Early Childhood Research Quarterly 36 (2016) 1–10

Contents lists available at ScienceDirect

Early Childhood Research Quarterly

Development in narrative competences from oral to written stories in five- to seven-year-old children

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ARTICLE INFO

Article history:
Received 29 April 2015
Received in revised form
25 November 2015
Accepted 4 December 2015
Available online 18 December 2015

Keywords:
Narrative competence
Emergent literacy
Structure
Coherence
Cohesion

ABSTRACT

This prospective cohort study analyzes the predictive power of oral narrative competence in kindergarten on written narrative competence in first grade, and compares it to the predictiveness of phonological awareness and conceptual knowledge of the writing system. The participants were 122 Italian children. Children's narrative retells were tested twice. First, children's emergent literacy skills (i.e. oral narrative competence, phonological awareness, and conceptual knowledge of the writing system) were tested in the last year of kindergarten; then their narrative competence in written stories was tested one year later in first grade (narrative competence in written stories). A series of hierarchical multiple linear regression analyses showed that, among the emergent literacy variables, narrative competence was the only statistically significant predictor of the children's competence in giving structure, coherence, and cohesion to their written stories. Among narrative competence components, structure in oral narratives was the only statistically significant predictor of narrative competence in written productions. These results contribute to our understanding of the development of children's narrative competence in the transition from oral to written productions.

1. Introduction

Children's development of narrative competence begins early and it continues through early adulthood (Makinen, Loukusa, Nieminen, Leinonen, & Kunnari, 2013). The acquisition of the written language includes the development of narrative competence elements of discontinuity and continuity. As far as discontinuity is concerned, since the studies conducted by Olson (1994), scholars have agreed that we cannot automatically extend what we know about oral narrative competence to written narrative competence, as spelling might play an interference effect (Pinto, Tarchi, & Bigozzi, 2015). On the other hand, findings from studies of "emergent literacy" have highlighted the continuity existing between specific early skills and the formal acquisition of literacy (Lonigan, Burgess, & Anthony, 2000; Whitehurst & Lonigan, 1998). In the first grade, children learn to tell their narratives through a new instrument, which they are still acquiring (i.e. the written language). Therefore, this particular age, in which the transition from emergent to formal literacy and from oral to written narratives takes place, is particularly important for our understanding of the development of narrative competence. Studies adopting a longitudinal perspective are needed, as they contribute to the explanation of this phenomenon (Kim, Al Otaiba, & Wanzek, 2015).

This prospective cohort study explored the predictive power of narrative competence in oral productions on narrative competence in written productions, in the transition from kindergarten to the first grade in Italian children. The predictive contribution of oral narrative competence was compared to two other components of emergent literacy, namely phonological awareness and conceptual knowledge of the writing system (Hooper, Roberts, Nelson, Zeisel, & Kasambira Fannin, 2010). Narrative competence was measured through aspects of structure, coherence, and cohesion assessed in oral narrative retells in kindergarten and written narrative retells in first grade.

Studies on the development of narrative competence generally explore two lines of inquiry, focusing either on oral narratives or on written narratives. Only a few studies have explored the transition from oral to written narrative competence. These studies share the definition of the construct of narrative competence and the methodology to study it.

1.1. Definition of narrative competence

Narratives are a complex form of text; they are not just talk about past events, but a specific talk in which the sequence of clauses matters, and it matches the sequence of events which actually occurred (Labov, 1972). Narrative competence is a mul-

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http://dx.doi.org/10.1016/j.ecresq.2015.12.001
0885-2006/

tidimensional construct, and it is important to assess the specific features of a narrative, differentiated into macrostructure and microstructure (Justice, Bowles, Pence, & Gosse, 2010). Narrative macrostructure is defined as the general, global characteristics of a narrative (Justice et al., 2010). Macrostructure is probably the most evident element of a child's narrative, and it can be analysed through the traditional story grammar approach to determine if the narrator is organising the discourse around recognizable conventions (Griffin, Hemphill, Camp, & Wolf, 2004), and/or an assessment of the overall coherency of the narrative (Justice et al., 2010). It is also important to assess the micro-level properties of a narrative, such as the way in which words and sentences are linked to each other through the use of specific cohesive devices (Justice et al., 2010). Following, we describe these levels more in detail, the macro-level, i.e. structure and coherence, and the micro-level, i.e. cohesion.

1.1.1. Structure

Stein and Glenn (1982) pointed out the importance of structure in narratives. The notion of structure refers to the macrostructure of text organization, composed of unique rules and guiding principles. Although a minimal narrative includes only two clauses, generally narratives have a more complex structure and include several elements (Labov, 1972): a narrator is expected to include an introduction, characters, and a sequence of events developing and leading to the solution of the problem and the conclusion (Halliday & Hasan, 1976; Ripich & Griffith, 1988). This type of analysis originated in the research on story grammar, a concept that has evolved from anthropologists' analysis of folktales in the 1900s (for a summary of research on story grammar see for example Dimino, Taylor, & Gersten, 1995).

1.1.2. Coherence

Coherence concerns how the components of a story and the events are interrelated and organized in a meaningful way (Louwerse & Graesser, 2005; Shapiro & Hudson, 1991). To produce a coherent text, writers need to use a scheme to organize the content that helps the reader to understand the characters, the problem, the solution, and the conclusion. This is achieved by including a formalized introduction, a background, and a setting (Hudson & Shapiro, 1991). Errors in the use of cohesive devices, for example, can hinder the reader's/listener's efforts to understand the message included in the narrative (Struthers, Lapadat, & MacMillan, 2013).

1.1.3. Cohesion

Cohesion is a characteristic of the text that makes a list of sentences become a unitary total on a micro level (Hudson & Shapiro, 1991). Cohesion is achieved through linguistic elements that link ideas across the narrative (Struthers et al., 2013). There are five linguistic devices used to establish cohesion (Halliday & Hasan, 1976): referencing (linguistic elements referring to previous information); conjunction (linguistic elements describing additive, temporal, causal, adversative, and continuative relationships); lexical cohesion (semantically related words); substitution (replacement of redundant elements); and ellipsis (elimination of redundant elements). Cohesion is necessary, since it facilitates the comprehension of underlying semantic relations (Widdowson, 1978), but not sufficient to create a coherent text and interpret the discourse: readers and listeners generate inferences on the basis of their own background knowledge (Louwerse & Graesser, 2005).

1.2. Oral narrative competence

Most studies on early narrative competence development in the transition between kindergarten and primary school have focused on oral narratives. Berman (1988) studied Hebrew-speaking children's oral narratives and found a significant increase in narrative competence during preschool and school-age years. Preschoolers' narratives were poorly developed from a macro- and micro-level perspective, but, by early school age, children were already displaying a basic macrostructure in their narratives (initiating event, goal-directed actions, and a consequence), even if they were still putting too much emphasis on the micro level. Typically, school-age children tell narratives that include several macrostructure elements (characters, setting, initiating event, plans, goal-oriented actions, consequence, and internal responses) (Squires et al., 2014). As regards cohesion, Lahey (1988) reported that children increase the number of connectives included in the narrative and move from additive connections to temporal connections and then to causal connections. At the age of six, causality is clearly evident in children's oral narratives (Peterson & McCabe, 1983). To, Stokes, Cheung, and T'Sou (2010) studied the oral narratives of typically developing Cantonese-speaking children aged between 4 and 12 and found a high correlation between syntactic complexity, narrative vocabulary, referencing, and the use of connectives. In terms of coherence, Makinen et al. (2013) explored the predictive relationship between preschool and school-age children's oral narrative competence and reported that children reduce the level of ambiguity and increase referential adequacy in their narratives.

However, it would be interesting to support the literature on narrative competence, which is mainly based on English, with studies on other languages. Indeed, narrative styles and expectations about children's narratives may differ across cultures (see McCabe's review on cultural background and storytelling, 1997; Squires et al., 2014). For instance, John-Steiner and Panofsky (1992) examined macro- and micro-level variations in a series of cross-cultural studies on narratives produced by children and adolescents aged 5–15 years. The authors found thematic differences between the cultural groups examined, i.e. Black, Hispanic and Native American, as each ethnic group was using different cultural schemas to give structure and coherence to their stories; and differences in narrative cohesion between English-speaking American and Hungarian students, with the latter ones using more cohesive devices than the American students.

1.3. From oral to written narrative competence

The importance of the specific cultural and linguistic context in which the child grows is even more important in the transition from oral to written narrative competence, given the influence that the specific characteristics of a language have on the process of acquisition of spelling competence (Pinto, Bigozzi, Tarchi, Gamannossi, & Canneti, 2015). Generally, studies on this aspect have explored narratives written in English, a language characterized by a deep orthography in which the correspondence between graphemes and phonemes is inconsistent (Botting, 2002; Makinen et al., 2013). Thus, it is important to analyze early narrative writing skills also in transparent orthographies, i.e. orthographies in which the correspondence between graphemes and phonemes is relatively simple and consistent (Babayiğit & Stainthorp, 2010). In the early stages of learning the written language, the lack of automaticity of transcription skills could interfere with children's narrative competence as expressed through writing: the novice writer might struggle to generate a narrative while his or her attention is devoted to spelling (Babayiğit & Stainthorp, 2011). Oral skills and transcription skills share many components, but writing puts additional demands on children's cognitive system (Dockrell & Connelly, 2009; Kim et al., 2015). Several studies have failed to find solid relationships between children's oral language skills and the quality of their written narratives (Berninger et al., 1992). The question to be answered is whether or not spelling constrains the

generation of written narratives. The spelling interference effect on narrative competence might have a different weight in languages varying for the transparency of their orthography.

Mäki, Voeten, Vauras, and Poskiparta (2001) found that the relationship between spelling accuracy and composition coherence was very slight in the early stages of writing acquisition in Finnish students. The authors explained this effect in terms of the transparency of Finnish orthography, which makes spelling an easier task for students. Babayiğit and Stainthorp (2010) found a similar result in children speaking Turkish, another transparent orthography, in the transition from grade 1 to grade 2.

Research on the development of narrative competence from oral to written stories in the transition from kindergarten to primary school is limited, mainly for reasons of two different kinds: studies have either explored the development of oral narrative competence only (Makinen et al., 2013), or, if they analyzed the relationship between oral and written competence, they focused on primary school only (Reese, Suggate, Long, & Schaughency, 2009), especially older children from the third grade or higher (Hertz-Lazarowitz, 2004). In this sense, the emergent literacy perspective makes a relevant contribution by exploring kindergarteners' specific skills that are connected to the acquisition of the written language.

1.4. The emergent literacy perspective

Lonigan et al. (2000) claimed that preschool competences are highly inter-correlated, and thus that the unique contribution of oral narrative competence can be better understood if compared to other preschool competences. Rather than considering primary school as the starting point for studying the acquisition of literacy, scholars should conceptualize it more as a developmental continuum, originating early in the life of the child. This approach is defined as "emergent literacy," and it consists of the skills, knowledge, and attitudes considered to be the precursors of children's formal acquisition of the written language (Lonigan et al., 2000; Teale & Sulzby, 1986). It is a multi-componential construct, in which several competences are systematically interrelated to each other. Most emergent literacy models include the following competences: oral narrative competence, phonological awareness, and conceptual knowledge of the writing system (Pinto, Bigozzi, Accorti Gamannossi, & Vezzani, 2009). Phonological awareness is the ability to identify and manipulate different units of sounds (e.g. phonemes, syllables, and the like). Conceptual knowledge of the writing system is the knowledge available to children of the visual attributes of the letters included in words. Within literacy acquisition, studies on reading have identified several precursors among the components of emergent literacy. A similar approach is also needed for writing, so that in this domain too teachers can promote effective practices starting from kindergarten (Kim et al., 2015). In this regard, Hooper et al. (2010) analyzed emergent literacy predictors of primary school narrative competence in the written production of 65 African American children. The authors adopted an emergent literacy perspective and among the preschool predictors they included: phonological awareness, language skills, pre-reading skills, and early writing concepts. Results indicated that language skills and pre-reading, but not phonological awareness or knowledge of writing concepts, were predictive of primary school writing skills. However, the authors did not include a measure of narrative competence in oral narratives, and primary school writing was assessed in terms of spelling, grammar, and word usage. In addition, the authors tested children's narrative writing skills in grades 3–5 and did not focus on the early stages of the acquisition of the written language (grade 1).

Phonological awareness and conceptual knowledge of the writing system are mainly studied in relation to the transcription component of writing (Pinto, Bigozzi, Gamannossi, & Vezzani, 2012), but not in relation to the composition one. The lack of such studies is surprising, if we consider that both phonological awareness and conceptual knowledge of the writing system are correlated with oral narrative competence (Pinto et al., 2009), and that conceptual knowledge of the writing system has been found to be predictive of spelling in first grade (Pinto et al., 2012). Moreover, Hipfner-Boucher et al. (2014) analyzed kindergarteners' oral language and phonological awareness performances and found that narrative structure and phonological awareness are strictly correlated. According to them, this result indicates that these two processes share a common structural and processing demand.

1.5. Rationale and hypotheses

In this study, we explored the predictive relationship between oral narrative competence in kindergarten and written narrative competence in the first grade, after controlling for the effect of other emergent literacy components, namely phonological awareness and conceptual knowledge of the writing system. The participants in this study were Italian children. The specific transition analyzed in this study, from kindergarten to primary school, is culture-bound, as it takes place at different ages in different educational environments. In Italy, this transition takes place between five and seven years of age. The current base of knowledge on the transition between kindergarten and primary school is confused by the existence of different educational practices and curricula across cultures, although it is now broadly acknowledged that schooling effects reflect the content of classroom instruction (Paris, Morrison, & Miller, 2006). Firstly, age ranges in kindergarten and primary schools change, e.g. in some countries children begin primary school when they are 5 years old, whereas in other countries they begin school at 6 years old. Secondly, in some countries children are formally taught to read and spell already in kindergarten, whereas in other countries the formal teaching of these skills are introduced only in primary school. To increase generalizability, we included a detailed description of the school context in which the study was conducted. Italy offers a particularly appropriate context to explore the transition between kindergarten and primary school, as the formal teaching of reading and spelling is introduced only in primary school.

In accordance with what was suggested in the scientific literature, we expected children's oral narrative competence, as assessed in kindergarten, to predict children's written narrative competence in first grade. Several studies suggested the existence of a continuity between oral language skills and narrative competence in written stories (Dockrell & Connelly, 2009). In the present study, we also explored which of the components of narrative competence, i.e. structure, coherence, and cohesion, were connected by a predictive relationship. We did not expect phonological awareness in kindergarten to predict narrative competence in written productions in the first grade. In transparent orthographies, phonological awareness appears not to play a relevant predictive role for the acquisition of writing (Pinto et al., 2012). We believed that conceptual knowledge of the writing system does not predict narrative competence in written stories. Indeed, conceptual knowledge of the writing system was found to be predictive of spelling in the Italian language (Pinto et al., 2012), but spelling might not be playing a relevant role in narratives written through transparent orthographies (Babayiğit & Stainthorp, 2010; Mäki et al., 2001).

2. Method

2.1. Participants

The participants were 122 Italian children. All children were Italian native speakers. Children with special educational needs

were excluded from the study, including both, children who had already received a diagnosis, or children who were still in the diagnostic process, from the clinical units of the Italian National Health System, which follows the International Classification of Mental Disorders, ICD-10 (World Health Organization, 1992).

Participants were assessed twice, first at the end of the last year of kindergarten, and then at the end of first grade. The parents of the participants gave their informed consent for their children to take part in the study. The participants represented a cohort of all the children attending Italian kindergartens in a suburban area on the outskirts of a city in Central Italy, characterized by a medium socio-economic level. There was 5% subject attrition between the two steps and the final participant sample numbered 116 (66 boys and 49 girls; the mean age was $5.29 \pm .29$ in kindergarten, and $6.87 \pm .29$ in the first grade). Subject attrition in this study was extremely low as the Italian population is characterized by a very low mobility, and children tend to attend schools in the same neighbourhood.

All participating kindergartens were following the national guidelines issued by the Ministry of Education that were valid at the time of the study. None of the participants had received specific teaching intervention in any of the variables measured in this study. In the Italian educational system, children typically start kindergarten aged three and finish when they are five. Then, children enrol in primary school when they are six years old. Moreover, in Italian schools, children are exposed to formal reading as soon as primary school begins. Conversely, the national curriculum for kindergarten does not include the formal teaching of reading and writing, as happens in other countries. According to the national guidelines (Law n. 254 of November 16, 2012), these are the literacy aims in kindergarten: use of the Italian language, increasing vocabulary, understanding of words and discourses, hypotheses on meanings; ability to express emotions, feelings, and argumentations through verbal language; ability to produce rhymes, nursery rhymes, new words; ability to detect similarities and analogies between words and meanings; ability to listen to and understand narrations, produce stories, ask for and offer explanations, and use language to create activities; reflection on the language, discovery of other languages. None of the kindergarten classes were exposed to formal literacy instruction, differently than what happens in other countries. Activities conducted in the last year of kindergarten included: communication and oral language, quantification and the measuring of natural phenomena, the exploration and discovery of the natural world, manipulation, dramatization, artistic expression, and psychomotricity (how children process information through movement and kinesthetic intelligence). First-grade children are expected to learn the instrumental level of the written language (reading and spelling) and the basis of mathematics (arithmetic, logic, geometry, and measuring). None of the participants' teachers implemented special training in their classroom to empower relevant variables for this study. Teachers-students ratios are 2:28 in kindergarten, and 1:25 in primary school. All the schools were also comparable in terms of the presence, visibility, and accessibility of meaningful material for the written language. Research design.

This longitudinal study is divided into two steps (see Table 1):

1. Children's emergent literacy skills (oral narrative competence, phonological awareness, and conceptual knowledge of the writing system) were assessed at the end of the last year of kindergarten.
2. Children's writing performances (narrative competence) were assessed at the end of the first grade.

2.2. Materials and measures

2.2.1. Kindergarten assessment

All the children's performances were recorded, transcribed, and coded by two independent judges.

2.2.2. Narrative competence

Story production test (Pinto et al., 2009; Spinillo & Pinto, 1994). The children were first exposed to an oral fictional story (Anna and Melissa, 157 words long) and then asked to retell it, using their own words. In Italian schools, kindergartens, and primary schools, this type of instruction refers to the production of fictional stories, which are compositions/reconstructions of a previously heard/read story. All participants understood the instructions well and produced fictional stories. Agreement between the judges was 92% for cohesion, 94% for coherence, and 91% for structure. The alpha coefficient of the instrument was .87. Their productions were audiotaped and transcribed. From this task, three measures were derived.

2.2.2.1. Structure. The story structure was coded using eight elements: (a) title, (b) conventionalized story opening, (c) characters, (d) setting, (e) problem, (f) central event, (g) resolution, (h) conventionalized story closing. The system of assigning scores for structure was:

1st level (no telling): simple description or list of events, objects, or facts.

2nd level (sketch story): opening, setting, character/s, and conclusion or opening, character/s, sketch of the problem and resolution.

3rd level (incomplete story): opening, character/s, problem, and resolution.

4th level (essential story): opening, character/s, problem, central event, and resolution.

5th level (complete story): title, opening, character/s, setting, problem, central event, resolution, and story closing. In Appendix A we have included a table with a more extensive description and an example for each level.

2.2.2.2. Coherence. To analyze coherence in children's narratives, the number of incongruences were identified. An example of incongruence was: "I mostri non volevano fare pace, **però** i mostri volevano attaccare" [the monsters did not want to make peace, **but** the monsters wanted to attack] (Authors' translation). Then, we proceeded to create three categories (low, medium, high coherence) through a three-way split:

absent (0-points): no story.

low (1-point): ratio connectives/words at the 33rd percentile.

medium (2-points): ratio connectives/words between the 33rd and the 66th percentile.

high (3-points): ratio connectives/words at the 66th percentile.

2.2.2.3. Cohesion. To assess cohesion in children's stories, the following causal and temporal linguistic connectives were counted:

causal: così, allora, quindi, di conseguenza, a causa di ciò, con questo in mente, perché, per cui, ne segue, ne consegue, salta fuori che, a questo scopo, in quel caso, stando così le cose, non stando così le cose, perciò, sicché.

[so, then, thus, consequently, because of that, with this in mind, because, therefore, it follows that, it follows that, it turns out that, for this purpose, in that case, under the circumstances/in that case, that not being so, for this reason, and so].

temporal: allora, poi, dopo, successivamente, proprio in quel momento, prima che, alla fine, in origine, all'inizio, precedentemente, in conclusione, alla fine, ora, improvvisamente, presto, il giorno dopo, l'anno dopo, il mese dopo, la volta dopo, nel frattempo,

Table 1
Research design and variables.

First step (last year of kindergarten)	Second step (first grade)
Emergent literacy skills	Formal writing
Phonological awareness (identification and production of sound patterns):	Narrative competence (written story production)
Rhythm detection	structure
Rhyme detection	coherence
Alliteration detection	cohesion
Conceptual knowledge of the writing system (invented spelling)	
Conceptual knowledge of orthographic notation	
Conceptual knowledge of the orthographic variation of sound quantity	
Conceptual knowledge of the orthographic variation of phonemic units	
Invented reading	
Narrative competence (oral story production)	
structure	
coherence	
cohesion	

fino a quando, in questo momento, in primo luogo, fino ad ora, d'ora in avanti, per riassumere.

[then, after, afterwards, later, right at that moment, before (+clause), in the end, in origin, at the beginning, beforehand, in conclusion, at the end, now, suddenly, soon, the day after, the year after, the month after, the next time, in the meantime, until, at the moment, in the first place, until now, from now on, to sum up].

An appropriate balance was established between the number of connectives used in the stories and the total number of words. An example of a temporal connective is: "Un giorno un coniglio andava" [One day a rabbit was going]. An example of a causal connective is "Il topo scappò perchè vide un gatto" [The mouse ran away because it saw a cat]. Then, we proceeded to create three categories (low, medium, high coherence) through a three-way split:

absent (0-points): no story.

low (1-points): ratio connectives/words at the 33rd percentile.

medium (2-points): ratio connectives/words between the 33rd and the 66th percentile.

high (3-points): ratio connectives/words at the 66th percentile.

2.2.3. Phonological awareness

(Pinto et al., 2009; Spinillo & Pinto, 1994). Children's phonological awareness was assessed through two measures, rhythm, rhyme and alliteration detection.

2.2.3.1. Rhythm detection. Children listened to a series of rhymes, with the following instruction: "Now I am going to tell you a poem, which is a bit like a story, but not quite. And I would like you to make up something similar." The children were asked to produce a poem of their own, with the example acting as a stimulus. The children's ability to reproduce the prosody (rhythm) was scored as follows: "0," no rhythm produced; "1," one rhythm produced; and "2," two or more rhythms produced. Students' scores ranged from 0 to 2. Agreement between the judges was 94%.

2.2.3.2. Rhyme detection. The children listened to a series of rhymes, with the following instruction: "Now I am going to tell you a poem, which is a bit like a story, but not quite. And I would like you to make up something similar." Children were asked to produce a poem of their own, with the stimulus acting as an example. The children's ability to detect the rhymes within the stimulus was scored as follows: "0," no rhymes produced; "1," one rhyme produced; and "2," two or more rhymes produced. Students' scores ranged from 0 to 2. Agreement between the judges was 97%. An example of a whole poem showing rhyme detection by a kindergarten participant was: La pecora va di là.

La pecora viene qui.
E va a mangiare là.
L'erba che é lì.

Table 2
Descriptive analysis of all the measures.

Time	Measure	Mean	*SD*	Skewness	Kurtosis
emergent	PA	8.51	1.63	−1.04 ± .24	.48 ± .47
	CKWS	9.79	2.39	−.67 ± .23	−.86 ± .46
	NC	7.55	2.98	−.58 ± .23	−.22 ± .45
	NC_str	3.21	1.42	−.33 ± .23	−.76 ± .45
	NC_chr	1.65	.55	−1.30 ± .23	.75 ± .45
	NC_chs	2.68	1.33	−.35 ± .23	−.37 ± .45
Formal	NC	7.07	2.57	−.03 ± .23	−1.09 ± .45
	NC_str	3.07	1.35	−.17 ± .23	−.94 ± .45
	NC_chr	1.94	.78	.11 ± .23	−1.32 ± .45
	NC_chs	2.06	.76	−.10 ± .23	−1.27 ± .45

Note. PA: phonological awareness; NC: narrative competence; CKWS: conceptual knowledge of writing system; NC_str: structure; NC_chs: cohesion; NC_chr: coherence.

[The sheep goes there.
The sheep comes here.
And then goes there to eat.
The grass that is growing there].
(Authors' translation)

2.2.3.3. Alliteration detection. The children listened to a series of alliterations, with the following instruction: "Now I am going to tell you a poem, which is a bit like a story, but not quite. And I would like you to make up something similar." The children were asked to produce a poem of their own, with the stimulus acting as examples. The children's ability to detect alliterations within the stimulus was scored as follows: "0," no alliterations produced; "1," one alliteration produced; and "2," two or more alliterations produced. Students' scores ranged from 0 to 2. Agreement between the judges was 98%. An example of a poem with alliteration detection from a kindergarten participant was: Una cavalla cammina, cammina.

Com'è che cammina?
Cammina cantando.
[A mare walks and walks.
How does it walk?
It walks singing].
(Authors' translation)

2.2.4. Conceptual knowledge of the writing system

Invented spelling (Pinto et al., 2009). The children were asked to write and read seven items as well as they could. Four measures were derived. Agreement between the judges was 96%. The alpha coefficient of the instrument was .83.

2.2.4.1. Conceptual knowledge of orthographic notation. This measure defined how similar the children's signs were to conventional

letters. The children had to write down their name, the words they knew, and the word "mela" [apple]. Scores were assigned as follows: "0," for drawings; "1," for scribbles; "2," for forms similar to letters; and "3," for sequences of well-shaped letters. The mean score was then calculated. Students' scores ranged from 0 to 3.

2.2.4.2. Conceptual knowledge of the orthographic variation of sound quantity. This measure defined whether the children were aware of the numerical correspondence between sounds and signs (one sign per sound). The children had to write down two long words (one given by the experimenter, one of their choice) and two short words (one given by the experimenter, one of their choice). Scores were assigned as follows: "0," for drawings; "1," for performances based on non-correspondence between signs and sounds (when words were all written with the same number of signs, or if children used more signs for the short word then they did for the long word; i.e. writing '*king*' with more signs than they do when writing '*rainbow*'); "2," for performances in which the difference in length was present and correct, without a 1:1 correspondence between signs and sounds; and "3," for performances in which the difference in length was present and correct, with a 1:1 correspondence between signs and sounds. The mean score was then calculated. Students' scores ranged from 0 to 3.

2.2.4.3. Conceptual knowledge of the orthographic variation of phonemic units. This measure defined whether the children were aware that words that sound similar are also written in a similar way, with small variations. The children were asked to write two pairs of words, each pair consisting of two words that were similar in their first part and differed only in their final letters. Scores were assigned as follows: "0," for drawings; "1," for performances in which the two words were written either identically or completely differently; "2," for performances with a partial equivalence and a partial differentiation in which the two parts did not correspond to sound variations; and "3," for performances with a partial equivalence and a partial differentiation in which the two parts corresponded perfectly to variations in sounds. The mean score was then calculated. Students' scores ranged from 0 to 2.

2.2.4.4. Invented reading. The children were asked to read the written words. This measure defined whether the children were aware of the sound-sign correspondence rules. Scores were assigned as follows: "0," absence of performance; "1," performance without any correspondence between the written signs and the pronounced sounds; "2," performance with low correspondence between groups of signs and sounds; "3," performance with largely correct correspondence between groups of signs and groups of sounds; and "4," performance with perfect correspondence between groups of signs and groups of sounds. The mean score was then calculated. Students' scores ranged from 0 to 4.

2.3. First grade assessment

2.3.1. Narrative competence

Children were first exposed to the same oral story as the one told in kindergarten and were then asked to write down the story in 30 min. The same three measures of emergent literacy narrative competence were applied as those used for testing narrative competence in the first step, namely structure, coherence, and cohesion (see above for more details on the scores). Agreement between the judges was 93% for cohesion, 94% for coherence, and 90% for structure. The alpha coefficient of the instrument was .88.

2.4. Data analysis

To test the predictiveness of emergent literacy on formal reading, the scores for the single tasks in the kindergarten assessment were merged to calculate the children's performances in three components – oral narrative competence, phonological awareness, and conceptual knowledge of the writing system – in accordance with the factorial model of Pinto et al. (2009). The principal descriptive statistics (mean, standard deviation, skewness and kurtosis coefficients) were calculated. For the variables that proved to be non-normally distributed, monotonic increasing transformations were applied (in particular, phonological awareness was normalized through exponentiation). For the economy of presentation, and because previous research showed that narrative competence, phonological awareness, and conceptual knowledge of the writing system are latent construct influencing the scores in each specific measure, we create three composite scores through addition.

To test the predictive impact of the three emergent literacy measures (independent variables: oral narrative competence, phonological awareness, and conceptual knowledge of the writing system) on the dependent variables (narrative competence in a written production: structure, coherence, and cohesion), we ran three multiple linear regression analyses. Subsequently, multiple linear regression analyses were applied to examine the effect of significant emergent literacy components on narrative competence in primary school.

3. Results

The descriptive statistics (mean, standard deviation, skewness, and kurtosis coefficients) and correlations between the three emergent literacy regressors – oral narrative competence, phonological awareness, and conceptual knowledge of the writing system – and

Table 3
Correlations between all measures.

Measures	Emergent						Formal				
	PA	TC	CKWS	NC_str	NC_chr	NC_chs	NC	NC_str	NC_chr	NC_chs	
emergent	PA	1									
	NC	.40**	1								
	CKWS	.44**	.28**	1							
	NC_str	.40**	.95**	.23*	1						
	NC_chr	.21*	.76**	.15	.69**	1					
	NC_chs	.37**	.92**	.32**	.77**	.56**	1				
formal	NC	.06	.36**	.25*	.38**	.26**	.29**	1			
	NC_str	.06	.37**	.22*	.39**	.23*	.31**	.96**	1		
	NC_chr	.09	.29**	.27**	.32**	.19*	.24*	.87**	.79**	1	
	NC_chs	−.00	.27**	.17	.28**	.27**	.20*	.79**	.64**	.52**	1

Note. PA: phonological awareness; NC: narrative competence; CKWS: conceptual knowledge of writing system; NC_str: structure; NC_chs: cohesion; NC_chr: coherence.
* $p < .05$.
** $p < .01$.

Table 4
Multiple linear regression analysis to predict the effect of emergent literacy measures on narrative competence in written productions: coefficients.

Model	Beta	*t*	Sig.
(Constant)		8.16	.00
Phonological Awareness	−.19	−1.74	.09
Narrative Competence	−.38	−3.73	.00
Conceptual Knowledge of Writing System	−.19	−1.80	.08

Table 5
Multiple linear regression analysis to predict the effect of emergent literacy narrative competences on narrative competence in written stories: coefficients.

Model	Beta	*t*	Sig.
(Constant)		11.39	.00
Structure	−.32	−1.99	.04
Coherence	.06	.49	.63
Cohesion	−.00	−.01	.99

the dependent variable, writing in first grade, are shown below (Table 2). Correlations among the variables of this study are presented in Table 3.

In the first multiple regression analysis, we checked the predictive impact of the emergent literacy measures (oral narrative competence, phonological awareness, and conceptual knowledge of the writing system) on the children's narrative competence in their written production. Overall, the emergent literacy measures predicted 14% of children's narrative competence in written stories (Adj. $R^2 = .14$; $F_{3,97} = 6.57$, $p < .01$). The only statistically significant predictor among the emergent literacy skills was oral narrative competence (see Table 4). Overall, among the emergent literacy components, these results highlighted the importance of narrative competence in oral productions in kindergarten in predicting narrative competence in written texts in the first grade.

We proceeded to analyze this relationship in more detail by exploring the predictive impact of each of the three emergent literacy narrative competences (oral production) on each of the three narrative competences in primary school (written production): structure, coherence, and cohesion. Overall, the three emergent literacy narrative competences predicted 11% of the children's narrative competence in written stories (Adj. $R^2 = .11$; $F_{3,107} = 5.41$, $p < .01$). The only statistically significant predictor among the emergent literacy narrative competences was structure (see Table 5).

The three emergent literacy narrative competences predicted 13% of structure in written stories (Adj. $R^2 = .13$; $F_{3,107} = 6.50$, $p < .01$). The only statistically significant predictor among the emergent literacy narrative competences was structure. The three emergent literacy narrative competencies predicted 8% of coherence in written stories (Adj. $R^2 = .07$; $F_{3,107} = 4.12$, $p < .01$). The only statistically significant predictor among the emergent literacy narrative competencies was structure. The three emergent literacy narrative competencies predicted 7% of cohesion in written stories (Adj. $R^2 = .07$; $F_{3,107} = 3.89$, $p < .05$). No predictor proved to be statistically significant (see Table 6).

Table 6
Series of multiple linear regression analysis to predict the effect of emergent literacy narrative competences on structure, cohesion, and coherence in written stories: coefficients.

Model	Beta	*t*	Sig.
DV: Structure			
(Constant)		3.66	.00
Structure	.41	2.56	.01
Coherence	.05	.38	.71
Cohesion	.02	.16	.88
DV: Coherence			
(Constant)		4.71	.00
Structure	.36	2.23	.03
Coherence	.04	.30	.76
Cohesion	−.02	−.16	.87
DV: Cohesion			
(Constant)		7.01	.00
Structure	.17	1.06	.29
Coherence	−.20	−1.60	.11
Cohesion	−.04	−.28	.78

Note. DV: dependent variable.

4. Discussion

This longitudinal study investigated the predictive impact of an emergent literacy model (oral narrative competence, phonological awareness, and conceptual knowledge of the writing system) on narrative competence in written production in Italian in the first grade. Overall, the results confirmed the relevance of emergent literacy models in predicting formal literacy (Lonigan et al., 2000). This study highlights once again how children's skills develop in a continuum, in which previous performances in narratives are connected to later performances, but it also shows that the transition from emergent to formal literacy is an important moment of discontinuity, as the child is shifting from oral to written expression of narratives.

Our data confirmed the existence of a predictive relationship between narrative competence in oral (kindergarten) and written production (first grade). Previous studies had given controversial results, some indicating the existence of continuity between kindergarten and primary school (Fernandez, 2011; To et al., 2010), while others, instead, supported the idea that emergent—formal literacy relationships are very specific in nature (Lonigan et al., 2000). The results from this study indicate that the overall picture is very complex, with some elements of continuity and some elements of discontinuity. More specifically, the structure of the oral narrative was the only predictive component of narrative competence in written productions. Although related, oral and written narratives do not seem to overlap completely, as cohesion and coherence do not transfer when the medium of expression is changed. This result confirms that the written language places additional demands on children, at least in this early stage of acquisition, and affects in particular children's ability to create a coherent narrative and to use cohesive devices (Dockrell & Connelly, 2009; Kim et al., 2015).

Interestingly, structure in oral narratives predicted not only structure in written narratives, but also coherence in written narratives. According to our interpretation, they are both global organizers, as they require the teller/writer to reflect on the text as a whole. This was an expected result, if we take into consideration the legacy of research on story grammar and on the importance of fostering an awareness of the structure of the narration when children are engaged in both reading comprehension (Dimino, Gersten, Carnine, & Blake, 1990) and writing tasks (Gersten & Baker, 2001). On the other hand, cohesion requires the teller/writer to reflect locally on the connections among sentences and claims (Makinen et al., 2013). The predictive relationship between structure in oral narratives and coherence in written narratives shows that these two indicators are rather independent of the medium of expression, probably representing the metacognitive side of narrative competence (Kaderavek, Gillam, Ukrainetz, Justice, & Eisenberg, 2004). Instead, cohesion is more linguistic in nature: it requires a knowledge of linguistic indicators such as pronouns, connectives, and the like. It is less influenced by children's emergent literacy and it needs to be formally addressed by specific grammar instruction about these aspects. Indeed, when writing, children need to identify and correctly use a set of indicators that can be substituted for the referential opportunities given by oral communication: mimicry, tone, prosody, gestures, and the like.

The conceptual knowledge children have about their writing system in the last year of kindergarten did not predict their narrative competence in written productions in the first grade. This finding shows that orthographic and narrative competences are rather independent processes at this early stage of writing acquisition. This is a plausible result, if we consider that the text is student-produced, so he/she can decide to include only the words he/she is confident about in terms of spelling. In a way, the student is able to adapt the instrument (writing) to both his/her intentions (to narrate a story) and abilities (vocabulary and spelling). Moreover, as Babayiğit and Stainthorp (2010) and Mäki et al. (2001) confirmed, this result suggests that for the Italian language too the spelling and the composition components of writing are not strongly related, at least in the early stages of writing acquisition.

We did not expect that phonological awareness in kindergarten would predict narrative competence in written productions in the first grade, and our results confirmed this hypothesis. These data once again support the relative independence of the different aspects characterizing a language and its writing system. Other linguistic aspects might have more weight in predicting narrative competence, such as knowledge of causal, temporal, and referential expressions. In general, emergent literacy components appear to be more related to the instrumental components of literacy (i.e. spelling in writing and decoding in reading), rather than to the constructive components (composition in writing and comprehension in reading).

Emergent literacy variables can only partially account for the variance in written narrative competence. Several hypothesis can be put forward to explain the small effect sizes found in this study. Firstly, oral narrative competence in kindergarten is still in an embryonic level. Let us explore participants' performances in structure: children's average score was around 3, which corresponds to an incomplete narrative, with an elementary narrative structure but without the central event. It could be that accessing the next level (connecting the main parts of the story in a sound cause-effect net of events) requires the contribution of higher-order mental processes and long-lasting planning, two processes available on a maturational basis. Thus, the low levels of oral narrative competence in kindergarten might not be able to fully account for the complexity of written narrative competence in first grade. Secondly, there might be other major sources of variance in written narratives, e.g. orthographic competence. Past research has reported direct and indirect associations between orthographic and narrative competence for deep orthographies (Berninger et al., 1992; Juel, 1988; Puranik & Alotaiba, 2012), whereas results for transparent orthographies are more inconsistent (Babayiğit & Stainthorp, 2010; Mäki et al., 2001). While discussing the contrast between shallow (e.g. Italian) vs. deep orthographies (e.g. English) goes beyond the scope of this paper, this represents an important research question. For instance, in transparent orthographies spelling is rapidly acquired, within the first two years of schooling (Notarnicola, Angelelli, Judica, & Zoccolotti, 2012), thus orthographic competence might impair narrative competence only in early stages of schooling. In first grade, children's writing ability may be very shallow. As they progress from beginning to more skilled writers, their coding processes become more automatic and do not make great demands on limited-capacity resources. Children may then have more possibility to use their available higher-order resources, e.g. narrative abilities. Thus, children's oral narrative competences in kindergarten might be able to better predict narrative competence in later stages of school. Thirdly, the analysis of the standard deviation scores shows a great individual variability in children's oral and written narrative competence performances. A standard deviation higher than 1 means that the great majority of the sample can master narrative competence at the incomplete narrative level, or one level below (sketch narrative, which just includes a setting and the main character), or one level higher (essential narrative, in which all the elements are included, except for the non-essential ones). Individual differences can account for diverging developmental patterns.

It is important to notice that formal schooling brings more changes to children than just the introduction of reading and writing. In primary school, learning targets, knowledge and instruments are all formalized, demanding the child to meet specific criteria: schooling is an important aspect of literacy (Olson, 1986). Thus, their narrative competence, once (i.e. kindergarten) felt as spontaneous, might become cognitively more complex in primary, and a target of assessment. An example of this shift comes from Cutler and Graham's finding (2008) that 96% of primary school teachers use narratives to teach writing skills to their students.

Finally, a further explanation of the limited predictive power of oral narratives is the influence of background factors over the impact of schooling (Rutter & Maughan, 2002): family environments, values and practices influence the children's pathways through school. Individual differences in opportunities and abilities to learn are amplified, not minimized, as children enter primary school.

In conclusion, this study confirms the existence of a predictive relationship between narrative competence in oral productions in kindergarten and narrative competence in written productions in the first grade. In particular, the knowledge children have about the structure of a story, namely story grammar, plays a central role in kindergarten and it influences both the structure and the coherence of written narratives when children are in the first grade. Structure, therefore, stands out as a component that is rather independent of the medium of expression used. Overall, despite significance, the amount of variance accounted for by the regression models ranged from 7% to 14%, suggesting that spelling plays an interference effect, and there are other factors that could be contributing to narrative written production in the first grade.

This study has practical implications. Teachers and parents know the importance of reading for young children but tend to neglect the importance of emergent literacy skills related to writing (Watanabe & Hall-kenyon, 2011). The present study suggests the need to teach language skills in an oral format before they are more challenging to teach—i.e. in a written format. From an emergent literacy perspective, we found some elements of continuity in the transition from oral to written narratives, which elements of continuity should be addressed early in kindergarten. Students' ability to give a structure to their narratives appeared a particularly important component in the continuum between oral and written productions. This ability is supported by students' knowledge of the conventional components of the narrative genre. Results from this study suggest kindergarten practitioners to enhance children's knowledge of textual genres, by exposing them to good models of narratives, providing them more opportunities to narrate their own narratives, and using graphical texts to better convey their intended meaning (Teubal & Guberman, 2014). As Hooper et al. (2010) noted, the acquisition of writing skills in students presents a significant challenge for educators. This is particularly true nowadays, with increased stress on high-stakes testing. Furthermore, several scholars have analyzed narrative competence in children with special educational needs, and found that their performances significantly differ from the ones of typically-developing children on several dimensions (Soodla & Kikas, 2010; Colozzo, Gillam, Wood, Schnell, & Johnston, 2011). Early identification of learning problems in writing is widely advocated by school psychologists, and the present study contributes by providing initial clues to the beginning of narrative competence. Other works showed the predictivity of emergent literacy skills on the manifestation of learning disorders (see Bigozzi, Tarchi, Pezzica, & Pinto, 2014). The study also shows that working on narratives from an early stage in life

is extremely important for the development of writing, independently of the formal acquisition of orthographic and grammar rules.

The results from this study are affected by some limitations. Firstly, our data provides information on textuality in a specific genre: narratives. It would be interesting to replicate this research design with other genres and see whether emergent literacy predicts children's narrative competence differently in expository texts. Furthermore, narratives are generally sensitive to how they are prompted (Levy & Ransdell, 1996). In this study, students were first exposed to a story and then asked to retell (in kindergarten) or rewrite it (in the first grade). Future studies should replicate the study with different prompts (a personal experience, poetry, a word limit, and the like) or no prompts at all. Future research should also investigate if the predictive relationship of the emergent literacy components changes in the later stages of the acquisition of writing.

Appendix A.

Table A1

Table A1
Story structure coding (Adapted from Spinillo & Pinto, 1994).

Level	Definition	Score	Example
	no telling	0	
First level Non-story	Simple descriptions of actions without any characteristic of narrative style.	1	A ball. A girl. Sunshine. A house
Second level Sketch story	Introduction of the setting and the main character,	2	Once upon a time there was a cat that met a girl and then it found also a little house and it went inside with the cat and they went to a school. The girl left the cat outside and then went into a gym. That is all.
Third level Incomplete story	Elementary narrative structure, but a central event is missing	3	Once upon a time there was a lady who had a frog. One day the frog became a prince and then the prince married her and then they lived happily ever after
Fourth level Essential story	Non-essential structural elements are missing	4	Once upon a time there was a penguin. He was all on his own. He had no one in the whole world. He did not have any friends. So he went out to find someone in the neighborhood to be a friend. He found someone in the end. He found his friend! He went to his house with his friend and they played together all day long. And they lived happily ever after
Fifth level Complete story	All the elements are included.	5	Once upon a time there was a boy and he had a secret that no one could know about. One day he went to his friend's house and told him his secret. The secret was that he came from another planet that was very far from earth. His friend was worried because he did not know what to do. He did not know if they could stay friends after all. Then he asked his mother and his mother said that it did not matter. So they became friends again and they lived happily ever after

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