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Early Predictors of Reading in Three Groups of Native Spanish Speakers: Spaniards, Gypsies, and Latin Americans

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Universidad Complutense (Spain)

The main purpose of the study reported here was to examine the early linguistic predictors of reading (e.g., Knowledge About Print, Listening Comprehension, Receptive Vocabulary, Rapid Naming of Objects and Letters, and Phonological Awareness), for a sample of 77 Spaniards, 48 Latinos, and 30 Gypsies kindergartens (mean age = 5 years 9 months) living in Spain. The relative contribution of ethnic background, neighbourhood socioeconomic status (SES), age, and gender was assessed. Findings revealed that ethnic background, neighborhood SES, and age differentially predicted children’s pre-literacy skills. The implications of these results for understanding the role played by these demographic and socio-cultural variables in alphabetic literacy acquisition are discussed. The second purpose of this study was to add to the growing literature on the nature of reading challenges in children who are learning to read a transparent orthography-Spanish. Cross-linguistic research between different subtypes of readers will add to understand the impact of language characteristics in reading acquisition. Finally, the present study suggested that early assessment of pre-literacy skills can be a highly effective way to determine the instructional needs of students who are at risk for reading failure before formal reading instruction begins.

Keywords: reading, literacy, preschool, Spanish, minority
Researchers working on literacy acquisition have for some time been concerned with the prevention of reading difficulties. Accurate early prediction of individual differences in reading ability has long been an educational goal. Reading problems are found among every group, although children from minority groups and poor families are at a much greater risk of reading difficulties than are middle-class/mainstream students. Studying these demographic disparities can help us understand about the course of literacy development and identify groups that should be targeted for special prevention efforts.

Spain has historically been a multicultural society composed of diverse linguistic and cultural groups, and traditionally, for the most part an emigrants’ nation. Nevertheless, as with other European Mediterranean countries, in the last 15 years, Spain has experienced significant immigration, mostly coming from Latin America due to shared historical roots and language, and from North Africa due to geographic proximity. Over the last five years the immigrant population in Spain has quadrupled, transforming the social configuration of several geographical areas in the big cities.

Latin Americans represent the largest immigrant population in Madrid, and Gypsies (Gitanos) have been the most distinct ethnic minority group settled in Spain since the 15th century.

Attention to Gitanos has included study in the fields of sociology and anthropology, as well as social history (Dunbar, Blanco, Sullaway, & Horcajo, 2004). However, very little psychological research has been conducted about reading development concerning Gitanos. To our knowledge, there is neither previous research in Spain that has analyzed early linguistic predictors of reading development in Gitanos, nor have studies approached this issue with Latin American immigrant children.

Reading is the key to learning, no single skill taught in schools is more central to learning than reading. Without accurate and fluent reading skills access to school content is diminished. In a country such as Spain, where there is an increasing need of social policies addressing ethnic integration, information about literacy development, in different ethnic groups, is of great interest.

Reading is not only a cognitive psycholinguistic activity but also a social one. Learning to read for minority groups is generally a demanding task, one that might be more challenging for children who live in socioeconomic disadvantage. Low income families have a higher proportion of children at risk for low levels of reading achievement than any other socioeconomic group (Ramey & Ramey, 1998). SES is most commonly measured using variables such as family income or parents’ occupation and education level that directly impact upon academic progress (Ensminger & Fothergill, 2003). Nevertheless, many other factors, including neighbourhood characteristics, physical health, home environment, and early education, influence children’s school related cognitive abilities (Bornstein & Bradley, 2003).

Gitanos tend to belong to socioeconomic disadvantage families. While inarguably Spanish citizens, they continue to suffer from a far higher degree of poverty and exclusion, than the majority of the population (Salinas, 2007).

Immigration in Spain is a recent phenomenon, and there is no available data on school achievement of any immigrant group yet, but initially immigrants are at an economic disadvantage compared to natives having similar education. Previous research suggests that residential mobility, unemployment or unstable occupation, as well as uncertain economic conditions in young and single parents, may be important variables in the influence of socioeconomic context on cognitive abilities related to reading development and literacy (D’Angiulli, Siegel, & Hertzman, 2004; Dickinson & Snow, 1987; Scanlon & Devine, 2001; Snow, Barnes, Chandler, Goodman, & Hemphill, 1991).

Additionally, stereotypes and teachers with lower expectations influence children’s school related cognitive abilities (Rosenthal & Jacobson, 1992; Elliott, 1970). Stereotypes about Gitanos are rarely positive and most frequently negative in our society. These students still suffer from rejection and their SES has not changed (Enesco, Navarro, Paradela, & Guerrero, 2005; Salinas, 2007).

However, the risk for low levels of reading difficulties is not explained fully by these sources of influence. Accumulating research is showing important links between all children’s oral language and literacy development (Jencks & Phillips, 1998, Craig, Connor, & Washington, 2003; Connor & Craig, 2006).

Language use varies across individuals even when these individuals are perceived to speak the same general dialect. In some cases, this variation relates to one or more variables that systematically influence the language of a subgroup. A salient language difference among Spaniards, Latin Americans, and Gitanos students is the dialect they speak and bring to the task of literacy acquisition.

Standard Spanish is the primary dialect spoken by Spaniards students and teachers and it is the dialect used in most books and texts children encounter in school.

Spanish Gitanos used to speak Caló or Spanish Romani. Caló blends native Romani vocabulary with Spanish grammar. Gitanos used Caló to communicate discreetly in their internal dealings. At present, Caló is almost extinguished and Gitano dialect or Gitano Spanish is the language spoken by most Gitano students.

Very little is known about the oral language production of young Gitano children, to our knowledge there is not previous research in Spain that has analyzed this topic. However, Children’s Gitano dialect is characterized by systematic differences from Standard Spanish in vocabulary, prosody, morphosintactic, and phonological features.

The differences between the Spanish of Spain and the Spanish of Latin America may be similar to the differences between British English and American English. Although,
there are more differences in the spoken language than in writing, differences in vocabulary, prosody, morphosintactic, and phonological features of the language exist between the two Spanish dialects.

Moreover, Gitano and Latin American culture are still absent in the school curricula and text books. The Asociación de Enseñantes Gitanos (2001) reported that in 208 textbooks used in early childhood education, elementary, and secondary school between 1990 and 2000, there were only eighteen explicit references to Gitanos, only six of them with meaningful content, and only two dial with the topic of Gitanos in a positive light.

Since 1983 the Spanish government has operated a special program of compensatory education to promote educational rights for the disadvantaged, including immigrant and Gitano children. The program includes the assignation of more teachers and resources, the creation of resource centers and support services, scholarships covering the cost of meals and books, and flexibility in requirements to gain admission to schools.

Over the past two decades nearly all Gitano children attend school at the early childhood and elementary levels. However, Gitano families’ acceptance of and response to the educational system has not been uniform. Lower attendance rates and a much higher failure among Gitanos is still a tendency. The conflict between values encountered at home and school results in a cultural dissonance. The lack of expectations concerning schooling, that many Gitano families share, results from a belief that it does not guarantee a job when their children finish their studies (Salinas, 2007).

The current situation tells us that 70 percent of Gitanos over sixteen have not completed primary school. Not many make it to high school; even fewer finish. (Fundación del Secretariado Gitano, 2006). Extremely few are admitted to college, thus poor academic achievement among Gitanos can also be understood in terms of the dearth of Gitano role models with strong educational backgrounds (Salinas, 2007).

Research conducted during the past two decades has demonstrated that students who experience difficulty learning to read early in the first grades continue to struggle in later years (Juel, 1988; Vellutino & Scanlon, 2002). The poor reader in the first year of school almost invariably continues to be a poor reader (Torgesen, 1998; Torgesen & Burgess, 1998). The well known paper on the “Matthew effect” (the rich get richer and the poor get poorer), by Stanovich (1986), points out the consequences associated with reading failure, ranging from negative attitudes to less actual practice in reading. Furthermore, the effects of poor reading are cumulative over time, increasing problems with reading fluency, and reducing the opportunities for vocabulary growth, and the development of reading comprehension strategies.

The best solution to the problem of reading failure is to allocate resources for early identification and prevention (Torgesen, 1998). Effective preventions are necessary in preschool years and in some cases even starting in infancy. Snow et al. (1998) suggested that prevention of reading difficulties is easier than remediation and is dependent on early identification.

Early predictors of reading

Early correlates and predictors of reading acquisition have been studied in the last 30 years.

One of the best and most studied predictors of reading in the early phases, has been phonological processing, the implicit or explicit knowledge that children have of the sound structure of language. The ability to use information about the sound elements of language has repeatedly been demonstrated to be an essential precursor to basic reading development (Adams, 1990; Bradley & Bryant, 1985; Ehri et al., 2001; Goswami, 2000; Share & Stanovich, 1995; Muter & Snowling, 1998; Wagner & Torgesen, 1987). Longitudinal correlational studies, in several different language communities, have shown a substantial relation between measures of phonological awareness and reading (Bradley & Bryant, 1985; Defior & Tudela, 1994; de Jong & van der Leij, 2002; Jiménez & Ortiz, 2000; Kirby & Parrilla, 1999; Manis, Seidenberg, & Doi, 1999; Stanovich, Cunningham & Cramer, 1984; Torgesen, Wagner, & Rashotte, 1994; Wimmer, 1993; Wolf, Pfeil, Loiz & Biddle, 1994).

Analyses of the underlying structure of phonological awareness have been conducted on the assumption that the performance in phonological awareness tasks depends on the one hand on the linguistic complexity of the tasks (manipulation of different units sizes, such as words, syllables, onset/rimes, or phonemes) or on the other hand on the specific cognitive operations demanded by the different task types.

Other cognitive processes beyond the phonological domain are important in reading acquisition. Scarborough (1998) completed a meta-analysis of 61 prediction studies of reading disability. She found that the best predictor of reading was the child’s current knowledge of printed letters and words, once formal training of literacy had started. For preliterate children a measure of letter identification explained a significant proportion of variance in later reading by itself. Among the other measures studied by Scarborough, the next best predictors were confrontation naming (expressive vocabulary), general language ability, verbal memory for sentence or stories, phonological awareness, rapid serial naming, and receptive vocabulary. She reported that measures of skills that are directly related to reading including letter identification, phonological awareness, and knowledge of print (the mechanics and functions of book reading), have yielded the highest simple correlation with subsequent reading scores.
Other studies have concluded that rapid naming is strongly related to early literacy and constitutes, in addition to phonological awareness, a good and independent predictor of letter-word identification (de Jong & van der Leij, 2003; Manis, Lindsey, & Bailey, 2004; Wimmer, Mayringer, & Lander, 2000).

As research into reading has been conducted predominantly among those whose first language is English, assumptions may have been made about the nature of reading that are dependent on the complex features of that language.

However, there is great variability among languages; different alphabetical systems have different rules for grapheme–phoneme correspondences. In English, with its opaque orthography, the development of decoding skills is slower than in more regular orthographies, where the correspondences between graphemes and phonemes are highly consistent. In the Spanish language, the number of syllabic structures is limited, and irregularities of phonemes-graphemes mapping can be resolved by taking into account the structure of the syllable where the graphemes appear in the word.

A European collaborative study across 13 countries showed that while only 40% of English speaking children read by the end of first grade, reading accuracy in most other European orthographies was close to ceiling by that time (see Seymour et al., 2003 for full report).

Cross-linguistic studies are indispensable for the identification of universal processes in oral and written language, both in their development and in their breakdown (Bates, Devescovi, & Wulfeck, 2001). Examining the differences of literacy acquisition in contrasting orthographies can help illumine both the more universal aspects of reading, as well as their individual language-specific attributes. The importance of this approach lies in its implications for diagnosis and intervention in different languages communities (Katzir, Shaul, Breznitz, & Wolf, 2004).

Within this context, the present study examined the emergent literacy skills (i.e., Knowledge about Print, Listening Comprehension, Receptive Vocabulary, Rapid Naming of Objects and Letters, and Phonological Awareness) in three groups of native Spanish speakers: Spaniards, Latin Americans, and Gitanos. The aims were a) to assess the relative roles of ethnic background, neighbourhood SES, age and gender as predictors of reading ability in Spanish. b) to add to the growing literature on the nature of reading challenges in children who are learning to read a transparent orthography-Spanish; and c) to provide educational administrators, educators, and researchers, with early reading assessment recommendations.

Based on previous research on educational outcomes ethnic background and SES, we hypothesized to find a significant association of family cultural background and SES with literacy skills in kindergarten.

**Method**

**Participants**

Prior to the implementation of the study, we asked the administration of three Madrid public schools to participate in the project, which was approved by the School Council.

Students attending Madrid public schools, including the three selected for the present study, have the same opportunities in terms of curriculum, teacher preparation, school budget, resources, and student/teacher ratio. In the three schools, all teachers were Spaniards, all of them held at least a bachelor’s degree and all were considered fully credentialed teachers, and passed the competitive exam for the position of childhood professor. This exam is required to teach in any public school in Spain.

The main difference among the three selected schools was the neighbourhood characteristics where they were located and the population attending each of them.

School-1 was located in a working class, low-middle and mid-middle SES neighbourhood (LMSES), School-2 and School-3 were located in low SES (LSES) urban neighbourhoods.

It should be noted the predominance of minority groups in two of the schools, ninety five percent of Gitano population in School-3, and eighty five percent of Latin American population in School-2. The Spaniards were predominant in School-1, ninety five percent of the total student body. Although, educational policies have been designed to prevent all forms of school segregation, immigrants and Gitanos tend to concentrate in the same neighbourhoods, proximity and parent choice in schools, produce school minority concentration.

The participants were chosen at random from the three public schools. Our sample consisted of 77 Spaniards (fifty-six in School-1 and twenty-one in School-2), 48 Latinos (eight in School-1 and forty in School-2), and 30 Gitanos kindergarten children (all of them in School-3) (mean age = 5 years and 9 months) (See Table 1 and 2).

### Table 1: Distribution of participants by School

<table>
<thead>
<tr>
<th></th>
<th>School-1 LMSES</th>
<th>School-2 LSES</th>
<th>School-3 LSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spaniards</td>
<td>56</td>
<td>21</td>
<td>0</td>
</tr>
<tr>
<td>Latin Americans</td>
<td>8</td>
<td>40</td>
<td>0</td>
</tr>
<tr>
<td>Gitanos</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
</tbody>
</table>
All participating children in the three groups were monolingual Spanish speakers with normal hearing and no history of significant emotional or neurological disorders. Furthermore, no child had been diagnosed, in their schools, with autism or mental retardation.

**General Procedures**

All participants were tested individually, in a quiet room, in the children’s respective schools, by Spaniards and Latin American trained graduate students, in one session that lasted about 30 minutes each. The teachers of Gitanos administered the tasks for this group since there are not Gitano graduate students in our School of Education. Each session was recorded for further analysis. Several measures of leading predictive variables, such as Knowledge about Print, Listening Comprehension, Receptive Vocabulary, Rapid Naming of Objects and Letters, and Phonological Awareness, were administered.

**Instruments**

**Knowledge about Print.** The experimenter carried on a structured conversation with the child about a children’s book. The child was asked 5 questions assessing knowledge of book and printing conventions (see Appendix 1). This task was an adaptation of the English-language version of Clay’s (2000) Knowledge about Print. A reliability analysis was computed for this task and the alpha coefficient was .70. The reported internal consistency reliability (Cronbach’s alpha) for this task in a similar Spanish version was .92 for age five (Manis, Lindsey, & Bailey, 2004). Raw scores are reported.

**Listening Comprehension.** This task measures the extent to which children are in a position to understand and remember a short children’s story read aloud to them. In this case, the story was about a birthday party, a familiar situation for most children. In order to avoid ethnic discrimination the story characters were animals. The experimenter read the book and asked the child five questions increasing in difficulty about the story (see Appendix 2). Contextual questions were designed for objective scoring. A reliability analysis was computed for this task and the alpha coefficient was .60. Raw scores are reported.

**Peabody picture vocabulary test (PPVT).** Spanish version. (Dunn, Padilla, Lugo, & Dunn, 1986). This is a standardized test of receptive vocabulary knowledge. On each trial the child hears a word and must select the corresponding picture from among four choices. Standard scores were assigned using the grade-based assessment norms from the test manual. Split-half reliability at age 5 from norms was .93. Standard scores are reported (M = 100, SD = 15).

**Rapid Automatized Naming (RAN) – Objects and Letters.** These two measures were selected from the RAN/RAS test. (Wolf and Denckla, 2005). The task consists of 5 items each arrayed on a page, each repeated in random order 10 times. One page has 50 simple object drawings, and the other 50 letters. Participants were initially asked to provide the name of each symbol: object or letter, to assess familiarity with the presented stimuli. Following this, participants were presented with the page containing the matrix of symbols and asked to name each item from left to right as quickly as possible. In the case that children did not know the presented letters the task with the letter page was not administered. Total time and accuracy were recorded. Test-retest reliability reported from norms for RAN-Objects was .84 and for RAN-Letters .90. Total time in seconds is reported.

**Phonological awareness.** The phonological awareness test included three tasks: isolation, blending, and deletion. The isolation task required the participants to recognize the first or last sound of a spoken word. In the blending task, the participants were asked to listen carefully at a word in small parts, and then put these parts together to make a whole word. Deletion required the participants to remove sounds from the beginning or end of one word and to form another word. This task was administered in two time periods. Internal consistency reliability (Cronbach’s alpha) for our sample calculated at Time 2 was .71. The tasks are shown in the Appendix 3. Real word items were selected for each task. High-frequency words were selected on the basis of ratings generated from a normative study conducted by Guzmán and Jiménez (2001).

**Results**

The strength of the relationship of ethnic background, neighbourhood SES, age, and gender to pre-literacy skills was addressed in three ways.

First, preliminary descriptive analyses were conducted. Mean percentile scores are shown in Table 3. Inspections of Table 3 reveals that children from the minority groups did demonstrate lower pre-reading skills than did children.
from the mainstream group. Spaniard children were the best performers and Gypsies were the most impaired group.

It’s apparent that Spaniards’ and Latin Americans’ scores in Vocabulary (on which normative data was available) were above the average range; in contrast, Gitanos’ scores in this measure were below average. Second, a correlation matrix (see Table 4) for each group was computed to provide information about the relations between the variables.

For Spaniards, the relations between these literacy scores followed patterns typically observed for kindergarten children. Moderate significant correlations were found among most literacy variables for this group. Listening comprehension

Table 3
Descriptive Statistics of Studied Groups

<table>
<thead>
<tr>
<th>Measure</th>
<th>Spaniards (n = 77)</th>
<th>Latin Americans (n = 48)</th>
<th>Gitanos (n = 30)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>Range</td>
</tr>
<tr>
<td>Knowledge about print (7)</td>
<td>3.78</td>
<td>1.31</td>
<td>0-7</td>
</tr>
<tr>
<td>Listening Comprehension (8)</td>
<td>5.26</td>
<td>1.70</td>
<td>0-8</td>
</tr>
<tr>
<td>Vocabulary (standard score)</td>
<td>113.39</td>
<td>14.71</td>
<td>73-143</td>
</tr>
<tr>
<td>RAN-Objects (seconds)</td>
<td>66.78</td>
<td>14.27</td>
<td>39-104</td>
</tr>
<tr>
<td>RAN-Letters (seconds)</td>
<td>53.38</td>
<td>16.14</td>
<td>31-120</td>
</tr>
<tr>
<td>Total Phonological Awareness Tasks (12)</td>
<td>7.81</td>
<td>2.57</td>
<td>1-12</td>
</tr>
</tbody>
</table>

When appropriate, maximum score is listed in parentheses next to task name.

a Task administered to Spaniards (n = 68); Latin Americans (n = 15); Gitanos (n = 17)

Table 4
Correlation Between Reading Measures for the Three Studied Groups

<table>
<thead>
<tr>
<th>SPANIARDS (n = 77)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Knowledge about print</td>
<td>.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Listening comprehension</td>
<td>.43**</td>
<td>.24*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Receptive Vocabulary</td>
<td>.12</td>
<td>.16</td>
<td>.36**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Ran-Objects</td>
<td>-.28*</td>
<td>-.11</td>
<td>-.30**</td>
<td>.23*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Ran-Lettersa</td>
<td>-.32**</td>
<td>-.14</td>
<td>-.10</td>
<td>-.18</td>
<td>.55**</td>
<td></td>
</tr>
<tr>
<td>7. Phonological Awareness Tasks</td>
<td>.24*</td>
<td>.24*</td>
<td>.32**</td>
<td>.37**</td>
<td>-.14</td>
<td>-.34**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LATIN AMERICANS (n = 48)</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
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<tbody>
<tr>
<td>1. Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Knowledge about print</td>
<td>.16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Listening comprehension</td>
<td>.18</td>
<td>.29*</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>4. Receptive Vocabulary</td>
<td>.08</td>
<td>.08</td>
<td>.29*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Ran-Objects</td>
<td>-.39**</td>
<td>.17</td>
<td>-.04</td>
<td>-.01</td>
<td></td>
<td></td>
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<tr>
<td>6. Ran-Lettersa</td>
<td>-.02</td>
<td>.30</td>
<td>-.36</td>
<td>-.13</td>
<td>.50</td>
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<tr>
<td>7. Phonological Awareness Tasks</td>
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<td>.24</td>
<td>.31**</td>
<td>.43**</td>
<td>.01</td>
<td>-.16</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>GITANOS (n = 30)</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Knowledge about print</td>
<td>.67**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Listening comprehension</td>
<td>.17</td>
<td>.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Receptive Vocabulary</td>
<td>.17</td>
<td>.09</td>
<td>.36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Ran-Objects</td>
<td>-.30</td>
<td>-.16</td>
<td>-.44**</td>
<td>-.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Ran-Lettersa</td>
<td>-.35</td>
<td>-.10</td>
<td>-.33</td>
<td>-.17</td>
<td>.67**</td>
<td></td>
</tr>
<tr>
<td>7. Phonological Awareness Tasks</td>
<td>.64**</td>
<td>.67**</td>
<td>.34</td>
<td>.27</td>
<td>.07</td>
<td>-.01</td>
</tr>
</tbody>
</table>

Key: * p < .05  ** p < .01  *** p < .001.

a Task administered to Spaniards (n = 68), Gitanos (n = 17); Latin Americans (n = 15)
Table 5
Summary of Hierarchical Regression Results for Six Models (N = 155)

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>R²</th>
<th>B (Coefficient)</th>
<th>SE B</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td></td>
<td></td>
<td>-4.93</td>
<td>1.81</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Age</td>
<td>.12</td>
<td>.13</td>
<td>.03</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>2.</td>
<td>Gypsies</td>
<td>.17</td>
<td>-1.34</td>
<td>.33</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>3</td>
<td>Latin Americans</td>
<td>.22</td>
<td>-0.87</td>
<td>.28</td>
<td>&lt; 0.005</td>
</tr>
<tr>
<td>Excluded</td>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hierarchical Regression Model Equation:
Knowledge about print = -4.93 + .13 (Age) + (-1.34) (Gypsies) + (-0.87) (Latin Americans)

**Model 2 - Listening Comprehension**

| Intercept |          |    | -0.92            | 1.86 |         |
| 1.        | School-1 | .14| 1.26             | .27  | < 0.001 |
| 2.        | Age      | .18| .07              | .03  | < 0.01  |
| Excluded | Gender |          |                  |      |         |

Hierarchical Regression Model Equation:
Listening comprehension = -0.92 + 1.26 (School-1) + .18 (Age)

**Model 3 - Vocabulary**

| Intercept |          | 113.39 | 1.77 |
| 1.        | Gypsies  | .31    | -29.06 | 3.36 | < 0.001 |
| 2.        | Latin Americans | .33| -6.78           | 2.87 | < 0.05  |
| Excluded | Gender |          | Age      |      |         |
|          |         |         | SES-School |      |         |

Hierarchical Regression Model Equation:
Vocabulary = 113.39 + (-29.06) Gypsies + (-6.78) Latin Americans

**Model 4 - RAN-Objects**

| Intercept |          | 163.64 | 23.87 |
| 1.        | Gypsies  | .14    | 31.36 | 4.41 | < 0.001 |
| 2.        | Age      | .24    | -1.41 | .34  | < 0.001 |
| 3.        | Latin Americans | .30| 11.53           | 3.76 | < 0.005 |
| Excluded | Gender |          | SES-School      |      |         |

Hierarchical Regression Model Equation:
RAN-O = 163.64 + 31.36 (Gypsies) + (-1.41) (Age) + 11.53 (Latin Americans)

**Model 5 - RAN-Letters**

| Intercept |          | 169.85 | 33.71 |
| 1.        | Gypsies  | .28    | 48.34 | 6.05 | < 0.001 |
| 2.        | Age      | .36    | -1.67 | .48  | < 0.005 |
| 3.        | Latin Americans | .40| 24.44           | 7.05 | < 0.005 |
| 4.        | School-2 | .43    | -15.30 | 7.55 | < 0.05  |
| Excluded | Gender |          |         |      |         |

Hierarchical Regression Model Equation:
RAN-L = 169.85 + 48.34 (Gypsies) + (-1.67) (Age) + 24.44 (Latin Americans) + (-15.30) (School-2)

**Model 6 - Phonological Awareness**

| Intercept |          | -9.02 | 3.13 |
| 1.        | School-1 | .25    | 2.82 | .57  | < 0.001 |
| 2.        | School-2 | .30    | 1.82 | .67  | < 0.01  |
| 3.        | Age      | .34    | .21  | .05  | < 0.001 |
| 4.        | Gypsies  | .38    | -2.06 | .68  | < 0.005 |
| Excluded | Gender |          |         |      |         |

Hierarchical Regression Model Equation:
Phonological Awareness = -9.02 + 2.82 (School-1) + 1.82 (School-2) + .21 (Age) + (-2.06) (Gypsies)
and receptive vocabulary were significantly correlated. In addition, phonological awareness significantly correlated with all but one (RAN-Objects) of the measures. Finally, age was significantly associated with most early literacy skills.

The pattern of correlations was different for the other two groups. For Latin Americans, listening comprehension and receptive vocabulary were also significantly correlated. Although the phonological awareness tasks were only significantly correlated with listening comprehension and receptive vocabulary, and age with RAN-Objects.

For Gitanos, there was not significant correlation between receptive vocabulary and any other variables. RAN-Objects significantly correlated with listening comprehension. The strength of the associations among the phonological awareness tasks, age, and knowledge about print were strong for this group.

Third, a series of stepwise regression analyses were conducted to examine the relative contributions of neighborhood SES, ethnic background to the studied pre-literacy abilities. In order to control for possible mediating variables, age and gender were also entered in each model.

The target variables for the six stepwise regression analyses models were the pre-literacy skills (i.e., Knowledge about Print, Listening Comprehension, Receptive Vocabulary, Rapid Naming of Objects and Letters, and Phonological Awareness). Dummy coding was used to assign membership to the categorical variables ethnic background, neighborhood SES, and gender.

Table 5 summarizes the six stepwise regression analyses models. To facilitate the description of the ethnic background, SES, and age interaction effects on the independent variables, we introduced the intercept and the coefficients for each dummy variable.

Table 5 shows the six stepwise regression analyses models. Inspection of table 5 indicates that model 1 predicted 22% of the variance in knowledge about print. Age was positively associated with knowledge about print and being Gitano or Latin American was negatively associated with this variable.

Model 2 predicted 18% of the variance in listening comprehension. Attending School-1 and age were positively associated with this variable.

Model 3 predicted 33% of the variance in vocabulary. Being Gypsy or Latin American was negatively associated with this variable.

Model 4 predicted 30% of the variance in RAN-Objects. Age was negatively associated with this variable. Being Gypsy or Latin American was positively associated with this variable.

Model 5 predicted 43% of the variance in RAN-Letters. Age and attending School-2 were negatively associated with this variable. Being Gypsy or Latin American was positively associated with this variable.

Finally, model 6 predicted 38% of the variance in phonological awareness. Age and attending School-1 and School-2 were positively associated with this variable. Being Gypsy was negatively associated with this variable.

Gender was excluded from the models because their effect was not found to be statistically significant.

Discussion

The first purpose of the present study was to assess the relative roles of ethnic background, neighborhood SES, age, and gender as predictors of reading ability in Spanish.

Many of the results reported here are consistent with previous research. As early as kindergarten there were differences in pre-literacy skills associated with ethnic background, neighborhood SES, and age. The findings are interesting in a number of respects.

The participants of the present study come to kindergarten with background differences in linguistic, economic, culture, and family structure which result in a wide range of literacy exposure. Mean scores showed that Spaniards outperformed the other two groups in all the variables, and Gitanos were the most impaired group.

The correlation matrix showed different patterns of correlations for the three studied groups. The characterization of group differences in reading is important not only in the study of normal reading development, but also in the study of less typical development. Reading skill is acquired in a relatively predictable way by children who have normal or above-average language skills and have had experiences in early childhood that provide exposure to literacy. Disruptions of the studied early language developments increase the possibility that reading will be delayed or impaired. The significance of studying the development of reading in different ethnic groups lies in its potential for illuminating multiple pathways of dysfluent reading, with the implications of such findings for assessment and intervention (Katzir et al., 2004)

Ethnic Background

Although, age and SES had an impact on literacy acquisition, ethnic background was the strongest predictor of pre-literacy skills. As regression analyses indicated, ethnic background significantly predicted all pre-literacy skills assessed, except listening comprehension. Being Gitano or Latin American was negatively associated with most of the assessed pre-reading abilities.

As we stated in the introduction, several factors related with SES contribute to the poor academic achievement of minority children. However, the risk for low levels of reading difficulties is not explained fully by these sources of influence. It is evident that other factors, such as culture values and language play an important role in literacy development and school success. Children who speak a nonstandard variety of Spanish potentially are at a disadvantage when compared to their majority peers because standardized assessment instruments, text books and instruction are based on Standard Spanish vocabulary and linguistic rules.
No matter children’s school or neighborhood SES, Spaniards’ performance was better than Latin Americans’ and Gitanos’. Coming from similar low SES neighborhoods Latin Americans’ performance was also slightly better than Gitanos’ performance.

Receptive vocabulary was below the age norm for the group of Gitanos, and it was not significantly correlated with any other pre-literacy skill. Many Gitanos children speak Gitano Spanish or Gitano dialect at the time of school entry. This is particularly true for the Gitanos participants of the present study who reside in a Gitano neighbourhood where Gitano dialect is the predominant linguistic system. This could be a major factor that likely contributes to the Gitanos’ low scores in vocabulary and in the other pre-reading abilities.

The importance of vocabulary development as a major contributor to reading comprehension has been widely studied (National Reading Panel, 2000). Besides, the relationship between vocabulary development and reading apparently extends beyond its significant impact on comprehension. According to Snow et al. (1998) there is link between vocabulary size and phonemic representation. In fact, this suggested link is evident in the results of the present study for Spaniards and Latin Americans.

Variations in letter knowledge, measured by the RAN-Letters task, within the participants are of great interest. In the present study, 12% of the Spaniards, 69% of the Latin Americans, and 44% of Gitanos failed to name letters.

Although, the Spanish kindergarten language and literacy national curriculum does not include activities designed explicitly to develop letter identification skills, children learn letter-sound correspondences in many kindergarten classrooms or at home.

Recognition of letters into sounds is a slow process in the beginning, as the child reads more frequently, letter recognition becomes more automatized. As the scores in the RAN-Letters tasks showed, not only a greater percentage of Spaniards recognized letters, letter recognition was also more automatized for them. As previously reported in the literature (Molfese et al. 2006), our results showed that children who have less developed language abilities related to reading, are at risk for making little or no gain in letter knowledge skills.

This study showed that majority-minority groups achievement gaps arise very early in the preschool and kindergarten grades. Data about the evolution of the Latin American gap is not available yet, but research data shows that for Gitanos this early gap widen by the end of primary school (Fundación del Secretariado Gitano, 2006).

In Spain compensatory education has been and attempt to deal with the problem of Gitanos’ low achievement in school. Nevertheless, despite the effort, compensatory policies have not compensated for disadvantages and have not brought students up to par either in access to education or persistence or success at school (Salinas, 2007).

**Schools or Neighbourhood SEES**

The present study findings revealed that schools also played an important role in the development of reading skills. Attending School-1 was positively associated with listening comprehension and phonological awareness, and attending School-2 was positively associated with phonological awareness and negatively associated with RAN-Letters.

Since, all Gitanos children were attending School-3 it was not possible to distinguish between the implications of ethnic background and School SES in alphabetic literacy acquisition for this population.

Nevertheless, our results suggest that a large presence of minority students in the same school, might constitute a disadvantage in the educational system. The schools most often at risk for student failure are those that serve significant populations of minority children living in poverty.

Minority children may need explicit instructional attention by preschool teachers that involves several aspects of language skills, such as print knowledge, letter knowledge, oral language, and phonological awareness with special emphasis in vocabulary development. As research has shown the acquisition of letter recognition and phonemic awareness is the result of instruction, and not age or maturation. Explicit instruction on skills known to facilitate the development of reading may promote children, who show slow language skill development, to acquire literacy skills. This instruction will have a positive impact on developing children literacy skills.

Early literacy programs may be offered in schools of minority neighbourhoods, in which family, with scarce resources, seems less likely to engage their children in activities promoting the development of pre-literacy skills. There is evidence that programs focused on pre-reading skills and school-based intervention have had a positive effect on the development of reading in low-SES children (D’Angiulli, Siegel, & Maggi, 2004; D’Angiulli, Siegel, & Hertzman, 2004; Linan-Thomas & Hickman-Davis, 2002).

**Age**

Age, as the present study showed, is a significant variable associated with the development of reading skills during kindergarten. In the present study, age was directly and positively associated with knowledge about print, listening comprehension, phonological awareness and negatively associated with RAN-Objects and RAN-Letters. Age range in our sample was 24 months. This result confirms a quick language and literacy development during preschool years.

**Cross-Linguistic Research**

The second purpose of this study was to add to the growing literature on the nature of reading challenges in children who are learning to read a transparent orthography-
Spanish. The goal of cross-linguistic research is to study universal processes that govern development, use, and breakdown of language. Comparative studies in all three areas can help illumine both the more universal aspects of reading, as well as their individual language-specific attributes (Bates, Devescovi, & Wulfeck, 2001). The importance of cross-linguistic findings to the diagnosis and intervention of reading disabilities can not be overestimated, for insights about reading difficulties based solely on irregular English orthography have been accepted with little questions by researches in vastly different orthographies (Katzir et al. 2004; Wimmer & Marynger, 2001).

Besides, cross-linguistic research between different subtypes of readers and minority groups will add to understand the impact of language characteristics, ethnic background, and SES in reading acquisition.

For example, the complex relation between the use of African American preschoolers’ language and their emergent literacy skills (Connor & Craig, 2006) could be compared with the use of Gitano dialect preschoolers’ language and their emergent literacy skills. Would reading acquisition be quicker and easier for Gitano than for Afro-American preschoolers because the Spanish shallow language orthography? Or does the devaluation of students’ culture and language affect reading achievement no matter the characteristics of the language they speak? Do some Gitano children switch dialect in school, between Gitano dialect and Standard Spanish, as some Afro-American children do between African American English and Standard English, suggesting emerging pragmatic/metalinguistic awareness? (Connor & Craig, 2006)

Another interesting cross-linguistic comparison would be between Latin American children raised in Spain and Latin American children raised in the U.S.

Several studies have explored the development of reading in Spanish-speaking English-language learners (D’Angulli, Siegel, & Maggi, 2004; Manis, Lindsey, & Bailey, 2004; Tabors, Páez, & López, 2003; Vaughn et al., 2006). Results from these studies reported reading difficulties in bilingual children. These results may well point to the vulnerability of young bilingual children to language loss in the context of acquiring a societal language as their second language (Tabors et al. 2003).

A monolingual Spanish-speaking environment might facilitate Latin American children’s vocabulary growth and reading development. However, the findings of the present study suggest that Latin Americans, as well as Gitanos, may well be at risk for early literacy development due to the dialect they speak and bring to the task of literacy acquisition and the lack of language experiences.

Further analyses on reading development of Latin American immigrants, living in Spain and in the US, will add to the study on how sociocultural and linguistic variables affect learning to read. By more precisely understanding the association between SES, ethnic background, second language acquisition, and reading development, we hope to ultimately develop more adequate intervention strategies for immigrant children.

Assessment recommendations

Finally, the third purpose was to provide educational administrators, teachers, and researchers, with early reading assessment recommendations.

Early assessment of pre-literacy skills can be a highly effective way to determine the instructional needs of students who are at risk for reading failure before formal reading instruction begins. The assessment tools used in the present study, or similar types of tasks, are readily available and are easy to administer within a school setting. Teachers in the classroom can assess letter knowledge, phonological awareness, and RAN, in as little as 10 minutes per child, with materials that are either free or have minimal costs and still provide precise information about performance on important predictors of reading.

Thus, the diagnostic process for the early readers should be implemented to the point to prevent reading failure, and should be a goal for all school districts regardless of location or onsite resources.

Identifying children’s risk factors for persistent reading difficulty provides the foundation for appropriate intervention. Critical foundation skills can be stimulated in 3- and 4-year-old children (Scarborough, 1988). However to maximize the potential for narrowing the gap in reading across ethnic background and SES, we must increase the precision of intervention.

There is a clear need for the provision of adequate programs for the language and literacy development, of the high risk population of minority and immigrant children, within the school setting. Because reading therapy services to school-aged children are not universally available, the possibility for such training to be delivered by classroom teachers can yield successful outcomes in a great number of children at risk.

Knowing more about the variation in initial literacy skills within the kindergarten classroom, may lead to insights on how literacy skill development can be addressed in the classroom curriculum so that children have the opportunities to establish a good language foundation to start formal reading instruction. The present study suggests that early assessment is a major component of preventing reading failure.

Of course, the conclusions we made above need to be qualified according to the limitations of the present study. Most noteworthy is that the Gitano sample we studied was attending the same neighbourhood school, for this reason, it was not possible to differentiate between the implications of ethnic background and School SES in alphabetic literacy acquisition for this population.

The instrument used to measure listening comprehension might not have enough items, the alpha of this task (.60) is considered questionable (George & Mallory, 2003). One of the reasons for the low alpha of this task could be that this task has only seven items.

The instrument used to measure the phonological awareness tasks might not have enough items to measure
this construct, and the practice item did not fully explain all the tasks requested in the test. However, the results of the study are consistent with other research done previously on early predictors of reading and phonological awareness, and the internal consistency reliability (Cronbach’s alpha) of this task for our sample calculated at Time 2 (in first grade, as part of our follow-up study) was .71 which is considered acceptable (George & Mallery, 2003).

References


Elliot, J. (1970). Eye or the storm (ABC News video) - 26 minutes


