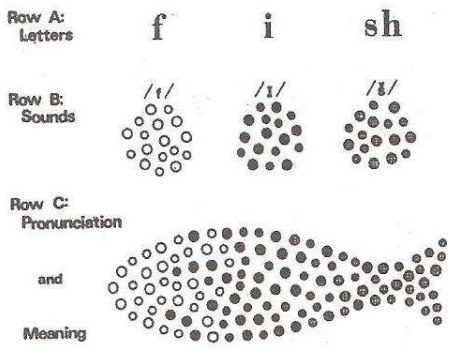
Table 5.2 A guide to adjusting phonological awareness task difficulty (adapted from Gillon, 2004: 149)

Task type	*Easier level* → → → → → → → → → → → → → → → → *More challenging level*		
Syllable segmentation	Segmenting two-syllable familiar words (e.g., *teddy*)	Segmenting three- and four-syllable familiar word (e.g., *elephant*)	Segmenting unfamiliar multisyllabic words (e.g., *anatomy*)
Rhyme	Rhyme recognition tasks (e.g., "Do these words rhyme: *car*, *tar*?")	Rhyme oddity tasks (e.g., "Which one doesn't rhyme: *mat*, *sun*, *cat*?")	Rhyme generation tasks (e.g., "Tell me all the words that rhyme with *bat*")
Phoneme identity	Identifying phonemes in the initial position of single-syllable words	Identifying phonemes at the end of single-syllable words	Identifying phonemes in the middle of words
Blending	Blending onset and rimes with picture choice (e.g., *c-at* = *cat* [pictures of a cat, hat, and car])	Blending phonemes to form single-syllable words without clusters (e.g., *d-o-g*)	Blending phonemes to form non-words and words with clusters (e.g., *s-t-o-p*, *v-a-p-t*)
Segmentation	Segmenting onset-rime units	Segmenting words with two to three phonemes at the phoneme level	Segmenting words with four or five sounds, including words with clusters
Sound deletion tasks	Deletion at the whole word and syllable level (e.g., Say *birthday* without the *day*)	Phoneme deletion task that results in a real word (e.g., say *part* without the /p/ sound" = *art*)	Phoneme deletion of non-words and words involving clusters (e.g., "Say *step* without the /t/ sound" = *sep*)
Indentifying and describing phoneme changes	Analysis tasks using common rhyming patterns (e.g., identifying that the first sound is changing in *cat, hat*, *mat*, *sat)*	Stimulus items involving two- and three-phoneme words with wide sound contrasts (e.g., identifying the last sound changes in *art* to *arm*)	Stimulus items with narrow sound contrast (e.g., *tug* to *dug*) and medial vowel changes (e.g., *sat* to *sit*); phoneme changes involving clusters (e.g., *stop* to *slop*)
Matching phonological form to orthographic form	Stimulus items that involve simple one to one connections (e.g., *mat*, *top*, *bun*)	Stimulus items involving diagraphs (e.g., *shop*, *teeth*, *chip*)	Stimulus items involving complex connections, such as one phoneme to multiple graphemes (e.g., *f*, *ph*, *ff, er*, *ir*, *ur*)

5.3.2 Basic Phoneme Awareness Tasks in the Decoding Process

As discussed throughout the present study, phoneme awareness skills are especially relevant because of their relationship to the task of *decoding* (cf. 3.2). Therefore, tasks can be further classified according to their relation to the process of decoding. One source of difficulty for beginning readers is understanding the complex relationship between letters, sounds, and words that characterizes alphabetically spelt languages. Finding a strategy to represent this relation visually (e.g., replacing the invisible element of sound with the visible element of color) may help children conceptualize it. This method has been proposed by Lewkowicz (1980) in the following figure, where white, black and grey (crosshatched) represent different sounds (Lewkowicz, 1980: 690):

Figure 5.1 The spelling, phoneme structure, pronunciation and meaning of the word *fish* (Lewkowicz, 1980: 690)



Row A represents the spelling (i.e., graphemes) of the word *fish*. Row B represents the abstract phoneme structure of the word, where the colors are separate and distinct; although in reality sounds do not follow one another in discrete fashion but overlap in the acoustic signal (Liberman, 1974). This overlap is visually represented by the merging of the colors in Row C, representing the pronunciation of the word as well as its meaning. Putting it simply, the act of decoding/reading a novel word can be viewed as moving from Row A through Row B to Row C. Normally, the beginning decoder derives C from A with the support of B, thus moving *downward* on the chart. In addition

to knowledge of letter-sound correspondences, decoders need to be able to combine isolated sounds (Row B) into a recognizable word (Row C). For example, when beginning readers encounter the novel word *cat*, they normally follow the following steps to derive its pronunciation and meaning:

- They focus on the graphemic units of the word (Row A), *c-a-t*.
- They map the graphemic units onto their corresponding sound units (Row B), /k/, /æ/, /t/, due to their knowledge of letter-sound correspondences.
- They blend the isolated sounds into a recognizable word with a specific meaning and pronunciation (Row C).

The perception that a familiar word (Row C) can be analyzed as in Row B (i.e., the ability to move *upward* on the chart) is essential for success in decoding as well (Lewkowicz, 1980). As a result, being aware that a familiar word such as *cat* can be divided into smaller sound units, and being able to carry out this segmentation task, can also assist beginning readers in the decoding process. Therefore, in order to classify phoneme awareness tasks in terms of the directness of their relationship to decoding, two tasks stand out as essential: the ability to derive C from Row B, i.e., *blending*, and the ability to derive Row B from Row C, i.e., *segmentation*. These can be regarded as *basic*, fundamental phoneme awareness tasks (Lewkowicz, 1980).

5.3.3 Implementation of Phonological Awareness Intervention

Within an L1 educational, clinical or healthy context, phonological awareness intervention can be practically implemented within several frameworks (e.g., with children at risk, with adolescents, etc.). The use of phonological awareness intervention for enhancing early reading and spelling development in preschool children is of interest in our discussion. Generally this intervention is integrated in the classroom curriculum and is implemented by the class educator in an L1 educational context (Gillon, 2004).

5.3.3.1 Systematic, Direct, and Explicit Phonological Awareness Intervention

Experimental research (Ayres, 1995; Catts, 1991) has constantly indicated that phonological awareness instruction has larger effects when it is *systematic*, *direct* and *explicit*. Instruction is systematic when it is organized in a logical order, and includes tasks going from easier to more difficult skills (cf. 5.3.1). Direct instruction implies direct involvement of children through the use of motivating teaching tools such as nursery rhymes, books, and stories which emphasize specific phonological features of words (Ayers, 1995). Explicit instruction is based on constantly modeling and scaffolding learners' attempts during phonological awareness activities, on providing immediate and clear feedback on correct/incorrect attempts, and on targeted elicitation (Justice & Kaderavek, 2004). Targeted elicitation should be especially taken into account when introducing phonological awareness tasks in a context of early foreign language teaching/learning. Furthermore, research has shown that learners who are exposed to explicit instruction are less likely to be 'nonresponders' to that instruction. In a recent study (Al Otaiba, 2003) it was found that 44% of the learners who were exposed to implicit phonological awareness tasks were nonresponders, whereas only 28% of the learners receiving explicit instruction were nonresponders.

5.3.3.2 Planning Phonological Awareness Intervention

In planning activities and tasks for the whole preschool class, educators should consider targeting developmentally appropriate phonological awareness skills (cf. 2.4). Educators should have knowledge or be trained in order to have knowledge of how to adapt phonological awareness instruction, namely on how to increase or decrease the difficulty level of a given phonological awareness task. This is especially done to ensure that activities planned will not only have more capable students be challenged by some tasks, but also enable less capable learners to achieve some level of success. Naturally, in order to do that educators need to have general knowledge of their learners' abilities. Teachers should also carefully consider the phonological complexity of the words

selected as phonological awareness stimulus items. Words that are phonetically regular and have simple phoneme-grapheme connections are recommended for young learners such as preschool children (Gillon, 2004).

5.3.3.3 Phonological Awareness Instruction in the Curriculum

In order to implement L1 phonological awareness instruction in the classroom two approaches are normally taken, either in isolation, or by integrating them (Gillon, 2004: 148):

1. Phonological awareness activities are integrated into regular class activities and language programs in an informal manner. Phonological awareness tasks provide additional practice for young learners. If they also become part of the educator's regular teaching practices, then phonological awareness can be taught and reinforced on a daily basis.
2. A structured phonological awareness program is designed for a well-defined length of time. This type of program ensures that adequate attention is given to the development of phonological awareness skills for all children. It also allows teachers to assess and monitor children's performance more easily.

Some researchers (e.g., Richgels *et al*., 1996) have stressed the need for phonological awareness instruction to be explicitly connected to and embedded within meaningful reading and writing contexts. This type of instruction is especially suggested for kindergarten and older children, namely 5- and 6-year old learners. Children can be instructed in phonological awareness, for instance, during activities such as reading authentic messages, generating stories that the teacher writes down, engaging in songs and name play, and reading verse books (Ukrainetz, 2006). One additional strategy aimed at stressing and scaffolding phonological awareness at the phoneme level during shared reading and writing is 'sound talk,' or explicit questions and discussions about sounds (Ukrainetz *et al*., 2000). Ukrainetz and colleagues (2000) provided small group

'sound instruction' to 5- and 6-year-old learners. These were compared to a control group of children who received no treatment. The treatment group made significant greater gains in phoneme awareness compared to the control group (the difference represented an effect size of $d = 0.74$).

5.3.4 Alphabet Knowledge Tasks

As revealed by the three meta-analyses presented in this chapter (Bus & van Ijzendoorn, 1999; Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh, & Shanahan, 2001; Developing early literacy: Report of The National Early Literacy Panel, 2008), phonological awareness instruction combined with letter instruction (e.g., instruction on letter names, sounds, and shapes, or on simple sound-letter correspondences) has shown to have positive effects on reading and spelling performance. Alphabet knowledge has also been found to be a strong predictor of later reading ability (for a review of these studies, see Bus & van Ijzendoorn, 1999; Ehri *et al*., 2001; Developing early literacy: Report of The National Early Literacy Panel, 2008). Researchers (e.g., Bowey, 1994; Burgess & Lonigan, 1998; Johnston *et al.,* 1996; Stahl & Murray, 1994; Wagner, Torgesen, & Rashotte, 1994) have found alphabet knowledge to be an element that can affect phonological awareness development. According to results from experimental studies, acquiring the names of the alphabet letters and their associated common phonemes may help children understand the sound structure of words. In their experimental study, Johnston and colleagues (1996) found that explicit awareness of phonemes emerged in many of the preschool children involved only *after* they had acquired at least partial alphabet knowledge, whereas phoneme awareness was rarely shown in the absence of alphabet knowledge. The researchers concluded that letter knowledge may be the trigger for awareness at the phoneme level in preschool children (Johnston *et al*., 1996). However, the relationship between alphabet knowledge, phonological awareness skills and decoding is still being debated. Training in letter knowledge alone was not shown to lead to improved phoneme awareness and word decoding. For instance, knowing the names of the letters alone was not shown to lead to the development of phoneme

awareness skills or decoding skills (for a review of these studies, see Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh, & Shanahan, 2001). There is also evidence (Tunmer *et al*., 1988) that an initial level of phonological awareness is required in order for children to be able to use letter knowledge in word recognition. For example, when reading the novel word *dog* and focusing on its component graphemic units, beginning readers should be aware that the word can be divided into sound units as well. Furthermore, in some studies (Elbro, Borstrom, & Petersen, 1998) phoneme awareness has been shown to make a unique contribution to predicting later reading, even when letter knowledge is taken into consideration.

The influence of letter knowledge to phonological awareness development was investigated in an important study (Burgess & Lonigan, 1998) involving 97 4-to 5-year-old American children from middle-class families. Growth in letter-name, letter-sound, rhyme detection, phoneme detection, blending and deletion tasks was examined over a 12-month period. The findings revealed the existence of a bidirectional relationship between letter-name and phoneme awareness skills. On the one hand, letter-name knowledge was found to contribute significantly to growth in phoneme awareness. On the other hand, children's achievement on phonological awareness tasks (both rudimentary ones such as syllable and rhyme tasks, and more complex tasks at the phoneme level) contributed to their growth in both letter-name and letter-sound over the following year (Burgess & Lonigan, 1998).

Evidence of an interactive relationship between phoneme awareness and letter knowledge is further supported by the results of other training studies (Ball & Blachman, 1988; Bradley & Bryant, 1985; Hatcher *et al*., 1994) showing stronger effects on enhancing reading skills when phonological awareness training is combined with letter-sound knowledge training, rather than when phonological awareness training occurs in isolation. As stressed by Gillon (2004), it is important to consider alphabet knowledge and phonological awareness as two separate variables influencing reading and spelling development. Although interactions in growth between letter knowledge and phonological awareness are evident, both elements make individual contributions to

predicting literacy achievement and should not be viewed as measures of the same underlying construct (Burgess & Lonigan, 1998).

In their meta-analysis, Ehri and colleagues (2001) remarked how teaching children all the letters of the alphabet is not an easy task, especially when they enter school knowing only few of them. In the English alphabet, for instance, there are 52 capital and lowercase letters shapes, and names, as well as associated sounds to learn. Moreover, the shapes of many letters are similar and thus confusing (e.g., *m* and *n*). Letter learning requires retaining shapes, names, and sounds in memory and internalizing them so that letters can be processed automatically in reading and writing words (Adams, 1990). This has always to be taken into consideration when working with preschool children.

It is important to underline some variation in the complexity of the tasks proposed to children when considering task types. In one study (Dodd & Carr, 2003) involving 83 British children between the ages of 4 years, 11 months, and 6 years, 4 months, letter knowledge development was investigated. All children had received 1-year of literacy instruction. Letter-sound recognition tasks (e.g., "Show me /s/") were found to be easier than letter-sound recall (e.g., "What sound does this letter make?"). Letter production (e.g., "Write down the letter /s/) proved a particularly complex task only for children coming from lower-class families (approximately 50% of the group) (Dodd & Carr, 2003).

One useful learning strategy in phonological awareness tasks was found to be the use of plastic letters or letter blocks representing each grapheme (e.g., *ch* written on one block and *sh* written on another) that could be manipulated (Defior & Tudela, 1994). For example, in their experimental study Blachman and colleagues (1994) had English-speaking kindergarten children be directly instructed in letter names and letter sounds. Eight specific letters were selected and included, i.e., *a*, *m*, *t*, *i*, *s*, *r*, *f*, *b*, because their combinations generate a significant number of real words, using the CVC (consonant-vowel-consonant) pattern (e.g., *rat*, *mat*, *bat*, *fat*). Illustrated alphabet cards were

employed to reinforce initial sounds, i.e., the *r* card had a picture of a *r*ed *r*ooster in *r*ed *r*unning shoes (Blachman *et al*., 1994).

An understanding of how children acquire alphabet knowledge may be additionally important in order to develop appropriate tasks focused on both phonological awareness and letter knowledge. Yet, there have been few systematic studies focused on the acquisition of alphabet knowledge itself. One exception is represented by Worden and Boettcher (1990), who investigated children's acquisition of alphabet knowledge of some critical aspects, i.e., letter recitation (i.e., recite the alphabet from memory, or sing the *A.B.C.* song[44]), naming (i.e., name the name of each letter on a page of scrambled letters), writing (both uppercase and lowercase letters on a wide-line white paper with a pencil or crayon), and sound knowledge, or association of letters with sounds (provide an appropriate sound for each letter on a page of scrambled letters) and word knowledge, or association of letters with words (name a word beginning with each letter on a page of scrambled letters). These skills were individually assessed for the entire set of upper- and lowercase letters in 188 English-speaking children from southern California from 2½ to 7½ years of age. The overall results indicated that alphabet knowledge was not an all-or-nothing process but rather was gradually accumulated on a letter-by-letter basis. Performance improved with age, and the tasks were all highly correlated with one another in terms of overall performance. The children performed better on upper- than lowercase letters in both naming and writing. A summary of the findings in relation to each task is presented below (Worden and Boettcher, 1990: 283-287):

- *Recitation*: performance improved significantly from 3 to 5 years. Three-year-old children on average could recite no more than 5 letters. By 5 years of age they could recite almost all letters correctly.

[44] The *A.B.C.* song is one of the best well-known English language alphabet songs, especially in the United States. It is used to teach the alphabet to children, normally in preschools, kindergartens, and homes.

- *Naming*: performance was better on uppercase letters at years 4 and 5. Performance on lowercase improved at years 6 an 7.
- *Writing*: performance improved significantly each year, with the largest gains taking place in years 3-6. Few 3- and 4-year old could write uppercase and lowercase letters separately. Performance was better on uppercase than on lowercase letters. Performance on uppercase improved with age.
- *Sound knowledge* and *word knowledge*: these proved to be the most difficult tasks, and on a comparison analysis were equally difficult for children aged 5, 6, and 7. Performance improved significantly at all ages on both tasks, with the biggest gains taking place from years 5 to 7.

To summarize, if acquisition of the alphabetic principle rests on the twin foundations of phonological awareness and alphabet knowledge, then supplementing phonological awareness instruction with letter training may be critical within a preschool educational context. This chapter presents a variety of important instructional implications for a tentative application to early language teaching methodology. The findings of the effectiveness of phonological awareness instruction for children's literacy development, as well as the description of the typology of phonological awareness tasks reviewed represent the scientific foundation from which we derive our proposal of phonological awareness activities in an L2, and in particular in English as a foreign language within an Italian preschool setting. A series of methodological implications derived from the contents of this chapter and a series of teaching suggestions are presented in chapter 7 and chapter 8. Up to this point, this study has focused on phonological awareness and its relation to word recognition and spelling development in an L1. However, within the scope of the present discussion it is critical to investigate the area of phonological awareness development and instruction in a context of learning English as a foreign or second language. There are few experimental studies available on this topic currently, and most of them are referred to children whose first language is not English and who are learning English in an English-speaking country (e.g., Hispanic

children in the United States). This specific topic is examined in more detail in the following chapter.

Chapter 6

Phonological Awareness across Languages

> [...] spending time learning in one language does not impede the development of these language functions in a second language, it enhances them. Or to put it another way, spending time learning one language benefits both languages with respect to developing those language-related skills associated with cognitive functioning and literacy-related activities.
> (Cummins & Swain, 1986)

6.1 Phonological Awareness and English-Language Learners (ELL)

Up to this point, the focus has been on the development of phonological awareness and its role in the acquisition of later reading and spelling abilities in a child's L1. The role of phonological awareness skills and development has been studied extensively in monolingual children, especially English-speaking children (cf. 2.4) (for a review of these studies, see Adams, 1990). This study will now concentrate on:

- The role and development of phonological awareness in children speaking a language other than English as their L1.
- Children who are mainly bilingual, namely they are native speakers of a language other than English, and are introduced to English as a second language.

There is little research literature currently available on the development and role of phonological awareness in children who are introduced to English as a foreign language, rather than as a second language (one exception is represented by Bialystok *et al.*, 2005, cf. 6.4.3). Most empirical research refers to young learners who are in most cases bilingual children, having a language other than English as their L1, and, being resident in an English-speaking country, English is their L2. This category of learners is normally referred to as *English-language learners* (ELL) (Developing Early Literacy:

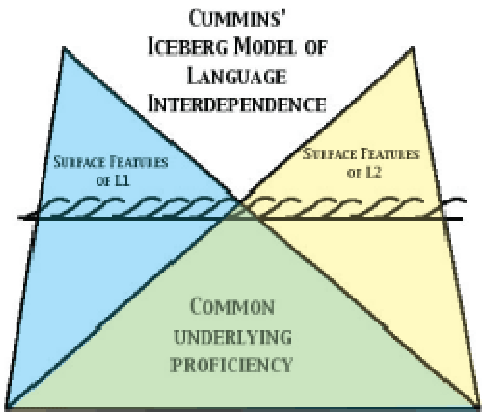
Report of the National Early Literacy Panel. A scientific synthesis of early literacy development and implication for intervention, 2008). The topic of phonological awareness development in ELL children is of special relevance in this work, as it raises a question about ELL children transferring phonological awareness skills already acquired from an L1 to an L2. This chapter explores the main experimental studies available on the transfer of phonological awareness skills from an L1 to an L2. This area of research represents an important scientific basis for this proposal, i.e. presenting phonological awareness tasks in EFL to Italian preschool children who are in the course of mastering their L1, bearing in mind the ways in which this setting differs from a context where English is learned as a second language.

6.2 Cummins' Interdependence Hypothesis

Before presenting the studies available on the relationship between phonological awareness in an L1 and an L2, one of the most important theories of the interdependence between an L1 and an L2 should be taken into account, namely Cummins' 'Linguistic Interdependence' or 'Iceberg Hypothesis' (Cummins, 1981, 1983, 1984a, 1992). This theory is critical for our purposes, as it mainly supports the view that skills acquired in an L1 can be transferred to an L2. The Interdependence Hypothesis argues that certain first language knowledge can be positively transferred during the process of second language acquisition. The L1 linguistic knowledge and skills that children possess can be extremely instrumental to the development of corresponding abilities in the L2. An integral component of these facilitative aspects of language influence is that the L1 be sufficiently developed prior to the extensive exposure to the L2, as would be found, for instance, in an educational environment. According to this hypothesis, normally represented as a 'dual-iceberg' (see Figure 6.1), every language contains surface features. However, underlying those surface manifestations of the language are proficiencies that are common across languages. The dimension of language used in more cognitive demanding tasks that involve more cognitively complex, high-level language (e.g., literacy, content learning, abstract thinking and

problem solving) is called CALP, and, once acquired in an L1, is positively transferable across languages (Cummins, 1981).

Figure 6.1 Cummins' Iceberg Model of Language Interdependence (1981)



With reference to literacy, for instance, the Interdependence Hypothesis posits that successful readers in an L2 must reach a 'threshold' of competence in the L1 for transferability of literacy skills to occur, i.e., there should be fluency and literacy in an L1 before exposing children to reading instruction in an L2 (Cummins, 1981). This theoretical framework may have important practical implications to Italian preschool children's emergent literacy and phonological awareness skills in L1, and the possibility for those skills to transfer to an L2.

6.3 Phonological Awareness and Phonological and Orthographic Variation

Thus far, we have examined phonological awareness skills, their development and their effects on later literacy in relation to the English language, where the majority of experimental studies and empirical evidence is available today. However, researchers gradually started investigating phonological awareness in languages other than English, in an attempt to verify whether children's development of awareness of the phonological structure of a language was responsive to the structure of that specific language only (for a review of these studies, see Tolchinsky & Teberosky, 1998). The

hypothesis was that the phonological and orthographic features of a language determine the nature of the phonological awareness skills that children needed to develop in order to read in each language; as well as the ease with which reading could be acquired for different languages (Bialystok, 2007a). Therefore, in view of the significant contribution of phonological awareness in early reading development, researchers (Barnitz, 1985; Caravolas & Bruck, 1993; Cheung et al., 2001; Cisero & Royer, 1995; Cossu *et al*., 1988; Durgunoglu *et al*., 1993; Kyöstiö, 1980) started extensively investigating whether phonological awareness is a language-specific construct or a general competence shared across alphabetic languages. A portion of phonological awareness, namely children's growing understanding of the segmental nature of spoken words, was believed to emerge as a by-product of oral language development prior to formal instruction (cf. 2.4; 4.5; 6.5.1). Since the concept of word segmentation is not specific to any particular language, once developed in one alphabetic language it should be readily available in learning to read in another alphabetic language, serving as the foundation for subsequent phonological awareness and word decoding development (Koda, 2007). However, researchers have also suggested that, because alphabetic languages differ widely in phonological and orthographic characteristics, it is possible that awareness of specific phonological and orthographic units develops as a function of salient structural aspects of a child's L1. A growing number of studies (Caravolas & Bruck, 1993; Cisero & Royer, 1995; Cossu *et al*., 1988; Durgunoglu *et al*., 1993; Lindgren *et al*., 1985; Wimmer & Hummer, 1990) have provided considerable support for both predictions, thus showing that phonological awareness may indeed function as a common underlying competence, but may also vary in rate and pattern of development in speakers of different alphabetic phonological systems, i.e., to some degree phonological awareness skills are language-specific and follow from children's familiarity with the oral forms in their particular L1. This was shown for various languages, such as German (Wimmer & Goswami, 1994; Wimmer *et al*., 1991), Dutch (Wentink, Van Bon, & Schreuder, 1997), Spanish (Goswami, Gombert, & Barrera, 1998),

Portuguese (Pinheiro, 1995), Greek (Goswami, Porpodas, & Wheelwright, 1997), Turkish (Öney & Durgunoglu, 1997), and Italian (Cossu *et al*., 1988).

6.3.1 The Orthographic Depth Hypothesis

In addition to being closely related to the oral forms of a language, phonological awareness is closely associated with the orthography of a language, especially once children are introduced to formal reading instruction. The task of understanding that there is a correspondence between phonemes and graphemes is made more difficult by different degrees of complexity in orthographies. The orthography of a language is the set of symbols (graphemes) used to write a language. Logographic systems such as Chinese (cf. 3.9) and Japanese *kanji*[45] use symbols to represent meaning directly and have no or comparatively few cues to pronunciation as compared to alphabetic systems. Other writing systems represent speech sounds. The characters of the Japanese *kana* system, for instance, correspond with spoken syllables, whereas those of alphabetic systems such as English correspond with individual phonemes. However, alphabetic orthographies vary in the degree to which they are regular in their representation of sounds. The writing-systems of Serbo-Croatian, Finnish, Welsh, Spanish, Dutch, Turkish, German and Italian are on the whole much more regular in sound-letter correspondences than those of languages such as English and French. The former are referred to as *transparent* or *shallow* orthographies in which sound-letter relations are highly consistent, whereas the latter are referred to as *opaque* or *deep* orthographies that are less regular as each letter or group of letters may represent different sounds in different words (Ellis *et al*., 2004; Ellis & Hooper, 2001).

[45] In Japanese, which is a syllabary where generally each symbol represents a syllable, children learn to read an orthography that is based on two types of transcription: *kanji*, a morphology-based system, and *kana*, a phonology-based system. *Kanji* is derived from the Chinese logography and represents the roots of words without regard to grammatical inflections, whereas *kana* is of native origin and comprises two syllabaries, *hiragana* and *katakana*, which can represent the root and inflection of any words in terms of their constituent *mora* (phonological units that are roughly equivalent to syllables). Normally, the two orthographies function together, with *kanji* representing most word roots and *kana* representing all word inflections and the roots of those words that lack *kanji* characters (Mann, 1986).

One interesting widely debated question is whether different writing systems affect the ways in which children learn to read, or the rate of reading acquisition. Katz and Frost (1992) proposed the so-called *orthographic depth hypothesis*, which postulates that alphabetic shallow orthographies should be easier to read using word recognition processes than deep orthographies. It further predicts the consequence that children learning to read a transparent orthography should learn to read aloud and to spell faster than children learning an opaque orthography. According to Katz and Frost's theory, there are different routes to fluent reading that are dependent on the nature of a particular orthography. Fluent English readers' ability to read nonwords such as *nabe* or *sloppendash* demonstrates the availability of a route reading using decoding, where pronunciation is assembled from known sound-letter associations. The ability to pronounce irregular or inconsistent real words such as *island* and *Wednesday* implicates the availability of another reading route, where the word cannot be decoded entirely by matching letters and sounds (cf. 3.2.2). According to the researchers, learners of English as an L1 use different strategies of reading at different stages of development (cf. 3.3). Readers of transparent orthographies are more likely to perform well in reading by means of decoding reading strategies than readers of opaque orthographies. To summarize, transparent orthographies are viewed as supporting word recognition involving a phonological route, whereas opaque orthographies are viewed as encouraging readers to process words by accessing the lexicon and meaning via the word's visual orthographic structure (Katz & Frost, 1992).

6.3.2 The English Language: Evidence of an Opaque and Unique Orthography

Our main interest lies in the English language, as we propose to introduce Italian preschoolers to phonological awareness tasks in English. Several experimental studies (e.g., Seymour *et al.*, 2003; Wimmer & Goswami, 1994) have explored the peculiarities of the orthography of English in order to verify whether it can be really viewed as an opaque and 'exceptional' orthography. Results from some of these studies are presented in this section. As remarked by some researchers (e.g., Share, 2008: 584): "the

idiosyncrasies of English, an exceptional, indeed, 'outlier' orthography in terms of spelling-sound correspondence" cannot be denied. English is generally defined as a deep orthography containing many inconsistencies and complexities (Seymour *et al*., 2003). Both psychologists and linguists (Borgwaldt *et al*., 2005; Daniels & Bright, 1996; Fries, 1963; Gaur, 1992; Seymour *et al*., 2003; Ziegler *et al*., 1996) are unanimous in proclaiming that the English spelling-sound code is the most complex of all the world's alphabetic orthographies. Recent evidence-based studies on dyslexia (Goulandris, 2003), reading development (Aaron & Joshi, 2006), and skilled reading (Frost, 1995) have raised feelings of unease when comparing the unique, 'deviant' nature of English orthography to other alphabetic orthographies.

6.3.2.1 The Opaque Orthography of the English Language

The English alphabet consists of 26 letters (5 vowels and 21 consonants) that represent over 40 phonemes. Letters or letter combinations are often ambiguous in terms of the sounds they represent. After examining the structure of English orthography, Venezky (1970: 127) concluded that: "a person who attempts to scan left to right, letter by letter, pronouncing as he goes, could not correctly read most English words." The 5 written vowels are especially varied in their mappings to speech, and include a large number of diagraphs (e.g., *ai* as in *pain*; *ea* as in *seat*, *ou* as in *trouble*, *ei* as in *reign*). Consonants, on the other hand, are more consistent in their grapheme-phoneme correspondences, with the exception of *c* and *g*, which are read differently according to the vowels that follow (e.g., initial *c* corresponds to /s/ when it occurs before *e*, *i*, *y*, as in *center*, *circus,* and *cycle*; in all other positions it corresponds to /k/, as in *cat*). Spoken English also has a complex syllable structure with a wide range of different types of syllables, most of which are closed syllables[46] (e.g., CVC, CVCC, CCVC). These features often pose difficulty even for English-speaking children learning to phonologically segment their spoken language. With reference to phoneme-grapheme correspondences, although

[46] A closed syllable has one and only one vowel, and it ends in a consonant.

only about 14% of common English words may be viewed as phonetically irregular (Moats, 2000), examples of variations between phoneme-grapheme associations are easily found in English. Orthographically similar words that do not rhyme (e.g., *through*, *rough*; *beard*, *heard*) and orthographically different words that do rhyme (e.g., *tea*, *key*, *me*, *see*) are examples of these variations (Gillon, 2004). On average, every English phoneme has three alternate spellings, as is the case with /f/, which can be spelt as *f* (*flower*), *fe* (*fear*), *ph* (*photo*), or *gh* (*laugh*). Although English is varied in its grapheme-phoneme correspondences, it has a higher degree of spelling-sound consistency at the level of the rime (cf. 2.2.2; 8.1.2.1.1). For example, the vowel *a* is pronounced differently in *cat*, *call*, *car*, *cake*, and *care*, but is pronounced the same in *cat*, *hat*, and *mat*, which share the same rime *-at* (Ellis *et al*., 2004). In general, inconsistent mappings among orthographic, phonologic, and semantic representations in English complicate the process of learning to decode written texts, and as previously seen (cf. Chapter 3), decoding is an essential component of the reading process. The peculiar orthography of English has also led to important decisions in the field of educational policy, such as the introduction and implementation of emergent literacy activities (e.g., teaching of letter shapes, exposure to books) with preschool children of 3 or 4 years of age (Ellis *et al*., 2004). In countries where languages with more consistent orthographies are used (e.g., Italy), reading instruction begins only with formal schooling, normally at age 6, and children are found to have mastered decoding by the end of Grade 1. In such countries, children are normally introduced to letter names and shapes at 5 years of age, but they are not exposed to formal reading and writing instruction yet. In English-speaking countries, children are exposed to formal reading instruction from the age of 5, namely, when they begin kindergarten[47]. In addition, in English-speaking countries it normally takes until

[47] In the 1970s, American kindergartens increasingly incorporated reading instruction into their programs by including concepts and skills that had been previously covered in first grade. In kindergartens, however, unlike formal literacy instruction in elementary school, reading and writing instruction is embedded in the daily activities of the classroom, in shared reading and teacher read-alouds, in children's play, and in learning center activities (Labbo & Teale, 1997).

Grade 3 for children to achieve the same level of decoding skills as children who start reading at the age of 6 (Seymour *et al*. 2003).

Evidence of English spelling-sound obtuseness can be found in studies (Frith *et al*., 1998; Wimmer & Goswami, 1994) where test stimuli on items such as length or syllable structure were individually matched across two linguistic cousins, English and German. Frith and colleagues (1998) investigated word and nonword reading in German and English-speaking children from the age of 7 to the age of 12. The selected words were common to both languages, whereas nonwords were composed of identical CVCVCV sets. The data collected generally indicated that, when reading nonwords and words of low frequency, at age 7, 8 and 9 English-speaking children made more errors than their German-speaking peers. Furthermore, 12-year-old English-speakers were less accurate than their German-speaking peers when decoding long and complex nonwords (Frith *et al*, 1998). The vowel system in the two languages represents a further difference. Data showed that vowels, often regarded as the most inconsistent trait of English orthography, were often mispronounced in English. On the other hand, in German, where vowels are consistent, this rarely occurred. The researchers concluded that different levels of phonological decoding ability were activated by readers in the two language systems. They also suggested that one of the reasons for this difference might be the different level of inconsistencies in the two languages under investigation (Frith *et al*, 1998).

One additional evidence-based study was published in 2000 by Geva and Siegel. The two researchers analyzed a bilingual context (two orthographically distant languages, English and Hebrew, the latter being a more transparent language than the former) to evaluate the effects of differences between differences in orthographic complexity or common underlying cognitive processes for the development of reading skills. Their findings showed that both factors should be accounted for when considering reading development in bilingual language learners. What is of interest to this discussion, though, is that the children in the study found it easier to develop their

word recognition skills with a less complex script (Hebrew), even if their proficiency in that language was lower (Geva & Siegel, 2000).

In order to collect some evidence-based data on the suggestion that basic decoding skills may develop less efficiently in English than in other European orthographies, Seymour, Aro and Erskine (2003) carried out the most ambitious and large-scale study currently available on the topic. They investigated assessment of letter knowledge, familiar word reading, and nonword reading in English and in twelve other European orthographies (including Italian). The results showed that the majority of children from most European countries could read accurately and fluently at the conventional basic level before the end of Grade 1. The only exceptions were English, French and Portuguese children. The factors responsible for this were found to be syllable complexity and orthographic depth (Seymour *et al*. 2003). The studies reviewed in this paragraph confirm that the English orthography may present more difficulties in reading acquisition, compared to more transparent writing systems.

6.3.2.2 History and the Orthography of the English Language

According to some researchers (e.g., Share 2008) another factor that should be taken into account when considering the English language is its uniqueness among writing systems. History has undoubtedly played its role in molding such distinctiveness. It is commonly acknowledged among grammatologists that the English language, as compared to other languages, experienced a series of extraordinary historical changes. Firstly, the orthography borrowed by Christian missionaries turned out to be designed to represent much fewer than its dozen or so vowels. Secondly, successive waves of invaders and conquerors left lasting influences upon the language. Thirdly, at the advent of printing and on the threshold of the Great Vowel Shift (XIV century), spelling became fossilized. In addition, at the same time, each attempt at reforming spelling was rejected (Share, 2008). As a result, the English language gradually became a varied combination of subsystems of spelling, mainly Germanic, Norman-French, and Latin-Greek, thus reflecting the geopolitical, cultural and historical events that shaped it as it

is today (Crystal, 2003). This has additionally led English far away from the one-grapheme-one-phoneme mapping principle, which is generally the norm among the world's writing systems (Daniels & Bright, 1996). The main source of inconsistencies can be found in the set of only five vowel letters, representing approx. 20 vowel phonemes (Share, 2008). Preservation of common roots and common word ancestries is one of the reasons the English vowel system is so complicated and English uses nearly 120 spelling patterns for 40 phonemes (Mann, 2003). In this light, then, history and preservation seem to have contributed to the uniqueness and complexity of the English writing system as it is today, which, in turn, does not facilitate the task of learning to read and write for young English-speaking children, as well as English-language learners.

6.3.3 Phonological Awareness and Decoding in Various Alphabetic Languages

Although a large part of the evidence on the development of phonological awareness skills and their relation to reading has been collected with English-speaking subjects (for a review of studies, see Adams, 1990), researchers (Algeria, Pignot, & Morais, 1982; Carvaolas & Bruck, 1993; Cossu *et al*., 1998; Quiroga *et al*., 2001) have started collecting data from speakers of alphabetic languages other than English. Experimental research (Carrillo, 1994; Denton *et al*., 2000; Gonzalez & Garcia, 1995; Jimenez Gonzalez & Haro Garcia, 1995) has shown, for instance, that phonological awareness emerges following the same developmental sequence (cf. 2.4) in other alphabetic languages. This section reviews some of the most relevant studies that investigated phonological awareness and decoding skills in alphabetic languages other than English. Most studies include experiments that concern both phonological awareness competence (e.g., sequence of development, etc.) and/or its relation to word recognition skills, and especially involve first-grade students or beginning readers.

In an experimental study focused on the French language (Algeria, Poignot, & Morais, 1982), 64 first-grade Belgian French-speaking children were divided into groups and taught to read according to a phonic approach (cf. 2.3.3), or a whole-word approach (cf. 3.2.2). Both groups of children were confronted with two tasks: one required them to

reverse two units (either two syllables or two phonemes) in an utterance; the other was a memory task where children had to recall series of visually presented items whose names either rhymed or did not. The findings indicated that both groups performed significantly well in syllable tasks. On the other hand, syllables were found to be easier to manipulate than phonemes. In addition, both groups showed a rhyme effect in the memory task[48]. The overall results of the experimentation are consistent with the idea of a progressive transition of phonological awareness development from high-level (syllables) to low-level (phonemes) segments, as occurs in the English language (c.f. 2.4).

One study (Ognjenović *et al*., 1983) investigated the errors made in reading by a group of Serbo-Croatian-speaking first-grade students. It has been proposed that the difficulty in segmenting a spoken word is reflected in the pattern of errors children produce in reading aloud (for a review of these studies, see Gleitman & Rozin, 1977). Previous research (Fowler, Liberman, & Shankweiler, 1977, Shankweiler & Liberman, 1972) on English word patterns such as CVC has shown:

a. More errors on vowels than on consonants.
b. More errors on word final consonants than on word initial consonants.

This suggested that consonant errors were based on phonetic confusions, while vowel errors were not. Unlike in the English language, phoneme-grapheme correspondences in Serbo-Croatian languages are more consistent. Where the English system is both morphemic and phonemic in its reference, the Serbo-Croatian alphabet demonstrates a clear priority for the phonemic, i.e., each phoneme is transcribed by only one letter or letter pair and each letter or letter pair is mainly pronounced. The Serbo-Croatian vowel set is numerically smaller than its English counterpart, and qualitatively better defined. In contrast to their English peers, the 65 Serbo-Croatian-speaking first-

[48] Rhyme 'easiness' may be explained by the fact that the rhyme allows for the full linguistic input to be better remembered. The repeated parts of the rhyming words, the rime (e.g., *-og* in *dog* and *fog*) can make it easier for children to keep words in stored memory. This process underlines the role played by *mirror neurons* (Gallese *et al*., 1996) in language acquisition in general and in storing information in particular.

grade learners tested in the study committed proportionally fewer errors on their reading of vowels than of consonants, but in common with English children their reading of final consonants was more vulnerable than their reading of initial consonants. The researchers concluded that the differences between the pattern of vowel confusions for English and Serbo-Croatian could be related to the difference between the two orthographies in the precision with which they represent their phonological systems, or to the fact that English vowels are qualitatively less distinct phonologically than Serbo-Croatian vowels. On the other hand, the difficulties with final consonant reading in both language groups revealed a common path of phonological sensitivity.

One additional study (Caravolas & Bruck, 1993) investigated the effects of syllable structure and orthography on the development of phonological awareness in 100 Czech and 101 English-speaking Canadian children from preschool, kindergarten and first-grade. Researchers decided to contrast English and Czech because they differ significantly with respect to syllable structure and orthographic depth. Czech, for instance, contains a greater variety and frequency of complex syllabic onsets (such as /fl/ and /st/) than English, and is considered a mainly transparent orthography, unlike English. The researchers' hypothesis was that, if language input affects children's phonological awareness development, Czech children should show higher levels of awareness for complex onsets prior to formal schooling, as well as greater performance in phonological awareness skills and better spelling skills than their English-speaking peers after reading instruction (Caravolas & Bruck, 1993). The findings showed that Czech-speaking children do posses higher levels of awareness of complex onsets than English-speaking children in kindergarten, and that they have better spelling skills by the end of first-grade. Yet, Canadian children showed better awareness in simple onset tests on one syllable tasks. In general, these results indicated that the early development of phonological awareness is shaped to some extent by aspects of phonological input, and that the nature of the orthography additionally affects the rate and pattern of development of phonological awareness and literacy skills.

With reference to Spanish, Carrillo (1994) investigated the relationships between different levels of phonological awareness and learning to read in Spanish. Sixty-eight Spanish kindergarten children and 52 Spanish first-grade children were individually administered phonological awareness tasks in two or three separate sessions. The main goal was to make a comparison in the tasks performance both within and between the two different groups of children. The tasks included sensitivity to rhyme, sensitivity to alliteration, position segment identification, final segment deleting, initial segment deleting, initial segment isolation, final segment isolation, total segmentation, reversal segments. Results showed that performance varied greatly across different tasks. Prereaders showed sensitivity to rhyme and alliteration, while they had more difficulty with deletion and reversal tasks. Children who had received minimal instruction in letter-sound correspondences were able to isolate the onset from the rime in simple words. The researchers concluded that syllable, rhyme and alliteration awareness develop prior to reading. Beginning readers developed more advanced awareness of individual phonemes. The tasks that most differentiated prereaders and beginning readers were tasks involving phoneme segmentation. Performance on segmentation tasks also separated good first-grade readers from average and poor readers. In general, this study confirmed that, like English-speaking pre-readers, pre-reading Spanish-speaking children show early knowledge of syllable, rhyme and alliteration, but phoneme segmentation ability typically emerge after instruction in reading.

One additional mainly transparent language, Turkish, was investigated by Öney and Durgunoğlu (1997), in order to verify the language demands made to beginning readers. The Turkish writing system has very regular spelling-to-sound correspondences, in that each letter maps simply and directly onto one phoneme. As refers the syllable structure, Turkish words are constructed using a simple set of 7 syllable types, and those containing two successive consonants are extremely rare. In addition, Turkish has a rich morphology, with many long and multisyllabic words. Thirty first-grade Turkish-speaking children were tested at the beginning of the school year using tasks of phonological awareness, letter recognition, word and pseudoword

recognition, spelling, syntactic awareness, and listening comprehension. The impact of these factors on the development of word recognition, spelling and reading comprehension was examined. In each of the testing sessions, the recognition of words and that of pseudowords were highly correlated, thus reflecting the influence of a transparent orthography. The spelling of words and pseudowords were highly correlated as well. On identical sets of words and pseudowords, the initial recognition level of 26% reached a level of 93% in the last session. According to the researchers, this dramatic performance increase suggested that systematic letter-sound correspondences made it easier for Turkish children to become efficient decoders and spellers. The general findings indicated that a phonologically transparent language such as Turkish fosters the early development of word recognition skills, that phonological awareness contributes to word recognition in the early stages of reading acquisition, and that, once children's word recognition performance is high, listening comprehension ability distinguishes the different levels of reading comprehension among children. These patterns of results were interpreted by the researchers as reflecting the phonological and orthographic features of the Turkish language (Öney and Durgunoğlu, 1997).

In a cross-language study (Goswami, Gombert, & de Barrera, 1998), three experiments were conducted to compare the development of orthographic representations in children learning to read English, Spanish and French. Nonsense words that shared both orthography and phonology at the level of the rhyme with real words (e.g., *cake – dake*), phonology only (e.g., *cake – daik*), or neither (e.g., *faish*, *ricop*) were created for each orthography. The results showed a clear difference in reading accuracy and reading speed across all orthographies. Nonsense words that shared orthographic and phonological units with real words were easier to read than nonsense words that did not. Nonetheless, nonsense word reading levels varied with orthographic transparency, and this was especially marked for the unfamiliar words that did not share orthographic and phonological units. These words were easily decoded even by the youngest Spanish-speaking children, but not by the French-speaking children and the English-speaking children. The latter had the greatest

difficulties. The French children, who learn to read in a language that is less transparent than Spanish but more transparent than English, showed an advantage in reading both nonsense types compared with their English peers. Both French-speaking and English-speaking children showed a comparatively large degree of facilitation when nonsense words shared spelling sequences with real words compared when they did not. English and French children thus seemed to cope with spelling-sound ambiguity by coding orthographic-phonological relations in terms of larger spelling units, such as rimes. In general, the researchers concluded that both the familiarity of the orthographic-phonological relations and orthographic transparency appeared to affect nonsense word decoding (Goswami, Gombert, & de Barrera, 1998). In a more recent study (Denton *et al*., 2000), researchers examined the role of phonological awareness in literacy development in Spanish-speaking children. The authors observed similarities between Spanish and English. They remarked that Spanish phonological awareness typically develops in stages, and it normally progresses from (Denton *et al*., 2000):

1. The ability to discriminate between similar and different sounds in words.
2. Awareness of rhyme and alliteration.
3. Awareness of separate syllables in words.
4. Awareness to isolate onsets and rimes within words or syllables.
5. Awareness of single phonemes.

A conclusion here is that alphabetic languages with mainly transparent scripts seem to provide an advantage in learning to use phonological knowledge in reading and spelling, because they may not demand the same level of phonological awareness skills in the early stages of reading and spelling than scripts with less transparent orthographies (Gillon, 2004). The general and important conclusion from the studies reviewed in this section is not the advantage of one language or writing system over another, but the fact that different languages may require and activate *different* levels of phonological awareness in young language learners.

6.3.3.1 Phonological Awareness in Italian: A Study

There are few studies available on phonological awareness skills in young Italian children. As previously remarked (1.5.3), within the Italian State's guidelines of the preschool curriculum phonological awareness is not emphasized. The relative transparency of the Italian language seems to avoid making phonological awareness a critical issue within the educational context. Only few Italian researchers (Pinto, 1992, 1993; Pinto and Carta, 1989) have dedicated time to reviewing experimental studies on phonological awareness carried out in languages other than Italian, to review the phonological awareness instructional practices experimented in Italian preschools nationwide, as well as to undertake some experimental research themselves. The researchers lamented the lack of correlational or experimental studies in Italy that are focused on preschool children's metalinguistic awareness in general, or on some specific emergent literacy skills (Pinto, 1993). This consideration led the Italian researchers to carry out a longitudinal experimental study themselves focused on children's phonological awareness, due to the central role that this ability has been found to play by research. The research questions posed by the researchers were as follows (Pinto, 1993: 207):

1. Does preschool children's phonological awareness improve after exposing them to specific phonological awareness instructional practices?
2. Do different components of phonological awareness (e.g., syllable awareness or phoneme awareness) improve differently after the intervention period?
3. Do phonological awareness instructional practices specifically affect some area of language development or do they affect language skills in general?

The study involved 60 4- and 5-year old children from the province of Vicenza. The children were part of either an experimental group or a control group. At the beginning of the project, children in the experimental group were assessed through pre-test tasks,

i.e., letter knowledge, vocabulary knowledge, rhyme oddity task, syllable blending, syllable segmentation, phoneme identification in initial position of words. The main goal of the program was to explicitly drive children's attention to the phonological structure of language. The program lasted 10 weeks and included a one-hour session for 5-year-old children and a 30-minutes session for 4-year-old children, three times a week. The results provided the following responses to the research questions (Pinto, 1993: 213-215):

1. Every age group of children (both the experimental and control groups) improved their phonological awareness skills between the first and the second assessment session. However, for each age group, the overall achievement of experimental groups was significantly larger than that of control groups.
2. All experimental groups showed increased performance on every task, i.e., rhyme oddity task, phoneme identification in initial position of words, and for younger children, both syllable blending and segmentation.
3. The general findings indicated that children's improved performance was not restricted to phonological awareness abilities, but also included improvement in broader language knowledge, such as letter knowledge and recognition, as well as vocabulary knowledge.

This major Italian project shows findings that are consistent with the findings collected in studies related to the English or other European languages. As seen for the English language, the Italian researchers concluded that their experimental study eventually provided support for what follows (Pinto, 1993: 215):

- Children show forms of phonological awareness before and regardless of formal reading and writing instruction.
- An educational setting aimed at developing skills of phonological awareness can effectively contribute to fostering such skills.

- The activation of some forms of phonological awareness seems to drive preschool children's attention to language as a sound system, rather than a semantic system. This may contribute to introducing children to the differentiation between meaning and form (which is crucial to later acquire the alphabetic code), as well as to the correspondence between phonemes and graphemes in alphabetic languages. As a result, children may be encouraged to learn by making hypotheses on the correspondence between phonemes and graphemes, and verifying them.

6.3.3.2 Phonological Awareness in English and in Italian: A Study

Within the scope of our study, it is important to review those experimental studies that investigated the similarities and differences in phonological awareness skills between English-speaking and Italian-speaking young children, in order to verify whether differences in phonological awareness rates and patterns may be ascribed to differences between the phonological systems of the two languages in question. One single major study (Cossu *et al.*, 1988) was carried out to compare phonological awareness skills between Italian-speaking children and English-speaking children, using the same methods of assessment and the same subject-selection criteria. This study was in fact an attempt to directly replicate with Italian children an earlier study carried out with American children by Liberman and colleagues (1974). The main aim of the Italian researchers was to determine whether the ability to abstract phonemes related positively to reading success in the two alphabetic systems irrespective of differences in language structures and their means of representation in the orthography. Italian was selected as a useful candidate for comparison with English, as it differs significantly in certain aspects of phonological and orthographic structure. With reference to the vowel system, for instance, spoken Italian only has seven vowels, whereas spoken English has a dozen. In Italian, vowels tend to have one speech rendition, regardless of the context in which they occur. English vowels, on the other hand, are subjected to several renditions, depending on the context in which they occur (e.g., in closed syllables ending in a

consonant, the vowel sound is generally short, as in *rab-bit* and *nap-kin*, whereas in open syllables ending in a vowel, the vowel sound is normally long, as in *ti-ger* and *pi-lot*). According to the Italian researchers (Cossu *et al*., 1988), this contrast should not materially affect the relative difficulties of phoneme and syllable awareness both in Italian and English before formal reading begins. Regardless of the language, the coarticulation of the sublexical phonemes in normal speech should still make phoneme awareness more difficult for preschoolers than syllable awareness. Once children are exposed to a specific orthography, however, it is possible that Italian-speaking children perform better in both phoneme and syllabic awareness tasks, because of the nature of Italian vowels and their relation to Italian orthography. There are other features in the two languages that can affect phonological awareness performance after reading instruction has begun (Cossu *et al*., 1988). Italian has a relatively shallow phonology with, for instance, relatively little morphophonological alternation as compared with English (e.g., *telegraph*, *telegraphy*). Furthermore, though Italian has a mixed variety of syllable types, it has fewer than half as many different types as English (Carlson *et al*., 1985). In addition, unlike English, which has a predominantly closed syllable structure (e.g., CVC, CVCC, CCVC), Italian has a predominantly open syllable structure (e.g., CVCVCV, CVCV), with very few monosyllabic words (Carlson *et al*., 1985). As previously remarked (cf. 2.2.1), the syllable is distinctly marked in the speech stream, and this perceptual saliency allows it to be easily extracted from the speech stream. The researchers hypothesized that, because Italian phonology is distinguished by many open syllables, this may emphasize the syllable unit and speed up the development of syllable awareness for Italian-speaking children. In general, the simpler syllable structure, the smaller number of distinctly different vowels, and the greater consistency of the alphabetic representation in Italian might be expected to give Italian an advantage not only in phonological awareness development, but also in early reading acquisition that would, in turn, be reflected in phoneme awareness as well (Cossu *et al*., 1988). Cossu and colleagues (1988) carried out two experiments with Italian children in their study. Experiment 1 was meant to verify whether the level of success in syllable or

phoneme awareness tasks was higher for Italian or English, and whether this ability varied with age in the same manner in the two language groups of children. Experiment 1 included 60 preschool Italian children and 160 Grade 1 and 2 Italian children. Children were required to carry out a 'tapping game' (Liberman *et al*., 1974), where they had to repeat a word spoken by the examiner and then indicate the number of syllables or phonemes in the stimulus items by tapping a dowel on the table. For the 15 two- and three-syllable words, and for the three- and four-phoneme words, the stress was always on the first syllable. For four-syllable words, the stress was on the second syllable for 5 words, and on the third syllable for 10 words. This distribution was chosen as it reflects the frequency of occurrence in Italian. The researchers' findings were then compared to those obtained with American children in the study carried out by Liberman and colleagues in 1974. Cossu and colleagues found that the pattern of task performance in the two language groups was similar, but the success rate was quite different. Italian children showed a higher level of performance on both syllable and phoneme awareness tasks, even at the preschool level. In both groups of children, syllable awareness skills were stronger than phoneme awareness skills. The researchers remarked how their attempt to make their Italian experiment match its American counterpart had been to some degree made more difficult by the very nature of the language differences between English and Italian. Italian, for instance, contains few monosyllabic words, so that it was not possible to design a phoneme awareness task with monosyllables, as researchers had done in their study on the English language (Liberman *et al*., 1974). In addition, high frequency words in Italian tend to contain a larger number of syllables than their English counterparts (Carlson *et al*., 1985), so that in the syllable awareness task the English version contained one-, two-, and three-syllable words, while the Italian version contained two-, three-, and four-syllable words. These differences might be expected to make the task harder for Italian children, however, according to the findings, they seemed not to have a negative effect on performance. In Experiment 2, where first- and second-grade Italian children were involved, the main aim was to find out whether syllable and phoneme awareness skills were related to level of reading achievement in

Italian-speaking children, as was found for English-speaking children, and whether a mainly transparent orthography like Italian facilitated phonological awareness development more than a relatively complex orthography like English. In this second experiment, 80 elementary school children of varying reading skills were required to carry out the same syllable ad phoneme awareness tasks as the preschool children in Experiment 1. The researchers found that some changes in performance of each task occurred between first and second grade, (e.g., average readers improved in phoneme awareness), yet, these changes were specific to reading level. In both the Italian and the American groups, however, phoneme awareness skills distinguished children of different levels of reading performance. For example, Italian poor readers, like their American peers, were distinguished from good readers by the phoneme awareness task.

6.3.3.2.1 Discussion of Results

Cossu and colleagues' study (1988) demonstrated evidence of cross-language similarities as well as differences concerning the development of phonological awareness skills in English-speaking and Italian-speaking children. The following similarities and differences were identified (Cossu *et al*., 1988: 10-11):

- An improvement in the phonological awareness tasks occurs with age, from the preschool level, to kindergarten. This progression is consistent with the view that the early development of phonological awareness ability is under maturational control (cf. 2.4).
- The greater difficulty in phoneme segmentation than in syllable segmentation applies across languages that differ in their phonological structure.
- At the preschool level, both Italian and American children had greater difficulties in identifying phonemes, and more success in identifying syllables.
- A sharp improvement in task performance occurs after reading instruction in both language groups, as well as a decrease in error making. This was considered

evidence that exposure to an alphabetic orthography has a positive effect on phonological awareness development.

- At the preschool level, there was a quantitative difference in the degree of accuracy in the two language groups, with Italian children making fewer errors than their American peers in both phoneme and syllable awareness tasks. The researchers concluded that this might be due to the simpler open-syllable structure as well as the small number of syllable types and vowel distinctions in Italian.
- The level of task performance of both groups improved with first-grade attendance. Yet, only about 3% Italian children failed on the phoneme task, while 30% of their English peers still failed. The researchers concluded that this might still be associated with the simpler syllable and vowel structures of the Italian language. Additionally, it was suggested that once formal reading instruction is introduced, the closer correspondence between graphemes and phonemes in the Italian orthography should further facilitate children's development of phoneme awareness skills.

The researchers concluded that the discrepancies between the two languages may be ascribed in part to the phonological and orthographic differences between the two languages (Cossu *et al.*, 1988). Within the scope of our study, this implies that some teaching precautions are necessary when exposing Italian preschool children to phonological awareness tasks in English, e.g., a greater focus on the main phonological differences between Italian and English (cf. Chapter 8).

6.3.3.3 English and Italian Orthographies: A Study

One major study (Thorstad, 1991) is of interest in relation to orthography variation and literacy skills. Thorstad investigated and compared the reading skills between Italian-speaking and English-speaking children. The study explored the effect of the regularity of orthography on the acquisition of literacy skills, by comparing the reading and

spelling skills of 70 Italian-speaking children aged 6-11 years with the skills of 90 English-speaking children learning traditional orthography (t.o.), and with the skills of 33 children aged 6-7 years learning the so-called 'Initial Teaching Alphabet' (i.t.a.)[49]. Italian-speaking children are said to be able to read and spell most words one year after beginning school at the age of six years, while English-speaking children take approximately 10 years to achieve an adult standard (Schonell & Schonell, 1950; Vernon, 1969, 1977). The Italian language has a higher degree of correspondence between graphemes and phonemes, which is reciprocal in reading and spelling, and can thus be said to be a mainly transparent language. Every letter is pronounced, except *h*, which is always silent. There are no vowel digraphs, and double consonants are pronounced. There are no homophones or homonyms, and foreign words are spelt according to Italian rules. These features of Italian orthography make it sound easier to be understood and learned than its English counterpart. After comparing outcomes on the reading and spelling tasks administered to the children involved, Thorstad (1991) found that the English children in his study could read fast but not accurately, while their Italian peers could read accurately using a direct, non-lexical systematic phonological strategy of translation in reading until they were 10 years, when they were able to read both fast and accurately (which meant they were accessing the words through a direct lexical route). All the children in the study used a phonological strategy in spelling, but only Italian children were mostly successful. Thorstad (1991) concluded that these results might explain why Italian-speaking children normally take one year to achieve the reading and spelling skills that English-speaking t.o. children acquire in three to five

[49] The Initial Teaching Alphabet was devised by Sir James Pitman in order to make it easier for English-speaking children to read standard English orthography. The Initial Teaching Alphabet has 44 letters instead of the conventional 26, and each symbol represents one and only one sound. The letters include 'regular' letters such as *b* (*bed*), *c* (***c***at), *d* (*dog*), *f* (***f***ish), *g* (***g***oat), *h* (***h***at), *j* (***j***ug), *k* (***k***ey), or new graphemes or diagraphs such as ɛɛ (***ee***l), *ie* (***i***ce), *œ* (***oa***t), *ue* (***u***niform), *ʧ* (***ch***air), *ʒh* (***th***umb), *au* (***au***to), *oi* (***oi***l), *ou* (***ow***l), *ŋ* (*ri****ng***) (cf. Appendix C). The Initial Teaching Alphabet was meant to be learned before learning traditional orthography. It was first used in a number of British schools in 1961 and soon spread to the U.S. and Australia, but due to the debate on its effectiveness it never became a mainstream teaching tool (http://www.omniglot.com/writing/ita.htm).

years. In general, this study's findings support the hypothesis that if a language's orthography is predictable and invariant, children may use a systematic phonological strategy and learn to read and spell more quickly and accurately. Thorstad's study is important as it can help us understand the difficulties that Italian children may experience when introduced to reading instruction in English as an L2, due to the orthographic differences between Italian and English.

6.4 Transfer of Phonological Awareness across Alphabetic Languages

Our main concern now is verify whether phonological awareness skills acquired in an alphabetic L1 can possibly transfer to an alphabetic L2. This is crucial within the scope of this work, i.e., presenting phonological awareness tasks in EFL to Italian preschool children. If children are in the process of acquiring or strengthening their phonological awareness skills in Italian, then, if transfer does occur, this may have positive effects on the development of phonological skills in English as well. Up to this point, there has only been a handful of experimental studies (e.g., Chiappe & Siegel, 1999; Cisero, & Royer, 1995; Durgunoglu *et al*., 1993) investigating biliteracy[50] that have focused on the processes of phonological awareness involved in biliteracy and on the possibility of cross-language transfer of this skill. The following section presents the most significant research literature available on bilingual children whose native language is mostly an alphabetic language, and the second language is English.

6.4.1 The Case of Hispanic Beginning Readers of English as a Second Language

Most experimental studies have been conducted in children residing in the United States and having Spanish as their L1 and English as their L2. In recent decades, the population of American who speak Spanish as their L1 has grown dramatically. In 1998, approximately 15% of public school enrollment in the U.S. was Hispanic (*The Condition of Education 2000*, 2000), and statistics show that the number of Spanish-speaking

[50] The term *biliteracy* normally refers to children's literate skills in two languages, developed to varying degrees, either simultaneously or successively (Dworin, 2003). The topic of biliteracy has received relatively little attention from researchers.

families continue to increase by roughly 1 million per year (August & Hakuta, 1997). In fact, *The Condition of Education 2000* (2000) argues that Hispanic students are the fastest growing student group in the U.S.'s elementary and secondary schools. According to the National Clearinghouse for English Language Acquisition and Language Instruction Educational Programs[51] (NCELA, 2007), in general the number of English-language learners in elementary and secondary schools in the U.S. has more than doubled in the last 15 years or so (approx. 14 million students today), and 3 out of 4 are Spanish-speaking children (NCELA, 2007). Given the rapid increase in the population of Spanish-speaking children in the U.S., researchers have been interested in investigating and understanding the process by which such children move from conversing in their L1 at home to learning to read and write English as they enter formal schooling. This may be seen as a common issue in Italian educational contexts as well nowadays, where both researchers and teachers are faced with immigrant children with several L1 language backgrounds moving from acquiring basic oral language skills to literacy skills in Italian (i.e., from acquiring BICS skills[52] to acquiring CALP skills, Cummins, 1979). The increase of linguistic diversity in the United States and elsewhere is linked to growing challenges in education. In 1999, the National Assessment of Educational Progress revealed that at the end of high school children from Spanish-speaking homes were performing at the same reading level as Caucasian students who were at the end of eight grade (Donahue *et al*., 1999). Of equal concern is the fact that in some communities as many as half of all Hispanic children never make it to high school (U.S. Bureau of the Census, 1993).

As discussed in the previous chapters regarding reading abilities, the roots of literacy skills as well as literacy difficulties can be traced to the years before children

[51] The NCELA collects, coordinates and conveys a broad range of research and resources in support of an inclusive approach to high quality education for English-language learners (ELL).

[52] The acronyms BICS stands for 'basic interpersonal communicative skills.' It was first introduced by Cummins (1979) alongside the acronym CALP (cf. 6.2), which refers to cognitive-academic language proficiency (including literacy skills). Cummins' distinction was intended to draw attention to the different periods typically required by immigrant children to acquire conversational fluency in their L2 (normally within 2 years of initial exposure to the L2), as compared to grade-appropriate academic proficiency in the L2 (usually 5 years).

enter formal schooling. This is why the early language and literacy development of children from Spanish-speaking families is an issue that is of growing concern in the United States, and this is why most experimental studies aimed at understanding the relationships between reading and pre-reading skills have been focused on English-Spanish bilingual children (Dickinson *et al.*, 2004). Most studies available examine the relationship between phonological awareness skills in L1 and L2 and their relation to L2 reading in children whose L1 is Spanish, and L2 English. In a major study, Durgunoglu and his colleagues (1993) investigated the relationship between phonological awareness in Spanish and word recognition in English in 31 bilingual Spanish-English first-grade children whose L1 was Spanish, in order to determine whether there was cross-language transfer. Children were given tests of letter naming (either in Spanish or English), Spanish phonological awareness, Spanish and English word recognition, and Spanish and English oral proficiency. The total phonological awareness score was significantly correlated with the number of English words read (r = 0.51), and it was more importantly correlated with performance on the two transfer tests, i.e., pseudoreading and word reading (r = 0.51 and r = 0.68 respectively). In general, the findings revealed that children who were better at the Spanish phonological awareness tests were more likely to be able to read English words and English-like pseudowords than their peers who performed less well on the same tasks. This effect was even more salient for those pseudowords that had different pronunciations in Spanish and in English. In short, phonological awareness was a significant predictor of performance on word recognition tests both within and across languages. The results of this study indicate that it is possible to build on the strengths that children already have in their L1, thus confirming Cummins' Interdependence Hypothesis (cf. 6.2). Children who, for instance, already knew how to read in Spanish and had a high level of phonological awareness in Spanish were more likely to perform well on English word and pseudoword recognition tests. In contrast, children who had some Spanish word recognition skills but low phonological awareness ability tended to perform poorly on English transfer tests. Developing phonological awareness and word recognition skills

in the L1 is thus likely to help in L2 word recognition. Researchers (Durgunoglu *et al*., 1993) concluded that phonological awareness is not specific to a particular language. In both English and Spanish, children need to identify the phonological subcomponents of spoken words, and understand how orthographic symbols are mapped onto these phonological subcomponents. When faced with a new language, children may need to acquire new phonemes (e.g., /ə/ in English) or new orthographic patterns (e.g., *str-* in English), as well as new matches between phonological segments and orthographic patterns (e.g., pronunciation of *–un* is not like *put* as in Spanish but rather like *nut*). Children additionally need to understand which phonological units are salient in orthographic representation (e.g., syllables in Spanish but onset-rime units in English) (Durgunoglu *et al*., 1993). In the course of their study, the researchers also made sure to take into account the phenomenon of *transfer* between Spanish and English, i.e., the fact that children could read English using Spanish decoding rules. Thus, for example, in the English word recognition test, if a child read a word using Spanish decoding rules, e.g., *ready* pronounced as *re-a-di*, it was counted as incorrect. However, in order to provide a more stringent test, a second analysis was performed by removing the selected words that could be pronounced somehow similarly in English and Spanish, such as *at*, *boys*, *for*, and *a*. With reference to the word recognition of English pseudowords, it was important to determine whether children were pronouncing the pseudowords by means of Spanish decoding strategies and basically treating them as Spanish words. In order to do this, the researchers examined the items on the pseudoword test more carefully. They noticed that half of the items had different English and Spanish pronunciations (e.g., *fub*). Therefore, the words were divided into two categories, words with overlapping and nonoverlapping pronunciations. Multiple regression analyses[53] were carried out separately for the two sets of items using Spanish word recognition and

[53] In statistics, regression analysis includes any techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables. More specifically, regression analysis helps understand how the typical value of the dependent variable changes when any one of the independent variables is varied, while the other independent variables are held fixed.

phonological awareness as predictors. If children were treating all pseudowords as Spanish words, then the effects of Spanish word recognition and phonological awareness should be have been greater on overlapping items. If, on the other hand, there was true transfer of metalinguistic processing, then overlapping items should have benefited from Spanish word recognition and phonological awareness. On overlapping words, the performance level was 84% correct, and the two variables together explained a nonsignificant 22% of the variance. On nonoverlapping words, however, the performance level was 75% correct, and the two variables explained a significant 49% of the variance. Thus, the effect of Spanish word recognition and phonological awareness was stronger on nonoverlapping words, which were more complex. On the other hand, phonological awareness and sophisticated word recognition levels were the most helpful when English pseudowords could not be decoded by routine application of Spanish reading strategies (Durgunoglu *et al*., 1993). In general, these findings have important educational implications in relation to our overall discussion (cf. Chapter 7 and Chapter 8).

6.4.2 Additional Evidence of Cross-Language Transfer of Phonological Awareness

In an experimental study addressing children speaking a different L1 than Spanish, Chiappe and Siegel (1999) investigated the performance of 88 first-grade children - 50 Canadian English-language children and 38 Punjabi[54]-speaking children who spoke English as a second language - on tasks assessing phonological awareness skills in English. Both language groups came from middle-class suburbs in Toronto. The Punjabi-speaking children spoke Punjabi at home with their family, but had been exposed to English at preschool since they were 4 years of age. The findings showed that first-grade English-language learners demonstrated comparable phonological awareness skills to children who spoke English as an L2. This competency in phonological

[54] According to the official 2006 Canadian Census, Punjabi, an alphabetic language, is the fourth most spoken language in Canada after English, French, and Chinese (http://timesofindia.indiatimes.com/world/indians-abroad/Punjabi-is-4th-most-spoken-language-in-Canada/articleshow/2782138.cms).

awareness was evident despite the incomplete mastery of the English language for the Punjabi-speaking children. Reading difficulties in English occurred with approximately the same frequency for native and non-native speakers of English. Similarly, children from Punjabi-speaking families did not differ significantly from native English speakers on measures of word recognition or phonological awareness. The Punjabi-speaking children used similar strategies in word recognition (e.g., relying on grapheme-phoneme correspondences when reading unfamiliar words) to the native English speakers. They performed worse only on a measure of syntactic ability in English (i.e., oral cloze test) than their English-speaking peers. This latter data is consistent with the findings of Da Fontoura and Siegel (1995) with Portuguese-English bilingual children. Although Portuguese-English bilingual children in the study had no difficulty on word recognition tasks, their performance on oral cloze tests was significantly lower than that of English monolingual children (Da Fontoura & Siegel, 1995). This result may reflect difficulties experienced by young English-language learners with English syntax (probably associated with the little time of exposure to English). In Chiappe and Siegel's study (1999), phonological awareness revealed an important relationship with reading skills for both groups of children. Phonological awareness (as measured by phoneme recognition tasks, phoneme recognition and local identification tasks, and deletion and substitution tasks) discriminated between groups of children based on reading ability, and not on their first languages. For example, good readers who were native Punjabi speakers demonstrated the same level of phonological awareness skills as good readers who were native speakers of English. Both of these groups showed significantly stronger phonological awareness skills than native English and native Punjabi speakers who were poor readers. These results overall revealed that there were no significant group differences based on language groups for any of the phonological awareness tasks. In addition, the common incidence of poor readers in both language groups, and the fact that difficulties in reading resulted from a deficit in phonological awareness that was not associated with the language of instruction, lends support to Cummins's linguistic interdependence hypothesis (cf. 6.2) (Chiappe & Siegel, 1999). These findings

are consistent with other results in the literature. In another cross-language study involving English-French bilinguals, Comeau and colleagues (1999) investigated the relations between phonological awareness skills and word decoding ability in 122 English-speaking children enrolled in French immersion[55] Grades 1, 3 and 5 over one year in the area of Moncton, New Brunswick (Canada). Children were administered tasks of word decoding and phonological awareness in French and in English. Phonological awareness in both languages was specifically associated with one-year increments in decoding skills in French. The findings provided further evidence that cross-language transfer does occur for phonological awareness and word decoding in alphabetic languages. Phonological awareness in the mother tongue was as strongly related to achievement in word decoding in the L1 as phonological awareness in the L2. Likewise, phonological awareness in the L2 was as strongly related to achievement in word decoding in the L2 as phonological awareness in the L1. The remarkable similarity in the strength of the relations across conditions is consistent with the point of view that phonological awareness is a general (not language-specific) ability. The researchers suggested that this ability may develop from being exposed to auditory input and analyzing the phonological properties of this input. They concluded that phonological awareness development is not strictly language specific; instead, the cognitive processes involved in developing phonological awareness skills in one alphabetic language can be applied to other alphabetic languages (Comeau *et al*., 1999).

6.4.3 Transfer of Phonological Awareness and Non-Alphabetic Languages

The majority of studies investigating transfer of phonological awareness or word recoding across languages has compared languages that are written in alphabetic systems. However, researchers have also started being interested in investigating what

[55] The immersion programs in the study were meant to allow children who spoke the language of the mainstream culture at home to achieve proficiency in another language. In immersion programs the L2 is not only explicitly taught but is also the medium of curriculum instruction (Cummins 1984b; Genesee, 1985).

happens when children are learning to read in two languages based on different systems (Bialystok *et al*., 2005). Experimental studies (Liow & Poon, 1998; Mann, 1986; Read et *al*., 1986; Spagnoletti *et al*., 1989), only began in the late 1980s', but they are slowly growing and providing support that at least a portion of phonological awareness is a general competence shared across alphabetic and non-alphabetic languages (Bialystok, McBride-Chang, & Luk, 2005; Wang, Yang, & Cheng, 2009; Wang, Perfetti, and Liu, 2005). Research on Chinese-English biliteracy acquisition is especially emerging. The goal of this line of research is to examine how the two languages and scripts relate to each other in acquiring reading skills across different writing systems (Wang, Yang, & Cheng, 2009). In a recent study (Bialystok, McBride-Chang, & Luk, 2005), 204 5- and 6-year old monolingual English, bilingual English-Chinese, and Chinese-speaking children beginning to read English as a foreign language (defined by Bialystok as 'L2 learners') were compared on receptive vocabulary, phonological awareness (phoneme deletion and counting) and word recognition or decoding (simple words reading) tasks in English and Chinese. The monolingual English children and the English-Chinese bilingual children lived in Canada, where the dominant language is English and language of schooling is English; while the Chinese-speaking children lived in Hong Kong (where Chinese and English are the official languages), spoke Chinese at home, learned English as a school subject only, and learned both Chinese and English mainly through rote memorization (Bialystok, McBride-Chang, & Luk, 2005). The findings indicated that, when a phonological awareness concept was mastered, it was equally available for both languages for both bilingual and L2 learners, irrespective of the children's proficiency in that language. For instance, children's ability to analyze words into syllabic units was the same for all three groups and strongly related across languages for each child. Awareness of phonemes was found to be more difficult in Chinese, especially for children from Hong Kong (presumably because language instruction in Hong Kong is not organized around awareness of phonemes[56]). Yet,

[56] In Hong Kong, children are taught to read in the traditional Chinese script (i.e., through rote memorization of the characters) (García, 2009).

children from Hong Kong were able to transfer their limited abilities to solve tasks based on phoneme onset awareness in both real words and nonwords across their languages, even though these abilities were not well developed (Bialystok, McBride-Chang, & Luk, 2005). The researchers concluded that the emergence of awareness for a particular sound unit depends on both the accessibility of that unit in the child's more familiar language and on instruction to develop the skill. The components of phonological awareness thus become available for any language that the child knows. Just as the skill was applied equally to real words and nonwords, it could probably be applied to a completely unknown language. In general, these results indicated that phonological awareness developed in part as a consequence of experience with specific languages and exposure to instruction and, once established, readily transferred across languages for both English-Chinese bilinguals and L2 learners (Bialystok, McBride-Chang, & Luk, 2005).

A very recent study (Wang, Yang, & Cheng, 2009) investigated the concurrent contribution of phonology, orthography, and morphology to biliteracy acquisition in 78 first-grade Chinese-English bilingual children from Washington DC. Chinese children had been introduced to reading through *pinyin* (cf. 3.9.1). Phonological and morphological transfer (in the form of compound structure awareness) was found to occur from Chinese to English. Interestingly, the phonological transfer occurred for both onset awareness, the shared phonological unit, and tone awareness, the contrastive phonological unit. Orthographical transfer was not found to occur, which was interpreted by the researchers as a language-specific process, i.e., reflecting the contrasts in mapping principles and visual forms across the two writing systems. In general, the study's findings of cross-language phonological transfer support the hypothesis that there is a joint function of shared phonological processes in biliteracy acquisition (Wang, Yang, & Cheng, 2009). Furthermore, these findings are especially relevant in relation to the educational context we are interested into, due to the large presence of children with non-alphabetic language backgrounds attending Italian preschools. Knowing that at least a portion of phonological awareness can indeed transfer across alphabetic and non-

alphabetic languages can have significant methodological and instructional implications for Italian educators.

6.5 Phonological Awareness in English-Language Learners: Final Considerations

Taken as a whole, the empirical studies and the findings discussed in this chapter concerning transfer of phonological awareness skills within a plurilingual educational context, where children are exposed to both alphabetic and non-alphabetic languages, provide support to Cummins' Interdependence Theory (cf. 6.2). In particular, the studies presented provide support to the assumption that, once phonological awareness is acquired in an L1, it can positively transfer across languages. In general, the studies reviewed provide support for the following assumptions:

- The emergence of literacy is propelled by general cognitive and linguistic development, in any language.
- Phonological awareness is a universal, not language-specific ability in all alphabetic languages.
- Phonological awareness, if not at least a portion of it, is a general competence shared across alphabetic and non-alphabetic languages.
- Once established in an L1, phonological awareness, as well as the conceptual understanding of phonological awareness, transfers across both alphabetic and non-alphabetic languages.
- Literacy emerges out of specific phonological forms and orthographic principles of individual languages and is unique to each of the child's mother-tongues.
- Children's language background may influence the extent, nature, and development of their phonological awareness. For example, the closer the phonological structure of an alphabetic L1 and an alphabetic L2, the greater the likelihood that transfer of phonological awareness skills will be positive rather then negative, because children are already used to manipulating the sounds and patterns existing in their L1.

- In order to allow for a positive transfer of phonological awareness skills between alphabetic languages, children will have to acquire the new L2 phonemes and orthographic patterns, as well as understand what phonological units are salient in the L2 orthographic representation (e.g., syllable vs. onset-rime).
- As in L1 literacy, phonological awareness plays a critical role in L2 reading acquisition of alphabetic and non-alphabetic languages.
- If children can establish basic concepts of phonological awareness in any language, then when reading acquisition occurs at an older age, it will be facilitated no matter what language initial literacy instruction occurs in.

It should be remembered, however, that despite the findings available to date, the extent to which phonological awareness is a general, language-independent competence needs further investigation.

6.5.1 Phonological Awareness and LAD

The finding on the 'universal' character of phonological awareness brings another innate biological device to mind that is thought to be possessed by every child acquiring a first language: the LAD, or 'Language Acquisition Device' (Chomsky, 1965). According to this theory, acquisition of a language is viewed not as acquisition of information from *outside* the organism (such as acquiring facts from geography or history), rather as an *internal* development in response to vital, but comparatively 'trivial' experience from outside. Knowledge of language does need experience to mature (what Bruner defined as the 'Language Acquisition Support System'), but the entire potential is there from the start, i.e., inside every human being (Cook, 1988). Chomsky (1965, 1980) argues that language acquisition is more similar to a process of 'growing' than 'learning;' it is the maturing of the mind according to a present biological clock. He puts it simply (Chomsky, 1980: 134): "in certain fundamental respects we do not really learn language; rather grammar grows in the mind." Thus, the prerequisites for acquiring a human language seem to be to be a human being and to have the minimal exposure to language

input necessary to trigger the various parameters of Universal Grammar. Universal Grammar (UG) is the central concept of Chomsky's theory of language; it is (Chomsky, 1976: 29) "the system of principles, conditions, and rules that are elements or properties of all human languages […] the essence of human language." All human beings share part of their knowledge of language, regardless of which language they acquire and speak. UG is human beings' common inheritance. UG holds that a human being 'knows' a set of linguistic principles that apply to all languages, as well as parameters that vary within clearly defined limits from one language to another (Cook, 1988). For example, in English the subject pronoun in an utterance or sentence needs to be compulsorily expressed (e.g., "*I am tired*"), whereas in Italian it does not (e.g., "*Sono stanco*"). Thus, acquiring language implies learning how principles apply to a specific language. The innate and genetic nature of UG makes it a part of biology rather than psychology (Chomsky, 1980: 82): "universal grammar is part of the genotype specifying one aspect of the initial state of the human mind and brain […]."A specific aspect of UG is the innate component of the human mind that allows for language acquisition to occur, i.e., the Language Acquisition Device, which postulates grammar from given data. Likewise, phonological awareness, as defined and conceived throughout this work, is a language-independent internal property of each human being that emerges naturally in childhood and develops under the guidance of the environment, i.e. adults and teachers. Phonological awareness facilitates learning to read in children just as the LAD facilitates language acquisition. At the same time, phonological awareness is developed by exposure to the outer environment, i.e., reading instruction, just as language acquisition is developed by interactions with the outer environment, i.e., social interactions.

One interesting metaphor of the LAD has been devised by Santipolo (2010, personal communication). Regarding the phonological system of a language, Santipolo views the LAD as a tree where each leaf represents a specific phonological feature of a language, e.g., the English phoneme /θ/. This particular phoneme will be deactivated for an Italian-speaking child acquiring his/her L1. On the other hand, the Italian phoneme /ɲ/

will be activated and available during the L1 acquisition process. Once an Italian student is exposed to the English phoneme /θ/, he/she may tend to 'seize' it from the nearest leaf in the Italian phonological system. The older the student, the fewer the chances of acquiring the new sound with a native-like pronunciation, without the filter of the L1 phonology. The younger the learner, as in the case of preschool children, the more the chances of acquiring the new sound with a native-like pronunciation, without the filter of the L1 phonological rules. This provides additional support to the introduction of phonological awareness tasks in EFL in Italian preschools.

Chapter 7

Phonological Awareness in ELTM: An Educational Framework

> [...] every teacher of young beginning readers should know why such instruction [phonological awareness] is important and how and when to provide it.
> (Blachman, 2000)

7.1 Phonological Awareness in Early Education: The Contextual Framework

Thus far, this work has examined what phonological awareness in an L1 is, its relation to literacy skills, both in alphabetic and non-alphabetic languages, the transfer of phonological awareness across both alphabetic and non-alphabetic languages, as well as the types of phonological awareness tasks in an L1. It is our main aim now to apply all the findings collected and the considerations drawn thus far to the specific filed of Early Language Teaching Methodology (ELTM). Before illustrating examples of phonological awareness tasks for preschool children, it is crucial to describe the specific educational setting where these activities could be conducted. It is important to stress, though, that within today's framework of nationwide educational policies, which is not focused primarily on early language education (if not at the elementary level) (cf. 1.5), the educational setting within which to conduct phonological awareness activities in EFL is to be interpreted principally as a 'model' environment.

7.1.1 From Foreign-Language Education To Bilingual Education

When English is introduced at any school grade and category in Italy, it is officially considered a foreign language, which is taught mainly as a school subject without being actively employed outside the educational context. This notion of English as a 'foreign language' could be debated in today's growing degree of proximity with the Anglophone language and culture. This is due to the phenomenon of world globalization and the role played by new technologies in allowing for more frequent and closer contacts with and in the English language, which has come to play the role of

an international language or of a 'lingua franca' among peoples speaking languages other than English (Santipolo, 2006). Researchers (e.g., Garcia, 2009) have begun to acknowledge that the differences between foreign-language school programs and second-language teaching programs are starting to blur in the context of globalization, especially for global languages such as English. This shift in trends, as well as its acknowledgment by the academic world, has some important implications in defining the educational environment where phonological awareness activities could be conducted, as is discussed in the following sections.

7.1.2 Being Bilingual

Experimental research (Meisel, 2004) on child bilingualism has provided data showing how simultaneous acquisition of two or more languages can in fact be qualified as an instance of 'multiple first language acquisition.' As remarked by Fabbro (1999: 103, En. tr.): "Over 50% of the world's population is bilingual. However, ideological and political prejudices have established a deformed vision of reality, on the basis of which bilingual individuals are considered to be only a very restricted number." There is not a univocal and well-established notion of bilingualism. Generally, a person is bilingual if he or she can use two languages in communication (Pearson, 2009). Views vary from Bloomsfield's (1933) assertion that a bilingual is whoever masters two languages with full fluency to the more pragmatic affirmation by Grosejean (1989) that a bilingual is whoever can use each language according to precise needs. Edwards (2004: 7-8) begins his article on the foundations of bilingualism by saying:

"Everyone is bilingual. That is, there is no one in the world (no adult, anyway) who does not know at least a few words in languages other than the maternal variety. If, as an English speaker, you can say *c'est la vie* or *gracias* or *guten Tag* or *tovarisch* – or even if you only understand them – you clearly have some *command* of a foreign tongue […] The question, of course, is one of degree […] It is easy to find definitions of bilingualism that reflect widely divergent responses to the question of *degree*."

From Edward's (2004) perspective, then, a person is bilingual at *any* point in the learning process of an L2, whereas some other researchers (e.g., Bhatia, 2004) are more likely to reserve use of the term bilingual for the end learning condition, i.e., when the process of second language acquisition is complete. Should we apply the notion of bilingualism to children, it would become even less straightforward: there are several ways in which children can become bilingual (e.g., for reasons of immigration, education, extended family, or dislocation) (Bialystok 2001). The matter of proficiency then complicates this notion even further, as nobody can deny that children's knowledge of any language is still *in progress* and thus incomplete (Bialystok 2001). However, one common classification of bilinguals is in fact based on *when* the languages are learned in relation to one another. Child bilinguals can learn both languages at birth simultaneously or learn one first and, after that one language is established, learn the next one sequentially (or successively) (Pearson, 2009). An infant bilingual is unambiguously a simultaneous learner, but a child bilingual could be either a simultaneous or a sequential learner. The terms normally employed to define this contrast are Bilingual First Language Acquisition (BFLA) and early Second Language Acquisition (early SLA) (Pearson, 2009). Both infant and child bilinguals are normally considered early bilinguals, as opposed to someone learning a second language late or after a critical age which is yet to be precisely determined, but which was first identified by Lenneberg (1967) as puberty. Most recent studies of neuroimaging in bilingual subjects (Fabbro, 2004) have identified several critical and sensitive periods for the acquisition of a second language. For example, if children acquire two languages between the ages of zero and three (the first critical period), the representation of both languages is located in the same cerebral regions. Alternatively, if children acquire a language between three and eight years of age (the second critical period), the two languages are represented only partially in the same regions, although children's competence in the L2 can be excellent. Moreover, the L2 has been found to normally occupy a wider region thus requiring more energy and a greater cognitive effort to be activated. In learners acquiring an L2 after eight years of age, the L2 is represented in

different and more extended regions than those of the L1, thus making it more difficult to acquire a perfect competence in the L2 (Daloiso, 2009).

Bearing in mind the above considerations, this thesis' assumption is that if Italian learners are exposed to a context of English language acquisition from an early age (e.g., since preschool) and if the approach, methodologies and strategies chosen in the classroom are similar to those employed by English-native speakers (in order to facilitate the acquisition of their L1 in a natural, spontaneous and 'unconscious' way), then the setting of introduction of EFL could partly resemble an environment of 'early dominant bilingualism'. Children would be exposed to both Italian (the dominant language) and English (the subordinate language), possibly with one teacher speaking one language (Italian) and another teacher speaking a different one (English), as in the type of bilingualism described by Romaine (1995) as 'one person, one language.' This could also be tentatively referred to as a context of 'successive bilingualism,' i.e., the condition of someone whose L2 is added at some stage after the L1 has begun to develop (Wei, 2000) as well as a context of 'secondary bilingualism,' i.e. the condition of someone whose L2 has been added to an L1 via instruction (Wei, 2000), although from a very early age. One additional factor to take into account is that an Italian setting of preschool children exposed to English as an L2, where the number of children speaking languages other than Italian as their L1 is rapidly growing (cf. 3.9.1), will be more naturally referred to as a 'plurilingual' educational context.

7.1.3 Early Bilingual Education

When referring to 'bilingual education,' the use of two languages in education immediately comes to mind. Yet, with regard to the term 'bilingual' as applied to an individual (cf. 7.1.1), bilingual education is not as easily described and tends to be viewed as a simple label for a complex phenomenon (Cazden & Snow, 1990). According to Baker (1988), bilingual education is sometimes employed to describe the education of students who are already speakers of two languages, while at other times it describes the education of students who are studying additional languages. These latter may

already be speakers of the majority language(s) used in their society. They may be immigrants, refugees, members of minority groups, or perhaps even members of the majority group learning a different language, the dominant language in school (e.g., some African countries where children continue to be schooled in the colonial language). In general, bilingual education refers to education in more than one language, often including the use of more than two languages (Baker, 2001). Due to the wide variety of contexts to which bilingual education can be applied, and the complexity surrounding the notion of bilingual education, people tend to misunderstand it. For instance, in the United States, and maybe in some parts of Europe as well, people tend to think that bilingual education only refers to settings where immigrants are taught using only English (Garcia, 2009). Bilingual education is normally different from 'traditional' language education programs that teach a second or foreign language, where the language is mainly taught as a subject, and not as the medium of instruction (i.e. content is taught through an additional language other than the children's L1). Table 7.1 illustrates the differences between bilingual education programs and language education programs, which include both foreign-language and second-language programs (Garcia, 2009).

Table 7.1 Differences between Bilingual Education and Language Education (adapted from Garcia, 2009: 7)

	Bilingual Education	*Foreign- or Second-Language Education*
Overarching Goal	Educate meaningfully and some type of bilingualism	Competence in an additional language (L2)
Academic Goal	Educate bilingually and be able to function across cultures	Learn an L2 and become familiar with an additional culture (C2)
Language Use	Languages used as media of instruction	L2 taught as subject
Instructional Use of Language	Use some form of two or more languages	Use target language mostly
Pedagogical Emphasis	Integration of language and content	Explicit language instruction

However, as Garcia (2009) remarks, it is becoming more and more difficult to differentiate between bilingual education and foreign- and second-language teaching programs, as the latter are nowadays increasingly integrating language and content,

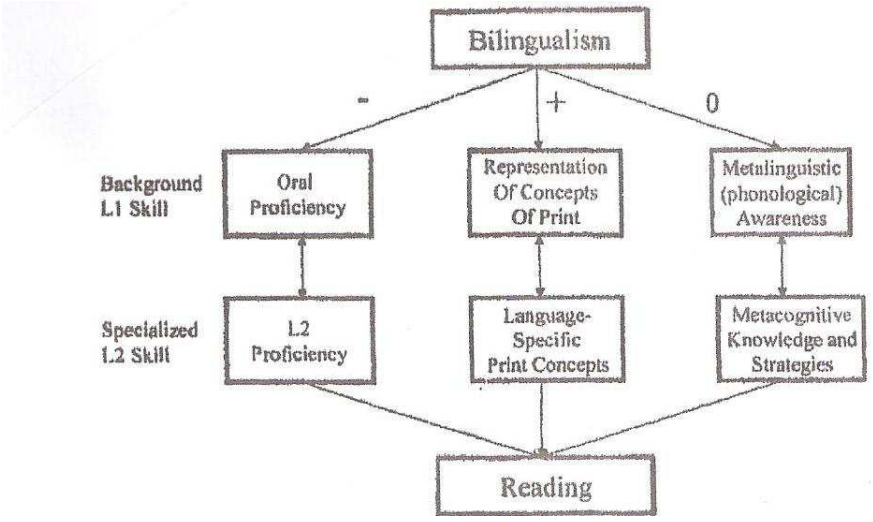
thus coming to resemble bilingual education. In Italy, for instance, although English is usually included in the curriculum as a simple subject from elementary to secondary grades, full language experiences such as CLIL are rapidly growing in all school grades and orders (Serragiotto, 2004). Within a preschool context, it is universally acknowledged that due to the characteristics of very young learners (i.e., age, cognitive and linguistic maturity in their L1), an L2 is not and cannot be taught 'explicitly' as a school subject, but it can become part of a wider process of early bilingual language education and acquisition, where Italian and English can be both included in everyday routines and activities (cf. 7.1.4). This can result in a 'spontaneous' CLIL experience.

In general, what is of interest when introducing a foreign language in an Italian preschool setting is the broader goal of education, i.e., not only teaching and learning an L2, but using two languages to (Garcia, 2009: 6) "educate generally, meaningfully, equitably, and for tolerance and appreciation of diversity." Within an early bilingual education context, preschool children are assisted in the broader objective of becoming 'global' and responsible citizens as they are gradually introduced to different languages, cultures, and worlds, thus overcoming the linguistic and socio-cultural borders in which traditional schooling typically operates. Introducing children to an L2 at an early age may help them experience the notion of diversity from an early age, and guide them into the slowly emerging process of being aware of linguistic and cultural relativism. Languages as means of communication may facilitate understanding between different peoples, and understanding is the path to tolerance, openness and universal respect, which may in turn have positive effects on the coexistence of varied languages and cultures within today's globalized societies. This is an extremely ambitious educational goal that can in fact be reached by 'simply' supporting and implementing the stable and systematic introduction of a foreign language at a very early age, as in the case of preschool children.

7.1.4 Emergent Biliteracy

If the 'ideal' educational context where to introduce activities aimed at fostering phonological awareness skills in English tentatively resembles a context of early bilingual education, it can also be closely associated with a setting of 'emergent biliteracy' (cf. 4.1, the notion of 'emergent literacy'). Italian children attending preschool are typically guided in acquiring the skills to communicate verbally in their L1, interact and dialogue, reflect on their L1, and are gradually introduced to the written language (cf. 1.5.3). As previously observed (cf. 1.5.3), the Italian guidelines for the preschool syllabus do not explicitly mention fostering the phonological system or phonological awareness skills of the Italian language. However, the phonological system of Italian is spontaneously and holistically worked upon in the everyday interactions between children-educators and between children themselves. Moreover, phonological awareness skills are implicitly stressed in those everyday activities that are related to sounds in the L1, e.g., songs, rhymes, chants, lullabies, and are especially fostered when introducing children to the L1 written system by means of simple activities or games with letters (shapes, names or sounds), which are usually addressed to older children of 5 years of age. In order to better understand the notion of emergent biliteracy, it is useful to refer to a setting of bilingual reading acquisition (Bialystok, 2007a). According to Bialystok (2007a), there is a close relationship between the background and precursor skills needed for reading in both an L1 and an L2 within a bilingual educational context. The researcher proposed a diagram (see Figure 7.1) that was not intended to represent a model, but a description of the relations between the three aspects of literacy in an L2 (i.e., L2 proficiency, language-specific print concepts, and metacognitive knowledge and strategies) and the precursor to literacy in an L1 (i.e., oral proficiency, representation of concepts of print, phonological awareness), within a bilingual literacy setting.

Figure 7.1 Relation between L1 and L2 literacy acquisition and bilingualism (adapted from Bialystok, 2007a: 52)



As can be seen in Figure 7.1, there are skills that need to be mastered by monolingual children within a context of bilingual education in order to support later literacy in L2. The first is oral proficiency in the language of literacy. It is important for monolingual children to have mastered their L1 sufficiently to support literacy. Likewise, reading in a 'weaker' language such as an L2 can be hampered by inadequate linguistic control in the L2 (cf. 6.2, Cummins' Interdependence Hypothesis). Oral language was also identified as one of children's emergent literacy skills by NELP (cf. 4.4.5). The second skill in Bialystok's figure is representation of concepts of print. Monolingual children must establish concepts of sound, word, and the function of print before they can read. Because these units are different across languages (e.g. English notion of word vs. Chinese notion of word), bilingual children must acquire the appropriate representations for each language they are learning to read. The third skill includes metacognitive processes and strategies for reading. For monolingual children, the primary challenge for metalinguistic understanding is phonological awareness. For bilingual children, the challenge is not only phonological awareness, but also the

strategies and insights (including phonological ones) that are specific to reading different languages. What is of interest for the scope of this study is the fundamental role played by phonological awareness skills as a prerequisite of literacy acquisition within a setting of bilingual education. Concretely, within an Italian preschool setting where young children are exposed to English, Bialystok's scheme implies a methodological focus on the following factors:

- Children's oral skills in Italian: these are fostered naturally in children's everyday interactions with preschool educators and other children.
- Children's concepts about print in Italian: these are normally implicitly fostered throughout the whole preschool cycle, through instructional tools such as storybook sharing routines. In the later years of the preschool cycle, i.e., when children are 5 years of age, the focus on concepts about print may become 'explicit' and a topic of discussion with children themselves.
- Children's phonological awareness skills in Italian: these are normally fostered in the later years of the preschool cycle, i.e., when children are 5 years of age.
- Children's oral skills in English: these should be strengthened by exposing children to a frequent and qualitative high input in English.
- Children's concepts about print in English: due to the similarities between Italian and English, if children have already acquired knowledge of concepts about print in their L1, this could easily be transferred to English. For example, educators could guide this transfer by drawing children's attention to literature in English in order to have pupils concretely see that it shares print conventions with literature in Italian, e.g., print has left-to-right and top-to-bottom direction on the page. This may additionally assist those immigrant learners whose L1, though alphabetic, is structurally distant from Italian (e.g., Arabic-speaking learners, or those children who come from non-alphabetic language backgrounds such as Chinese-speaking learners).

- Children's phonological awareness skills in English: common phonological awareness notions and skills acquired by Italian children in their L1 can be transferred to the English language, e.g., both languages can be broken up into smaller units of sound such as syllables and phonemes. Yet, differences between the two languages should be stressed, e.g., the relevance of onset-rimes in English as compared to syllables in Italian, or the set of phonemes that exist in a language but not in the other.

What should also be carefully taken into account is the rapidly growing number of preschool children who attend a preschool classroom but are not native speakers of Italian (cf. 3.9.1). These children may have an alphabetic or non-alphabetic language as their L1 (acquired at varying degrees, depending on the children's ages and home contexts) and be in the process of mastering alphabetic Italian as their L2, while being introduced to alphabetic English as their L3. This may look like a challenging plurilingual educational setting for these children. Yet, due to their young age and the plasticity of their brains (cf. 7.1.3.1), immigrant children may naturally develop their skills in each language as follows:

- Immigrant children's oral skills in Italian are developed and strengthened spontaneously in their everyday interactions with preschool educators and other children.
- Immigrant children's oral skills in their specific L1 are normally maintained and strengthened within their everyday relationships with parents, siblings or relatives in the home setting. If children are 4 or 5 years of age when they arrive in Italy, depending on their linguistic and cultural background, they may already possess some emergent literacy skills in their L1. The maintenance of the L1 is of great relevance at the cognitive and linguistic level, as it can allow the skills already acquired in their L1 to transfer to Italian and consequently into English, in what can be viewed as a process of 'double transfer'.

- Immigrant children's oral skills in English are acquired and strengthened in the natural process of introducing English for all children, both Italian and non-Italian.
- Once established in one language, be it immigrant children's alphabetic or non-alphabetic L1 or Italian as an L2, at least a portion of phonological awareness should be easily transferred to English as an L3.
- Special attention should be given to the phonological differences between immigrant children's L1, Italian as an L2, and English as an L3.

7.1.4.1 Oral Skills and Emergent Biliteracy

As seen in Bialystok's proposed relation between L1 and L2 literacy acquisition and bilingualism (cf. Figure 7.1), oral proficiency in preschool children seems to play a crucial role in their later acquisition of literacy. As stressed by Whitehurst and Lonigan (2001), generally not much attention has been devoted to research in oral languages skills in general and to the developmental link between oral language skills and reading in particular. Yet, oral language skills are crucial in order to develop linguistic comprehension, one of the two components of the reading process, according to the Simple View of Reading (cf. 3.8).

In the meta-analysis carried out by the NELP on emergent literacy skills (cf. 4.4), oral language was found to be moderately correlated with at least one measure of later literacy growth (cf. 4.4.6). Oral language was defined by the NELP (Schatschneider, Westberg, & Shanahan, 2008) as the ability to produce or comprehend spoken language, including vocabulary and grammar. In particular, measures of simple vocabulary knowledge were found to be fairly weak predictors of later decoding and reading comprehension, whereas more complex aspects of oral language (e.g., grammar, definitional vocabulary, listening comprehension) were found to have more substantial predictive relations with later conventional literacy skills (Lonigan, Schatschneider, & Westberg, 2008). As remarked by the NELP members themselves (Lonigan, Schatschneider, & Westberg, 2008), these overall results suggest that further and more

careful studies of the role of oral language in literacy development are needed. In their model, Whitehurst and Lonigan (1998) (cf. 4.2.1) defined the broad category of language as 'syntactic, semantic and conceptual knowledge', and later referred to it as 'oral language skills', including vocabulary development and understanding of spoken language (Whitehurst & Lonigan, 2001). In her model and successive revisions, van Kleeck (1998) (cf. 4.2.3) proposed including among the 'context processor skills' (i.e. the skills that go beyond the word level and give children contextual frameworks for the printed information on texts) 'syntactic knowledge' (van Kleeck, 1998) or 'semantic-syntactic skills' (van Kleeck, 2009), and 'reasoning' (van Kleeck, 1998), which was later referred to as 'inferential skills' (van Kleeck, 2009). Among scholars who have focused their work on oral language skills are Whitehurst and her colleagues (for a review of studies, see Zevenbergen & Whitehurst, 2003), who have proposed the so-called 'dialogic reading' intervention program[57]. Yet, this program of sharing storybooks with children is especially designed to foster vocabulary knowledge and semantic-syntactic skills, namely children's 'literal' knowledge. There is one additional component of oral language skills that is crucial for reading comprehension, and this is the ability to engage in inferencing (Trabasso & Wiley, 2005; van den Broek *et al*., 2005), an ability that is often neglected in evidence-base research (van Kleeck, Vander Woude, & Hammett, 2006). When referred to text comprehension, being able to engage in inferencing means being able to go beyond the information directly provided by the text, being able to make predictions beyond the text level, before, during and after reading, and recognize different kinds of relationships between different parts of the text. Some experimental research (e.g. Oakhill, 1982) has shown that children's reading comprehension skill is related to their ability to draw inferences. The direction of the relation between these two skills was investigated by Cain & Oakhill (1999). Their experimental study revealed that good inference skills can determine good comprehension ability (Cain & Oakhill,

[57] Dialogic reading is an interactive shared picture book reading practice designed to enhance young children's language and literacy skills. It is based upon three main techniques - asking 'what' questions, asking open-ended questions, and expanding upon what the child says. These three techniques are designed to encourage children to talk more and give descriptions of what they see.

1999). In this light, the notion of oral language should be expanded as to include inference skills as well.

Within a bilingual educational setting, where preschool children are exposed to two different languages, an issue investigated by research (e.g., Bialystok, 2007a) has been whether oral competence in two languages may have an impact on the way in which children learn to read. Studies (for a review see Adams, 1990) have indeed shown that children with higher levels of oral proficiency and more elaborated vocabulary tend to read more easily than their less proficient peers. Within an environment of emergent biliteracy in Italian preschools, and in an attempt to foster phonological awareness both in Italian and in English, this implies that oral skills should be supported and strengthened in the two languages. Oral language skills in an L2 are related not only to vocabulary acquisition, but also to the receptive and productive acquisition of those first simple speech forms that can pragmatically useful for preschool children (e.g., "Toilet, please;" "Hello;" "I'm fine;" "Bye-bye"). Inference skills, on the other hand, might be too difficult to foster in English in Italian preschool children, but could be tackled and strengthened in their L1 instead, in an attempt to help children transfer them to the L2 when they have acquired more advanced skills in the L2. Time and frequency of exposure in the L2 thus become a critical issue, in an attempt to foster preschool children's oral skills, both at the receptive and productive level. While children have an opportunity to foster their oral skills in Italian during their everyday activities both within the preschool setting and outside it, the question of fostering oral skills in English remains closely related to the quality and quantity of the input offered by language educators (cf. 1.5.5; 7.1.4). What should be the focus of attention in preschools are both the quality and the quantity of the input offered by language educators. This is an essential issue that is still being debated within the context of early language teaching, and on which there are no clear guidelines from the Italian Department of Education.

7.1.5 Bilingual Allocation

In the previous paragraphs we proposed to introduce EFL in general and phonological awareness activities in English in particular within a bilingual education setting. What makes bilingual education complex is that there are several issues to be tackled, e.g., not only pedagogic or methodological issues, but issues such as how to allocate, arrange, and use the two languages in instruction (Garcia, 2009). The phonological awareness activities that we propose to include in the EFL syllabus within an Italian preschool setting are in fact meant to be included within a broader, ideal educational environment, where oral skills in Italian and English are both fostered. English as a foreign language in preschools should not to be considered as a subject to be acquired separately, but as a 'learning environment' itself (Daloiso, 2009), where children can experience activities of linguistic and extra-linguistic growth and discovery, to be harmoniously inserted alongside everyday activities in Italian. As suggested by the latest research on ELTM (Daloiso, 2009), a 'diffuse' exposition to the L2 could be promoted as follows (Daloiso, 2009: 115-116):

1. Within *school time*. A school day in preschools is typically characterized by a series of routinized activities where children are guided to carry out sequences of recurrent actions (e.g., wash their hands in the restroom), and where speech forms in Italian are generally used. English as an L2 could be employed as well during these school routines in order to increase the quantity of the input in the L2. The advantages of carrying out daily routines in the L2 can be as follows:
    - children have a chance of experiencing *contextualized* input. Children's oral comprehension skills in English can be strengthened by contextualizing the input in L2 in familiar daily communicative situations. At a later stage, this may assist children in tackling more complex, not yet routinized activities, such as phonological awareness tasks.
    - Daily routines promote the integration of varied expressive codes, such as the verbal and non-verbal codes (e.g., psychomotor procedures).

Children's oral comprehension skills in English can be assisted by the integration of codes children know and employ in their daily activities.

2. Within *school spaces*. If the L2 is confined to a special space or room, children might feel and conceive it as something 'different' and 'separated' from other educational activities in their L1. If different educational activities are carried out in different spaces within the school, the English language can be inserted in each space as well. Children can, for instance, carry out psychomotor activities in English in the space where psychomotor activities are usually carried out in Italian.

The moment children perceive the English language as an 'integral' part of their daily routines (Daloiso, 2009), as something that is normally present within their educational time and spaces, they may be more prepared for introduction to any type of task in English, including activities aimed at fostering their phonological awareness abilities. With reference to 'bilingual allocation,' i.e., the time allotments given within a context of early bilingual education, it goes without saying that within an Italian preschool setting most class periods would be dedicated to instruction through the mainstream language, i.e., Italian. The most equitable distribution of languages (although not necessarily the most adequate) would be a 50:50 allocation, where half of the education is imparted through one language and half in the other (Garcia, 2009). Yet, as already discussed, this would be an 'ideal' solution, as today's resources and educational policies in Italy do not seem to be aimed at supporting and implementing a steady integration of an L2 of this type into the preschool syllabus. Moreover, within a preschool setting, it is not easy to just cut education in half, as education is not imparted through separate subjects, but is focused on a series of learning fields that in Italy are defined as 'experiential domains' (i.e., 'myself and the others,' 'the body,' 'languages, creativity, and expression,' 'the world's knowledge,' 'discourses and words') (Daloiso, 2009). The most extreme solution, which is maybe one of the most popular ones, would be a 90:10 distribution, with the mainstream language (Italian) being used 90 percent of

the time, and the additional language (English) being used only 10 percent of the time (Garcia, 2009). This would encourage the emergence of a CLIL-type program within a preschool setting, where most of the instruction takes place in the school's dominant language, but the L2 is also employed, although only for short periods of time to carry out children's routines, activities and games. This 90:10 distribution between Italian and English could be attempted especially with younger children in preschools, i.e., 3-year-old children, in order to gradually introduce them to the new speech forms and sounds of the L2. Most of the time, traditional bilingual education programs have a so-called 'sliding bilingual allocation,' where, as bilingualism develops, the allocation of time to different languages changes. This would imply, for instance, that as children grow (e.g., when they are 4 or 5 years of age) and become more accustomed to the speech forms and sounds of English, instruction is increasingly done through English as well, so that the two languages become to be equally divided in a 50:50 relationship. This could be an appropriate time to expose children to phonological awareness activities, as they would already have some oral and phonological knowledge of the L2.

7.1.6 The Formative Approach

Within the field of Language Teaching Methodology in general, the most popular approach in the last few decades has been the so-called 'communicative approach' (Balboni, 2002) where language is viewed as a communicative tool, rather than a 'static' subject to be learned. In this perspective, socio-linguistic and socio-pragmatic accuracy seems to have precedence over formal and grammatical accuracy. This means that stress is given to using the most appropriate language forms according to the context of use, rather than simply using grammatically correct language forms. Krashen's (1983) 'natural method' is an example of the communicative approach, which also includes other factors, such as the critical role of learners and their psycho-affective needs in the acquisition of an L2. When applied to the field of early language teaching, however, the communicative approach, although having the merit of giving priority to the pragmatic value of language (instead of its structural value), seems not to be sufficient in itself.

Studies carried out in the Italian field of Early Language Teaching Methodology (Freddi, 1987, 1990a, 1990b, 1999) have shown that the instrumental function is not the only one performed by an L2 within a setting of early language teaching. The L2 has an additional *formative* role, in that it represents a tool for children's *overall* growth, namely their cognitive, cultural, relational and semiotic development, as well as for their self-realization (Daloiso, 2007: 37-40):

- *Cognitive development*: children's language development (in the L1 and consequently in the L2) is closely interlinked to cognitive growth. On the one hand, language maturity is dependent on cognitive maturity. On the other hand, language development itself contributes to cognitive development.
- *Cultural and intercultural development*: language is an entity which includes characteristic elements from the culture that uses that language. This allows children to know that other cultures exist, experience them, and at the same time appreciate their own.
- *Relational development*: language is a means that allows children to interact with the world, to establish relationships and cooperate with their peers, as well as to develop socio-pragmatic competencies.
- *Semiotic development*: language is only one of several codes of expression. This means that children gradually learn how to integrate this specific code with already known codes.
- *Self-realization*: children experience joy and pleasure in the use of the L2 as a further tool that can serve their immediate needs, e.g., communicating and playing, and allow them to have meaningful experiences.

Thus, the formative approach turns out to play a fundamental role when working with preschool children from three to five years of age. These children are still developing their cognitive, psychological and social abilities, which means that their mental instruments, strategies, world knowledge and competences in L1 are still

incomplete and in progress. Four year-old children, for instance, have usually not yet fully conceptualized colors in their L1. Before introducing them to colors in an L2, it is thus essential to help them develop the notion of color in their L1 first. This will help them transfer the conceptual notion into the L2, and re-learn the denominations in a different language. The cognitive development of children should be carefully considered when introducing them to phonological awareness activities that may contain some conceptual notions not already acquired in the L1. To summarize, a formative approach seems to be the most appropriate solution in any early encounter of an L2, in that (Daloiso, 2005):

- A formative approach comes from the observation that language acquisition (be it an L1 or an L2) at an early age cannot be separated from the overall development of children.
- It consequently establishes a relationship between L2 teaching and general children's education.
- It highlights the affective and emotive sphere of learning.
- It includes the instrumental view of the L2, by respecting children's inclinations to satisfy their pragmatic needs (e.g., playing, communicating, gaining experience of themselves, of others, and of the world) through language.

7.1.6.1 The Experiential Language Teaching Methodology

The communicative-formative approach presented above finds a most appropriate methodological realization within a preschool setting in what has been defined as 'experiential language teaching methodology' (Daloiso, 2009). It is within this theoretical framework that we propose to introduce our set of phonological awareness activities. This particular methodology is based upon the consideration that children first gain knowledge of the world by concretely observing, experiencing and establishing a relationship with whatever surrounds them. Children learn by doing and by experiencing the world around them, by observing, imitating, manipulating, and using

all of their senses (Daloiso, 2009). Following is a table that summarizes the main features of the experiential language teaching methodology (adapted from Daloiso, 2009: 119; 124).

Table 7.2 Main features of Experiential Language Teaching Methodology

Educational goals	Approach children to the L2 and develop BICS skills, informally make children sensitive to the L2 through experiential learning
Exposure to L2	Diffuse exposure within school time and spaces
Teaching focus	Both linguistic and extra-linguistic skills (e.g., psychomotor, relational, or cultural competences)
L2 as the means of instruction	L2 is viewed mainly as an 'auxiliary' means of instruction, within a setting where curricular themes and objectives are meant to be at least already partially known and acquired in L1
Link between L2 and other subjects	Introduction of the L2 within the experiential domains, selection of formative goals from the preschool syllabus, to be achieved with the support of the L1 as well
Integrating setting	Not just a common thematic area, but educational goals and objectives in common with instruction in L1
Linguistic goals	Specific linguistic objectives and a common thematic area are selected from the formative goals of the general preschool syllabus

For the purpose of this study, this implies that phonological awareness activities should be embedded within the broader experiential educational and learning environment presented above.

7.1.6.2 The Playful Methodology

Within the experiential methodology, a more specific method through which we propose to include our phonological awareness activities is the so-called 'playful methodology' (Caon & Rutka, 2004; Caon, 2006, Freddi, 1990b). Within this methodology, the notion of 'game' is reviewed in the light of its educational, formative and instructional value. Games, and in general activities that are appreciated by children and carried out within a pleasant and motivating educational setting are assigned a strategic value for the development of linguistic, cultural, cognitive, relational and psycho-affective abilities, be it in an L1 or an L2. Games are thus conceived as teaching/learning strategies that are able to respond to the complexity of overall children's growth, which in turn is promoted through linguistic and formative

objectives (Daloiso, 2007). Within this methodology, it is once more essential to promote and respect children's natural language acquisition mechanisms. In this perspective, an early approach to the L2 through a playful methodology should (Daloiso, 2007: 46):

- Be based upon strategies of natural, implicit linguistic acquisition that children have already acquired or are in the process of acquiring in their L1.
- Provide paths and sequences of implicit acquisition, where the L2 becomes a natural, integral element of a learning setting in which children can use and explore the L2 to have meaningful experiences to their development, while at the same time creating certain linguistic automatisms through practice.
- Allow children to explore the operative dimension of the L2, namely using the L2 to concretely 'do things,' e.g., inventing a song or a nursery rhyme, which could be carried out with the support of a guiding educator and within a context of phonological awareness development.
- Support the neuro-sensory development of children (cf. 7.1.7.1), by allowing synaptic connections to be stabilized, through linguistic activities that involve several sensorial modalities simultaneously, and provide input in the L2 that should be:

  - constant, due to the repetition of stimuli that encourages the formation and stabilization of definite neural channels and allows information to be fixed in children's implicit memory structures (cf. 7.1.7.2.1);

  - gradual, i.e., respectful of the degree of linguistic and cognitive maturity of children;

  - ordered and coherent, as disordered input in L2 is difficult to integrate at the neural level and might slow the learning process.

To summarize, phonological awareness activities should be presented to children in the form of functional games within an overall playful environment, so as to increase motivation and thus facilitate language acquisition.

7.1.7 The Need for an Operative Model Tailored for Children

Most operative models of language teaching methodology nowadays are based on the view of language acquisition as a process where the whole brain of the learners, both left and right hemispheres, is activated and involved (Danesi, 1988; 1998). In particular, the left hemisphere allows for an analytic approach to the L2 input, and is activated to comprehend and elaborate literal language on a linguistic, syntactic and phonetic level. The right hemisphere, on the other hand, allows for a global approach to the L2 input, and elaborates lexical, visual aspects and the emotional content of the message. Language acquisition is seen as a process where first the right hemisphere is activated for a general elaboration of the L2 input, after which the input is processed by the left hemisphere for elaboration on an analytic level. Finally, both hemispheres are activated for the synthetic re-elaboration of the input received (Danesi, 1988; 1998). However, this interpretation of language acquisition reflects the modalities through which languages are learned in adolescents and adults. In children, the alternation between the global and analytic elaboration of an L2 input is not possible, as they have not yet completed their cerebral lateralization (cf. 7.1.7.3**)**. Cerebral lateralization is a configuration that allows for cognitive functions to become established in specific regions of the cerebral hemispheres, and for the language input to be globally and analytically elaborated. The process of cerebral lateralization is generally completed when children are around 7 or 8 years of age (cf. 7.1.7.3). The following paragraphs present a short review of the brain functioning in children. This focus on the neurodevelopment of children is meant to clarify the reasons why the introduction of EFL in Italian preschools cannot be done by selecting traditional models as the one based on the differentiated involvement of the right and left brain hemispheres.

7.1.7.1 Cerebral Plasticity

Neurological maturation refers to the series of physical, physiological and neurological phenomena that genetically determines an individual's growth. In children, this

maturation is distinguished by the interaction between a series of neurodevelopmental factors that determine cerebral plasticity (Fabbro, 2004; Paradis, 2004). These factors include (Fabbro, 2004):

- The neuron density, i.e., the number of cerebral cells.
- The increase in length of those parts of neurons that receive information from other neurons.
- The myelin formation, which makes the transmission of information more effective.
- The synaptogenesis, i.e., the formation of new connections between neurons.
- The metabolic activity, which is at its best when children are around 4 years of age.

Every region of the brain follows the same maturation sequence, although at different times (Fabbro, 2004):

1. A sudden increase in the number of cerebral cells and in the formation of connections between neurons, which partly relies on children's genetics and partly on their interactions with what surrounds them.
2. A slow synaptic reorganization, depending on the type of input as well as on children's responses to the stimuli.
3. The completion of cerebral maturation, which involves the stabilization of the nerve channels that become covered with myelin.

During these three phases, the cerebral plasticity tends to decrease progressively as the neurodevelopmental factors that determine it gradually reach adult-like levels and different cognitive functions settle in specific cerebral regions. This means that the full maturation of a specific cerebral region, i.e., its functioning as in adults' brains, implies a slight decrease of cerebral plasticity. This neurologic factor is usually related to the

difficulty adults have in learning an L2, as compared to children. In children, the full growth of a particular cerebral region only occurs when the number of cerebral cells, the metabolic activity, and the length of those parts of neurons that receive information form other neurons reach typical adult levels. As already specified, every region has its own maturation rhythms. This means, for instance, that generally 3- or 4-year old children might have already developed complex visual and motor competences, because their visual-motor systems are mature. Yet, these children might not be able, for instance, to carry out complex cognitive tasks, to plan their own actions, or to keep under control their attention and concentration abilities, as the frontal lobe, the area where these operations are performed, will only be fully developed when children are 7 years of age. This information on the neurodevelopment of children can have some important methodological implications when proposing phonological awareness tasks in EFL. These implications are discussed in more detail in chapter 8.

7.1.7.2 Memory and Language

The mnemonic skills of children, both in early and late infancy, rely on the interaction between the maturation of memory systems and the development[58] of memory strategies. Children develop two distinct memory systems, 'implicit' memory and 'explicit' memory. Although both are part of long-term memory, they are distinguished on different levels (Cardona, 2001; Fabbro, 1996; 2004):

- On the *maturation* level, because implicit memory and explicit memory mature at different periods and involve different cerebral regions.
- On the *development* level, because implicit and explicit memory are connected to cognitive and mnemonic strategies that children learn and use.

[58] In this context, development refers to all the changes that reflect the interaction between maturation and learning in relation to children's environment and experiences (Fabbro, 2004).

7.1.7.2.1 Implicit Memory

Children are already capable of recognizing and discriminating sounds in the womb, although their skills are still very elementary (Oliviero Ferraris Di Pinto, & Berretta, 1990). Children normally become able to memorize more complex sequences from 8 months of age, when implicit memory beings to mature. Below is a list of the main features of implicit memory (Daloiso, 2007: 25):

- *Automatism*: the input is interiorized and organized in sequences and procedures that become increasingly automatic.
- *Casualness*: the acquisition of new knowledge does not follow a precise and premeditated sequence.
- *Unawareness*: children are not aware of the fact that they are learning and are not able to make verbally explicit what they have acquired.
- *Minimum attention levels*: acquisition through implicit memory does not require complex attention levels, but mainly that children learn by doing and experiencing what surrounds them.
- *Transversality*: children are able to acquire new knowledge in one sphere while being engaged in other activities.

On the cognitive level, children activate implicit memory strategies by virtue of practice and information storage/recovery becoming progressively automatic. These strategies include the decomposition of the procedure to be acquired into single actions, the repetition of motor schemes at first singularly and later in blocks, and finally as a single automatic procedure (Karmiloff-Smith, 1992). Implicit memory becomes mature at around 3 years of age. It plays a critical role in language acquisition, as it allows for children's acquisition of the phonology and morphosyntax of the language in the form of unconscious automatisms (Aglioti & Fabbro, 2006; Fabbro, 1996; 2004)

7.1.7.2.2 Explicit Memory

It is during their second year of life that children start developing forms of voluntary and controlled acquisition. This is made possible by the maturation of the explicit memory, which becomes complete only when children are around 7 years of age. Below is a list of the main features of the explicit memory (Daloiso, 2007: 26):

- *Awareness*: children are aware of what they are learning and can express verbally what hey have acquired.
- *High attention levels*: acquisition takes place by activating high, sophisticated attention levels located in the frontal globe.
- *Multi-functionality*: the explicit memory allows for the memorization of episodes, events, and scenes through the 'episodic' memory (i.e., the memory of autobiographical events, such as times, places, associated emotions, and other contextual knowledge), and of theoretical knowledge, notions and concepts through the 'semantic' memory (i.e., the memory of meanings, understandings, and other concept-based knowledge unrelated to specific experiences).
- *Will to learn*: children learn only if they are the ones to decide to do so.

Acquisition in early infancy occurs mainly through implicit memory, whereas in late infancy (i.e., when children enter elementary school) the processes of explicit memorization play a more important role. Additionally, in the first years of their lives, children tend to rely only on episodic memory, using visual strategies for conscious memorization. On the other hand, between early and late infancy (which is the span that is of interest to our purposes), children learn new explicit memory strategies, such as (Daloiso, 2007: 26-27):

- Repetition of the input to fix it.
- Re-elaboration of the input.

- Enrichment by expansion, a technique based on redundancy, consisting in the association of the input to be acquired to other elements, based upon different criteria, e.g., phonetic, visual, and semantic.

Through such strategies, children activate the semantic memory, which allows them to memorize information by giving priority to the conceptual system over the visual system. This is especially valid for the acquisition of vocabulary, both in the L1 and in the L2 (Fabbro, 2004; 2006). It is within this period of time, when children start activating explicit and semantic memory strategies that this study proposes the introduction of phonological awareness activities.

7.1.7.3 Cerebral Lateralization

This is a fundamental process that takes place in children's development and is not generally completed before 7 or 8 years of age. It consists in settling children's cognitive functions in specific regions of the cerebral hemispheres, thus allowing children to elaborate information both globally (through the right hemisphere) and analytically (through the left hemisphere). Although there are differences in the ways 3- and 5-year-old children elaborate information due to the different degree of lateral formation, normally children of that age are not able to elaborate stimuli according to separate cerebral modalities (i.e. logical and analogical). They tend to elaborate input through unified and all-encompassing strategies, which simultaneously involve manifold cerebral structures. The notion of lateralization has important implications in relation to the most appropriate operative model adopted to carry out phonological awareness activities (cf. 7.1.7.4).

7.1.7.4 The Acquisition Unit

As previously seen (7.1.7.3), complete lateralization in children only becomes complete at around eight years of age; before that age children tend to elaborate information on a global level. This incomplete lateralization stage does not allow for long phases of

linguistic analysis. Children's analytical skills increase as their lateral formation progresses, which means that a 5-year-old child displays marked differences when elaborating input as compared to a 3-year-old child. As a consequence, 3-year-old children should be presented with certain types of activities, i.e., activities that involve them totally, on a holistic level, which are not focused on an explicit reflection on the language. On the other hand, 5-year-old children can be exposed to short reflective moments on what they experience first-hand. This different approach to children's meta-linguistic skills does not imply that children do not reflect upon language when they are very young. On the contrary, preschool educators should encourage *spontaneous* observations from younger children on the language that they are learning, while encouraging longer and explicit reflective moments in older children who are more mature on the meta-cognitive level (Daloiso, 2007). It is crucial to understand which operative language model can be most adequately tailored to meet the needs of young preschool children. Following is a presentation of the traditional operative models offered by Language Teaching Methodology, with some considerations on their effectiveness for young preschool children (Balboni, 2002; Daloiso, 2007):

- The *module*, a section of the curriculum that is self-sufficient, having its own beginning and end, and normally includes teaching units that last in total from 30 to 45 hours. The module was designed in order to meet the needs of contemporary society. However, its long structure does not seem to make it appropriate for ELTM. Moreover, its certification and accreditation system places the focus on the final *product,* while ELTM focuses on the language acquisition *process*.
- The *Teaching Unit* has its theoretical foundation on the Gestalt theory of the 1930s. This theory proposes a view of human perception based on three different phases, i.e., global perception, analysis, and synthesis (cf. 7.1.3) (Balboni, 2002). Beginning in the 1960s and 1970s this model was applied to language teaching of adolescents and adults. This model includes highly structured and planned

paths that can last up to 6-10 hours. There are two main reasons why this model is not the most suitable solution for children under 7 or 8 years of age:

- on the *neurological* level, it would require the ability to elaborate information according to different cerebral modalities, i.e., logical and analogical, a feature that is typical of the lateralized adult brain, but is not present in children under 8 years of age.
- On the *psychological* level, the rigid structure of the Teaching Units contrasts with the teaching flexibility that is necessary when working with children.

These considerations led to the proposal of an alternate operative model (Daloiso, 2007) specifically designed to meet children's needs, and whose acquisition paths are:

- *Short*, as they do not last more than one hour.
- *Flexible*, as they naturally integrate other ongoing educational paths, and meet the contingent needs typical of childhood education.
- *Respectful of the natural sequence of acquisition in the L1.*
- *Respectful of the neuropsychological dimension* of childhood acquisition.

A special interest has been aroused by the operative model of the *Learning Unit,* elaborated by the Venetian School (Balboni, 2002, Mezzadri, 2003). This model is focused on a set of short paths where learners gradually discover, learn and fix one or more elements (e.g., linguistic, communicative, or cultural), following the traditional stages of global perception, analysis and synthesis. Although the learning phases proposed by the Learning Unit are shorter than in the Teaching Unit, the acquisition sequences still do not conform to children's learning styles, and need to be adapted to childhood neurology and psychology. Recent research (e.g., Daloiso, 2007; 2009) has proposed that, if addressed particularly to children up to 8 years of age, the Learning

Unit in fact becomes an *Acquisition Unit*[59], because young learners are in their second critical period (cf. 7.1.1), and are thus activating implicit strategies of language learning typical of acquisition in their L1. The Acquisition Unit is to be viewed as a connection between activities based on linguistic and logic criteria (e.g., comprehension comes before production, memorization comes before re-use) (Daloiso, 2007). Within the Acquisition Unit, the following sequence of learning paths is proposed, when introducing an oral or written text to older children (Daloiso, 2007):

1. *Motivation*: this should be a short phase, considering the intrinsic motivation driving children to approach the language phenomenon.
2. *Approaching*: children are guided to a complete comprehension of the text through strategies such as multi-sensory stimuli (e.g., images, objects). This phase can also be interpreted as approaching in L2 a reality that is already the object of educational activities in the L1.
3. *Focusing*: the educators/teachers select some structures from the text (e.g., lexical, syntactic) and propose activities that help children memorize the structures.

- *Re-use*: activities are planned in order to enrich the on-going educational experience and at the same time allow children to re-use fixed structures or vocabulary.

Within a preschool setting, this operative model seems to be focused on a sequence of phases that cannot be fully carried out by children who are 3- or 4-years of age, but could be more easily carried out by elementary school children. Yet, this model can be taken as a general reference and starting point within which to insert our set of phonological activities and games:

[59] This reflects the dichotomy proposed by Krashen (1983) between *acquisition*, an unconscious, natural process of language acquisition that leads to a stable linguistic competence by language elaboration becoming automatic, as opposed to *learning*, a conscious process which does not lead to automatic language elaboration.

1. *Motivation*: this could be a short phase where preschool children are motivated to carry out a task in EFL in general, and a task focused on phonological awareness in particular.
2. *Approaching*: children are guided to a new EFL phonological awareness task through strategies such as multi-sensory stimuli (e.g., images, objects). Children can also be introduced to a phonological awareness task that has already been proposed in Italian.
3. *Focusing*: the educators select some phonological skills or specific sounds in EFL, and propose activities to foster those skills/sounds.

To summarize, phonological awareness activities could be included in a broad learning environment of early bilingual education, and more specifically in one of emergent biliteracy, where a diffuse exposition to the L2 is supported, within school time and school spaces, and where children are given the important chance of carrying out experiences of linguistic and extra-linguistic development and discovery both in the L1 and in the L2. It should then be up to preschool educators to find the right space and time of the day where to carry out each specific phonological awareness task within the broader context of linguistic education, both in the L1 and in the L2.

7.1.8 The Role of Language Educators

One critical issue concerns the person who is in charge of the teaching process in the L2 within a preschool setting (cf. 1.5.4). In this particular educational setting, the word 'educator' is preferred to 'teacher,' and is in fact interpreted as 'facilitator.' Preschool educators in charge of instruction in L2 are conceived as language facilitators who guide the acquisition of the L2 within a natural language acquisition environment (Costenaro, 2006; Steinbock & Costenaro, 2005). Although there are no precise guidelines from the Italian Department for Education as to who is in charge of introducing preschool children to the English language, it would seem ideal that this task was carried out by a

preschool educator who also has competencies in the L2. It is important to stress that the job of preschool educators introducing the L2 should be aimed at achieving two main goals:

- Promote children's development of linguistic and communicative skills in L2.
- Contribute, through activities in L2, to children's overall development and education.

As a consequence, preschool language educators are called to play a double role:

- Integrate learning in the L2 with other learning areas, e.g., with experiential domains.
- Propose graded learning paths, which can promote what Vygotsky referred to as the 'zone of proximal development', i.e., the difference between all that learners can do and acquire on their own, and all that they can do and acquire when they are supported by the environment, e.g., by an adult-educator.

In this perspective, preschool language educators should posses a whole range of skills, which include pedagogic, methodological and linguistic competences. When skills are not sufficient to carry out activities mainly through the L2, it is advisable to select an expert collaborator outside the preschool setting; one who is capable of offering a more correct input in the L2 in order to avoid exposing children to incorrect or inappropriate speech forms which would be difficult to remove in the long-run (Daloiso, 2009). When considering introducing phonological awareness tasks in EFL in preschools, it cannot be assumed that all educators know what phonological awareness abilities are or how to teach phonological awareness skills by virtue of being speakers, readers and writers in their L1 or in EFL. This makes the issue of EFL teaching even more delicate and crucial. One reasonable solution would be to include training in phonological awareness (particularly phonological awareness tasks) in the current

English and ELTM training courses specifically addressed to Italian preschool educators. The present study on phonological awareness could thus be interpreted as an additional tool to support the creation and implementation of training courses in English and ELTM for Italian preschool language educators nationwide.

Chapter 8

Phonological Awareness Tasks in EFL

> Nobody questions the role played by English as an international language today. People can be divided into those who love it and those who hate it and would rather do without, as if English were a 'necessary evil.' But the unconditional importance of the English language is now universally acknowledged.
> (Santipolo M., 2006, translation ours)

8.1 From Phonology to Phonological Awareness

Now that the general educational context within which phonological awareness tasks could be inserted has been presented, the focus of this thesis shifts to the characteristics of phonological awareness practices themselves in English as a Foreign Language. As the notion of phonological awareness is closely interlinked to preschool children's ability to 'hear' and acquire the sound structure of English, which presents both similarities and differences with Italian, the first goal of this chapter is to examine the capability of children to acquire two phonological systems. The chapter then moves on to some considerations specifically referred to phonological awareness activities in EFL within a preschool environment.

8.1.1 Acquiring Two Phonological Systems

As previously discussed (cf. 2.4), the definition of phonological awareness as children's ability to make explicit the knowledge they have acquired about the sound structure of spoken words in a language, cannot be separated from a focus on the phonological system of that language. Within this framework, and the scope of the present discussion, the goal of fostering phonological awareness skills in EFL becomes necessarily associated with the introduction of a new phonological system, which has its own features and patterns, which, in their turn, need to be gradually mastered by preschool

children. Some considerations should be made about the capability of preschool children to acquire and master two phonological systems simultaneously. Evidence (Aglioti & Fabbro, 2006; Fabbro, 2004; Karmiloff-Smith, 1992) shows that at birth, children are potentially capable of distinguishing sounds from all languages, but show preference towards those from their mothers (cf. 2.4). However, evidence (Werker & Tees, 1984) also shows that the basic perceptual processes for interpreting linguistic sounds become restricted in early childhood, usually at one year of age. Reaching their second year of life, children have developed a vast repertoire, although not yet stabilized, of sounds in their L1, often produced with all their phonetic features (Daloiso, 2007). The second to the fifth year is a very delicate period of phonological development because it is during this phase that children sharpen their ability to discriminate phonetically, and start stabilizing their phonetic inventory. A complete phonetic stabilization occurs when children are able to pronounce sounds correctly in all their phonetic features and in any phonetic context (e.g., in syllabic contexts) of their L1, from around 4 to 6 years of age.

A methodological consequence of this knowledge concerns the importance that the phonological and phonetic dimension assumes in the acquisition of an L2, in this case English within an Italian preschool environment. During the stabilization phase, children *still* have the possibility of acquiring sounds that do not belong to the phonological system of their L1, but in order to avoid wrong phonetic forms to become fossilized, the input in the EFL should be highly qualitative (Daloiso, 2007). Yet, while preschool children have good competency in phonetic discrimination, their productive oral skills are often not as developed, and their phonetic performance does not always reflect their real competence in the new sound system. However, as remarked by Daloiso (2009), this gap between competence and performance, between receptive and productive oral skills, represents a common developmental phase in the linguistic growth of children, who are still developing and refining the articulatory movements that are necessary to produce the sounds to which they are being exposed. Being a typical development phase, the gap between competence and performance will be

gradually filled. Being introduced to EFL at an early age can thus provide an opportunity to enrich a yet to be stabilized phonetic inventory with characteristic sounds of a new language. Preschool children are not yet strongly bound to 'cultural filters' deriving from the phonetic and spelling features of their L1. Unlike adults, children have a phonologic plasticity sufficient to learn new sounds in all their phonetic features (cf. 7.1.7.1) (Cigada, in Porcelli, 1993). Children will, for instance, be able to grasp, more or less consciously, that /s/ in Italian is a phoneme with two realizations, a voiced and a voiceless realization (as in *rosa* and *serpente* respectively), while in English /s/ and /z/ are two phonemes that create a phonological opposition (e.g., *place* vs. *plays*; *once* vs. *ones*). At a psychological level, children, unlike adults, will be able to activate two distinct mental representations, one for the Italian phoneme, and one for the English phoneme, that they will gradually learn to employ according to the phonetic contexts typical of each language. (Daloiso, 2007). One more factor to be considered is that the phonological dimension in EFL is of primary importance at the pronunciation level, in that once past the second critical period (around 8 years of age) (cf. 7.1.2), the foreign accent begins to penetrate and it becomes extremely difficult to acquire a pronunciation near to that of a native speaker. The main aim of a correct pronunciation is not to sound like a native speaker of English though, but to use speech forms correctly in order to allow for intelligibility and successful communication, both at the receptive and productive level, when interacting in English[60] (Busà, 1995; Zanola, 1999a, 1999b). This requires responsibility on the part of language educators, i.e., they should constantly aim at improving their phonological skills in EFL in order to offer a high quality phonological input. Educators that have difficulty in doing this should find alternative strategies to compensate for their deficiencies, e.g., provide authentic phonological input through authentic material such as audiovisuals, cassettes, CD-ROMs, and DVDs (Daloiso, 2007).

[60] A simple example of unsuccessful communication would be when an Italian learner of English says *soap* in an English restaurant, instead of saying *soup*. The inaccurate production of one single phoneme can lead to misunderstanding, at least on the part of the waiter (Kelly, 2000).

To summarize, introducing phonological awareness tasks in EFL makes it critical for preschool language educators not only to have knowledge of the general process of phonological awareness development in a language, but to have a solid knowledge of the English language itself, especially at the phonological and pronunciation level. When introducing preschool children to phonological awareness tasks in EFL, the educators' attention should thus be turned to stressing features that characterize the phonological system of English as well (cf. 8.2.2.5). In this light, activities aimed at fostering phonological awareness abilities in English become a useful tool to facilitate the simultaneous development of the phonological system of English.

8.1.2 Phonological Awareness in EFL

The main task of helping children develop their phonological awareness skills in EFL should not be separated from the task of regularly fostering their phonological awareness abilities in Italian, in order to facilitate the transfer of children's competences already acquired in Italian into the new language (cf. 6.4). Following is a review of the main issues tackled in the previous chapters, and an application of these issues to the specific educational setting of Italian preschools, where English is introduced as a foreign language.

8.1.2.1 Phonological Awareness Developmental Sequences

As previously observed (cf. 6.3.3.2), in both Italian and English children's phonological awareness moves from larger units to smaller units (e.g., sentences to words, compound words to word parts, words to syllables, and words and syllables to phonemes). In both languages preschool children have been found to have more difficulties in identifying phonemes, and more success in identifying syllables (cf. 6.3.3.2). This means that educators can generally introduce the same sequence of tasks in the two languages, moving from larger to smaller units, i.e., from less linguistically complex to more linguistically complex practices (cf. 5.3.3.1, the notion of 'systematic' tasks). Programs should additionally teach one skill at a time (e.g., syllable awareness first, and phoneme

awareness after; phoneme segmentation first, and phoneme deletion after) until it is mastered, before moving on to the next skill.

8.1.2.1.1 Psychological Units in English and Italian

Although phonological awareness skills emerge following the same order in English and in Italian, there are some differences in the most salient unit of analysis for each language, or what linguists define as the 'psychological unit' of a language. In English, rhyming and alliteration (i.e., words beginning with the same first sound, such as *ph*one and *f*ix) awareness has been shown to represent a critical precursor to being able to segment words into smaller units (Treiman, 1992). In particular, rhyming awareness can help children learn to separate the onset of a word from the ending rime, as well as to blend sound units into words. This can in the long run assist children in segmenting and blending phonemes. When children begin reading, their phonological awareness at the onset-rime level unit makes a significant contribution to their formation of an orthographic category of common spelling patterns, so that children for instance recognize the word *cap* because of its spelling and phonological similarities to already known words such as *cat* or *map*, without the need to decode the word phoneme by phoneme (cf. 3.2.4, the analogy model of reading). The fact that the onset-rime is the physiological unit of English leads to a language with more monosyllabic content words, unlike Italian which has more multisyllabic words. The psychological unit of spoken Italian is not onset-rime. Onset-rime awareness in English has its counterpart in Italian in what could be defined as 'root-affix awareness.' The root or stem is the main part of a word that contains its meaning and that does not change (e.g., in *bell-* in *bello*), to which affixes can be added (e.g., *bell-a*; *bell-i*). The way onset-rime in English can lead to changes in words (e.g., *m-at* vs. *m-an*) is similar to the way root-affix in Italian can lead to changes in words (e.g., *sorell-a*; *sorell-e*). Yet, onset-rime does not represent the psychological unit of Italian. In Italian, which, unlike English[61], has consistent syllabic

[61] English, unlike Italian which is a 'syllable-timed' language where every syllable is perceived as taking up roughly the same amount of time, is a 'stress-timed' language. In stress-timed languages syllables may

cues and clear syllable boundaries, the syllable represents the most salient unit of analysis. Instruction in Italian letter-sound correspondences has traditionally been syllabic: children are normally taught sets of syllables that vary by one vowel, such as *ba*, *be*, *bi*, *bo*, *bu*, or they are taught to break print words into syllables, e.g., *casa* = *ca* + *sa*, and to recombine the syllables to make new words (e.g., *ca* + *ne*; *sa* + *le*). This means that, while an English-speaking beginning reader would be typically taught letter-onset, letter-rime, and letter-syllable correspondences, Italian-speaking peers would be primarily introduced to letter-syllable correspondences. The methodological consequence of the prominence of onset-rime awareness in English, when introducing Italian preschoolers to EFL, will be a special focus on the onset-rime unit. Focus on onset-rime is typically embedded in rhyming. Rhyming activities can therefore represent a useful tool to foster onset-rime awareness (cf. 8.2.2.4). Some useful tasks in EFL can be identifying rhyming words, producing rhyming words, and segmenting or blending words at the onset-rime unit (cf. 9.4).

8.1.2.2 Age

As previously discussed (cf. 7.1.7.1; 8.1.1), research on neurloinguistics has shown that introducing a foreign language at an early age has no contra-indications. However, when presenting phonological awareness tasks in EFL, certain precautions should be taken, when considering young children's neurological and cognitive maturity. Following is a summary of some methodological suggestions:

- Children of 3-4 years of age have short concentration and attention levels (cf. 7.1.7.2.1). This implies that the most suitable model of language instruction is represented by a series of brief didactic interventions, which can find an appropriate realization in short phonological awareness tasks in EFL (cf. 7.1.7.4).

last different amounts of time, but a fairly constant amount of time (on average) is perceived between consecutive stressed syllables (Taylor Torsello, 1992).

- Children of 3-4 years of age might not be able to carry out complex cognitive tasks at varying levels, which suggests that language educators will need to continually adjust phonological awareness tasks to the cognitive maturity of children, as well as regularly support, scaffold and model instruction for children.
- Since their second year of life, children's explicit memory starts emerging (cf. 7.1.7.2.2), and allows children to gradually make use of memory strategies such as repetition and re-elaboration of the language input. Repetition thus becomes a useful technique to help children retain and recall what they acquire in English (cf. 8.1.2.3.1). This implies that language educator can reiterate the same phonological awareness tasks several times in order to help children interiorize new skills and knowledge.
- Cerebral lateralization (cf. 7.1.7.3) is not complete yet in preschool children. This implies that, when introducing phonological awareness tasks, more global tasks should be proposed to younger children of 3 years of age, e.g., globally listening to chants, songs, rhymes, lullabies. However, some spontaneous observations on the possibility to divide sentences into words and words into the larger units of syllables and onset-rimes can already be encouraged. Some simple games focusing children's attention on first phonemes in words can be proposed as well. On the other hand, more analytic tasks can be carried out with older children of 4 and 5 years of age, who can be more explicitly guided in the discovery of segmentation of spoken words not only into syllables and onset-rimes, but also into phonemes. Educators should make sure that these tasks are embedded in a playful and stimulating setting.

The sequence of development of phonological awareness skills in children (cf. 2.4.1) has some important consequences in relation to the age at which children can be introduced to phonological awareness tasks in EFL. These implications can be summed up as follows:

- Phonological awareness skills (especially at the larger units of the syllable and onset-rime) normally start developing in children from the ages of 3 and 4 years, and children start showing some stability on phonological awareness tasks performance from 4 years of age. This means that phonological awareness tasks in EFL can be already introduced with 3- to 4-year old children, being aware of the need for a more global approach to the tasks with younger children, and that children may show varying levels of performance on the activities. Phonological awareness tasks should be preferably introduced when children have already had exposure to phonological awareness activities and games in their L1.
- Most children start being aware of rhyming from 3 years of age. This implies that young children of this age can already be introduced to global phonological awareness tasks focused on rhyming, e.g., listening to and repeating songs, chants, lullabies, nursery rhymes. Educators should make sure to especially emphasize rhyming words, e.g., holding up pictures or cards of the rhyming words while pronouncing them, so as to stress those particular words while offering visual support to assist children's comprehension.
- Sensitivity to phonemes have been found to be present before formal reading instruction, depending on the nature of the task used (cf. 2.4.1). This implies that, employing an appropriate methodology (cf. 7.1.6.2, the playful methodology,) children as young as 3 years of age can already be introduced to some easy phoneme awareness tasks (e.g., "say 'a little bit' of a spoken word"), while older children of 5 years of age can be introduced to more complex and explicit tasks (e.g., match pictures of words beginning with the same sound).

8.2 Phonological Awareness Tasks in EFL

The general educational framework within which phonological awareness tasks should be inserted has been discussed in chapter 7. This section is going to sum up some of the features that should characterize phonological awareness tasks in EFL within an Italian

preschool setting. The methodological implications that can be derived from the studies reviewed thus far can be listed as follows:

- Within an L2 educational environment, phonological awareness tasks are not only aimed at fostering children's phonological awareness skills in EFL, but to develop their general listening and speaking skills as well.
- Phonological awareness tasks in EFL should be carried out in small groups rather than large groups, so as to encourage participation of every child, be able to monitor each child's reaction and production, and provide individual feedbacks. When this is not possible, the collaboration of at least two language educators in one classroom is recommended.
- During phonological awareness tasks in EFL, children should be constantly encouraged to be directly involved in the activities (cf. 5.3.3.1, the notion of 'direct' instruction), and their productions or attempts should be continually supported, scaffolding provided, and well as receiving a regular feedback (cf. 5.3.3.1, the notion of 'explicit' instruction).
- Phonological awareness instruction in L1 has been found to be more effective when it lasts from 5 to 18 hours (cf. 5.2). Within an EFL context, it would be appropriate to dedicate at least a short time every day (e.g., 30 minutes for younger children, and 45 minutes for older children) to phonological awareness tasks, and provide the same tasks several times in order to help children fix and re-employ what they have acquired. The structure of 5 to 18 hours can thus become more flexible within an EFL setting.
- Phonological awareness tasks in EFL at the phoneme level can be more effective if integrated with letter introduction (cf. 5.3.4). Within an EFL setting, preschool children from 3 to 6 are normally introduced to the written language and to concepts of print through exposure to book sharing routines. If they are explicitly introduced to alphabet letters, this usually happens when they are 5 years of age. This implies that phoneme and letter instruction in EFL should take place with

older children. Additionally, some other factors related to the acquisition of an L1 should be taken into account (cf. 5.3.4):

- naming a letter name is usually easier than reproducing its sound, and this happens when children are usually 4 years of age;
- naming uppercase letters is easier than lowercase letters;
- usually by 3 years of age children can recite no more than 5 letters, and by 5 years of age nearly all of them,
- recognizing a letter-sound is easier than recalling it.

Within an EFL setting, this implies that older children of 5 years of age should be initially introduced to a small number of uppercase letters in English, as it typically occurs in Italian. In addition, within the scope of this discussion, the main goal will not be to introduce children to letter names in English, but to start exposing them to some letter sounds. This is done not only to avoid possible confusion with letter names in Italian, but to start focusing on the phonological aspect of the language.

- Phonological awareness instruction with older children could include a first focus on connections between simple graphemes and phonemes. This task could be embedded in the broader context of phoneme awareness instruction (cf. 10.1).
- Each phonological awareness task at the phoneme level should focus on no more than one or two English phonemes at a time.
- At the cognitive level, phonological awareness tasks in EFL should be presented in an order of increasing complexity: from identity or recognition (e.g., rhyme oddity tasks) to synthesis (e.g., blending tasks), to analysis (e.g., segmenting, deletion or counting tasks).
- Frequency of exposition and reiteration of the same tasks should be encouraged, in order to allow for the knowledge acquired to be interiorized. Although activities should follow a precise sequence (e.g., from larger to smaller units of sound), it is recommended that instruction keeps spiraling back through the

sequences (e.g., after introducing tasks at the onset-rime level, language educators could go back to review tasks at the syllable level).

- The words used or focused upon in each phonological awareness task should be strategically selected, i.e., simple and phonetically regular words are initially recommended.
- Educators should make sure that the phonological awareness activities proposed contain conceptual notions already acquired by children in their L1 (e.g., the notion of 'color').

As previously suggested (cf. 7.1.6.2), phonological awareness tasks in EFL should be embedded within a playful methodology. Meaningfulness for children is one of the tenets of this methodology. Meaningful instruction normally embeds skills to be fostered into purposeful and engaging activities. Language educators can for instance decide to switch between carefully planned tasks and a deliberate use of social and physical contexts, gesture, intonation, and situational cues to help children gain knowledge about phonological awareness. Although the focus is not primarily on meaning and content during phonological awareness tasks, these may become a useful tool for broader learning experiences, e.g., vocabulary learning and social language learning (e.g., how to take turns in English).

8.2.1 Phoneme Awareness Tasks and Drilling

The introduction of activities and games on sound units such as syllables and phonemes naturally imply a primary focus on the *form* of language. In order to provide an adequate receptive model to children, and encourage the active production of correct phonological units in English, a useful teaching tool to employ seems to be 'drilling' (or 'call and response'). In its most basic form, drilling simply involves the educator saying a word or a sound, and getting the children to repeat it (Kelly, 2000). This technique has its root in behaviorist psychology theory and so-called audio-lingual approaches to teaching (Balboni, 2008), that are both now largely consigned to history and replaced by

communicative approaches (cf. 7.1.6). Yet, some forms of drilling have stayed with us as a tried and tested classroom technique, especially in adult education, in that drilling can help students achieve better pronunciation of speech forms, as well as remember new speech forms. For example, integrating phoneme segmentation tasks with minimal pair activities (Balboni, 2008) focused on such words as *cat* and *mat* or *cat* and *cut*, can be useful to show the phonemic principle in action, i.e., changing just one sound leads to a change in meaning (Kelly, 2000). The main concern here is to stress how the often 'frightening' notion of drilling can be approached in a positive and constructive way within an educational preschool setting. Having children listen attentively to and repeat English phonemes, for instance, should be viewed and carried out in the form of a pleasant activity embedded in a broader instructional context (e.g., storybook sharing, cf. 10.5) or a playful setting where the task is carried out in the form of a competition between groups of children. One additional way to make drilling more motivating may be to lead children to discover their phonetic apparatus and organs, by making them notice the position of their tongues, their lips, or to the vibration of their vocal cords. In this way, the notion of pattern drills is deprived of its most monotonous connotation, and can become an effective means to foster English oral skills both at the receptive and productive level. Additionally, the effectiveness of imitation activities such as drilling, and consequently of phonological awareness tasks where children are required to imitate the teacher, is supported by research (Gallese *et al*., 1996) in the filed of the neurosciences of language. Recently discovered mirror neurons systems have been found to play a crucial explanatory role in the understanding of human features such as imitation. Mirror neurons have been found to be active during imitation activities: they respond to both performing an action, to observing it, and to hearing it sound (Morosin, 2007). Young children normally show an extraordinary ability to imitate not only actions, but also linguistic behavior beginning from the age of two (Mauser & Rodemaker, 1999). At the neurological level, this implies that children's mirror neurons are involved in observing what others do, in listening what others say, and in practicing doing and saying the same things. In this light, imitation becomes a central notion in the

language learning process (Morosin, 2007). Likewise, imitation of phonological input during phonological awareness tasks in an L2 can become a crucial strategy to foster the acquisition of the phonological system of the L2 in young children.

8.2.2 From Non-speech Listening to One-to-One Correspondence Awareness Tasks

Guiding young children in the discovery that words are made up of smaller units represents the main focus of this study. Yet, within an educational milieu where educators work with very young children, it is initially critical to help children be aware of sounds in general, not only speech sounds, but non-speech sounds as well. Activities aimed at making children play with and be gradually aware of environmental sounds can be useful to introduce them to a later phase of awareness of speech sounds. Furthermore, in order to prepare young children to match sounds to letters at a later stage, tasks on what has been here defined as 'one-to-one correspondence awareness' are proposed as well. These tasks are intended to help children match common things. One-to-one correspondence awareness skills can be playfully and implicitly fostered with children as young as 3 years of age, using toys or other objects instead of letters and sounds to create one-to-one associations. The following paragraphs are going to discuss the general methodological features of the tasks in EFL that are concretely presented in chapter 9 and chapter 10.

8.2.2.1 Non-Speech Listening Awareness Tasks

The goal of this type of activities is twofold:

1. Make children familiarize with the basic terms and dynamics of phonological awareness activities in general, before moving into more complex language tasks.
2. Have children learn to listen attentively in general, not just to speech sounds, but to non-speech (e.g., environmental) sounds as well. The ability of listening carefully and attentively to non-speech sounds will be useful when having children listen to speech sounds.

Hearing non-speech sounds is a relatively easy and natural task for all children, provided they pay 'conscious' attention to the sounds. Listening games can introduce children to the art of listening actively, attentively, and analytically. These tasks can activate abilities linked to perception and memory. For example, children can be asked to listen to several everyday sounds (e.g., the snipping of scissors, the rush of the wind), and, with closed eyes, identify them, remember their order, or locate their sources. Once the nature of the task has been understood and established, children can be exposed to listening to meaningful speech language (e.g., familiar songs or poems) instead of environmental sounds.

8.2.2.2 Sentence and Word Awareness Tasks

Being spontaneously exposed to spoken language, in any language, at an early age, does not necessarily help children become aware that speech is made up of words, and that words are made up of sounds. What infants or very young children typically hear, in any language, is what to their ears sounds like an uninterrupted acoustic stream of speech. This leads to the consideration that:

- Children should be initially introduced to awareness at a higher level than the word level, i.e., the sentence level (cf. 2.2.4).
- Sentence awareness should be followed by a focus on word awareness.
- Sentence and word awareness within an EFL setting should be accompanied by a focus on the ability to attend to and detect English individual words in the acoustic stream of speech (e.g., listening skills).

Children could be for instance gradually guided to learn to recognize that a spoken sentence is in English (and not in Italian), to be aware that it is a sentence, as well as to recognize and be aware of simple English words within spoken sentences. These abilities could be referred to as 'sentence awareness' and 'word awareness' respectively,

which may be already acquired in Italian, and may be transferred to and reinforced in the English language. Therefore, before analyzing words at smaller levels, it could be useful for children to be introduced to tasks focusing on sentence awareness and word awareness in EFL as well.

8.2.3 Some Remarks on Speech Perception and Segmentation

As remarked in 8.2.1, spoken words in languages do not occur in isolation, rather, they form a continuous stream. The comprehension of the input in a new language can be facilitated by the fact that the input is organized in constituents, which may be common to every language or language-specific. On the other hand, Italian children, and especially preschoolers, are still immature in their linguistic process and knowledge, as they are still building their *interlingua* in Italian. As a result, they cannot rely on a full knowledge of a language in general, of how it works, or of what its component elements are, which could facilitate the speech perception and segmentation process in a new language like English. Young children can only rely on what they have already learned or are in the process of learning in Italian. Therefore, one of the main goals of educators, who are expected to know the level of knowledge of Italian of their preschoolers, is to help children transfer from Italian into English that part of knowledge already acquired in Italian that could be useful for general speech perception and segmentation in English. In particular, below is a list of the features that Italian and English share and could be focused upon when proposing phonological awareness tasks to children (Klein, 1986: 64):

- Speech is an oral continuum that can be segmented into spoken sentences or utterances, i.e., sentence awareness.
- Spoken sentences can be divided into words, i.e., word awareness.
- Words can be divided into syllables and into phonemes, i.e., syllable awareness and phoneme awareness.

- A pause usually occurs at word-end (but not every word-end is distinguished by a pause).
- There are both function words, e.g., determiners, articles, and prepositions, and content words, e.g., nouns, adjectives, and verbs.
- Function words tend to be shorter (usually monosyllabic), more frequent and less salient than content words.
- The general rule is one word = one meaning.

Other factors that make more salient some parts of speech and may help learners understand an input in English are (Klein, 1986: 66-70):

- The frequency of words within a spoken sentence.
- The position of words within a spoken sentence.
- The prosodic structure of a spoken sentence.

In an utterance, the words that are in initial and final position, as well as those that are stressed, are typically acknowledged to be the most salient (Bettoni, 2001). In Italian, for instance, although four main positions for word stress are available, word stress can normally be found on the penultimate syllable. English, on the other hand, is neither a wholly fixed-stress nor a wholly free-stress language, but also tends to reduce word stress in favor of sentence stress, i.e., many of the potential stresses in words are lost in connected speech (McMahon, 2002). The general pattern is that words that are likely to lose stress completely are those that convey relatively little information (e.g., function words), while the stress tends to be placed on the word with the greatest semantic charge, often the word which introduces new information to the utterance (e.g., content words) (Collins & Mees, 2003). This makes it more difficult even for English-speaking children to be able to segment a sentence into words and establish word boundaries. As a result, within an EFL setting, children need to be continually guided not only in the discovery of the universal rules shared by both Italian and English, but in the discovery

of the specificity of the English language. If we were to consider the structure of an English spoken word in isolation, it would not be easy to clearly classify it as a function word or as a content word. For instance, it is rhythm that helps distinguish a word like *bus* from *but* in the same sentence in English. In L1 acquisition, this can be defined as a 'rhythmically triggered segmentation strategy' (Hoöle, 2009). The ability to distinguish a word like *bus* from *but* in the same sentence is due to the regular occurrence in English of stressed syllables in the spoken stream, regardless of the number of weak syllables occurring between a stressed and a weak syllable. In stress-timed languages like English there is a coincidence of boundaries of metrical feet[62] and word boundaries. The initial boundary of a metric foot – defined by a strong syllable – is a reliable cue for an initial word boundary for a reasonable number of content words (Hoöle, 2009). English content words normally include at least one stressed syllable (e.g., *dog*), while function words are frequently realized with weak syllables (e.g., *it*) (Cutler 1993, quoted in Bettoni 2001). Cutler (1993, quoted in Bettoni, 2001) analyzed the distribution of weak and stressed syllables within a huge British corpus of spoken language, and reported that a stressed syllable is most often realized as a monosyllable or the beginning of a content word (74%). On the other hand, a weak syllable is most often realized as a monosyllable or the beginning of a function word (69%). What can be deduced is that stress in English can help listeners assume that the stressed syllables they hear constitute the onset of a content word. This feature is naturally not sufficient to comprehend an input in English, but it can be of great help. In addition, true appreciation of the syntax and constraints that give sentences their clarity and cohesion and help recognize words can only be developed over time in very young learners of any language, be it an L1 or an L2 (Levin & Kaplan, 1970). Another strategy useful to segment the continuous speech stream into smaller units has been identified by research on L1 acquisition (Bortfeld *et al.*, 2005) as the use of familiar words. If, for instance, a highly frequent American English word such as *mom* precedes an unfamiliar word, then identification and

[62] The foot is the next biggest 'phonological unit' above the syllable. Each phonological foot normally starts with a stressed syllable and continues up to, but not including, the next stressed syllable. For instance, in *cat in a hat* there are two feet, the first containing *cat in a*, and the second *hat* (McMahon, 2002).

segmentation of the unknown form is facilitated. Within an EFL setting where listeners are young children, language educators can for instance foster word awareness and recognition through the following strategies:

- Exaggerate stressed syllables in content words, to facilitate identification of the content word, while at the same time holding up visuals (e.g., pictures, cards) or using para-linguistic cues (e.g., facial expressions, gestures, intonation) to enhance meaning comprehension.
- Utter simple sentences containing familiar content words, especially referred to children's experiential world (e.g., *mom*, *dad*), and help children spot the words they already know.

In general, the sentence and words awareness tasks proposed in this study (cf. 9.2) are intended to establish essential starting points and give children a basic awareness of sentences and words. The main goals of these activities are:

- To make children aware that sentences exist in English as well as in Italian.
- To make children aware that sentences are the 'linguistic packages' through which meaning is conveyed.
- To make children aware that sentences are composed of separately vocalized, meaningful words.
- To make children aware that the meaning of a sentence depends on the particular words it contains as well as on the specific order of words.
- To clarify children's concepts of 'sentence' and 'word.'

8.2.2.3 Syllable Awareness Tasks

Once children have established that speech is made up of sentences, and that sentences are made up of words, it is time to introduce them to the idea that words themselves are made up of strings of smaller sound units called syllables. In general, children are

developmentally able to segment words into syllables in their L1 by 4 years of age, but simple guided activities can be proposed to younger children as well. Because syllables are meaningless, it is unlikely that children notice them by themselves, in any language. However, the fact that successive syllables of spoken language can be both heard and felt, i.e., they correspond to the sound pulses of the voice as well as to the opening and closing cycles of the jaw, can make syllables be easily perceived. This is also why most children find syllable games new and difficult enough to be interesting, but easy enough to be feasible. Syllable segmentation activities are frequently employed in the L1, which means that children may already be accustomed to this task when introducing it in EFL. However, the guidance and support of language educators modeling the execution of the activity in the foreign language is critical, so as to help children tune their ear to and slowly interiorize syllable segmentation in a language other than Italian. With young learners, this will occur gradually and mainly through repetition and internalization of the task as modeled by the educator.

The syllable awareness tasks proposed in chapter 9 advance from analysis to synthesis, as proposed by Adams and colleagues (1998a). This means that children first learn to segment familiar two-syllable words (e.g., *teddy*), then three- and four-syllable familiar words (e.g., *elephant*), and only at a successive stage to segment unfamiliar multisyllabic words (e.g., *anatomy*). It should be remembered that, while approaching syllabification in EFL, children may be in the process of practicing syllabification in Italian as well. As previously remarked (cf. 6.3.3.2; 8.1.2.1.1), Italian, unlike English, is distinguished by a large number of multisyllabic words. Yet, as shown by research in language acquisition (for a review of studies, see Camaioni, 2001; Orsolini, 2000), like English-speaking children, Italian children acquiring words in their L1 tend to learn two-syllable (CV-CV) words first (e.g., *tata*, *papa*). It is thus expected that this developmental sequence (i.e., from two-syllable to multisyllabic words) is the one proposed when introducing children to syllable segmentation tasks in Italian as well. Once children are familiar with analysis tasks in EFL, they can advance to more complex tasks, such as synthesis activities, where they learn to put together or recognize words

given sequences of their separate syllables (e.g., *but-ter-fly* = *butterfly*). After proposing syllable segmentation tasks, language educators can introduce older children to more complex tasks, such as syllable completion, syllable identity, and syllable deletion. Segmentation games could initially involve children's first names, and move on to include the names of objects around the room, favorite animals, or longer words heard during storybook sharing routines. Throughout the games, syllables should be enunciated clearly and distinctly by the language educators, who would function as speech models for children. What educators could do, in order for young children to become attuned to syllable segmentation in English, is not instruct them explicitly in the basic rules of syllabification[63], but to carry out segmentation tasks of a variety of words, so as to provide children with examples of how English words are typically segmented in syllables. In this way, children are guided to learn about syllable segmentation *inductively* (which is one of the tenets of the communicative approach in language teaching methodology, cf. 7.1.6). For instance, following the basic rules of syllabification in English, the educator could provide examples of their application, such as (Lerner, 1971):

- Compound words are divided between the two words, e.g., *cow-boy*, *hot-dog*.
- Words where the initial vowel is followed by two consonants are divided between the two consonants, e.g., *muf-fin*, *vel-vet*.
- Words ending in *–le* are divided between the consonant preceding the *–le* and the rest of the word, e.g., *ta-ble*, *ma-ple*.
- Consonant blends and diagraphs are not divided when separating a word into syllables, e.g., *stain*; *chop*.
- Prefixes and suffixes are divided from separate syllables, e.g., *re-peat-ing, eat-ing*.

[63] Preschool children from 3 to 6 years of age are not linguistically and cognitively ready to be exposed to explicit syllabification instruction, in any language. Furthermore, according to Johnson and Bauman (1984), memorizing countless syllabication rules has little effect on children's later ability to decode multisyllabic words.

If language educators provide examples of several types of words segmented in syllables, then with time, repetition, and practice, young children may find it easier to interiorize the internal rules for segmenting English words. The difference between English, which has a most predominantly closed syllable structure (e.g., CVC, CVCC, CCVC) and Italian, which has a predominantly open syllable structure (e.g., CVCVCV, CVCV) cannot be linguistically and cognitively tackled with preschool children, be it in their L1 or L2. It can be explicitly introduced with simple games when children become more developmentally, linguistically and cognitively mature, both in Italian and in English (e.g., in elementary school).

8.2.2.4 Rhyming Awareness and Onset-Rime Awareness Tasks

Sensitivity to rhymes comes quite easily to most children, from an early age (cf. 2.2.2). This is why rhymes represent an excellent strategy to focus on phonological awareness even with youngest children (e.g., 3-year old children). In general, rhyme play turns children's attention to the sounds of language, and to similarities and differences in the sounds in words, thus representing a useful tool to make children aware that language has not only meaning and message but also physical form. Sensitivity to rhyming is considered a valuable step towards developing more analytical phonological awareness skills (cf. 4.7.2). Sensitivity to rhyming in general should be distinguished from onset-rime awareness in particular. These two abilities are closely interrelated though. A sensitivity to rhyme can be considered preparatory to fostering onset-rime awareness, and focus on onset-rime units is typically embedded in rhyming activities. This concretely means that, while an activity of simply listening to a nursery rhyme in English can especially develop rhyming awareness, it can be useful to develop a first degree of onset-rime knowledge, although not explicitly. For instance, a child who can recognize that *dog* and *fog* rhyme within a nursery rhyme or a chant, must 'hear' that *dog* and *fog* share 'just a little part,' i.e., the rime *og*. Likewise, when a child can tell that *dog* and *cap* do not rhyme within a nursery rhyme or a chant, the child must 'hear' that 'just a little part' of *dog* and *cap*, i.e., the rime (*og* and *ap* respectively), is not the same

(Treiman, 1992). The activities proposed in chapter 9 advance from a focus on rhyming in general to a focus on onset-rime awareness in particular. Rhyming awareness practices in EFL advance from simpler to more complex tasks, i.e., from rhyme recognition tasks, to rhyme oddity tasks, to rhyme generation tasks. Onset-rime awareness tasks in EFL advance from onset-rime blending to onset-rime segmenting. It can be generally stated that rhyming awareness activities are suitable for preschool children of all ages, whereas activities that have an explicit focus on onset-rime awareness should be proposed to older children of 5 years of age. Still, the modality through which activities are presented and carried out may help even youngest children to be aware that *dog* and *fog* share 'a little part' that makes the two words rhyme.

8.2.2.5 Phoneme Awareness Tasks

As already seen throughout this study, understanding how the alphabetic principle works (i.e., how graphemes and phonemes relate to each other in a systematic way) (cf. 3.3.2**)** depends on understanding that all words are composed of strings of phonemes. In terms of raw logic, this is not very different from understanding that sentences are composed of strings of words and words of strings of syllables. Yet, phonemes are much more difficult for children to perceive or conceptualize (Adams *et al*., 1998a). The activities on phoneme awareness in EFL presented in chapter 10 are intended to introduce preschoolers to the nature and existence of phonemes. First of all, the games are designed to lead children to discover that words contain phonemes. Secondly, they are intended to help children begin to learn about the separate identities of phonemes, so that they can distinguish them one from another. In the meantime, while learning this, children are naturally introduced to the specific nature of English phonemes, and to differences between English and Italian at the phonemic level. Phonemes are best distinguished more by the way they are articulated than by the way they sound. This implies that children should be encouraged to explore, compare, and contrast the phoneme's place and manner of articulation, by examining how their voices and the positions of their mouths and tongues change with each specific phoneme. This can in

fact turn into an enjoyable and motivating activity. Children can be invited to look at the educator or at each other while saying a given phoneme, or to look at themselves in hand mirrors to examine the movement of their own mouths. Children can be asked to put one finger in front of their mouths, articulate different phonemes, such as /i/ and /u/, go from saying /i/ to /u/, and feel the difference in their internal movements and muscles. Or children can be asked to put two fingers at the corner of their mouth and feel their lips spreading or not. In order for this task to be carried out in an appropriate manner, the input provided by language educators should be both 'exaggerated' in its articulation and adequate in its quality. Naturally, such activities of articulatory awareness are meant to be carried out with older children of 5 years of age. Furthermore, children should be helped one at a time by educators when carrying out each task, e.g., when putting their fingers in front or at the corners of their mouths. It is also critical for language educators to be aware that phoneme awareness, unlike syllable awareness, does not develop naturally with age, but develops at about the age children are introduced to reading instruction in formal schooling. However, the nature of the activity proposed may facilitate children's performance, so that even younger children of 3 or 4 years of age may be able to carry out some simple phoneme awareness tasks in the form of enjoyable activities and games. On the other hand, older children of 5 years of age can be introduced to more complex phoneme awareness tasks, by providing constant support and scaffolding. The learning environment should be constantly monitored in order to provide children with a safe, non-anxious and playful setting. In order to avoid children raising their affective filter in response to more complex tasks, the strategy of switching unpredictably between group and individual responding should be employed. Games aimed at introducing children to English phonemes should be designed and presented following an increasing level of complexity, as proposed in the following list:

- Phoneme identification and isolation:

- in initial position of one-syllable words
- in the final position of one-syllable words
- in the internal position of one-syllable words
- in initial, final, and internal position of words with more than one syllable

- Phoneme blending:

- to form real one-syllable words
- to form nonwords and words with consonant clusters

- Phoneme segmentation:
  - from initial position to final position
  - words with two to three phonemes
  - words with four or five phonemes, including words with clusters
- Phoneme manipulation:

- Phoneme counting
- Phoneme deletion: first into a real word (e.g., *p-art*), then into non words and words involving clusters
- Phoneme addition
- Phoneme removal
- Phoneme reversal
- Phoneme substitution
- Phoneme completion

Tasks on phoneme awareness are useful as they help children acquire skills that they will later need to decode words, especially phonetically regular words. This implies that the words initially chosen in the activities should be simple phonetically regular words (e.g., words with regular one-to-one sound-letter correspondence, such as *bit*, *dad, net*). All the activities proposed for initial sounds in words can be carried out for final sounds as well. Focus is primarily on consonants, rather than vowels. Normally, tasks are initially carried out with one-syllable words. This makes it easier for children to focus on the more 'common behavior' of speech sounds. For instance, the most

'common' behavior of *c*, /k/ as in *cat*, is easier to be grasped by children, so it should be introduced before the less common behavior of *c* in words such as *city*, *chair*, or *suspicious*. When introducing phoneme blending or segmenting tasks, the educator can choose to focus on vowel length as well, and blend or segment pairs of words such as *sheep-ship*, *beet-bit*, *leek-lick*. This is intended to help children start tuning their ears to the feature of vowel length in English. The tasks proposed initially focus on initial sounds without consonant clusters, and then gradually introduce consonant clusters as well. Putting consonants together may prove difficult for young children, in any language. In order to help children get used to the physical feeling of putting consonants together, educators can have children repeat the sounds, e.g., /*spspspspspsp*/. Children are successively guided to carry out activities which focus on final sounds and internal sounds, and can include words with more than one syllable. While introducing tasks at the phoneme level, language educators should always take care of providing a qualitatively adequate input in EFL, as well as emphasize the differences between the English and the Italian sound systems. For example, in terms of receptive skills, children need to learn to hear the difference between phonemes, especially where a phonetic contrast (e.g. the double realization of /l/) or a phoneme (e.g., /θ/) does not exist in Italian. Then children need to carry such new phonological knowledge through into their production. Due to the young age of preschool children, this concretely means that educators should function as prepared and adequate pronunciation models for the children to imitate, as well as continually guide children and provide feedback on their productions and pronunciations. With reference to differences between realizations of consonant or vowel sounds in Italian and English, when working with some words that feature such differences, educators could emphasize the articulatory movements of their mouths when pronouncing a certain sound, so as to allow children to imitate their movements. For example, educators could decide to stress the following phonemic features of English (D'Eugenio, 1985), within a playful environment:

- /d/ and /t/ in English are alveolar, and not dental as in Italian. The educators could emphasize the position of the tongue when articulating the sound (e.g., "Put your tongue against the hard bump behind your teeth!"), and have children repeat the articulatory movements along with them, or watch their mouths moving in a hand mirror. This can be done when presenting one-syllable words such as *tap*, *mat*, *dog*, *bed*.
- /l/ has two allophones or variants: when it precedes a syllable, or is between vowels, it is alveolar ('clear' /l/), in words such as *elbow* or *lip*. When it closes a syllable, it is velar ('dark' /l/), in words such as *doll* and *small*. Educators will make sure to exaggerate these two realizations and have children watch their mouth movements and try to copy the different realizations of the sound. For example, educators could make children notice how dark /l/ is formed in the same way as clear /l/, but the tongue does not break contact with the roof of the mouth, and the back of the tongue is also raised towards the soft palate (Underhill, 1994).
- Aspirated glottal fricative /h/: in order to model aspiration, educators could put the palm of their hands in front of their mouths when saying a word like *hat*, and exaggerate the aspiration of the /h/, so that the puff of air can be felt on their palms. Educators can then help children do the same with their hands, so that they can feel the puff of air themselves. Whenever educators introduce a word beginning with this sound, it can be accompanied by a personification of the letter: "Here comes sound /h/, the little windy man."
- Dental fricative /θ/: in order to help children reproduce this new sound, educators could exaggerate the position of the tongue coming out of their mouths, while saying a word like *three*, in a slow manner, first stressing the fricative, and letting the airflow for a few seconds out before stopping it, e.g., "th…ree." Or educators can have children place a finger against their lips, try to

touch their finger with their tongue, breathe out, and add their voice (Kelly, 2000). Whenever educators introduce a word beginning with this sound, it can be accompanied by a personification of the letter: "Here comes sound /θ/, the good snake with the forked tongue."

- Short vowels, e.g., /ɪ/ in *ship,* lip-retraction can be emphasized and exaggerated when articulating the vowel. When children articulate /ɪ/, they can be asked to add a movement, such as a little jump. The short /ɔ/ sound, as in *pot*, can be presented as the 'doctor sound.' Children can be shown that the lips form a circle, and the sound they make is the same as when they are at the doctor's office and he/she is checking their tonsils. Or they can pretend that they have a big orange in their mouth.
- Long vowels, e.g., /i/ in *sheep*, the vowel length can be exaggerated when articulating the word. This sound can be presented as a 'smile sound,' i.e., the lips are close together, but not closed, and children look as if they were smiling when they articulate this sound.

These are only some of the features of the phonological system of English. However, the fact that educators know and are aware of differences between the Italian and the English phonological systems is crucial when introducing phonological awareness activities to young learners. In general, the following suggestions should be taken regarding sequence of instruction of phonemes in English (Blevins, 2006):

- Short-vowel sounds (e.g., *ship*) should be introduced before long-vowel sounds (*sheep*), especially in CVC words.
- Consonant and short vowels should be introduced in combination, e.g., especially in consonant-vowel-consonant CVC words such as *mat*, *pat*, *fat*.

- The majority of the consonants introduced early should be continuous consonants, such as *f, l, m, n, r,* and *s*. These consonant sounds can be sustained without distortion, thus making it easier for educators to model blending.

In the set of activities proposed in chapter 10 there are some where sound instruction is integrated with letter instruction. In this context a precise choice has been made: the focus in on the *sounds* and not on the names of the letters. Italian children typically learn letter names in English in elementary school through the ABC song or other playful strategies. Since the focus of this thesis is on the awareness of the sound structure of language, tasks that include knowledge of letters at the sound level will be tackled first. During these activities, children are mainly introduced to match initial sounds to letters, and make some simple sound-letter correspondences, e.g., map the sounds */m/-/æ/-/t/* to the letters *m-a-t*. Diagraphs are avoided. These activities are meant to be addressed to older children of 5 years of age. This is the age when Italian children are normally introduced to letters in Italian. Special attention should be given to such tasks by educators. When the situation does not allow for a harmonic introduction of sound-letter correspondences in English, these should be avoided. If the educational context is supportive, on the other hand, educators should mostly introduce regular sound-letter correspondences of familiar one-syllable words, e.g., *bat*, *cap, mat*.

8.2.2.6 One-to-One Correspondence Awareness Tasks

As previously seen (cf. 4.2), the three most popular independently developed models of literacy development in alphabetic languages proposed so far (Scarborough, 2001; van Kleeck, 1998; Whitehurst & Lonigan, 1998) include among their emergent literacy components such ability referred to as 'phoneme-grapheme correspondence' or 'sound-letter correspondence.' Most theories of reading development (cf. 3) acknowledge that, once children have realized that it is the sounds that make up spoken language, the task of becoming able to construct associations between sounds and letters is the most crucial element in approaching reading (cf. 3.3.2). Furthermore, phonological awareness

programs that include some form of letter training, e.g., instruction in the connections between letters and sounds, have been found to be more effective than programs that do not in fostering literacy development (cf. 5.3.4). Within an Italian preschool setting, however, this does not necessarily mean that children should be explicitly instructed in mapping sounds to letters in English. Phoneme-to-grapheme mapping tasks may put too much cognitive demand on young children, as they imply a solid visual familiarity with letters, as well as a good degree of phonological awareness at the onset-rime level (van Kleeck, 2009). This is why this study first introduces tasks on the more general notion here defined as 'one-to-one correspondence awareness,' and only at a later stage tasks on the more specific notion of 'letter-sound correspondence awareness'. In order to attain a first degree of 'one-to-one correspondence awareness,' even with young children of 3 years of age, some easy tasks such as asking children to match one foot to one shoe could be proposed. Correspondences between familiar common objects can be created, in order to introduce children to the general notion of matching/mapping and prepare them to the more complex task of mapping the abstract categories of sounds to letters. On the other hand, at a more advanced stage, older children of 5 years of age could be approached to some easy activities involving simple, regular sound-symbol correspondences between a few letters they have already acquired. These activities represent a useful strategy to integrate first decoding skills into class routines. They should be carried out with already known words, and embedded in a playful educational setting. This first approach to letter-sound correspondences in English is only a suggestion though, and is not intended to become a standard recommendation, as language educators may be in the process of introducing 5-year-old children to alphabet knowledge and some letter-sound correspondences in Italian, and may prefer not adding what can be perceived as an extra load in children's memory.

8.2.4 Materials

Materials used when proposing phonological awareness activities to young children need to capture their interests, as well as be as close as possible to the environment they

experience in their everyday lives. The use of any common object known by children that can be found in their everyday preschool environment or home environment is strongly encouraged (e.g., boxes, bags, balls, beanbags). During phonological awareness tasks, educators could make use of a hand puppet that functions as their 'assistant,' introduces and explains the games and activities, e.g., the puppet demonstrates activities such as syllable segmentation by clapping out the syllables or nodding its head the correct number of times. The hand puppet can also 'help' the language educator spot and correct children's responses, e.g., the puppet 'whispers' in the educator's ear whenever there is an inappropriate or incorrect speech form used by children during the activities. The puppet can then ask children to try again, in a joyful and safe manner. During activities with phonemes, it is especially recommended that children use objects to represent the separate phonemes, so as to have some concrete, tangible representation for sorting the phonemes one from another. These objects could be:

- Colored blocks
- Chips or tokens
- Bingo disks
- Cardboard squares
- Any common object found in the preschool environment

When a phoneme awareness activity involves the use of letters, these should be clearly presented and of a reasonably large size, such as big plastic, magnetic letters or letter blocks representing each grapheme (e.g., *d* written on one block and *m* written on another).

8.2.5 Phonological Awareness Tasks and Book Sharing

Price and Ruscher (2006) proposed to embed instructional strategies to foster phonological awareness skills at various levels into routines of book sharing between adults and children. Their proposal is of interest to this work, as it implies the use of a

motivating tool normally already known by preschool children, i.e., storytelling or storybook sharing, to foster phonological awareness abilities in a language other than Italian. Price and Ruscher's approach to phonological awareness instruction is consistent with the principles of the so-called 'embedded-explicit model' for literacy intervention proposed by Justice and Kaderavek (cf. 5.3.3.3) (2004; Kaderavek & Justice, 2004). The goal of this program is to create opportunities for direct, explicit and repeated practice of literacy skills situated within purposeful and meaningful literacy activities. Price and Rushcher, on the other hand, intended to implement such an embedded-explicit approach in the specific area of phonological awareness. Their embedded-explicit phonological awareness program is specifically addressed to children acquiring phonological awareness skills in their L1. Being meant to embed phonological awareness instruction within meaningful reading and writing activities, this program is especially suitable for older children, such as kindergarten (i.e., 5 year-olds) and elementary school children. However, it is important to have some knowledge of how it works in such settings, and try to derive ideas for a tentative application to a foreign-language preschool setting as well. Price and Ruscher (2006) suggested that, in order to design phonological awareness instruction embedded in book sharing activities, teachers/educators should be intentional about planning:

- The sequence of instruction for the targeted phonological awareness skills.
- The sequence of instruction for each book chosen to address such skills.

The approach described by the two scholars advances from larger units of speech to smaller units of speech (cf. 2.4), from a focus on meaning to a focus on form, to a final step where form and meaning are integrated. This last aspect is relevant within a context of foreign-language acquisition with older children, as it follows the modality of language acquisition that moves from a global phase to a more analytical phase (Balcony, 2002). Within each sound unit instruction progresses from blending, to segmenting, to counting, and to deleting (cf. 5.3.1). Although there is a precise proposed

sequence of instruction, it is recommended that instruction spiral back through the sequences continuously at each school grade and level. According to Price and Ruscher (2006), shared book reading represents an ideal and authentic literacy context within which to integrate phonological awareness training. Within an Italian preschool setting where young children are introduced to EFL, educators could choose simple storybooks or texts in English that have already been read or told to or some new short and simple stories in English. Rhyming and alphabet books, which inherently focus attention on language form, represent an obvious choice when targeting rhyming and simple sound-symbol associations respectively. Texts should include words appropriate for use during instruction on the targeted skill, e.g., multisyllabic words to address syllable awareness.

Following is a table with a recommended sequence of instruction for Italian preschool language educators who decide to design a phonological awareness program within a shared book reading routine in EFL. This table is a revision of the one proposed by Price and Ruscher (2006: 33). After having chosen the sound unit level (e.g., syllable or phoneme), the task level or levels, and the most appropriate book to use, a precise sequence of instruction for each book is proposed. As can be seen in Table 8.1 below, the structure moves from a focus on meaning (steps 1 and 2) to a focus on form (steps 3 and 4), and to a phase of integrated meaning and form during re-reading or re-telling of the story (step 5). Within a context where English is introduced as a foreign language, it is recommended that the preschool educator tells the story in simple English words, instead of reading it. Words should be carefully selected before telling the story. Being an engaging activity at the linguistic and cognitive level, it is especially recommended for older Italian children of 5 years of age.

Table 8.1 Sequence of instruction for a phonological awareness program embedded in a shared book reading routine (adapted from Price & Ruscher, 2006: 33)

Step	Focus	Activity	Description
1	Meaning	The educator displays picture cards or objects	The emphasis is on the key content words of the story. The educator displays an array of picture cards or objects to introduce the key words in the story, facilitate comprehension, and motivate children
2	Meaning	The educator shares the book	The emphasis is on the story content, and interaction with the meaning of the text. The educator tells or reads the story, and encourages overall comprehension through visual aids and paralinguistic clues. The story can be read or told twice, if this can further facilitate comprehension and actively engage children
3	Educator modeling form	The educator provides demonstrations	The educator models phonological awareness activities for the children, so that they know what is expected from them (e.g., clapping syllables out in a multisyllabic word)
4	Children practicing form	Children are engaged in activities and games	The educator uses words, content, and/or pictures from the book in games and activities for repeated practice of the targeted phonological awareness skill
5	Integrating Meaning and Form	The educator shares the book again	The educator highlights children's acquired knowledge of the targeted phonological skill during shared book reading or telling

8.2.6 Phonological Awareness Tasks and Cultural Variation

Within Italian educational settings in general, and the preschool setting in particular, which is facing a growing presence of children with non-Italian language backgrounds (and often even non-alphabetic language backgrounds) (cf. 3.9.1), it is essential to take

into account differences in families' values and practices related to children's education in general, and to emergent literacy in particular. This is a crucial issue that is here discussed in relation to two different types of parties that are involved in children's development of emergent literacy skills: both children's parents (cf. 8.2.7) and preschool educators. On the one hand, preschool educators should be aware that some activities and behaviors may not be shared or acknowledged as such by some non-Italian cultural groups. On the other hand, non-Italian-speaking families themselves should be aware that the activities and behaviors used in their children's preschools may be different to the ones they are accustomed to in their cultures.

van Kleeck (2006) discussed the crucial issue of cultural variation in relation to book sharing routines, as she believes that a wide range of language, emergent literacy and later literacy skills potentially can be fostered by book sharing between parents and their young children (van Kleeck, 2006). She remarks how this has led to the creation and implementation of interventions aimed at increasing the amount of time dedicated to adult-child book sharing in homes, to teach parents book-sharing interaction strategies known to enhance language, emergent literacy and literacy skills (cf. 7.1.4.1, 'dialogic reading'). According to van Kleeck (2006), however, for interventions to be really effective, it is essential that interventionists have or collect knowledge of cultural differences in values, beliefs, and practices that may affect whether and how such interventions are received, carried out, and maintained over time by family members from various cultural backgrounds. Applied to the educational setting of Italian preschools, this especially implies that preschool educators, during instruction in general, or when introducing phonological awareness tasks, should be aware that some practices might not be used or envisaged in different cultural groups. For instance, what van Kleeck (2006) refers to as 'mainstream culture,' i.e. middle-class European American families, normally displays practices, values and beliefs related to emergent literacy socialization that may be different from those found in other cultural groups, such as Hispanic, African American, and Asian American, the three main broad cultural groups

residing in the United States[64]. van Kleeck strongly suggests however that we first of all think of the mainstream European American group mainly as a 'cultural' group among others. Within the scope of this discussion, according to van Kleeck's view (2006), this implies that the preschool educator's goal should not be to place Italian (and more generally European) education habits in general and in phonological awareness practices in particular as the implicit starting point for understanding other cultural practices. The main objective would rather be to emphasize that mainstream tasks and practices are culture-bound and influenced by cultural factors that may not be universal. If middle-class European preschool educators, in this case, do not primarily view themselves as a cultural group, with specific cultural habits and routines, then their educational, socialization, emergent literacy and literacy practices would be thought of as normative and preferred, and other cultural practices would be, by default, viewed as somehow deficient.

The following table (Table 8.2) is adapted from van Kleeck's table (2006: 179-180) on the qualities of book sharing with preschoolers in mainstream culture families, the beliefs they reflect, and potential alternative beliefs in other cultural groups. In her discussion, van Kleeck (2006) only refers to cultural practices and beliefs found during storybook sharing routines between adults-parents and children. Yet, the concern of this thesis primarily lies on phonological awareness activities. This is why a section on phonological awareness tasks and the cultural beliefs underlying them has been tentatively added in the Table proposed by van Kleeck (2006). In general, the same cultural practices and beliefs underlying storybook sharing can be said to underlie phonological awareness tasks as well, as can be seen in the Table 8.2 below.

[64] In 2007, more than 40% of all students from kindergarten to grade 12 in the United States were minorities, i.e., Hispanics, African American, Asian-Americans, and others (van Kleeck, 2009).

Table 8.2 Qualities of book sharing and phonological awareness tasks with preschoolers in mainstream culture families, the beliefs they reflect, and potential alternative beliefs in other cultural groups (adapted from van Kleeck, 2006: 179-180)

Mainstream Book Sharing Qualities	*Mainstream Phonological Awareness Tasks Qualities*	*Values and Beliefs Reflected*	*Alternative Beliefs*
Begin very young	Can begin very young	Babies are intentional communication partners	Babies do not intentionally communicate (e.g., African)
Interact one-on-one	Interact one adult-on-one children's group	Dyadic interaction predominates, adult is primary caregiver	Multiparty interaction is the norm, siblings are primary caregivers (e.g., Hispanic; African)
Engage in very frequently	Can be proposed frequently	Literacy and emergent literacy are highly valued	Other aspects of child's development may be more valued than literacy (e.g., Hispanic)
Make fun and entertaining	Make fun and entertaining	Learning is fun	Leaning is hard work (e.g., Chinese)
Discuss the book	Model and discuss phonological awareness activities	Adults explain activities verbally as they unfold	Learning is accomplished more by observation and listening (e.g., Hispanic)
Encourage child participation	Encourage child participation	Child's talkativeness is valued	Child's quietness is valued; talkativeness is discourteous, immature, undisciplined (e.g., Hispanic; Japanese)
Prompt child with known information questions during book sharing	Prompt child with known information questions or requests during phonological awareness activities	Adults verbally display what they know	Verbal display rarely practiced (e.g., Hispanic; African)
Prompt child with cognitively challenging questions increasing in difficulty over time	Prom children with cognitively challenging tasks increasing in difficulty over time	Practice school-like discourse involving higher level thinking before school	Preschoolers not yet to age of reason: school learning should be avoided (e.g., Hispanic)
Respond to child	Respond to child	Child's verbal assertiveness is valued	Child's verbal assertiveness is considered rude (e.g., Japanese)
Praise child's attempts at participating	Praise child's attempts at participating	Child's talkativeness is valued	Listening quietly is more valued (e.g., African)

Lack of attention to these cultural differences from the part of Italian preschool educators might eventually result in a source of misunderstanding between preschool educators, non-Italian-speaking children and/or their parents. In general, what can be recommended within a preschool educational context which includes children with various ethnic, language or cultural backgrounds, is what follows:

- To be aware that there may be children with different cultural beliefs and habits, and that this may somehow effect these children's carrying out of learning tasks and their final outcomes.
- To allow for more sensitive, respectful, and effective communication exchanges between members of different cultural groups, in classrooms and elsewhere.
- To allow *all* children the opportunity to learn in classroom environments.
- To help avoid the pervasive tendency of professionals to blame parents for their children's lower achievement.

8.2.7 Phonological Awareness and Children's Families' Involvement

Emergent literacy, as previously discussed (cf. 4.1) represents a developmental continuum where children growing up in literate cultures with an alphabetic writing system normally accumulate a fund of knowledge about books, words, letters, and sounds in their L1. The amount of emergent literacy knowledge that children accumulate from birth till formal schooling depends on several factors, such as the amount of exposure to literacy artifacts and events (e.g., being exposed to book sharing experiences, or experience with written texts in general). This exposure is naturally not restrained to children's educational environment, i.e., preschools, but it includes influences from homes and family. In the United States, for instance, children coming from low-print homes, who have little exposure to literacy artifacts and events, tend to begin formal schooling with little literacy knowledge. On the other hand, children raised in high-print homes might posses some degree of literacy knowledge and might even be at an early stage of word recognition when they enter elementary school (Catts & Kamhi, 2005). As the notion of emergent literacy includes phonological awareness skills, this means that high-print homes may help children develop their phonological awareness skills as well. This highlights the critical role played by homes, i.e., families and relatives, in approaching preschool children to print in general and to phonological awareness in particular. Not only can families' approaches to their children's emergent literacy skills be generally different and variable, but as previously seen (cf. 8.2.6) their

values and practices can vary within different cultural groups (van Kleeck, 2006; 2008b). As stated by Morrow and Paratore (1993: 194):

"[I]t is clear that if we do not attend to the home when we discuss literacy development, whatever strategies we carry out in school will never be completely successful. Schools need to view family literacy as part of the curriculum."

The term *family literacy* has been applied to the study of the relationship between families and the development of literacy in children (Tracey, 1995), especially in the United States. It includes issues such as the role of the families in the development of children's literacy or the design of structured programs to support this relationship[65]. There are several ways for educators in the United States to try to positively influence the home-school relationship in the area of literacy (Tracey, 2000). The so-called 'parental involvement programs' are those efforts that are narrowest in scope and easiest for classroom educators to implement. They are designed to work with parents in an attempt to positively affect their abilities to support and scaffold their children's literacy development. An example of this program would be initiatives aimed at improving the quality or frequency of parent-child book sharing (Tracey, 2000). Naturally, family literacy initiatives and programs also include a focus on how parents can help their children develop their phonological awareness skills.

Research (Skibbe & Justice, 2005; van Kleeck & Beckley-McCall, 2002) has focused special attention to the parents' role in fostering their children's emergent literacy skills. Skibbe and Justice (2005) for instance, investigated the effectiveness of embedded phonological awareness practices such as book sharing in interventions with children with language delays. They compared the effectiveness of mother-child storybook sharing on the children's development of both print awareness and phonological awareness skills. Mothers were trained to focus on either print awareness, phonological

[65] The issue of families' involvement in fostering their children's literacy skills is crucial in the United States, in relation to the large number of learners not succeeding in acquiring basic literacy skills in elementary school (cf. 4.3).

awareness, or on the pictures in the book. The results suggested that children in the phonological awareness group made greater gains in rhyming that did children in the print awareness group or control groups. On the other hand, children in the print awareness group made greater gains in alphabet knowledge, word awareness, as well as print awareness. However, the concern of this thesis does not lie in the study's results only. What primarily interests us is the involvement of children's mothers in the experiment as well as the fact that they were trained in order to carry out each task with their children. The effectiveness of mother's involvement in different fields (e.g., print awareness or phonological awareness) is then naturally interesting and critical to the scope of the present discussion. This work is not proposing that *every* Italian parent should be trained in order to know what phonological awareness skills are, and how to foster their children's phonological awareness skills, be it in Italian or an L2. Yet, families' knowledge and awareness that the development of phonological awareness skills in their children can be facilitated in home interactions as well as school interactions can be important in assisting children's literacy development. What parents or members of the family could do within their everyday home environment is:

- Foster children's oral skills in Italian.
- Expose children to experiences of book sharing (i.e., reading aloud or telling a story), with different typologies of books in Italian: alphabet books, rhyming books, picture books and storybooks in general.
- Naturally incorporate a focus on sentences, words, letters, syllables, and sounds while exposing children to alphabet books, rhyming books, picture books and storybooks in general in Italian.
- Expose children to activities, practices and games that can foster phonological awareness development in Italian, e.g., listening to nursery rhymes, syllable segmentation games, sound recognition games.

These are simple activities that parents or members of the family can carry out quite spontaneously during their everyday interactions with their children. Once children have established some phonological awareness abilities in their L1, it should be easier for them to transfer that knowledge to English as an L2. The mentioned practical suggestions are especially crucial when considering the increasing presence in Italian preschools of children coming from non-Italian language backgrounds. As previously seen (cf. 8.5), the emergent literacy beliefs and practices of non-Italian-speaking families may be different from the Italian ones, and may not include a focus on the phonological aspects of the language. In this perspective, approaching non-Italian homes and families to typical ways of fostering emergent literacy skills (including phonological awareness skills) in Italian (that can be later transferred to English) becomes a fundamental issue, which, within an 'ideal' educational setting (cf. 7.1), could be tackled by providing training courses for parents of preschool children, both Italian and non-Italian speaking, in addition to courses for preschool language educators.

8.3 Conclusions

Throughout this work, one of the main goals has been to examine the notion of preschool children's phonological awareness skills in an L1 and in an L2, as well as to verify its relation to later literacy skills in children. In order to do this, the most recent and reliable scientific research studies have been collected and presented. The research data analyzed has been taken as the scientific basis of this work. However, scientific findings should not be considered complete or definite, but subjected to changes and open to further research. The next chapter presents techniques and games based on all the conceptual ideas and findings discussed in the preceding chapters. The activities and practices of chapters 9 and 10 represent a synthesis of all that has been found thus far on phonological awareness. Some of the activities have been drawn from already existing materials on phonological awareness in English as an L1. They have however been reviewed in order to be applied to a preschool context where English is learned as a foreign language. The tasks proposed in this thesis might at first look like techniques

that are already being employed within a preschool foreign-language context, e.g., listening to songs and nursery rhymes to develop children's listening skills in EFL. Yet, what is new is the focus on phonological awareness abilities. The ultimate goal of the set of activities in chapters 9 and 10 is thus twofold: to develop listening and speaking abilities in EFL in general, and to foster phonological awareness skills in EFL in particular. The ideas and notions that have been discussed in this work are mainly new to the field of foreign language teaching methodology, and especially early foreign language teaching methodology. What we hope is that the ideas and notions discussed in this thesis may not only concretely assist preschool educators in charge of introducing the English language in Italian preschools, but generally draw the teaching community's attention to some new topics as well as raise the curiosity to research and experiment further.

Chapter 9

A Proposal of Tasks: From Non-Speech Listening to One-to-One Correspondence

> Word play activities explicitly teach phonological processes by making children increasingly aware of the sounds in spoken words.
> (O'Connor *et al.*, 1998)

The phonological awareness practices presented in this chapter have mostly been inspired by already existing field-tested materials traditionally employed in English-speaking preschools and kindergartens, such as Adams and colleagues' *Phonemic Awareness in Young Children. A Classroom Curriculum* (1998) and O'Connor and colleagues' *Ladders to literacy. A kindergarten activity book* (1998). The activities and games included in these already existing materials have been totally or partially modified and adjusted in order to fit the specific Italian preschool setting where English is introduced as a foreign language. It is then recommended that the tasks here proposed are further adapted by language educators in each specific setting, in order to make activities meet the level of linguistic, psychomotor and cognitive maturity and the needs of children of different ages. Tasks and games are here presented as a set of activities that follow the typical order of development of phonological awareness skills, i.e., from sound awareness, through syllable awareness, and onset-rime awareness. Tasks focusing on one-to-one correspondence awareness are introduced as a preliminary step to the execution of more complex sound-letter correspondence tasks that are tackled in chapter 10. The sequence of activities proposed has been thought to imitate and respect the natural development of phonological awareness skills in children, and not as a sequence that has to be necessarily mastered as a whole by every single child. Every child will probably attain varying levels of success in each task. All activities are meant to be conducted within broader and richer educational settings. For example, when

presenting a nursery rhyme or a song in Italian, educators can decide to present one in English as well. Or syllable segmentation tasks can be carried out during a storybook sharing activity (cf. 10.5). For example, when telling the story *The Very Hungry Caterpillar* (Carle, 1994), children can be encouraged to clap syllables out whenever the educator says the word *caterpillar*. Phonological awareness activities are intended to be introduced when children have already had some exposure to phonological awareness activities in Italian, and to be carried out in parallel while working on the development of phonological awareness abilities in Italian. Each specific task on phonological awareness is introduced to children through play, as a new form of playful activity, and can be carried out in the form of a competition, with winners and losers, so as to motivate children and facilitate learning. Within an EFL context, phonological awareness activities are also meant to help children develop both heir receptive and productive skills in the new language. Naturally, the focus is first on receptive abilities, as children are exposed to a stream of new sounds, and are gradually guided to be aware that this stream can be divided into smaller units of sounds, and be able to recognize sentences and words within that stream, syllables within words, onset-rimes within words, and lately phonemes within words. As a result, children are primarily asked to listen to the foreign language. On the other hand, while listening, children are introduced to new words, structures and sounds that can be gradually interiorized. During the activities, children can be slowly guided to the articulation of some easy expressions and/or words in English, so as to start developing their receptive skills as well. Most activities presuppose that children already know some vocabulary in English. If not, each task can be preceded by a phase of vocabulary acquisition, where children are introduced to the words that will be useful during the later execution of the task. For each activity, educators should select words based on children's speech production capabilities, vocabulary knowledge, and the target phonological aspect that they want to work upon. For instance, when working on rhyming, educators should initially select simpler pairs of one-syllable rhyming words, such as *cat* and *mat*. At a more advanced stage, educators can introduce more complex words containing

consonant clusters, e.g., *snail* and *trail*. The focus of each task is mostly on the form of the language, and its phonological structure. Yet, it should be kept in mind that English is not children's L1, therefore children should not be simply exposed to the new form without being assisted in understanding its content. In this perspective, most activities recommend the use of picture cards or paralinguistic clues in order to assist children's comprehension of the meaning/content of words and sentences. Depending on each specific task, educators will work with the whole class, if possible with the support of other educators, or with smaller groups of children. This last solution is recommended within an educational context where a foreign language is introduced to very young children. Younger children of 3 and 4 years of age should be arranged on a circle or semicircle on the floor, sitting on their own mats (e.g., a small carpet mat). Generally, maps can be useful tools, as they help:

- Organize children's positioning in the room.
- Help structure the activities and focus on children's attention (e.g., a new activity is presented only when all children are back on their mats).
- Help discourage young children from wandering around the room during the activity.

When children are required to stand up and engage in an activity, they should be encouraged to return to their mat after each turn. In games where children are required to stand up and throw a beanbag onto letters or picture card, the mats can be arranged in a line. Children could be rewarded for returning to their mat. When carrying out activities, educators should constantly make sure that children refrain from responding until they signal. Educators can then unpredictably call on an individual or the group for the response. Each phonological awareness activity is presented within a table, which includes the following labels:

- *Category*: this indicates the specific phonological skill that is targeted in the activity, e.g., syllable awareness or onset-rime awareness. When the activity is focused on one skill in particular, e.g., phoneme awareness, but it also helps children develop other phonological skills, the 'secondary' target skill is indicated within brackets. For example, an activity focusing on the initial sounds of one-syllable words such as *cat*, or *hat* also focuses on the onset and rime of the two words, namely, *c* (onset)-*at*(rime), *h*(onset)-*at*(rime). In this case, the target category will be both (initial) phoneme awareness and onset-rime awareness. When instruction on letters and on sound-letter correspondence is integrated with phonological awareness tasks, the target categories include alphabet knowledge and sound-letter awareness.
- *Objectives*: this includes the linguistic, cognitive, and generally developmental goals of each activity.
- *Materials Needed*: this indicates the materials and objects required to carry out the activity. When indicating picture cards, this normally implies that the cards are already available, in the form of either already existing cards commercially available, or of cards specifically created by educators. As an alternative, before proposing the activity, educators can ask children to draw pictures of the words needed, and use them as visual aids during the activity. In this case, children can feel more involved in the activity, and probably motivated, as their own pictures are part of the task.
- *Description*: this is the description of the activity itself. Even when not explicitly stated in the description, each activity can be carried out in the form of a competition, so as to make it more stimulating and motivating for children.
- *Variation/s*: this indicates other versions of the game that can be proposed, after the main version has been played, understood and interiorized by the children. Variations often include more complex versions either at the linguistic or cognitive level.

- *Source*: this label indicates the already existing English materials used to design the activity. When not present, it means that the activity was created *ex-novo*.

The present chapter includes activities and games aimed at fostering the following specific phonological awareness skills:

- Sound awareness
- Sentence awareness
- Word awareness
- Syllable awareness
- Rhyming awareness
- Onset-Rime awareness
- One-to-One Correspondence awareness

The activities here proposed presuppose that children have a general understanding of such terms as: sentence, word, syllable, sound, letter, initial, internal, final. Naturally, educators will have to find the most linguistically and cognitively appropriate way to make children gain an understanding of such notions. For instance, educators could provide examples of what is meant by each specific term. In addition, educators should continually model tasks for children, as well as provide corrective feedback. One last important point concerns the means of communication and instruction used to carry out phonological awareness tasks. Each session is meant to be primarily conducted in English from the outset. Instructions on how to carry out each activity should be given in simple words, by using strategies such as gestures, mime, or drawings. Each task should be modeled first, in order to support comprehension. Italian can be used for directing group behavior, or when explanations or clarifications are needed, especially with younger children. When children naturally speak in Italian, e.g., when commenting an on-going activity, their comments can be accepted and immediately reformulated in English.

9.1 Non-Speech Listening Activities

9.1.1 What Can You Hear?

Category	Sound Awareness
Objectives	To develop listening and speaking skills; to help children explore their listening powers; to practice focusing attention on a particular sound or a series of sounds from outdoors, indoors, and from within themselves; to help children listen to non-speech sounds selectively and indentify them in the environment; to develop children's memory and the attentional abilities for thinking about sequences of sounds; to develop voice and body awareness; to review or learn vocabulary; to review or learn cardinal numbers
Materials Needed	Voices or CD player, parts of the body, common objects that make interesting, distinctive sounds, such as *banging on wall/table/lap* *birds* *blowing (nose, a whistle)* *breathing* *cars* *clocks* *clapping* *clicking with tongue* *coloring hard on paper* *coughing* *crumpling paper* *cutting with scissors* *dogs* *dropping* *drumming with fingers* *eating an apple* *fan* *folding paper* *hammering* *heartbeat* *noisy chewing*

	opening window or drawer *pouring liquid* *ringing a bell* *rubbing hands together* *scratching* *sharpening a pencil* *slamming a book* *smashing crackers* *snapping fingers* *stamping* *stirring with teaspoon* *tearing paper* *tiptoeing* *trucks* *turning on computer* *voices* *walking* *whistling* *wind blowing* *writing on board* *writing with a pencil*
Description	Children are seated in a circle and asked to cover their eyes with their hands. They are encouraged first to identify single sounds, and then to identify each one of a sequence of sounds (from two to three or more sounds). Children are discouraged from calling out their answers until they are asked to do so (as a whole group or individually). In this game, it is difficult to have young children already know all the English terms for the sounds they hear (e.g., names of verbs, as in *clapping,* or names of objects, as *scissors*). As a consequence, during these activities the Italian language will probably play a fundamental role and be frequently employed from both children and educators. Educators can choose among two main options: whether they only present sounds that include simple English names already learned by children (e.g., *apple*, *book*), or, once children have detected the sound and expressed it in Italian,

	accept children's production and repeat it in English. However, the main aim of this game is not linguistic, namely new vocabulary learning. Vocabulary learning in this game will be incidental rather than intentional. This game offers a good opportunity to learn or review children's knowledge of cardinal numbers (e.g., "*Sound number one is… sound number two is…*")
Variations	- The educator makes a series of already acquired sounds, but omits one of the sounds. Children must identify the missing sound - Once some sounds are learned, children are invited to make sounds for their classmates to guess
Source	Cabell *et al.*, 2009

9.1.2 Let's Play Some Music

Category	Sound Awareness
Objectives	To develop listening skills; to help children explore their listening powers; to help children use music to discriminate sounds, e,g., high, low, loud, soft; to develop musical intelligence; to develop awareness of cultural diversity
Materials Needed	Musical instruments, such as bells, cymbals, drums, tambourine, triangle, xylophone. When available, instruments from other cultures, such as Russian balalaika or Indian sitar
Description	The educator models the activity for the children, plays one instrument at a time and makes contrasting sounds, e.g., high and low, helping children discriminate them. At a later phase, children are seated in a circle and asked to choose instruments and make sounds with them. They are encouraged to produce loud and soft sounds as well as to notice which

	instruments can make high and low sounds. When available, instruments from other cultures, e.g., sitar, can introduce children to awareness of cultural diversity
Source	O'Connor *et al*., 1998

9.1.3 David, Where Are You?

Category	Sound Awareness
Objectives	To develop listening and speaking skills; to encourage children to listen sensitively and thoughtfully to non-speech sounds; to help children locate the source of a sound by listening only; to pinpoint from where in the room the sound is coming; to develop voice and body awareness
Materials Needed	Children's voices and parts of the body, small musical instruments, common objects that make interesting, distinctive sounds
Description	Children are seated in a circle and asked to cover their eyes with their hands. One child with eyes covered is seated in the center of the circle, or lying down ('sleeping'). Another child is asked to play the part of 'David.' David hides in any part of the room (better if it is a large room), and makes any sound (e.g., clapping, hammering on a drum). The 'sleeping' child must locate the sound and point to David, while exclaiming "*David*!" When the 'sleeping' child has figured out from where the sound is coming, the child becomes David and a new 'sleeping' child is chosen
Variations	- Instead of exclaiming "*David!*", children are asked to say "*There*!" so they can be introduced to a simple locative in English - Instead of exclaiming "*David*!", children are asked to say other simple vocabulary items that have already been acquired and

	can thus be reviewed and reinforced
Source	Adams *et al*., 1998b

9.1.4 Move Your Body

Category	Sound Awareness
Objectives	To develop listening and speaking skills; to develop awareness of sounds; to help children explore rhythm; to develop children's ability to separate sounds from their meaning; to develop body awareness and kinesthetic intelligence; to review or learn vocabulary
Materials Needed	Small musical instruments, objects that can make rhythmic sounds
Description	The educator plays some musical instruments (e.g., drums) or objects that can make rhythmic sounds (e.g., sticks), to different beats (e.g., even, uneven), tempos (e.g., fast, slow), intensities (e.g., soft, loud), frequencies (e.g., high, low) and durations (e.g., long, short). The educator begins with slow, regular, even beats to which children can clap their hands. Uneven beats are then introduced, with variations in intensity and tempo. The educator can relate rhythm to movement, and have children play imaginary roles, e.g., "*Let's move slowly and pretend we are walking in heavy snow,*" "*Let's fly around like light butterflies.*" As a support to comprehension, the educator can use picture cards depicting the action or mime the action for the children
Variation	The educator pronounces a word while playing the instrument to different tempos and durations, and has the children repeat the word accordingly, e.g., *ba…na…na* (to slow music), *banana banana* (to fast music)
Source	O'Connor *et al*., 1998

9.1.5 Alarm Clock Hunt

Category	Sound Awareness
Objectives	To develop listening skills; to reinforce sound awareness; to help children locate a sound that gradually blends with random environmental noises; to develop and expand children's ability to stretch their listening attention in time
Materials Needed	Ticking clock or timer
Description	Children are seated in a circle and asked to cover their eyes with their hands. One child with eyes covered is seated in the center of the circle, or lying down ('sleeping'). Another child is asked to hide a ticking clock or timer. The 'sleeping' child uncovers her/his eyes and tries to find the ticking clock only by listening. When the clock has been located, the 'sleeping' child becomes the one to hide the clock, and another 'sleeping' child is chosen
Source	Adams *et al*., 1998b

9.1.6 Animal Hunt

Category	Sound Awareness (Word Awareness)
Objectives	To develop listening and speaking skills; to help children listen for a particular sound and to pair it with its source; to review or learn animal names and their noises
Materials Needed	Toy animals, pictures/picture cards of animals, or picture books with animal characters
Description	This activity is preparatory to be played with phonemes and letters instead of animals and noises at a later stage. The educator distributes a toy animal or picture card to each child. The educator makes an animal noise, e.g., *woof*, and the

	child with the matching toy or picture holds it up for all to see. Older children can be asked to pronounce the animal name as well, e.g., *dog*. Children should already know animal sounds and names, or they could learn them while playing the game
Variation	The educator reads or tells a story with animal characters in it. Instead of pronouncing the animal name, the educator says its noise, and the child with the corresponding picture holds it up and pronounce the name
Source	Adams *et al*., 1998b

9.1.7 Name Hunt

Category	Sound Awareness
Objectives	To develop listening skills; to reinforce sound awareness; to help children pick out one specific sound from many similar sounds that are heard at once
Materials Needed	Voices, blindfold
Description	One child is chosen to be the 'listening' child, and moved to another part of the room where, together with the educator, s/he selects the name of another child in the classroom. The 'listening' child is blindfolded. All other children are standing in a circle, whispering their own names. The 'listening' child is guided around the circle by the educator, listening for the name that was selected. On hearing the selected name, the 'listening' child embraces its speaker
Source	Adams *et al*., 1998b

9.1.8 Nonsense Singing

Category	Sound Awareness (Word Awareness)
Objectives	To develop listening and speaking skills; to reinforce sound awareness; to develop children's ability to attend to differences between what they expect to hear and what they actually hear; to revise or learn songs, chants, lullabies, nursery rhymes, etc.; to review or learn vocabulary
Materials Needed	Books of familiar songs, chants, lullabies, nursery rhymes, etc.
Description	Children are seated in a circle and asked to close their eyes. The educator reads aloud or tells a simple poem, song, a lullaby, etc. already known by the children, by changing one word; e.g., *Twinkle twinkle little* ***car***, instead of *Twinkle twinkle little* ***star***. Children have to detect the change whenever it occurs, by raising their hands
Variation	At a later stage, whenever children detect the word changed in the song, they are asked to pronounce it several times
Source	Adams *et al*., 1998b

9.2 Sentence Awareness and Word Awareness

9.2.1 Raise Your Flag to the Sentence

Category	Sentence Awareness
Objectives	To develop listening skills, to help children distinguish between English and Italian; to help children focus on the form of language; to strengthen awareness of sentences; to review or learn vocabulary; to develop awareness of cultural diversity
Materials Needed	Small Italian and American flags; picture cards
Description	Children are given one small Italian flag and one small American flag each. They are told that they are going to listen to

	some sentences either in Italian or in English. Each time they will have to decide whether the sentence is in Italian or in English, and hold the appropriate flag up accordingly. The sentences selected should be easy and meaningful, e.g., "*Maria è felice*", "*Maria is happy*". When the educator says the sentence, in any language, he/she holds up a picture card illustrating the meaning, e.g., says "*Maria is happy*" and holds up a card illustrating a girl with a big smile, or mime the action
Variations	- The educator chooses sentences that relate to the objects in the room or school, or common objects that are normally found in children's home environment; e.g., "*The cat toy in the box is brown;*" "*L'orsacchiotto di Gianni ha gli occhi grandi*" - Flags from different English-speaking countries can be selected, e.g., the British flag or the Australian flag. This variation should be played with older children, so as to introduce them to the concept of 'a same language for different places'

9.2.2 How Are You Feeling Today?

Category	Sentence Awareness (Word Awareness)
Objectives	To develop listening and speaking skills, to strengthen children's awareness of sentences; to help children understand that a sentence is not a fixed structure but its component elements can change; to review or learn vocabulary; to learn how to express one's feelings; to develop emotional intelligence
Materials Needed	Picture cards
Description	The educator says a sentence referred to himself/herself, e.g., "*Today I am happy;*" "*Today I am angry,*" and at the same time mimes the emotion, emphasizing his/her

	facial expressions and tapping his chest to indicate that the sentence is referred to himself/herself. Children are encouraged to repeat the sentence along with the educator and mime the emotion themselves
Variations	- The educator has a set of picture cards illustrating people with facial expressions indicating different moods and emotions. The educator gives one card to every child. Every child is asked to answer the question "*How are you feeling today*?" with just one word, e.g., *sad*, by referring to the emotion displayed on the card. The educator first models the activity for the children - Once the children have mastered the activity and acquired some vocabulary, the educator points to each child, mimes an action, and says "*Today David is sad;*" "*Today Julia is excited,*" stressing the words that change in each sentence, as to indicate that a sentence is not a fixed structure but the subject experiencing the emotion as well as the type of emotion may change

9.2.3 Clap Each Word

Category	Sentence and Word Awareness
Objectives	To develop listening skills, to strengthen children's awareness of sentences and words; to help children recognize words in a spoken sentence; to review or learn vocabulary; to review or learn cardinal numbers; to motivate children before more complex tasks
Materials Needed	Picture cards
Description	The educator presents himself/herself: "*I am Chiara*; *I am Paolo*." Children are encouraged to clap each word in the sentence they hear, first with the educator,

	and then alone
Variation	When children have understood the activity, they are asked to count the words they hear in the sentence

9.2.4 Blocks & Words

Category	Sentence and Word Awareness
Objectives	To develop listening and speaking skills; to strengthen children's awareness of sentences and words; to help children hear words in sentences; to review or learn vocabulary; to review or learn cardinal numbers; to encourage left-right progression
Materials Needed	Colored blocks, picture cards
Description	Children are given blocks that they will use to represent the words in a sentence produced by the educator, i.e., one block for each word. The educator models the required thought process for the children, showing them how to repeat the sentence to themselves word by word with clear pauses between each. Children are encouraged to arrange the blocks from left to right, so that they begin to establish directionality (this is especially useful for immigrant children such as Arabic-speaking children whose directionality is different). First, short, one or three word sentences should be introduced (e.g., *Pat is eating*; *Tom is sleeping*). In order to facilitate children's comprehension of sentences and words, educators could initially make use of gestures or picture cards as a visual support. After arranging the blocks, children are encouraged to repeat the sentence with the educator, pointing at each block, while pronouncing the word it represents
Variation	Once children have mastered the activity,

	they are asked to count the blocks-words in each sentence and tell the number out loud
Source	Adams *et al*., 1998b

9.2.5 Hold up the Word

Category	Sentence and Word Awareness
Objectives	To develop listening and speaking skills; to strengthen awareness of sentences and words; to help children spot simple content words within short sentences; to review or learn vocabulary
Materials Needed	Picture cards of familiar words, such as *cat*, *car*, *dog*, *mat*
Description	Each child is given a couple of cards of simple content words already acquired. The educator pronounces a short sentence that contains both content words and function words, e.g., "*This cat is brown*", exaggerating the stressed syllables. The child who has the picture of a brown cat holds it up and pronounces the word *cat.* In the long run, one of the goals of this activity would be to help learners rely on stressed syllables to spot unknown content words in sentences, as most often in English stressed syllables indicate the beginning of a content word
Source	Adams *et al*., 1998b

9.2.6 One Name for Each Animal

Category	Word Awareness
Objectives	To develop listening and speaking skills; to strengthen awareness of words; to review or learn vocabulary; to review or learn animal names and their noises; to develop story comprehension
Materials Needed	Picture books with animal characters

Description	The educator reads or tells a story with animal characters in it. Instead of pronouncing the animal name, the educator says its noise, and the child with the corresponding picture holds it up and pronounces the animal name. This activity requires that children already know animal names
Source	Adams *et al*., 1998b

9.2.7 Change the Word

Category	Sentence and Word Awareness
Objectives	To develop listening and speaking skills; to strengthen children's awareness of words; to learn to substitute words in a familiar verse; to review or learn vocabulary
Materials Needed	Picture cards of one-syllable words; familiar verses, such as *And the fork run away with the spoon* in *Hey Diddle Diddle*: *Hey diddle diddle,* *The cat and the fiddle,* *The cow jumped over the moon,* *The little dog laughed to see such sport,* *And the fork run away with the spoon*
Description	The educator reads or tells a familiar nursery rhyme to the children, showing picture cards or miming actions in order to facilitate comprehension. When the children are acquainted with the rhyme, the educator chooses only one verse, e.g., *And the fork run away with the spoon*, and repeats it several times, having the children repeat it with him/her. Then, each child is asked to pick a card from a deck of familiar one-syllable words, e.g., *dog*. The educator explains that they are going to substitute the last word in the verse with the one in the card, e.g., "*And the fork run away with the… dog!*" The educator encourages each child to stress the last word

Variation	Once the children have practiced the activity with one-syllable words, the are guided to substitute the word in the verse with familiar words with consonant clusters, e.g., *train*, *plane*, *stone*, *snail*, and words with more than one syllable, e.g., *teddy*, *robot*, *butterfly*, *caterpillar*

9.2.8 Short or Long?

Category	Word Awareness; Print Awareness
Objectives	To develop listening and speaking skills; to refine children's awareness of words *per sé*; to help children realize that words are defined by meaning and that they can be long or short independently of their meaning; to help children hear and see the differences in the lengths of words; to help children decide which of two words is phonologically longer; to introduce children to print; to review or learn vocabulary
Materials Needed	Picture cards, picture book (optional), pair of familiar words where one of the words refers to a familiar object/animal that is significantly larger than the other one, such as *bee-butterfly* *bus-motorcycle* *car-ambulance* *cow-ladybird* *dog-giraffe* *elephant-cat* *mosquito-truck* *tree-flower*
Description	The educator pronounces a pair of words known by children, and asks them which word they think is longer. When the children have answered, the educator shows them the words in print, in a way that makes the differences in their spelled lengths obvious (e.g., with magnetic

	letters, in large, uniform letters on rectangles of posterboards) so that children can see if their judgments were correct. Children are not required to know how to read the words though, only to visualize the differences in word length. Children can be asked to pronounce the pairs of words
Variation	The educator pulls words from picture books already shared with children and asks which word is longer or shorter. Children are then taken back to the books and shown the words in print
Source	Adams *et al*., 1998b

9.3 Syllable Awareness

9.3.1 Clap Your Name

Category	Syllable Awareness
Objectives	To develop syllable awareness; to introduce children to the existence and nature of syllables by leading them to clap and count the pulses of their own names; to help children pay attention to how syllables feel when they are articulated; to review or learn cardinal numbers; to understand and carry out instructions
Materials Needed	Children's names
Description	Children are seated in a circle. The educator models the task by pronouncing several names of contrasting lengths. The educator pronounces the first name of each child, syllable by syllable, by clapping it out before inviting the children to say and clap the name along with her/him, e.g., *Ste-fa-no*. When children have understood the task, the educator can ask them to listen to the syllables in each name she/he claps out loud and count the number of

	syllables, e.g., "*How many syllables in 'Alessandra'*?" In a second phase, children are encouraged to clap out loud out their own names one at a time, as well as count the syllables in each. This is a game that does not focus on English words, as it involves clapping names that are mostly Italian. Yet, the main aim of this task is to start developing syllable awareness. This is a task that can be easily integrated to everyday tasks in Italian
Variations	- After determining the number of syllables in each name, children are asked to hold two fingers horizontally under their chins, so they can feel the chin drop for each syllable. To maximize this effect, children can be encouraged to elongate or stretch each syllable - This task can be carried out to a rhythmic chant, such as *Bippity, Bippity Bumble Bee*, e.g., "*Bippity, Bippity Bumble Bee, tell me what your name should be*", while pointing to a child and have the child responding by saying her/his name in syllables and the class repeat the name out loud. The educator can continue with one of the following: - "*Clap it*!" (children repeat name, enunciating and clapping each syllable) - "*Whisper it*!" (Children whisper each syllable while clapping") - "*Silent*!" (Children repeat name, silently enunciating syllables with mouth movements)
Source	Adams *et al*., 1998b

9.3.2 The Syllable Box

Category	Syllable Awareness
Objectives	To develop listening and speaking skills; to reinforce children's ability to analyze

	words into syllables by asking them to clap and count the syllables in two-syllable words; to review or learn cardinal numbers; to review or learn vocabulary
Materials Needed	A box full of small objects or picture cards of objects that contain two syllables in their names, such as *ted-dy* *gui-tar* *yo-yo* *pup-py* *ta-ble* *trol-ley* *can-dy* *pen-cil*
Description	Children sit in a circle. The educator invites one child at a time to close her/his eyes and choose an object from the box. The educator names the object, e.g., "*teddy*." All children are invited to repeat the object's name and clap out its syllables, e.g., "*ted-dy*." Then the educator asks how many syllables the name has, e.g., "*How many syllables in 'teddy'*?"
Variations	- Physical movements can be used instead of clapping, e.g., raising one's arm; stamping one's feet - At a later stage, this activity can be carried out with pictures illustrating three or four-syllable words (e.g., *elephant*; *caterpillar*)
Source	Adams *et al*., 1998b

9.3.3 Let's Move to Syllables

Category	Syllable Awareness
Objectives	To develop listening skills; to reinforce ability to segment words into syllables; to review or learn vocabulary; to develop body awareness and kinesthetic intelligence
Materials Needed	Pictures of objects familiar to children,

	where objects have names of different syllable length, such as *base-ball* *yo-yo* *gui-tar* *bi-cy-cle* *cho-co-late* *co-co-nut* *pep-per-mint* *te-le-vi-sion* *re-fri-ge-ra-tor* *wa-ter-me-lon*
Description	The educator first invites one child at a time to segment her/his name into syllables. Each child can decide a movement to associate with each syllable: whether to clap, jump, touch their toes, pat their heads, or perform some other action. In a second phase, the educator holds up pictures of familiar objects to be pronounced in syllables. The educator decides a different movement to be associated with each word, e.g., for the word *computer*, the class will turn in a circle for each syllable, *com (turn) –pu (turn) –ter (turn)*, and then they will pat their heads for each syllable in the next word, e.g., *microwave*, *mi- (pat)- cro (pat) – wave (pat*). First children will only listen to the word and do the movements. When they have mastered the movements they pronounce the syllables while making the movements
Source	Cabell *et al*., 2009

9.3.4 Throw the Syllable-Ball

Category	Syllable Awareness
Objectives	To develop listening and speaking skills; to reinforce ability to segment words into syllables; to review or learn vocabulary; to develop body awareness and kinesthetic

	intelligence
Materials Needed	A ball; picture cards of objects familiar to children, where objects have names of different syllable length
Description	Children are divided in pairs or small groups. Each pair/group has a soft ball. The educator holds up pictures of familiar objects to be pronounced in syllables one at a time. The educator models the segmentation of the word, e.g., *ca-ter-pil-lar*, and children throw the ball to each other while saying each syllable out loud, e.g., *ca (throw) ter (throw) pil (throw) lar (throw)*

9.3.5 Let's Play the King and the Queen

Category	Syllable Awareness
Objectives	To develop listening and speaking skills; to reinforce ability to analyze words into syllables; to bring out the rhythm of the words through repeated movements; to review or learn vocabulary (action words); to develop body awareness and kinesthetic intelligence; to understand and carry out instructions; to give instructions
Materials Needed	Toy or paper crown; a set of familiar instructions such as *bowing* *clapping* *hammering* *leaning* *marching* *nodding* *reading* *roller-skating* *sewing* *stretching* *tiptoeing* *waving* *wiggling*
Description	The educator makes a crown for the

	designated king or queen to wear. At first children are asked to stand in a circle around the educator. Acting as a king or queen, the educator issues an order, e.g., *reading*, syllable by syllable (*read-ing*, *read-ing*). Children are required to perform the action in time to the syllables. The words need to be pronounced very rhythmically so that every child is in time with each other. Once children have understood how to play, they take turns wearing the crown and issuing orders. The action names can be introduced with the support of picture cards depicting the action or with the educator miming the action
Variation	The educator introduces an action word (e.g., *swaying*) and asks the children to clap and count its syllables. If there are two syllables, as in *sway-ing*, the educator suggests a movement that has two parts (e.g., move to one side, then to the other)
Source	Adams *et al*., 1998b

9.3.6 The Ship is Loaded With...

Category	Syllable Awareness
Objectives	To develop listening and speaking skills; to reinforce syllable awareness; to help children synthesize syllables spoken one by one into familiar words; to review or learn vocabulary
Materials Needed	Picture cards of objects familiar to children, where objects have names of different syllable length, such as *ted-dy* *com-pu-ter* *he-li-cop-ter* *mo-tor-cy-cle* *su-per-mar-ket* *re-fri-ge-ra-tor*
Description	The educator holds up a stack of picture cards saying that he/she will say the name

	of each in a strange and funny way, i.e., one syllable at a time. Children are encouraged to listen carefully to figure out each name. The educator says "*The Ship is Loaded with…*" and then adds the name of one object pronouncing the syllables individually, in a smooth, connected way, e.g., "*com..pu..ter*." There should be hesitation, but no silence, between the syllables. When children figure out the word, the educator holds up the corresponding card and has children repeat the word in both normal and syllable-by-syllable fashion
Source	Adams *et al*., 1998b

9.3.7 Find Out Your Present

Category	Syllable Awareness
Objectives	To develop listening and speaking skills; to reinforce syllable awareness; to help children synthesize syllables spoken one by one into familiar words; to review or learn vocabulary
Materials Needed	A bag; picture cards of objects familiar to children, where objects have names of different syllable length
Description	The educator invites each child to pick a card from a bag with his/her eyes closed. That card will represent his/her symbolic present. The child does not look at the card while the educator does. The educator says the name of the object pronouncing the syllables individually, in a smooth, connected way, e.g., "*by..cy..cle*." There should be hesitation, but no silence, between the syllables. Each child is encouraged to listen carefully and figure out the object named. When the child figure out the word, the educator holds up the card and gives it to the child as his/her

	symbolic present. Each child is invited to repeat the name of the object in both normal and syllable-by-syllable fashion

9.3.8 Add or Remove One Syllable

Category	Syllable Awareness
Objectives	To develop listening and speaking skills; to reinforce children's ability to analyze words into syllables; to help children add or remove a syllable in a word; to review or learn vocabulary
Materials Needed	A bag; picture cards of objects with names of different syllable length
Description	The educator invites each child to pick a card from a bag. Each child at a time holds up his/her card. The educator says the complete word first "*pencil,*" then says the first syllable of the word, "*pen*___," and asks the child to finish the word. Words do not have to be necessarily known by children, so this may be a useful activity to introduce new vocabulary
Variations	- Children are asked to say the complete word depicted in their card first, e.g., "*letter*," and then say it without one syllable, e.g., "*say letter without the 'let'"* - When children have mastered the activity, multisyllabic words can be introduced. For example, the educator says "*bicycle*," then "*by-*____" and has children finish the last two syllables, or has children say "*bicycle"* without the last two syllables, e.g., "*by"*

9.4 Rhyming Awareness and Onset-Rime Awareness

9.4.1 Rhyming Time

Category	Rhyming Awareness
Objectives	To develop listening and speaking skills; to use nursery rhymes, lullabies, chants, etc. in ways that enhance children's awareness of the sound patters of speech; to develop rhyming awareness; to review or learn vocabulary; to strengthen menemonic skills, to enhance motivation before a more complex task; to develop musical intelligence
Materials Needed	Book of rhyming poems, songs, jingles, chants, lullabies, nursery rhymes such as *After a Bath:* *After a bath, I try, try, try* *To wipe myself 'till I'm dry, dry, dry.* *Hands to wipe, and fingers and toes,* *And two wet legs and a shiny nose.* *Just think, how much less time I'd take,* *If I were a dog, and could shake, shake, shake.*
Description	Initially, children are introduced to only one or two verses, so that they can learn them well by heart. More rhymes can be added to their repertoire in time. The educator first reads or recites the nursery rhyme, stressing the rhyming words out so that they are more salient than the other words in the rhyme. Then the educator re-reads line by line, having the children repeat each line in unison, first with a slow pace and only once the rhymes are acquired with a faster space. Rhymes should be repeated several times during the day, and integrated with the most common rhyming activities in Italian
Variations	-The educator recites the poem in whispers, but says the rhyming words aloud. -The educator recites the poem in very loud voices, but whispers the rhyming

	words -The educator recites the poem in crescendoing voices, getting louder and louder - The educator recites the poem and claps his/her hands or raises his/her arms above his/her head when saying each rhyming word During the above variations, children are asked to listen first and then to repeat with the educator
Source	Adams *et al*., 1998b

9.4.2 Let's Move to Rhymes

Category	Rhyming Awareness
Objectives	To develop listening and speaking skills; to focus children's attention on rhyme; to review or learn vocabulary; to review or learn cardinal numbers; to strengthen menemonic skills; to enhance motivation before a more complex task; to develop body awareness, kinesthetic and musical intelligence
Materials Needed	Traditional children's rhymes, such as *One Potato, Two Potato:* *One potato, two potato, three potato, four.* *Five potato, six potato, seven potato, more.*
Description	Children sit in a circle with both fists before them. While all children chant the rhyme with the educator, the child that plays the role of 'it' moves around the circle and gently ponds out the stressed syllables (the number words and the word *more* in the rhyme *One Potato, Two Potato*), first on the right fists, then on the left fist of each child. The child whose fist is pounded on the last or rhyming word of each line (i.e., the 'magic' word) must put that fist behind her/his back. As soon as any child 'loses' both fists, she/he is out. The last child remaining with one fist still

	in front becomes the new 'it'
Variations	- This game can be extended to other rhymes, such as: *Eeny, meeny, miny, moe* *Catch a tiger by the toe* *If he hollers let him go,* *Eeny, meeny, miny, moe.* 'Magic' words: *moe*, *toe*, *go*, *moe* - Children move around the class and do some specific movements when they hear rhyming words, e.g., raise their arms above their heads; stretch their arms; jump; touch their noses, etc.
Source	Adams *et al*., 1998b

9.4.3 Rhyming Drawings

Category	Rhyming Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to use rhyming words in ways that enhance children's awareness of rhyming in general and onset-rime in particular; to help children recognize rhyming words; to review or learn vocabulary; to develop drawing skills; to understand and carry out instructions
Materials Needed	Boxes of crayons; paper; pairs of simple one-syllable rhyming words, such as *bat-mat* *pin- din* *bug- rug* *pen-hen*
Description	Children are asked to draw the objects of the rhyming words first, so as to create a set of 'rhyming drawings'. Children are then asked to display their drawings of rhyming words pair by pair while the educator says the rhyming words out loud, and stresses the rimes. Children are asked to repeat the rhyming words all together, as in a chant. In order to make the activity

	more fun, children can be asked to have their drawings move, e.g., "*Put 'bat' and 'mat' up/down; have 'pin' and 'din' jump/float/crawl/fly,*" while saying the rhyming words
Variation	The educator uses the drawings of the rhyming words to propose a matching game. Drawings are placed face down on a big carpet, and each child takes turns in picking two drawings and verify whether the words depicted rhyme or not. In order to do so, children are asked to pronounce the two words. This game is suitable for older children who know well the words selected by the educator

9.4.4 Rhyming Pairs

Category	Rhyming Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to use rhyming words in ways that enhance children's awareness of rhyming in general and onset-rime in particular; to help children recognize rhyming words within a larger context, e.g., nursery rhymes and chants; to review or learn vocabulary
Materials Needed	The nursery rhyme *Jack Be Nimble* and picture cards referred to its content and key words: *Jack be nimble. Jack be* ***quick****,* *Jack jump over the* ***candlestick****.* *Jack be nimble, quick as a* ***fox****,* *Jack jump over this little* ***box****.* *Jack be nimble. Jack cut a* ***caper****.* *Jack jump over this little piece of* ***paper.*** *Jack be nimble. Jack be* ***fair****,* *Jack jump over this little* ***chair****.* *Jack be nimble and bright as a* ***star****,* *Stand up and jump very wide and* ***far****.*
Description	Children are asked to listen to the nursery rhyme first. Then the educator models the

	activity: children will have to look for the two rhyming words in each pair of lines. The educator repeats the first two lines, and then only repeats the two rhyming words, e.g., *quick* and *candlestick*. Children are asked to do the same for the remaining pairs of lines. Comprehension of the content of the nursery rhyme and the key words can be assisted through display of picture cards or miming
Variations	- The educator can use other nursery rhymes and jingles, such as *This Old Man*, *Rocking Boat*, *One, Two, How Do You Do*?, *Two Little*, *After a Bath*, *Me*, *Teddy Bear* - At a later stage, the educator can decide to take a step further and explain the children that words such as *star* and *far* rhyme because they have a little part in common, e.g., *-ar*

9.4.5 You Rhyme, You Rhyme Not

Category	Rhyming Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to use rhyming words in ways that enhance children's awareness of rhyming in general and onset-rime in particular; to help children make hypothesis, to help children recognize rhyming words among words that rhyme and do not; to review or learn vocabulary
Materials Needed	Picture cards of objects; triplets of simple one-syllable words where two rhyme and one does not, such as *bat, sun, mat* *pin, cup, din* *bug, sill, rug* *pen, hen, lid*
Description	Children are divided into small groups. They are shown triplets of picture cards of common objects. While displaying each

	card in a triplet, the educator says its name out loud, stressing its rime, and putting the card on a table. When the educator has said all three names in a triplet, all groups of children are asked to decide and say which word does not rhyme
Variations	- At first, this game can be carried out with names already known by children. At a later stage, children can be introduced to new names and words including more than one syllable. - Each group of children has two or three triples of picture cards and a bag. They have to decide which pictured word does not rhyme in a triplet, e.g., *ring*, *king*, *soap*, and throw it on the bag. The educator then collects all the bags and shows the cards selected discussing whether they are correct or not with the children

9.4.6 Rhyme-Hunters

Category	Rhyming Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to focus children's attention on rhyme in general and onset-rime in particular; to help children be aware that almost any word can be rhymed, not just the ones they can find in other people's poems; to help children generate rhymes; to promote children's creativity with focus on physical form and not content
Materials Needed	A set of rhyming pictures, such as *bag-rag* *cat-hat* *face-lace* *mouse-house* *rose-hose* *snake-cake* *talk-walk*
Description	To introduce the game, the educator

	exposes children to pairs of rhyming pictures, and says the picture names, e.g., "*cake-snake*." Children are encouraged to say the pair of words with the educator. The educator then calls on a child to add a third rhyming word, modeling the activity first as to make the children understand, e.g., "*cat-hat…dat*." Nonsense words are accepted. The educator can create an incorrect response to demonstrate how children can make a rhyme, e.g., "*cake, shake, mmmilk do not rhyme; try cake, shake, mmmmake*"
Source	O'Connor *et al*., 1998

9.4.7 Toss the Rhyme

Category	Rhyming Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to focus children's attention on rhyme in general, and onset-rime in particular; to help children be aware that almost any word can be rhymed; to help children generate rhymes; to promote children's creativity with focus on physical form and not content; to help children respond quickly without any contextual clues
Materials Needed	A ball; list of words to be rhymed
Description	Children are seated in a circle. The educator explains and models the game for the children. The educator says "*The Ship is Loaded with... cheese,*" and tosses the ball to one child in the circle. The child must produce a rhyme and throw the ball back to the educator. Being the focus on the form of the word and not its meaning, any word is accepted, e.g., a nonsense word such as *deese*, provided it rhymes with the word selected by the educator. The educator can decide to repeat the original

	rhyme tossing the ball to another child, and wait for the child to produce another rhyme. Or the educator can decide to begin the game all over again with a new word
Source	Adams *et al.*, 1998b

9.4.8 Picture Rhyme Bingo

Category	Rhyming Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to use rhyming words in ways that enhance children's awareness of rhyming in general and onset-rime in particular; to help children compare and recognize rhyming words; to review or learn vocabulary
Materials Needed	Bingo boards illustrating four or six pictures; picture cards of one-syllable words rhyming with the pictures on the bingo board
Description	Each child has a bingo board, and takes turns in selecting a card from a deck of picture cards, articulating the name of the picture (e.g., *mat)* and trying to find a rhyming match on his/her bingo board (e.g., *bat*). A counter or a bean is placed over a picture if a match is found. When a child has covered all of his/her pictures on the board, he/she exclaims "*Bingo!*" This activity is suitable for older children or children who have already interiorized the notion of rhyme and acquired the names of the pictured objects. If children have difficulties with this game, the educator moves the picture card selected along each picture on the bingo board to help children find the rhyming pair, e.g., "*Does 'pie' rhyme with 'bat'? Does 'pie rhyme' with 'sun'? Does 'pie' rhyme with 'tie'*?"
Source	Gillon, 2004

9.4.9 Guess the Onset-Rime Card

Category	Onset-Rime Awareness (Rhyming Awareness)
Objectives	To develop listening and speaking skills; to focus children's attention on onset-rime in particular and on rhyming in general; to help children synthesize onset-rime units spoken one by one into familiar words; to help children form words from blending onset-rime units; to review or learn vocabulary
Materials Needed	Picture cards of familiar one-syllable words with simple and orthographically regular onset-rime units, such as *c-at* *r-at* *d-og* *f-og* *b-ug* *r-ug* *p-en* *s-un* *c-an* *w-eb* *b-ed*
Description	The educator holds up a stack of cards saying that he/she will say the name of each in a strange and funny way, i.e., dividing the word in two little parts (the onset and the rime), e.g., "*c..at*." The educator pronounces the onset and the rime individually, in a smooth, connected way. There should be hesitation, but no silence, between the onset and the rime. Children are encouraged to listen carefully to figure out each name. When children figure out the word, the educator holds up the picture card and has children repeat the word in both normal and onset-rime fashion
Variation	At a later stage, the educator says two

	rhyming words instead of one, dividing them at the onset-rime level, e.g., "*w-eb*, *b-ed*," and has the children guess the two words. Once children have figured out the words, the educator shows the corresponding picture cards

9.4.10 Onset-Rime and Magic Blocks

Category	Onset-Rime Awareness (Rhyming Awareness)
Objectives	To develop listening and speaking skills; to focus children's attention on onset-rime in particular, and rhyming in general; to reinforce children's ability to analyze words into onset-rime units; to help children segment words into onset-rime units; to review or learn vocabulary
Materials Needed	Big colored blocks; list of familiar one-syllable words with simple and orthographically regular onset-rime units, such as *c-at* *r-at* *d-og* *f-og* *b-ug* *r-ug* *p-en* *h-en* *s-un* *c-an* *w-eb* *b-ed*
Description	The educator gives two blocks of two different colors to each child. The children put the blocks in front of them. The educator introduces a new way to say parts in words: with 'magic blocks'. The educators models the activity for the children: when he/she wants to say a word like *dog* in two parts, he/she first

	touches one block and says *d*, and then touches the next block and says *og*. The educator repeats twice, and then asks each child to try to do it for one word. The educator should limit the first sound choices to two and use only three to four words each session until children can segment easily. At first, the educator could limit the words to a small set of pictures used successfully in an earlier blending game
Variations	- Once children have understood the activity, words containing longer/more complex onset-rime units can be introduced, e.g., *sn-ack*; *str-ing; m-ilk* - Children can say the word slowly before trying to segment it at the onset-rime level, i.e., they touch the first block while stretching or iterating the first sound: "*Milk. Mmmmilk. Mmm*" and then say "*-ilk*" while touching the second block
Source	O'Connor *et al*., 1998

9.4.11 Let's Move to Onset-Rime Units

Category	Onset-Rime Awareness (Rhyming Awareness)
Objectives	To develop listening and speaking skills; to focus children's attention on onset-rime in particular, and rhyming in general; to reinforce children's ability to analyze words into onset-rime units; to help children segment words into onset-rime units; to review or learn vocabulary; to develop body awareness and kinesthetic intelligence
Materials Needed	List of one-syllable words with simple and orthographically regular onset-rime units, such as *c-at* *r-at* *d-og*

	f-og *b-ug* *r-ug* *p-en* *h-en* *s-un* *c-an* *w-eb* *b-ed*
Description	The educator first models the activity for the children. She/he pronounces one familiar word used in a previous activity and divides it at the onset-rime level, e.g., "*f-og*." The children move around the classroom and repeat what the educator says. The children are asked to touch two different objects close to each other in the classroom while saying the word, e.g., *f* (touch table) *og* (touch chair)
Variations	- When children have understood the activity, the educator repeats the same words without dividing them at the onset-rime level. The children have to say them into onset-rime units, while touching two different objects in the room - Instead of touching objects, children move around the class and when they pronounce a word in onset-rime units they do two different movements, one for the onset (e.g., jump) and one for the rime (e.g., greet)

9.5 One-to-One Correspondence Awareness

9.5.1 Let's Set the Table

Category	One-to-One Correspondence Awareness
Objectives	To develop listening and speaking skills; to help children understand the general concept of one-to-one correspondence; to review or learn vocabulary; to learn or

	review social habits and social behaviors; to learn to take turns
Materials Needed	Cups and napkins
Description	At snack time, children are asked to take turns setting the table, placing a cup or a napkin in front of each chair. The educator models the activity first, e.g., "*Now we are going to set the table. We are going to put one cup in front of each chair,*" and shows the action. As it is a simple task, it can be carried out by younger children as well. At a later stage, when the activity has become automatic, children can be introduced to the English names of the objects they place on the table, e.g., *cup*, *napkin*, and be asked to repeat them

9.5.2 One Shoe for Each Foot

Category	One-to-One Correspondence Awareness
Objectives	To develop listening skills; to help children understand the general concept of one-to-one correspondence; to review or learn vocabulary; to learn or review social habits and social behaviors
Materials Needed	Shoes
Description	When the educator helps children put on or take off their shoes during the day, he/she stresses the connection between one shoe and one foot only, e.g., "*We are going to put one shoe on each foot.*" The educator can play with and 'tease' each child by saying "*Let me put two shoes on your foot,*" while trying to put the two shoes on the same foot, and waiting for the child's reaction, to explain that one shoe is for one foot only

9.5.3 One Pillow for Each Bed

Category	One-to-One Correspondence Awareness
Objectives	To develop listening and speaking skills; to help children understand the general concept of one-to-one correspondence; to review or learn vocabulary; to review or learn cardinal numbers; to learn or review social habits and social behaviors
Materials Needed	Pillows; beds or mattresses
Description	The educator puts two or three pillows on each child's bed. When younger children are taken to take a nap during the day, the educator makes them see that there are far too many pillows on each bed, e.g., "*Look! There are three pillows on each bed! Do we need two pillows or just one*?," encouraging children to repeat "*One.*" Each child is encouraged to take extra pillows away from his/her bed and pile them on a corner

9.5.4 One Chair for Each Child

Category	One-to-One Correspondence Awareness
Objectives	To develop listening skills; to help children understand the general concept of one-to-one correspondence; to review or learn vocabulary; to learn or review social habits and social behaviors
Materials Needed	Little chairs
Description	When the educator has the children do an activity where they are required to be seated (e.g., drawing), he/she divides the children in pairs and asks them to seat on one chair only and start the activity, e.g., "*Each pair of children sits on the chair and starts drawing.*" After a few minutes, when the children are trying to draw while seated in pairs on their chairs, the educator makes them stand up and get an extra chair for each child in the pair, e.g.,

	"*Get one more chair for your friend.*" The educator tries to make the children understand that every child needs one single chair for himself/herself

9.5.5 One Toy for Each Child

Category	One-to-One Correspondence Awareness
Objectives	To develop listening and speaking skills; to help children understand the general concept of one-to-one correspondence; to review or learn vocabulary; to learn or review social habits and social behaviors
Materials Needed	Toys
Description	The educator sets a time during the day specifically dedicated to play with toys where each child is given one toy. Children play for some minutes, and when they hear a sound (e.g., the triangle sound) they have to chose a friend and exchange their toy, e.g., "*Choose a friend, and swap toys.*" When the educator decides the game is over, each child is asked to replace his/her toy in its place. Children can be introduced to the English names of the toys during the game, e.g., "*car*, *teddy-bear*," and be asked to repeat them

9.5.6 One Glove for Each Hand

Category	One-to-One Correspondence Awareness
Objectives	To develop listening skills; to help children understand the general concept of one-to-one correspondence; to review or learn vocabulary; to review or learn cardinal numbers
Materials Needed	Gloves

Description	This is a winter activity. When the educator arrives in the class in the morning, she/he shows up with only one glove on his/her hand and the other hand naked. The educator tries to make all children see that he/she is wearing only one glove, while pretending he/she is shivering and saying "*Oh it's cold outside, it's so cold, I'm freezing, my hand is freezing*" and moving his/her naked hand while saying this. The educator waits for the children's reaction and then explains that "*two gloves – one for each hand- are needed in winter when it's cold outside*"

Chapter 10

A Proposal of Tasks: Phoneme Awareness

> Few preschoolers spontaneously attain phonemic awareness, but many studies have shown that they can acquire this understanding by engaging in activities that draw their attention to the existence of phonemes in spoken words.
> (Burns *et al.*, 1999)

The activities and games that are presented in this chapter focus on awareness at the phoneme level[66], and are meant to help Italian preschoolers develop their phoneme awareness skills in EFL, as well as their overall oral skills in EFL. The present tasks are especially intended to be addressed to older children of 5 years of age. It should be kept in mind that not all children may be able to master all the task types though. Some easier activities, e.g., identification and stretching or iteration of initial sounds in words, may be carried out by children of 3 and 4 years of age as well. In general, however, the specific modality chosen to present and carry out each task can make it easier to address this typology of tasks to youngest learners. Like other phonological awareness tasks, phoneme awareness activities are meant to be carried out in broader educational settings. For example, when working on the category of animals, the educator could propose a phoneme blending task which includes words such as *dog*, *cat*, *duck*, *hen*. Or when working on the category of food, the educator could include words such as *corn*, *cake*, *pea*, *pear*, in tasks where children are required to identify initial phonemes in words. Furthermore, the educator could start a task on the initial sounds of words by referring to children's own experiences, as in the following example, "Anna showed us a photo of

[66] A list of American English consonant and vowel phonemes can be found in Appendix A and B of the present work.

her new dog. Let's listen to the word 'dog.' It starts with a /d/ sound. Hear the /d/ at the beginning of the word dog?" This can be taken as a starting point to introduce other similar or more complex tasks. Phoneme awareness activities and games are presented in a sequence of increasing difficulty at the cognitive level. This sequence passes through (cf. 8.2.2.5)

- Phoneme identification and isolation
- Phoneme blending
- Phoneme segmentation
- Phoneme manipulation:
  - Phoneme counting
  - Phoneme deletion
  - Phoneme addition
  - Phoneme removal
  - Phoneme reversal
  - Phoneme substitution
  - Phoneme completion

Following is a set of tables describing each specific phoneme awareness task. The labels for each table are the same as those selected for phonological awareness activities in chapter 9. The language of instruction is intended to be English, with Italian as a support for clarification or directing group behaviour.

10.5 Phoneme Identification and Isolation

10.1.1 Sounds, Not Words

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to introduce children to phoneme awareness; to focus children's attention on sounds

	instead of words; to develop familiarity with sound units smaller than onset-rime units; to help children learn that sounds are parts of words and can be isolated from words; to develop musical intelligence; to motivate children before more complex tasks
Materials Needed	Familiar songs, e.g., *Happy Birthday*; *If You're Happy and You Know it*; *I'm a Little Teapot*
Description	The educator chooses a phoneme and a tune with which children are familiar. For example, he/she chooses the phoneme /p/, "*The sound of the day is /p/, as in 'pig.'* Then the educator chooses the tune of *Happy Birthday*, and sings "*pppp, pp, pppp, pp…*" for the entire song. Children are encouraged to sing along with the educator.
Variation	At a more advanced stage, more difficult phonemes can be selected to sing the tune, e.g., /ʃ/
Source	O'Connor *et al*., 1998

10.1.2 Join the Line

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to introduce children to phoneme awareness; to focus children's attention on and recognize initial phonemes; to help children understand that phonemes are parts of words; to help children understand that every phoneme can show up in many different words
Materials Needed	Children's names
Description	During a transition time, the educator asks children to line up based on the beginning sound that he/she will say which matches with their names, e.g., "*If your name begins with /s/, join the line.*"

Variation	The sentence uttered by the educator can be sung to the tune *If You're Happy and You Know it*: *If your name begins with /s/, join the line.* *If your name begins with /s/, join the line.* *Silvia's name begins with /s/.* *Silvia's name begins with /s/.* *Silvia's name begins with /s/.* *Join the line.*
Source	Cabell *et al.*, 2009

10.1.3 Cross the Bridge

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to introduce children to phoneme awareness; to focus children's attention on and recognize initial phonemes; to help children understand that phonemes are parts of words; to help children understand that every phoneme can show up in many different words; to review or learn vocabulary
Materials Needed	Children's names; animal toys
Description	The educator creates a pretend setting with two islands connected by a bridge (e.g., two carpets connected by a bridge made up by shoes or big blocks). The educator explains that some children will live in one island – and asks a group of children to sit on one carpet – and some other children will live in the other island – and has the rest of the children sit on the other carpet. The only way for the children to go and play with one another is to cross the bridge. But that is a magic bridge. In order to cross it, children have to say their name by stretching or iterating the first sound of their name, e.g., "*D-d-d-davide; S-s-s-silvia,*" or the bridge would collapse. Children

	take turns in going and visiting one another on the two islands
Variation	To play this version, children should know the names of some animals, e.g., *dog*, *fish*, *frog*, *rat.* Children play the game of the two islands with animal toys who go and visit one another on the island, by crossing the magic bridge and saying the first sound of their name, e.g., *frog, f-f- f- frog*"
Source	Zhurova (1963)

10.1.4 Guess the Name

Category	Phoneme Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to develop phoneme awareness; to focus children's attention on and recognize initial phonemes; to help children understand that phonemes are parts of words; to help children understand how phonemes sound when spoken in isolation; to help children understand that every phoneme can show up in many different words; to help children pay attention to how phonemes feel when they are articulated; to review or learn vocabulary
Materials Needed	Children's names; picture cards of familiar three-phoneme words, such as *fig* *leg* *man* *net* *pen* *rag* *sun* *dog*
Description	The children are seated in a circle. The educator says "*Guess whose name I'm going to say now*" and secretly chooses the name

	of one of the children. The educator only enunciates the initial phoneme of the name selected. For names starting with a stop consonant, such as *Davide*, the phoneme should be repeated over and over, clearly and distinctly: "*d-d-d-d-d.*" For names starting with a continuant consonant, such as *Sonia*, the phoneme can also be stretched: "sssss." Children are asked to repeat the initial sound and encouraged to feel what happens in their mouths and lips. Then children have to guess the name of the child selected. If more than one child's name has the same initial sound, children can be encouraged to guess all of the possibilities
Variation	When children have understood the activity, the educator plays the game using three-phoneme names of common objects/things already known by children, better if starting with continuant consonants, e.g., *fig, leg, sun*. The educator first shows all the picture cards of the words selected, and then only says one initial sound at a time, e.g., "*f-f-f-f-f.*" Once children have figured out the name (*fig*), the educator shows the card to verify whether the answer is correct
Source	Cabell *et al*., 2009

10.1.5 Same Sounds, Different Words

Category	Phoneme Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to develop phoneme awareness; to focus children's attention on and recognize initial phonemes; to help children understand that phonemes are parts of words; to help children understand that every phoneme can show up in many different words; to help children compare,

	contrast, and identify the initial sounds of words; to help children pay attention to how phonemes feel when they are articulated; to review or learn vocabulary
Materials Needed	Picture cards for each targeted phoneme, such as *fox*, *fan, fur*, for the /f/ set *man*, *mop*, *mix* for the /m/ set
Description	The educator has a set of three to four picture cards for each targeted phoneme. Initially the name of each picture should begin with a single consonant, preferably a continuant consonant. The names of the objects depicted should be already familiar to children. If not, the educator should dedicate time to make children learn the names. Once the names are familiar, and have been repeated together, the educator asks a child to pick up one card from the set and name it, e.g., *fox*. The educator repeats the name, drawing out the initial consonant, e.g., "*f-f-f-ox.*" Then the educator asks the children to repeat the name in the same way, and to notice and describe what they are doing with their mouths as they make the *f-f-f* sound. After all the children have tried, the educator reviews the pictures chosen and asks "*Do these words begin with the same sound? What sound is it? Yes, they all start with the sound f-f-f.*" The educator then divides children in small groups and replays the game in the form of a competition
Variations	- The educator passes out the pictures to the children. Each child names his/her picture drawing out the initial consonant, e.g., *f-f-fish*. This game is suitable for small groups - When children have become competent in identifying first sounds in words, the same activity can be proposed with final sounds (e.g., *car, jar*) and eventually with internal sounds (*cat*, *hat*) in one-syllable

	words. At a more advanced stage, and with older children, the activity can be proposed with multisyllabic words (e.g., *teddy*, *temple*, *terrace*) Consonant clusters (e.g., *trolley*) should be initially avoided
Source	Adams *et al*., 1998b

10.1.6 The Poster of Sounds

Category	Phoneme Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to develop phoneme awareness; to focus children's attention on and recognize initial phonemes; to help children understand that phonemes are parts of words; to help children understand how phonemes sound when spoken in isolation; to help children compare, contrast, and identify the initial sounds of a variety of words; to help children understand that every phoneme can show up in many different words; to help children pay attention to how phonemes feel when they are articulated; to review or learn vocabulary
Materials Needed	A poster of three-phoneme pictured words that begin with the target sound, such as *fan, fig, fox* *dog, dad, dig* *bag, bib, box* *mop, man, mud*
Description	The educator shows a picture on the poster, stretching or iterating the first sound of the word, e.g., *d-d-d-dad*, and encouraging the children to repeat the words and sounds in stretched or iterated fashion. When the children feel confident with the activity, the educator points to each picture and wait for the children themselves to say the word and sound in the stretched or iterated fashion

Variation	When children have understood the activity, the educator can add pictures that begin with a different sound, e.g., not only /d/, but also /m/. The educator points to pictures of different sounds and repeats the words and sounds together with the children. When the children have learned all the words, they are encouraged to repeat the words and sounds pointed to by the educator without his/her help. Children can also be divided in small groups and the activity can be carried out in the form of a competition
Source	O'Connor *et al*., 1998

10.1.7 Sharing Books and Sounds

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to develop phoneme awareness; to focus children's attention on initial phonemes; to help children recognize when several words begin with the same sound; to review or learn vocabulary; to develop story comprehension
Materials Needed	Books that feature alliteration (i.e. words beginning with the same sound), e.g., Nancy E. Shaw's *Sheep in a Shop* or *Sheep on a Ship*; picture cards representing words in the book selected and words not present but beginning with the same initial sounds
Description	The educator prepares a set of picture cards illustrating words in the book and shows the set of cards to the children, so as to motivate them, and enhance story comprehension. The educator tells the story aloud stressing the words beginning with the same sound, e.g., *sheep*, *shop*. Children are invited to repeat the words drawing out the sound. Once children have understood the activity and are

	familiar with the story, the educator tells the story again and waits for the children themselves to draw out the sounds in the words selected
Variation	The educator prepares another set of picture cards representing words not present in the book but beginning with the same main initial sound, e.g. *shell*, *shade*, *short*. Once the story and the target words are familiar to the children, the educator says "*The words 'sheep' and 'shop' starts with the /ʃ/ sound. There are some other words starting with /ʃ/*" and shows the children the picture cards with words beginning with the targeted sound
Source	Cabell *et al*., 2009

10.1.8 Same or Different?

Category	Phoneme Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to extend children's awareness of initial phonemes; to help children compare, contrast, and identify the initial sounds of a variety of words; to help children pay attention to how phonemes feel when they are articulated; to review or learn vocabulary
Materials Needed	Picture cards of familiar three-phoneme words beginning with different sounds
Description	Children are seated in a circle. The educator spreads two picture cards at a time from different sets (e.g., *bug*, *fan*) out in the middle of the circle. The educator says the two words by stretching or iterating the initial sounds, and then asks: "*B-b-b-bug and f-f-f-fun. /B/ and /f/. They sound different. /B/ and /f/. Are they the same or different*?" Children are encouraged to repeat along with the educator and feel

	what happens in their mouths and lips, and then decide whether the first sound is the same or not. To make the activity more challenging, the educator can add words beginning with the same sound, and check whether children can recognize that the sound is the same
Variation	The task can be presented within meaningful contexts, such as short guessing stories: "*Here's a boat, and here's another boat. This boat starts with /b/. The other boat starts with /b/. Are they same or different?*"; "*Cat, /k/, and bug, /b/. Cat goes visit his friend the bug. Cat starts with /k/ and bug starts with /b/, are they same or different?*"
Source	O'Connor *et al*., 1998

10.1.9 Snap Your Fingers

Category	Phoneme Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to extend children's awareness of initial phonemes; to help children compare, contrast, and identify the initial sounds of a variety of words; to review or learn vocabulary; to motivate or prepare for more complex tasks
Materials Needed	List of familiar three-phoneme words beginning with the same or different sound, such as *cat-pat* *rat-tan* *ball-bat* *car-cat* *mat-man* *fog-dog* *leg-lap*
Description	Children are seated in a circle. The educator says he/she is going to say two

	words, e.g., *ball* and *bat*. If they share the same initial sound, children are asked to say *snap*! and snap their fingers. If the two words do not share the same initial sound, everybody is required to be quiet
Source	Burns *et al*., 1999

10.1.10 The Bag of Initial Sounds

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to extend children's awareness of initial phonemes; to help children compare, contrast, and identify the initial sounds of a variety of words; to review or learn vocabulary
Materials Needed	A paper bag for each child; picture cards for each targeted phoneme, such as *fox*, *foot*, *fish*, for the /f/ set *man*, *mouse*, *moon* for the /m/ set
Description	Children are seated in a circle. The educator secretly assigns a different initial sound to each child in the group (e.g., /f/, /p/, or /s/) and places pictures targeting these sounds in the middle of the circle. Children take turns in collecting the pictures with the name beginning with their assigned sound, and place the pictures in their paper bags. The educator then has each child reveal the pictures they collected and repeat each word and initial sound after him/her, e.g., "*Paolo found a f-f-f-oot… a f-f-f-ox, and a f-f-f-ish.*" The educator repeats the three words and asks: "*So what initial sound is Paolo?*"
Variation	At a later stage, each child is required to place the pictures collected on the table, and the other children are asked to guess the initial sound. This time, the educator only says the whole word without stretching the first sound, e.g., "*Amir found*

	a ruler, a rabbit, and a rainbow. What initial sound is it?"
Source	Cabell *et al*., 2009

10.1.11 Sound Memory

Category	Phoneme Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to extend children's awareness of initial phonemes; to help children compare, contrast, and identify the initial sounds of a variety of words; to help children recognize initial sounds that match and do not; to review or learn vocabulary
Materials Needed	Pairs of picture cards for each targeted phoneme, such as *fox-fig* *man-mop* *lap-leg* *rag-rod* *pig-pot* *tea-tap* *cot-cab*
Description	Children are seated in a circle. The educator places a few picture cards from different sets face down in the middle of the circle. Children take turns flipping pairs of pictures right side up and deciding if the initial sounds of the pictures' names are the same. If the initial sounds match, the child selects another pair; otherwise, another child takes turn. Children are encouraged to articulate the initial sounds of the words they pick up. The educator should first choose cards that represent phonemes that are clearly different, e.g., /d/ versus /k/. The number of initial sounds represented should be initially limited to two or three sounds. The educator can support children in taking

	decisions, "*'Fox' and 'mat.' 'Fox' starts with /f/, and 'mat' starts with /m/. Are they the same or different?*"
Variation	When children have become competent in identifying initial sounds in words, the same activity can be proposed with final sounds (e.g., *run-van, cap-lap*) and eventually with internal sounds (*cat-bat*; *dip-tip*) in one-syllable words. At a more advanced stage, and with older children, the activity can be proposed with multisyllabic words (e.g., *teddy*, *temple*, *terrace*) Consonant clusters (e.g., *trolley*) should be initially avoided
Source	Adams *et al*., 1998b

10.1.12 Initial Sound Bingo

Category	Phoneme Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to extend children's awareness of initial phonemes; to help children compare, contrast, and identify the initial sounds of a variety of words; to help children recognize initial sounds that match and do not; to review or learn vocabulary
Materials Needed	Bingo boards illustrating four pictures; picture cards of one-syllable words beginning with the same sounds as the pictures on the bingo board
Description	Each child has a bingo board and takes turns in selecting a card from the deck of picture cards. The child articulates the name of the picture (e.g., *bus)* and finds a word that begins with the same sound on his/her bingo board (e.g., *bat*). A counter or a bean is placed over a picture if a match is found. When a child has covered all of his/her pictures on the board, he/she says "*Bingo!*" This activity is

	suitable for older children or children who have already interiorized the notion of initial sound and acquired a sufficient number of words. If children have difficulties with this game, the educator moves the picture card selected along each picture on the bingo board to help children find the rhyming pair, e.g., "*Does 'bus' has the same initial sound as 'mat'?, Does 'bus' has the same initial sound as 'car'?, Does 'bus' has the same initial sound as 'ball'?* "
Variation	At a later stage, longer words and words with consonant clusters can be inserted in the activity, e.g., *puppy*, *tooth*, *smile*, *truck*
Source	Gillon, 2004

10.1.13 Roll the Ball on the Final Sound

Category	Phoneme Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to develop children's awareness of final phonemes; to help children compare, contrast, and identify the final sounds of a variety of words; to help children recognize final sounds that match and do not; to review or learn vocabulary
Materials Needed	Ball; big picture cards of familiar words ending with two clearly different sounds, such as *bat*, *hat*, *cat* *man*, *pen*, *pin*
Description	The educator shows big picture cards to children, says the words, e.g., *bat*, *hat*, stressing the final sound of each word. The educator encourages children to listen to the final sound "*What is the final sound of 'mat' and 'bat*'?" The educator then introduces words ending with a different sound, e.g., *man*, *pen*. When children have understood what a final sound is, the

	educator encourages them to compare the final sounds of words that end with different sounds; e.g., *bat*, *man*, and listen to the difference. When children feel confident with the activity, the educator introduced a further step. He/she places four big pictures face down on the floor, has children stand up in a circle and says: "*Let's find all the pictures that end with the same sound, e.g., /t/. Let's roll the ball over the pictures that end with a /t/ sound.*" After the educator has modeled the task, children take turns in rolling the ball. Whenever they roll it, they articulate the sound
Variations	- At a later stage, more complex or longer words can be introduced, e.g., *walk, play, teddy*, *stick* - This activity can be carried out with initial sounds as well
Source	Gillon, 2004

10.1.14 The Lost Sound

Category	Phoneme Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to develop children's awareness of final phonemes; to help children compare, contrast, and identify the final sounds of a variety of words; to help children recognize final sounds that match and do not; to review or learn vocabulary
Materials Needed	Picture cards of words ending with same or different sounds
Description	The educator shows groups of two pictured words to children, says the words, e.g., *bat*, *mat*, stressing the final sound of each word. The educator encourages children to listen to the final sound "*What is the final sound of 'mat' and 'bat'*?" When children can recognize final

	sounds in words, the educator encourages the children to compare the final sounds of words that end with different sounds; e.g., *man*, *cat*, and listen to the difference. When the children feel confident with the activity, the educator introduce a further step, where children have to guess a word between two: "*Now we are going to help a lost sound to find its word. It is the /t/ sound. The /t/ sound is the final sound of a word. The word is 'cat' or 'pin'. The /t/ is the final sound of 'cat' or 'pin.' Which word? 'cat' or 'pin'*?"
Variations	- At a later stage, three words are presented, e.g., *mat, bat*, *car*, and children are encouraged to guess the words that end with the same sound - At a later stage, longer and more complex words can be introduced, e.g., *rain*, *teddy*, *stick*

10.1.15 Sound-Letter of the Week

Category	Phoneme Awareness; Alphabet Knowledge; Sound-Letter Correspondence Awareness (Print Awareness)
Objectives	To develop listening and speaking skills; to extend children's awareness of initial phonemes; to help children compare and contrast initial sounds; to help children distinguish between letters and words as units of print; to help children recognize some alphabet letters and learn their most common sounds; to help children match phonological forms to orthographic forms; to help children understand the alphabetic principle; to review or learn vocabulary
Materials Needed	Big alphabet letter cards; picture cards of familiar objects beginning with the targeted sound, e.g., *pan*, *pat*, *paint*
Description	Children are seated in a circle. The educator selects a letter to work on for one

	week. The educator introduced the letter and says its most common sound, e.g., "*Here's p. It says /p/. Let's think of things that start with /p/.*" The educator begins by identifying children's names that begin with /*p*/, e.g., "*Paolo, Patrizia*", and things in the classroom that start with /*p*/, e.g., "*Pen*, *picture*." Then the educator uses picture cards to demonstrate objects and actions that start with /*p*/; e.g., "*Pan*, *pat*, *paint*." When the educator says the words starting with the selected sound, he/she stresses the initial sound, either stretching or repeating it, while touching the alphabet letter card of the corresponding sound. This activity takes place over several days and weeks and is most appropriate with older children
Variations	- After children have learned one sound, e.g., /*p*/, the educator shows pictures of familiar objects that either start or not with the /*p*/ sound. Children have to listen for and discriminate /*p*/ words and place the corresponding cards on top of the /*p*/ letter on a pile - After the educator has introduced a couple of sounds that are distinctly different, e.g., /*p*/ and /m/, he/she shows children pictures including objects beginning either with /*p*/ or /m/. Children have to listen for and discriminate /*p*/ words and /m/ words and place the corresponding cards on top of the corresponding letters
Source	O'Connor *et al.*, 1998

10.1.16 Catch the Letter

Category	Phoneme Awareness; Alphabet Knowledge; Sound-Letter Correspondence Awareness (Print Awareness)
Objectives	To develop listening and speaking skills; to extend children's awareness of initial phonemes; to help children distinguish between letters and words as units of print; to help children recognize some letters and their most common sounds; to help children match sounds to letters; to help children understand the alphabetic principle; to review or learn vocabulary; to develop body awareness and kinesthetic intelligence
Materials Needed	A beanbag; big alphabet letter cards
Description	The educator chooses one phoneme and one grapheme to work on, advancing from simpler sounds, e.g., /b/, /m/, to more complex sounds, e.g., /ŝ/, /θ/. Children are seated in a circle. The alphabet letter card corresponding to the sound selected is placed on the floor/carpet. The educator pronounces the sound and letter chosen, asks children to repeat the sound, and tosses a beanbag onto the corresponding letter card, e.g., /b/ is thrown onto the grapheme *b*, and /ŝ/ is thrown onto the grapheme *sh*. Each child then takes turns in tossing the beanbag onto the letter card, after the educator has selected and pronounced a known sound
Variations	- The educator asks children to take turns to move themselves physically to the targeted letter and touch it. Each child should articulate the sound at each turn. - The educator asks children to take turns to drive a toy car to the target lettered, or to push a teddy in a trolley to the letter, to fly a Superman toy to the letter, or any other object, while articulating the sound - At a later stage, the educator can present

	two different sounds (e.g., /p/ and /m/), and place two different letter cards on the floor. Children are divided in small groups. The educator pronounces one sound only, e.g., /p/, and one group at a time is asked to toss the beanbag onto the corresponding letter
Source	Gillon, 2004

10.1.17 The Munching Crocodile

Category	Phoneme Awareness; Alphabet Knowledge; Sound-Letter Correspondence Awareness (Print Awareness)
Objectives	To develop listening and speaking skills; to extend children's awareness of initial phonemes; to help children compare, contrast, and identify the initial sounds of a variety of words; to help children recognize initial sounds that match and do not; to help children distinguish between letters and words as units of print; to help children recognize some letters and their most common sounds; to help children match phonological forms to orthographic forms; to help children understand the alphabetic principle; to help children pay attention to how phonemes feel when they are articulated; to review or learn vocabulary
Materials Needed	Big alphabet letter cards; picture cards with objects beginning with the same consonant except for one, e.g., *pie*, *pea*, *scone*
Description	Children are seated in a circle. The educator shows a large alphabet letter card and says "*This is the letter 'p'. It makes a /p/ sound. Can you help me make the /p/ sound*?" and encourages children to articulate the sound correctly. Then the educator shows an animal toy, e.g., a crocodile, and says

	"*My friend the 'munching crocodile'* [the educator mimes the action of munching] *is going to eat up all the pictures that don't start with a /p/ sound. Let's listen carefully and be ready to make the crocodile eat the pictures that don't start with the /p/ sound.*" The educator displays each card and pronounces each word, stressing the initial sound, encouraging children to say whether it starts with a /p/ sound or not. When the activity is finished, the educator asks the children to articulate all the words that started with the /p/ sound and place the pictures on top of the letter *p*. This game is suitable for older children
Source	Gillon, 2004

10.1.18 The Mystery Bag

Category	Phoneme Awareness; Alphabet Knowledge; Sound-Letter Correspondence Awareness (Onset-Rime Awareness; Print Awareness)
Objectives	To develop listening and speaking skills; to extend children's awareness of initial phonemes; to help children compare, contrast, and identify the initial sounds of a variety of words; to help children distinguish between letters and words as units of print; to help children recognize some letters and their most common sounds; to help children match phonological forms to orthographic forms; to help children understand the alphabetic principle; to review or learn vocabulary
Materials Needed	A bag with toys or picture cards of familiar objects that begin with one of two phonemes that are visually different, e.g., /m/ and /k/ (*car*, *cot*; *man, mop*); big alphabet letter cards

Description	Each child is asked to select a toy/card from the mystery bag, say the name and identify the initial phoneme. The educator models the next step, and places beside the toy selected a large corresponding alphabet letter card. For example, the educator says to a child: "*You've found a 'car' in the mystery bag. Can you say 'car'? 'Car' starts with a /k/ sound, and this letter makes a /k/ sound* [pointing to the letter card *c*]. *Can you drive the car to the letter 'c'?"* and the educator helps the child take the toy or card to the letter card
Variations	- At a later stage, words with more than one syllable can be inserted in the activity, e.g., *teddy, doggy, table* - The educator puts one animal toy only in the mystery sound bag, and says "*Guess what's in my bag. It begins with /d-d-d-d/ and it swims*" (*duck*), while miming the action. Names of animals who perform some specific action that can be mimed should be preferred, e.g., "*It begins with a /k-k-k-k/ and it jumps* (*kangaroo*); *it begins with a /b-b-b-b/ and it flies* (*bird*); *it begins with a /s-s-s-s/ and it crawls* (*snake*)
Source	Gillon, 2004

10.1.19 The Bag of Letters

Category	Phoneme Awareness; Alphabet Knowledge; Sound-Letter Correspondence Awareness (Print Awareness; Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to extend children's awareness of initial phonemes; to help children distinguish between letters and words as units of print; to help children recognize some letters and their most common sounds; to

	help children match phonological forms to orthographic forms; to help children understand the alphabetic principle; to review or learn vocabulary
Materials Needed	A bag with magnetic letters; picture cards of familiar one-syllable words, such as *car* *cat* *cap* *man* *map* *mat*
Description	The educator shows two magnetic letters to the children, e.g., *c* and *m*, articulates the sounds, and gives some examples of words starting with that sounds. Then the educator pours the magnetic letters into a bag, shows a picture card of a word starting with one of the letters-sounds in the bag, names the word, e.g., *car*, and asks one child to pick up one letter in the bag without looking. The educator helps the child recognize the letter, "*Look, this is a 'm' letter. /M/ as in mom,*" repeats the selected pictured word, *car*, and helps the child verify whether the magnetic letter and the initial sound in the word match, "*Does 'car' start with /m/?' Listen: /Mmm/. C-c-c-ar. Is /m/ the first sound in 'car?*" Children take turns in carrying out the task

10.1.20 Change the First Sound-Letter

Category	Phoneme Awareness; Alphabet Knowledge; Sound-Letter Correspondence Awareness (Print Awareness; Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to extend children's awareness of initial phonemes in particular, and each word's sound in general; to help children

	distinguish between letters and words as units of print; to help children recognize some letters and their most common sounds; to help children match phonological forms to orthographic forms; to help children make comparisons between different letters and sounds; to help children understand the alphabetic principle; to encourage left-right progression; to review or learn vocabulary
Materials Needed	Big alphabet letter cards; picture cards of pairs of familiar one-syllable words, such as *mat-bat* *man-can* *map-tap* *dog-fog*
Description	Children are seated in a circle. The educator shows one card at a time, e.g., *mat*, and places the alphabet letter cards of each corresponding phoneme (*m, a, t*) on the floor, to visually represent the word. The educator says "*This word says 'mat', /m/-/æ/-/t/,*" pointing to each letter as each sound is pronounced, and asking children to join in articulating the sounds. Then the educator takes a different letter and says "*Now I want to make a new word. I'm going to change the first letter.*" The educator calls a child and has him/her remove the initial letter of *mat*, then he/she says "*Now I'm going to put the initial letter b that makes a /b/ sound. I've made a new word. This word says 'bat'. Let's say it slowly, /b/-/æ/-/t/,*" pointing to each letter as the sound is articulated and encouraging children to join in pronouncing each sound. Then the educator shows the picture card of *bat*. This activity is quite challenging and should be played with older children. It should be carried out with two words at a time, which only differ in their initial

	phoneme
Source	Gillon, 2004

10.1.21 Guess the Letter-Sound

Category	Phoneme Awareness; Alphabet Knowledge; Sound-Letter Correspondence Awareness
Objectives	To develop listening and speaking skills; to reinforce children's awareness of initial phonemes; to help children distinguish between letters and words as units of print; to help children recognize some letters, their most common sounds, and their shapes; to help children make comparisons between different letters and sounds; to help children understand the alphabetic principle; to review or learn vocabulary
Materials Needed	A box; magnetic letters of familiar sounds, such as /b/, /k/, /d/,/m/, /p/, /t/
Description	The educator pours magnetic letters of sounds and shapes familiar to the children into a box. One at a time, the educator has each child reach into the box and select a letter. While holding the letter inside the box, the educator tells the children to feel the letter with his/her fingers without looking at it. Then the child is guided to guess the letter sound, and pull the letter out to see whether the answer is correct. Once this has been verified, the child is encouraged to repeat the letter sound, e.g., /b/, several times, and then find a one-syllable word beginning with that sound, e.g., *bat*, *bug*. This activity should be carried out when children have already learned some letters-sounds, and mastered one-syllable words beginning with those letters-sounds
Source	Cabell *et al*., 2009

10.1.22 Matching Letters, Sounds and Words

Category	Phoneme Awareness; Alphabet Knowledge; Sound-Letter Correspondence Awareness (Print Awareness; Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to reinforce children's awareness of initial phonemes; to help children distinguish between letters and words as units of print; to help children recognize some letters and their most common sounds; to help children make comparisons between different letters and sounds; to help children understand the alphabetic principle; to help children match letters/sounds to words beginning with that letter/sound; to review or learn vocabulary
Materials Needed	Big alphabet letter cards; picture cards of familiar one-syllable words, e.g., *tap*, *leg*, *run*
Description	The educator shows an alphabet letter card to the children, e.g., /k/. Then he/she places two pictures, including the one of the object beginning with the letter selected, below the card, e.g., *cat*, *mat*. The educator says "*Today we're going to play a matching game. We're going to match the sound of this letter* [while pointing to the letter card] *with the initial sound of one of these pictured objects* [while pointing to the pictures]. *Ready? Which object begins with the /k/ sound*?", and pronounces each word stressing its initial sound. Children are invited to select the picture card and pair it with the letter card. Children can take turns to carry out the activity. This is a quite challenging activity, as it presupposes that children already know some letter sounds, and can recognize words in the picture cards selected by the

	educator
Source	Cabell *et al*., 2009

10.6 Phoneme Blending

10.2.1 Blend the Word Back

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to develop phoneme blending skills; to help children synthesize phonemes spoken one by one into familiar words; to review or learn vocabulary
Materials Needed	Picture cards of familiar one-syllable words; tokens or chips
Description	The educator tells the children that he/she is going to say the sounds in a word in a weird way, i.e., in little bits, and that he/she needs the children's help to put the word back together again. The educator should start with simple one-syllable words, e.g., *man, cat, tap*, and pronounce the sounds with enough space between them, e.g., */k/ pause /æ/ pause /t/*, so to help children blend the individual sounds to form the targeted word. Children are asked to push a token or a chip on a mat for each sound. Once the activity is over, the educator displays picture cards for each work selected. This activity works well when the words are already known by children
Variations	- Once children are able to blend CVC words (e.g., *mat*), they can be introduced to more complex blending tasks including words with consonant clusters (e.g., *grass*, *swim*) and CVCC words (e.g., *walk*, *park*). - The educator shows three picture cards of words familiar to children: "*Let's name these pictures: "'cat,' 'pig,' 'bat.' Now I'll say*

	the little bits of a word. It's one of these, but you have to listen and guess: /p/-/ɪ/-/g/" - When blending words including /i/, such as *bee*, *sheep*, *sheet*, the educator can introduce words that contain /ɪ/, such as *bit*, *ship*, *lip*, and stress the different lengths in the words when articulating them
Source	Cabell *et al*., 2009

10.2.2 I'm Thinking of…

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to develop phoneme blending skills; to help children synthesize phonemes spoken one by one into familiar words by providing categories to facilitate the task; to review or learn vocabulary
Materials Needed	Picture cards of familiar words belonging to various categories (e.g., animals, colors, food, children in the class, etc.)
Description	The educator begins by stating the category, "*I'm thinking of… an animal. Here's the clue: /d/- /ɑ/-/g/. Can you tell me what this word is*?" Children are asked to repeat the segmented version before they guess the answer. The words selected by the educator should be already known by the children
Variations	- At a more advanced stage, the educator can present more complex words, e.g., words with consonant clusters and CVCC words - To sustain motivation over several days, this activity can be varied by putting familiar objects into a bag for children to guess or by using picture cards, that the educator will turn to show children when they correctly guess each word - The educator provides children with a choice of two familiar objects or picture

	cards from which to select (e.g., *dog* and *cat*), "*Which animal am I thinking of? /k/-/æ/-/t/*"
Source	O'Connor *et al*., 1998

10.2.3 Listen to the Story and Guess the Word

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to develop phoneme blending skills; to help children synthesize phonemes spoken one by one into familiar words; to review or learn vocabulary; to develop story comprehension
Materials Needed	Picture books; picture cards referred to the key words in the story
Description	The educator has a deck of picture cards referred to the story in the picture book. He/she shows the cards to children in order to motivate them and enhance content comprehension. The educator then tells the story aloud several times, pointing to pictures in the book. When children have understood the main content, the educator says that he/he is going to tell the story again and say some words in a weird way, i.e., sound by sound, and children will have to guess the word. The educator should select words that are depicted in the storybook. For example, in the storybook *The very hungry caterpillar*, the educator can say "*It's night-time. And up in the sky is the /m/…/u/…/n/. The /m/…/u/…/n/. What's up in the sky?*"; "*And on a green /l/…/i/…/f/ is a little egg. The little egg is on a /l/…/i/…/f/. Where is the little egg?*" The picture of the selected word can be shown once the children have guessed the word

10.2.4 Coin a Word and Draw It

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to develop phoneme blending skills; to help children synthesize phonemes spoken one by one into non-words; to develop children's creativity with a focus on form and not on content; to develop drawing skills
Materials Needed	Boxes of crayon; paper
Description	The educator says that he/she is going to say some words in a weird way, i.e., sound by sound. These words are very special as they are for objects that do not exist in the real world. They are non-words, 'alien words' coming from a different planet. The educator says a non-word, e.g., *v-a-p*, and children have to blend its single sounds to form a word, *vap*. After children have been exposed to two to three non-words, the educator articulates the words again and children are asked to draw a picture of these words, thus giving a meaning to each word. For example, a child can decide that *vap* is a new type of animal with some special features
Variation	Once the children have mastered the activity, non-words with clusters can be introduced, e.g., *snat*, *trud*; *blont*

10.2.5 Blending Team

Category	Phoneme Awareness; Alphabet Knowledge; Sound-Letter Correspondence Awareness (Print Awareness)
Objectives	To develop listening and speaking skills; to reinforce phoneme blending skills; to help children synthesize phonemes spoken one by one into words; to help children distinguish between letters and words as units of print; to help children recognize

	some letters and their most common sounds; to help children match some letters to some sounds to form familiar one-syllable words; to help children understand the alphabetic principle; to encourage left-right progression; to review or learn vocabulary
Materials Needed	Picture cards of familiar three-phoneme words to be blended, e.g., *rat*, *lap, sip*, *net*
Description	The educator divides the class in small groups of three children. Each team is assigned a sound, e.g., /l/. Then the educator calls to the front of the room one child from the /l/ group, one child from the /æ/ group, and one child from the /p/ group, and has the three children sequence their sounds to form the word. Each team takes turns answering. When each team has given an answer, the educator shows the corresponding picture card to verify whether the answer is correct
Variation	Each group is assigned one big alphabet letter card. The educator shows one picture card, e.g., *lap*, and puts the three alphabet letter cards on the floor, under the picture card, to visually represent each sound in the word. The educator says "*This word says 'lap,' /l/-/æ-/p/,*" pointing to each letter as each phoneme is pronounced. Then the educator calls to the front of the room one child from each letter group, and has the child put his/her letter card on top of the corresponding letter card on the floor. The educator and the children articulate the sounds of the word pointing to each letter card, and finally pronounce the whole word
Source	Blevins, 2006

10.7 Phoneme Segmentation

10.3.1 Blocks and Sounds: Analysis

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to reinforce phoneme awareness; to develop phoneme segmentation skills; to help children analyze two-phoneme words into separate phonemes; to encourage left-right progression; to review or learn vocabulary
Materials Needed	Blocks; picture cards of familiar two-phoneme words beginning with the same sound, such as *boo, bee* *may, mow* *pea, pie* *say, see* *tea, tie*
Description	The educator gives two blocks to each child. Each child takes turns in picking up a card from the deck. The educator introduces the activity, "*Let's say a word in little parts,*" and articulates the name slowly, with a clear pause between its two phonemes, *e.g., "pea; /p/…/i/."* Then all children are asked to repeat the word in the same manner. To show that the word *pea* consists of two separate sounds, the educator places blocks in two different colors underneath the picture as he/she articulates each sound. Children are asked to repeat the word sound by sound while representing the sounds of the word, left to right, with their own blocks. Children repeat the sounds while pointing to the respective blocks and then the word, pausing slightly less between phonemes with each repetition, *e.g., "/p/…./i/, pea, /p/…/i/, pea, /p/../i/, pea, /p/-/i/, pea"*
Variation	At a more advanced stage, the same activity can be carried out with familiar

	words with three phonemes, e.g., *fig*, *chop*, *dish*, *teeth*, and words with four phonemes and consonant clusters, e.g., *slip*, *snack*, *spot*, *sleep*
Source	Adams *et al*., 1998b

10.3.2 Blocks and Sounds: Synthesis

Category	Phoneme Awareness; Sound-Letter Awareness
Objectives	To develop listening and speaking skills; to extend phoneme awareness; to develop phoneme segmentation skills; to help children synthesize two-phoneme words into words; to encourage left-right progression; to review or learn vocabulary
Materials Needed	Blocks; picture cards of familiar two-phoneme words beginning with the same sound, such as *boo, bee* *may, mow* *pea, pie* *say, see* *tea, tie*
Description	The educator chooses a picture card and places it face down so that children cannot see it. Then he/she names the picture phoneme by phoneme, e.g., "*p/-i/*", while placing the blocks beneath the picture. While pointing to their own blocks, children repeat the sounds over and over and faster and faster. When they think they know the identity of the picture, they raise their hands to give the answer. When the correct answer is given, the educator holds the picture up for all to see
Source	Adams *et al*., 1998b

10.3.3 Magic Squares and Sounds

Category	Phoneme Awareness; Sound-Letter Awareness
Objectives	To develop listening and speaking skills; to reinforce phoneme awareness; to develop phoneme segmentation skills; to help children analyze three-phoneme words with the same initial sounds into separate phonemes; to encourage left-right progression; to review or learn vocabulary
Materials Needed	Picture cards of familiar three-phoneme words beginning with the same sound, e.g., *cat, can, cap, cup;* three-square forms; blocks; big alphabet letter cards
Description	The educator shows one picture card of a familiar three-phoneme word, e.g., *cat*. Each child has a three-square form. The educator introduces the activity, "*Let's say a word in little parts. We are going to touch each box on the magic square for each sound in the word.*" The educator articulates the word *cat,* says /k/, and touches the first box on the square, says /æ/ and touches the next box, and then says /t/ and touches the last box. The educator repeats twice and then encourages the children to do it together, using their own blocks, "*Now do it with me. Who can say all the parts in 'cat' with the magic squares*?"
Variation	Instead of three-square forms, the educator gives each child three blocks, has them put the blocks in a line and asks them to touch each box when they articulate every single sound
Source	O'Connor *et al*., 1998

10.3.4. Hold up Your Finger

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to

	reinforce phoneme awareness; to reinforce phoneme segmentation skills; to help children analyze three-phoneme words beginning with different sounds into separate phonemes; to review or learn vocabulary; to motivate children before more complex tasks
Materials Needed	Picture cards of three-phoneme words, beginning with different sounds, such as *rat* *man* *tap* *lag* *sun*
Description	The educator shows a picture card of a familiar three-phoneme word, e.g., *sun*. The educator explains that he/she is going to separate each word in smaller parts, e.g., "/s/-/ʌ/-/ŋ/." When the educator says the word, children are only asked to hold up one finger for each sound as it is pronounced. Later, children are asked to repeat the words in little parts with the educator, while holding up one finger for each sound they pronounce
Source	O'Connor *et al*., 1998

10.3.5 Tap the Tabletop

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to reinforce phoneme awareness; to reinforce phoneme segmentation skills; to help children analyze two-phoneme and three-phoneme words with into separate phonemes; to review or learn vocabulary; to motivate children before more complex tasks
Materials Needed	Picture cards; list of familiar two- and three-phoneme words, such as *boo, bee, may, mow, pea, pie, say, see*

	cat, hat, mat, tap, pin, sun, bat, car
Description	The educator introduces the activity, "*Let's say a word in little parts. Each word has two or three little parts.*" When the educator says one word, children are asked to tap the tabletop for each sound they hear in the word. After children have pronounced the whole word, the educator shows the corresponding picture card
Source	O'Connor *et al*., 1998

10.3.6 Segment the Word and Choose the Letter

Category	Phoneme Awareness; Letter Knowledge; Sound-Letter Correspondence Awareness
Objectives	To develop listening and speaking skills; to reinforce phoneme awareness; to reinforce phoneme segmentation skills; to help children analyze three-syllable words into separate phonemes; to help children distinguish between letters and words as units of print; to help children recognize some alphabet letters and learn their most common sounds; to help children match phonological forms to orthographic forms; to reinforce children's understanding of the alphabetic principle; to encourage left-right progression; to review or learn vocabulary
Materials Needed	Magnetic letters; picture cards of familiar phonetically regular words with three phonemes, such as *cap* *car* *man* *mop*
Description	Children are seated in a circle. The educator pours a selection of familiar magnetic letters on the floor. The educator shows a picture card, e.g., *cap,* and models the activity for the children: "*Let's say a word in little parts,*" and articulates the

	name slowly, with a clear pause between its three phonemes, e.g., *"/k/…/æ/…/p/."* "*Now Let's choose one letter for every part in the word,*" and starts selecting letters. The educator then repeats the word phoneme by phoneme by touching each letter for each sound. The educator can ask the assistance of every child in selecting the letters and articulating the sounds. At a later stage, children can be given different letters and asked to choose the letters themselves
Source	Gillon, 2004

10.8 Phoneme Manipulation

10.4.1 One…Two…Three…Sounds

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to reinforce phoneme awareness; to develop phoneme segmentation and manipulation skills; to help children distinguish phonemes in words and count them; to review or learn vocabulary; to review or learn cardinal numbers
Materials Needed	Blocks; picture cards of familiar two- and three-phoneme words, such as *ice* *ash* *bee* *moon* *bean* *meat*
Description	The educator shows pictures of two-phoneme words first, articulating the two words slowly, stressing each phoneme, e.g., */b/…/i/*. Children sound each word out and use blocks to decide how many sounds there are in the word. When

	children are acquainted with the task, they are shown pictures of three-phoneme words and they repeat the same activity

10.4.2 Two or Three?

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to reinforce phoneme awareness; to develop phoneme segmentation and manipulation skills; to help children distinguish between and recognize two-phoneme and three-phoneme words; to review or learn vocabulary; to review or learn cardinal numbers
Materials Needed	Blocks; picture cards of pairs of two- and three-phoneme words, where the three-phoneme words adds one phoneme to the two-phoneme word, such as *ice-mice* *eat-meat* *ash-dash* *bee-beef* *moo-moon*
Description	The educator shows pictures of pairs of two- and three-phoneme words, articulating the two words slowly, and stressing each phoneme. Children are asked to decide whether each word consists of two or three phonemes. In order to figure out the number of sounds in each word, children can use their blocks
Source	Adams *et al*., 1998b

10.4.3 Take One Sound Away: Real Words

Category	Phoneme Awareness (Onset-Rime Awareness)
Objectives	To develop listening and speaking skills; to reinforce phoneme awareness; to reinforce

	phoneme manipulation skills; to help children remove initial phonemes in words and create new real words; to review or learn vocabulary
Materials Needed	Picture cards of words to which initial sounds can be removed, resulting in a real word, such as *p-art* *m-ice* *r-ice* *m-eat* *d-ash* *f-ill* *c-up*
Description	The educator pronounces a word, e.g., *mice*, shows a corresponding picture, and says that he/she is going to take a little part of that word away, and create a new word. The educator says *mice*, first, then without the initial /m/, *ice*, and has children repeat with him/her. The educator repeats this twice having children repeat alongside. Once children have understood the task, the educator shows them the picture of the new word, *ice*. This activity should be presented and carried out as a 'magic trick', where from one word with a specific meaning, e.g., *mice*, the educator-magician creates a new word with a different meaning, e.g., *ice*, by only taking the first sound in *mice* away. Later this activity can be carried out in the form of a competition, where children are divided in groups and asked to pronounce the new word without the initial sound

10.4.4 Take One Sound Away: Non-Words

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to reinforce phoneme awareness; to help

	children remove initial phonemes in words and create non-words; to review or learn vocabulary; to focus on the form and not the meaning of language
Materials Needed	Boxes of crayon; paper; picture cards of familiar one-syllable words, such as *rib* *sun* *net* *mud* *dad*
Description	The educator pronounces a word, e.g., *sun*, shows a corresponding picture, and says that he/she is going to take a little part of that word away, and create a word that does not exist in real life, "*Now we're going to take the first sound away, and create a word that doesn't exist…it's an alien word coming from a different planet*!" The educator says *sun* without the initial sound, *s…un*, and has children repeat with him/her. The educator repeats this twice having children repeat alongside, and funnily exclaiming that "*'un' is an alien word*!"
Variation	- Once children are acquainted with this task, they are guided to remove the initial sound of longer words or words with consonant clusters, e.g., *step* without the /s/ sound, *tep* - Children can be asked to draw the new alien word, just as they wish, show their drawing to the class, and explain what it is (in Italian)

10.4.5 Playing with Consonant Clusters: Removal of Initial Sounds

Category	Phoneme Awareness (Rhyming Awareness)
Objectives	To develop listening and speaking skills; to reinforce phoneme awareness; to reinforce phoneme segmentation and manipulation skills; to focus on the phonemic structure

	of consonant clusters; to help children remove phonemes in words with consonant clusters; to encourage left-right progression; to review or learn vocabulary
Materials Needed	Blocks; picture cards of words with consonant clusters to which initial sounds can be removed resulting in a real word, such as *train-rain* *play-lay* *crow-row* *gray-ray* *play-lay*
Description	The educator pronounces a three-phoneme word, e.g., *train*, says its sounds separately, /t/…/ɹ/…/e/…/n/, and shows a picture card. The educator has children repeat the word and, using their blocks, analyze it into three separate phonemes. At a second stage, the educator takes the first sound away in the word and produces a word that rhyme with the first but has two phonemes instead of three. The educator introduces the new word phoneme by phoneme, /ɹ/…/e/…/n/. Children are encouraged to modify their block arrangements to represent this new, two-sound word. While pointing to their respective blocks, children repeat the two phonemes over and over and faster and faster in sequence, in order to blend the phonemes together and name the word. When they know the answer, the educator shows the corresponding picture, stressing how now "*it's a totally new word*!" Later this activity can be carried out in the form of a competition, where children are divided in groups and asked to pronounce the new word without the initial sound
Variation	Children are encouraged to remove and replace the blocks as the two words are articulated in time, e.g., "*train…rain…train…rain…train…rain*"

Source	Adams *et al.*, 1998b

10.4.6 Playing with Consonant Clusters: Removal of Internal Sounds

Category	Phoneme Awareness (Rhyming Awareness)
Objectives	To develop listening and speaking skills; to reinforce phoneme awareness; to reinforce phoneme segmentation and manipulation skills; to focus on the phonemic structure of consonant clusters; to help children remove internal phonemes in words with consonant clusters; to encourage left-right progression; to review or learn vocabulary
Materials Needed	Blocks; picture cards of words differing in an internal sound, such as *say-sway* *sigh-sky* *bow-blow* *pay-play* *go-glow* *boo-blue* *fee-flea*
Description	The educator pronounces a three-phoneme word, e.g., *flee*, says its sounds separately, /*f*/…/*l*/…/*i*/, and shows the corresponding picture card. The educator has children repeat the word and, using their blocks, analyze it into its separate phonemes. At a second stage, the educator produces a word that rhymes with the first but lacks one internal phoneme, e.g., /f/…/*i*/. The educator introduces the new word phoneme by phoneme, and children are encouraged to modify their block arrangements to represent this new, two-sound word. While pointing to their respective blocks, children repeat the two phonemes over and over and faster and faster in sequence, in order to blend the phonemes together and name the word.

	When they know the answer, the educator can mime the action or show the corresponding picture. Later this activity can be carried out in the form of a competition, where children in groups are asked to say the word without the internal sound selected by the educator
Variation	Children are encouraged to remove and replace the blocks as the two words are articulated in time, e.g., "*flee…fee…flee…fee…flee…fee*"
Source	Adams *et al*., 1998b

10.4.7 Finish the Word

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to reinforce phoneme segmentation and manipulation skills; to help children complete a word with the missing phoneme; to review or learn vocabulary
Materials Needed	Picture cards of familiar three-phoneme words, such as *sky*, *pen*, *flea*
Description	Children are seated in a circle. The educator chooses a card from his/her deck and shows it to the children, saying only part of it, e.g., "*This is a pen. I'm going to say just a little part, and then you finish the word for me: pe__*; At a later stage, this activity can be carried out in the form of a competition, where children in small groups are shown a pictured word, told the first part, and asked to add the missing sound
Variation	At a more advanced stage, the educator can introduce phonemes more complex to be articulated, such as /ĉ/, e.g., "*This is a watch. Finish the word for me: wa__*"

10.4.8 Add One Sound

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to reinforce segmentation and manipulation skills; to reinforce children's awareness of final phonemes; to help children add final phonemes in words; to review or learn vocabulary
Materials Needed	Picture cards of word pairs, such as *bar-bark* *bee-beak* *bee-bean* *bee-beef* *car-card* *moo-moon* *two-tooth*
Description	The educator explains that sometimes a new word can be created by adding one sound to the end of some other word. The educator shows a picture card, e.g., *bee*. He/she repeats the word several times, phoneme by phoneme, having children repeat alongside. Then the educator says "*Now I'm going to add one extra sound to the word 'bee'. I'm going to add the sound /f/. Listen… now I have a new word: bee…/f/: beef*!" The educator has children repeat several times, while showing them the corresponding picture card
Variation	When children have mastered the activity, it can be carried out in the form of a competition, where children are divided in small groups, assigned a word and a specific sound to be added to form a new word
Source	Adams *et al*., 1998b

10.4.9 Playing with Consonant Clusters: Addition of Initial Sounds

Category	Phoneme Awareness (Rhyming Awareness)
Objectives	To develop listening and speaking skills; to reinforce phoneme awareness; to reinforce phoneme segmentation and manipulation skills; to focus on the phonemic structure of consonant clusters; to help children add phonemes in words to form consonant clusters; to make children notice that consonant clusters can be created by adding one consonant before another in some words; to encourage left-right progression; to review or learn vocabulary
Materials Needed	Blocks; picture cards of words to which an initial consonant can be added in order to make a cluster, such as *rain-train* *lay-play* *no-snow* *two-stew* *row-crow* *pie-spy* *ray-gray* *low-blow*
Description	The educator pronounces a two-phoneme word, e.g., *lay*, and mimes the action: "*Lay: I lay down on my bed*", or shows a picture card. The educator has children repeat the word and, working with their blocks, analyze it into its separate phonemes. At a second stage, the educator produces a word that rhyme with the first but contains one additional phoneme, so as to make a consonant cluster, e.g., *play*. The educator introduces the new word phoneme by phoneme, "*/p/…/l/…/e/*. Children are encouraged to modify their block arrangements to represent this new, three-sound word. While pointing to their respective blocks, children repeat the three phonemes over and over and faster and

	faster in sequence, in order to blend the phonemes together and name the word. When they know the answer, the educator can mime the action or show the corresponding picture. At a later stage this activity can be carried out in the form of a competition, where the educator only says the initial phoneme to be added to a word, and has children pronounce the new word
Variation	Children are encouraged to remove and replace the blocks as the two words are articulated in time, e.g., "*lay…play…lay…play…lay…play*"
Source	Adams *et al*., 1998b

10.4.10 Playing with Consonant Clusters: Addition of Internal Sounds

Category	Phoneme Awareness (Rhyming Awareness)
Objectives	To develop listening and speaking skills; to reinforce phoneme awareness; to reinforce phoneme segmentation and manipulation skills; to focus on the phonemic structure of consonant clusters; to help children add internal phonemes in words; to encourage left-right progression; to review or learn vocabulary
Materials Needed	Blocks; picture cards of words differing in an internal sound, such as *say-sway* *sigh-sky* *bow-blow* *pay-play* *go-glow* *boo-blue* *fee-flea*
Description	The educator pronounces a two-phoneme word, e.g., *say*, and mimes the action, e.g., "*Say: I say hello,*" or shows a picture card of someone saying hello. The educator has children repeat the word and, using their blocks, analyze it into its separate

	phonemes. At a second stage, the educator produces a word that rhymes with the first but contains one additional phoneme, so as to make a consonant cluster, e.g., *sway*. The educator introduces the new word phoneme by phoneme, "*/s/…/w/…/e/*. Children are encouraged to modify their block arrangements to represent this new, three-sound word. While pointing to their respective blocks, children repeat the three phonemes over and over and faster and faster in sequence, in order to blend the phonemes together and name the word. When they know the answer, the educator can mime the action or show the corresponding picture. At a later stage, this activity can be carried out in the form of a competition, where the educator only says the internal sound to be added to the initial letter, e.g., "*add /w/ to /s/ in say*", and has children guess in small groups
Variation	Children are encouraged to remove and replace the blocks as the two words are articulated in time, e.g., "*say…sway…say…sway…say…sway*"
Source	Adams *et al*., 1998b

10.4.11 Building Longer Words

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to reinforce phoneme awareness; to reinforce phoneme segmentation and manipulation skills; to help children add phonemes in words; to extend children's analysis and synthesis skills to four-phoneme words; to encourage left-right progression; to review or learn vocabulary
Materials Needed	Blocks; picture cards of three- and four-phoneme words, such as *four-fork*

	rice-price *rain-train* *pay-play* *nail-snail* *trail-trace* *lake-flake*
Description	Each child has four blocks. The educator starts by saying a three-sound word, e.g., *rain*, in three clearly separate parts: /r/…/e/…/n/, and has children repeat the word. Children are asked to represent the sounds in the word with three blocks. The educator shows the picture of the word, and then explains that a new word can be created by adding one extra sound to *rain*. It is a longer word, e.g., *train*, e.g., */t/…/r/… e/…/n/*. To represent the fourth phoneme, the educator places a new block to the left of the other three blocks, then pronounces each phoneme as he/she points to each block from left to right and repeats the whole word once more. Children are encouraged to modify their block arrangements to represent this new, four-sound word. While pointing to their respective blocks, children repeat the four phonemes over and over and faster and faster in sequence, in order to blend the phonemes together and name the word. When they know the answer, the educator shows the corresponding picture. At a later stage, this activity can be carried out in the form of a competition, where the educator only says the sound to be added to a word, and children articulate the new longer word
Variation	Children are encouraged to remove and replace the blocks as the two words are articulated in time, e.g., "*rain…train…rain…train…rain… train*"
Source	Adams *et al*., 1998b

10.4.12 Guess the Sounds in Words

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to reinforce phoneme awareness; to reinforce segmentation and manipulation skills; to review words with two, three and four phonemes; to help children add or remove phonemes in words; to strengthen children's analysis and synthesis skills; to encourage left-right progression; to review or learn vocabulary; to review or learn cardinal numbers
Materials Needed	Blocks; Picture cards of familiar two-, three- and four-phoneme words, such as *pie-spy--spice* *pea-peak-speak* *ray-rain-train* *ache-fake-flake* *row-grow-groan* *ice-rice-price* *toe-tone-stone* *ear-tear-steer* *pay-play-plane* *lay-lace-place*
Description	This activity is a revision of the previous tasks where children learned to add and/or remove initial or internal sounds in words. Children are encouraged to review words with two, three, and four phonemes. The educator starts by saying a three-sound word, e.g., *spy*, in three clearly separate parts. The educator then reminds children that sometimes a word can be made by taking a sound away from another word, e.g., *pie*, and says the word in two clearly separate sounds. The educator explains that sometimes a new word can be made by adding an extra sound to a word, e.g., *spice*. While reviewing all this, the educator uses his/her blocks to represent added and

	removed sounds in words. After this revision, the educator has children sit in a circle. The educator lies out three pictures face down on the floor, each representing a word with a different number of sounds from the other. Children take turns in picking up a picture, naming it, and saying it in separate sounds, depending on the number of sounds contained
Variation	At a later stage, children can be asked to count the number of sounds in each word by using their blocks
Source	Adams *et al*., 1998b

10.4.13 Let's Reverse Sounds

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to reinforce phoneme awareness; to reinforce manipulation skills; to focus on the form of words and not their content; to help children reverse phonemes in words; to review or learn vocabulary
Materials Needed	A hat; blocks; picture cards of familiar two-phoneme words, such as *bee* *pie* *pea* *ray* *row* *ice* *toe* *ear*
Description	The educator shows the picture of a familiar two-phoneme word, e.g., *bee*, and explains that "*Today we are going to play with the sounds in words and change their position.*" The educator models the activity: "*This is 'bee': /b… /i/. Two sounds. Now can you change the position of this sound? Let's say the /i/ first and then the /b/: /i/…/b/;*

	/i/.../b/. Yes, we have a new word, 'eeb'! It's an alien word!"
Variation	This activity could be carried out in the form of a 'magic trick'. For example, the educator has a 'magic hat' from which he/she takes out the two blocks-sounds and plays to reverse them. Later, children can be asked to take out the blocks from the hat, say the 'regular' word first, e.g., *bee*, and then reverse the blocks and pronounce the word reversed, e.g., *eeb*. Blocks has to be of different colors, in order to represent the two different sounds

10.4.14 Change Your Name

Category	Phoneme Awareness
Objectives	To reinforce children's phoneme awareness skills; to reinforce phoneme isolation skills; to help children develop phoneme substitution skills; to focus children's attention on initial phonemes; to help children substitute initial phonemes in words, to motivate children before more complex tasks
Materials Needed	Children's names
Description	The educator chooses a sound that will be the sound of the day, e.g., /p/. During that day, all children's names will be started with the /p/ sound, e.g., Silvia becomes *P*ilvia, Marco becomes *P*arco. Children are encouraged to call each other with the new names during that day
Variation	During the day where a sound is selected, some simple familiar songs can be sung starting all the words in the song with the phoneme of the day, e.g., /b/ and *Happy Birthday*: *Babby Birthday bo bou* *Babby Birthday bo bou* *Babby Birthday bear Bilvia*

	Babby Birthday bo bou
Source	O'Connor *et al*., 1998

10.4.15 Changing Words: Initial Sounds

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to reinforce children's phoneme awareness skills; to reinforce phoneme isolation skills; to help children develop phoneme substitution skills; to focus children's attention on initial phonemes; to help children substitute initial phonemes in words; to help children compare, contrast, and identify the initial sounds of a variety of words; to review or learn vocabulary
Materials Needed	Picture cards of word pairs, such as *big-fig* *can-tan* *sun-bun* *bat-mat* *car-bar*
Description	The educator displays a picture card, e.g., *sun*. Then he/she chooses a sound, e.g., /b/, and says that he/she wants to change the initial sound in the word *sun* with /b/. Children are encouraged to change the word by starting it with /b/, e.g., *bun*, "*Right, now it's bun*!" Then the educator shows the picture of *bun*. The educator has children repeat both the pairs of words and the initial sounds. At a later stage, this activity can be carried out in the form of a competition where children in groups are required to pronounce the new word with the new initial sound
Variation	After children have changed real words into other real words, they are guided to change real words, into non-words, e.g., by changing the initial sound in *ball* with a /g/sound, and create *gall*. In this case the

	educator will not make use of visual aids, and will make children understand that *gall* is in fact an "*alien word coming from a different planet*"
Source	O'Connor *et al*., 1998

10.4.16 Changing Words: Final Sounds

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to reinforce children's phoneme awareness skills; to reinforce phoneme isolation skills; to help children develop phoneme substitution skills; to focus children's attention on final phonemes; to help children substitute final phonemes in words; to help children compare, contrast, and identify the final sounds of a variety of words; to review or learn vocabulary
Materials Needed	Picture cards of word pairs, such as *bus-bun* *coal-cold* *four-fork* *moon-mood* *bean-bead*
Description	The educator displays a picture card, e.g., *bean*. Then he/she chooses a sound, e.g., /d/, and says that he/she wants to change the final sound in the word *bean* with /d/. Children are encouraged to change the word by ending it with /d/, e.g., *bead*, "*Right, now it's bead*!" Then the educator shows the picture of *bead*. The educator has children repeat both the pairs of words and the initial sounds. At a later stage, this activity can be carried out in the form of a competition where children in groups are required to pronounce the new word with the new final sound
Variation	After children have changed real words into other real words, they are guided to

	change real words into non-words, e.g., by changing the final sound of *moon* with a /p/ sound, and create *moop*. In this case the educator will not make use of visual aids, and will make children understand that *moop* is in fact an "*alien word coming from a different planet*"
Source	Adams *et al*., 1998b

10.4.17 Changing Words: Internal Sounds

Category	Phoneme Awareness
Objectives	To develop listening and speaking skills; to reinforce children's phoneme awareness skills; to reinforce phoneme isolation skills; to help children develop phoneme substitution skills; to focus children's attention on internal phonemes; to help children substitute internal phonemes in words; to help children compare, contrast, and identify the internal sounds of a variety of words; to help children work with vowels; to review or learn vocabulary
Materials Needed	Picture cards of word pairs, such as *pit-pat* *bug-bag* *pin-pen* *sun-son* *tan-tin* *dish-dash*
Description	The educator displays a picture card, e.g., *pit*. Then he/she chooses a sound, e.g., /æ/, and says that he/she wants to change the internal sound in the word *pit* with /æ/. Children are encouraged to change the word by adding the new sound, e.g., *pat*, "*Right, now it's pat*!" Then the educator shows the picture of *pat* or mimes the action. The educator has children repeat both the pairs of words and the initial sounds. At a later stage, this activity can be

	carried out in the form of a competition where children in groups are required to pronounce the new word with the new internal sound
Variation	After children have changed real words into other real words, they are guided to change real words into non-words, e.g., by changing the internal vowel sound in *dish* with a /ʌ/sound, and create *dush*. In this case the educator will not make use of visual aids, and will make children understand that *dush* is in fact an "*alien word coming from a different planet*"
Source	Adams *et al*., 1998b

10.5 Phoneme Awareness in Storybook Sharing

This section will provide an example of a set of phoneme awareness activities embedded in a literary experience, namely storybook sharing (cf. 8.2.5). The proposed activities are a revision and an adaptation of the phoneme awareness tasks embedded in storybook sharing proposed and designed by Price and Ruscher (2006). The book *Winnie the Witch* (Paul & Thomas, 1987) is here used to illustrate the set of phoneme awareness tasks. In *Winnie the Witch*, Winnie, the main character, lives in a house that is all black, with her cat Wilbur. Wilbur is also all black, except for his green eyes. This makes things complicated in the house, as the cat blends in with everything, the carpet, the bed, the chairs, making it difficult to see him. Winnie tries to solve this problem by changing the cat's color with her magic wand. Now Wilbur is green, which works out well, whenever the cat is in the house, but does not work anymore, whenever he is out in the grass. Winnie tries to change the cat's hair in many different colors, but this has only the effect of embarrassing her cat. Then Winnie has an idea and decides to keep her cat black and change the color of her house instead. She changes her house in many different colors. This book is a useful tool to work on the phoneme level of words, as it includes many one-syllable words with short vowel sounds (e.g., *cat*, *sat*, *can*, *bath*, *black*, *grass*, *sit*, *him*,

witch, *red*, *bed*, *legs*), long vowel sound patterns (e.g., *sheet*, *sleep*, *green*, *tree*, *came*, *chair*, *blue*), R-controlled vowel sound patterns (e.g., *turn*, *bird*, *door*, *floor*), and other vowel sounds (e.g., *house*, *now*, *down*). Words with different initial and final consonant clusters are also present.

Following is a description of the steps suggested in the presentation of the story to young Italian preschool children, while focusing on phoneme awareness skills. The sequence of steps follows the one proposed in chapter 8 (cf. 8.2.5., Table 8.1).

Step 1: Focus on meaning. The main aim of this phase is to introduce children to the story, motivate them, and present the key words that they will hear throughout the story. The educator presents the key words of the story through picture cards, such as *house*, *cat*, *witch*, *black*, *bed*, *chair, green*. The educator then moves on to show pictures from the book itself, and has children repeat the key words with him/her. As an alternative, the educator introduces the story through real objects found in the story, such as the animal toy of a cat, a little lego house, a real chair, true colors present in the classroom, etc. During this phase, children are guided to discover what the story will be about, so the focus in on meaning, and not form.

Step 2: Focus on meaning. This second phase is still dedicated to enhance and strengthen story content comprehension. The educator shares the book, either by reading it or by telling it aloud. Within a context of early foreign language teaching, it is recommended that the educator tells the story aloud in simple, clear words, while pointing to the pictures in the book, in order to support overall story comprehension. Paralinguistic clues such as facial expression, gestures, body language, voice tone, intonation, should be used by the educator, in order to facilitate children's story comprehension (Costenaro, 2006; Steinbock & Costenaro, 2005). The story can be told more than once.

Step 3: Educator modeling form. The educator models the activities on phoneme awareness that children will carry out on their own during step 4. The sequence of

instruction for phoneme awareness advances through blending, segmenting, counting and deleting sound tasks. The educator initially introduces and models each task and skill using words that are not taken from the storybook, and has children listen to him/her carefully without talking part in the task. For example, the educator shows two objects, a cap and a toy dog, and has children first repeat the names, *cap*, and *dog*. Then the educator articulates one of the words phoneme by phoneme, e.g., "*/k/ pause /æ/ pause /p/*," and encourages children to listen attentively and blend the sounds together to figure out the word and object.

Step 4: Children practicing form. Children are actively involved in the sequence of phoneme awareness tasks previously presented and modeled by the educator. This time the activities include words found in the book. Following is a sequence of sample tasks for each skill:

Phoneme blending: the educator shows children picture cards referred to words in the book, e.g., *bad*, *chair*, *tree*, *grass*. This is done in order to review vocabulary. Then the educator chooses a selection of toy objects that are depicted in the cards, and put them in a bag. The educator picks one and without having children see it, articulates the sounds in the word with enough space between them, e.g., for a cat toy, "*/k/ pause /æ/ pause /t/*." Children are encouraged to listen attentively and blend the sounds together to determine what object the teacher is holding.

Phoneme segmenting: this is an expansion of the task proposed for phoneme blending. Children are now required to take one step forward and be able to segment sounds in words. Each child is given colored blocks. Each child takes turns in picking up a card from a deck of picture cards. The educator articulates the word selected slowly, with a clear pause between its phonemes, e.g., "*cat; /k/…/æ/…/t/.*" Children are asked to repeat the word in the same manner. To show that the word *cat* consists of three separate

sounds the educator places blocks in two different colors underneath the picture as he/she articulates each sound. Children are asked to repeat the word sound by sound while representing the sounds of the word, left to right, with their own blocks. Children repeat the sounds while pointing to the respective blocks and then the whole word.

Phoneme counting: once children have mastered the segmentation activity, they are asked to count the phonemes they hear in the word selected from the deck. The educator articulates the word, *cat*, and its phonemes, while clapping his/her hands, e.g., "*cat; /k/ clap /æ/ clap /t clap/.*" Children are asked to count the number of sounds in the word. At a later stage, the educator articulates the word without clapping, and children are required to count the sounds out loud once more.

Phoneme deleting: using colored blocks, children are shown that it is possible to delete a word, e.g., the word *cat* without /k/, becomes *at*. When children have practice with their own blocks, they are shown that the final sound can also be taken away, e.g., *cat* without /t/ becomes *ca*. Children are encouraged to practice both initial sound and final sound deletion by removing and replacing the blocks as the pairs of words are articulated in time, e.g., *cat…at…cat…at*; *cat…ca…cat…ca*. At a later stage, this activity can be carried out with sounds that contain consonant clusters, e.g., *black*, *black* without /b/ is *lack*.

Step 5: Integrating meaning. The educator retells *Winnie the Witch*. When the educator encounters one of the words worked upon in the phoneme awareness tasks (e.g., *cat*), he/she reviews the tasks encouraging children to give answers. For example, the educator articulates the word phoneme by phoneme and encourages children to segment it, "*Do you remember how to divide 'cat' in little bits*?", or asks them to count sounds out loud in the word, "*Do you remember how many sounds in 'cat'*? In this way,

children are guided to review the tasks previously carried out within the embedded context of the book sharing experience.

Naturally, phonological awareness can be tackled at different levels, not just at the phoneme level, within a storybook sharing routine. If the educator wants to review syllable awareness, he/she will choose a book which contains many compound words or multisyllabic words. For example, *The Paper Bag Princess* (Munsch, 1980) includes a diverse range of useful multisyllabic vocabulary, such as *paper, princess, castle, tomorrow, fantastic, expensive, meatball* and *magnificent*. If the educator wants to work on awareness at the onset-rime level, the most suitable choice includes rhyming books and poems, such as *Didn't Frighten Me!* (Goss & Harste, 1984), a rhyming book that includes rhyming words such as *night*, *light*, *right*, *knight*, *white*, *kite*, or *see*, *tree*, *flee, sea*, *key*. Each time, the educator will make sure to choose the most appropriate book for each targeted skill, and remember that each story will have to be further adapted to meet the specific needs and features of the children in his/her classroom.

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Appendix A

American English consonants (adapted from Adams *et al.*, 1998b)

Phonetic symbol	Phonic symbol	Graphemes for spelling[a]
/p/	/p/	pit, spider, stop
/b/	/b/	bit, brat, bubble
/m/	/m/	mitt, slam, comb
/t/	/t/	tickle, stand, sipped
/d/	/d/	die, loved, handle
/n/	/n/	nice, knight, gnat
/k/	/k/	kite, crib, quiet, duck, walk
/g/	/g/	girl, Pittsburgh
/ŋ/	/ng/	sing, bank, English
/f/	/f/	fluff, sphere, tough, calf
/v/	/v/	van, dove
/s/	/s/	psychic, pass, science, sit
/z/	/z/	jazz, xerox, zoo, cheese
/θ/	/th/	thin, breath, ether
/ð/	/th/	this, breathe, either
/š/	/sh/	shoe, mission, sure
/ž/	/zh/	measure, azure
/č/	/ch/	cheap, future, etch
/ǰ/	/j/	judge, wage, residual
/l/	/l/	lamb, call, single
/r/	/r/	reach, singer, wrap, car
/j/	/y/	you, use, feud
/w/	/w/	witch, shower, queen
/ʍ/	/wh/	where, when
/h/	/h/	house, who, rehab
Phonetic segment (allophone):		
[D]	t, d	writer, ladder, water

From material prepared by Louisa Cook Moats for the Comprehensive Reading Leadership Program, California State Board of Education.

[a]Graphemes are spellings for individual phonemes; those in the word list are among the most common spellings, but the list does not include all possible graphemes for a given consonant.

Appendix B

American English vowels (adapted from Adams *et al.*, 1998b)

Phonetic symbol	Phonic symbol	Spellings
/i/	ē	beet
/I/	i	bit
/e/	ā	bait
/ɛ/	e	bet
/æ/	a	bat
/ɑj/	ī	bite
/ɑ/	o	bottle
/ʌ/	u	butt
/ɔ/	aw, ô	bought
/o/	ō	boat
/ʊ/	o͝o	put
/u/	o͞o	boot
/ə/	ə	between
/ɔj/	oi, oy	boy
/æω/	ou, ow	bow

From material prepared by Louisa Cook Moats for the Comprehensive Reading Leadership Program, California State Board of Education.

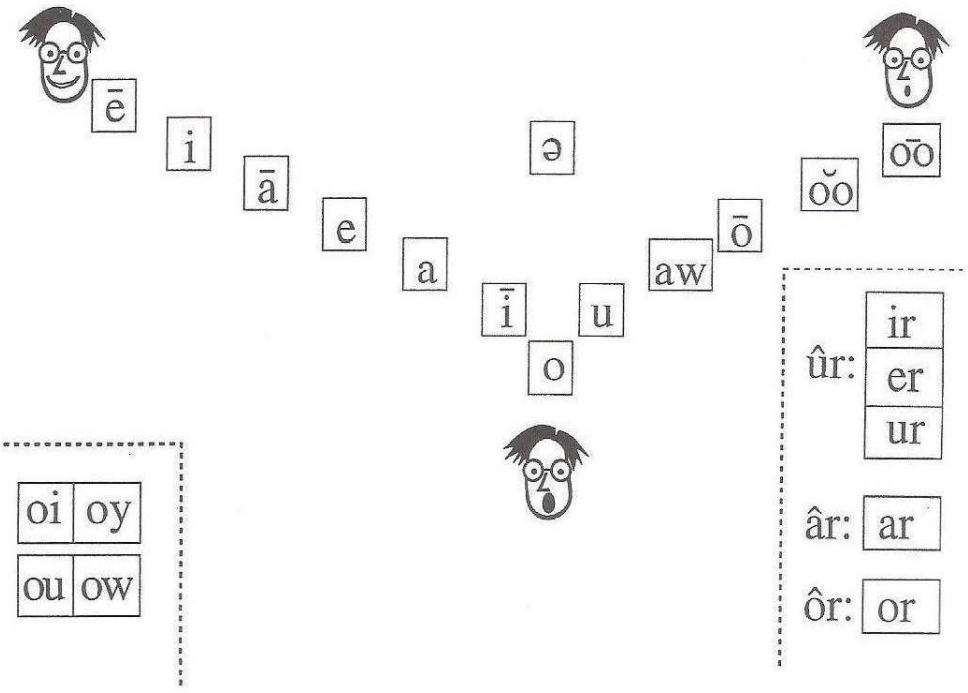

Figure 1. Vowel spellings by mouth position. (From material prepared by Louisa Cook Moats for the Comprehensive Reading Leadership Program, California State Board of Education.)

Appendix C

Pitman's Initial Teaching Alphabet

Character	Name	Example
æ	ain	æbl
b	bee	but
c	kee	cat
d	did	dog
ҽҽ	een	ҽҽch
f	ef	fun
g	gay	gæt
h	hay	hay
ie	ide	ies
j	jay	jam
k	kay	kiŋ
l	el	lip
m	em	man
n	en	not
œ	ode	œpen
p	pee	pæ
r	ray	rat
s	ess	sit
t	tee	top
ue	une	uex
v	vee	vois
w	way	wet

Character	Name	Example
y	yay	yellœ
z	zed	zω
ɤ	zess	aɤ
wh	whee	whie
ʧ	chay	ʧurʧ
ϑ	ith	ϑin
ð	thee	ðen
ʃ	ish	ʃip
ʒ	zhee	meʒuer
ŋ	ing	siŋ
ɾ	er	heɾ
ɑ	ahd	fɑðheɾ
a	at	at
au	aud	autum
e	et	egg
i	it	it
o	og	on
u	ug	up
ω	oot	bωk
ω	ood	mωn
ʊu	ʊun	ʊut
ɔi	oin	ɔil