

Emergent literacy in children of immigrants coming from a primarily oral literacy culture*

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This study examined emergent literacy skills of 61 kindergarten children whose families had immigrated to Israel from a primarily oral society (Ethiopia). Three complementary perspectives were examined: developmental patterns, individual differences, and the contribution of parent literacy. The emergent literacy skills of children whose families were from Ethiopia were compared to those of 52 children coming from a primarily literate culture. The groups had acquired less complex Hebrew literacy skills in the same order, including phonological awareness, letter naming and consonant writing. However, the Ethiopian Israeli children were less proficient on various aspects of Hebrew language proficiency, and less familiar with aspects of cultural and environmental literacy. Most were also unable to speak or comprehend Amharic. In both groups, phonological awareness explained individual differences in letter naming, but vocabulary and syntactic knowledge added to the explained variance only in the Ethiopian Israeli group. Letter naming was associated with consonant writing in both groups. Hebrew oral and written language proficiency of Ethiopian Israeli mothers was positively correlated with literacy skills in their children. The results underscore the importance of distinguishing between less complex, modularized, aspects of emergent literacy and more complex literacy skills. Here the cumulative effects of poverty, oral home culture, parental inability to mediate language and literacy, and non-optimal conditions for becoming bilingual place young immigrant children at risk for academic failure early on.

Keywords: emergent literacy, oral culture, Ethiopian Israeli children immigrants

1. Introduction

1.1 Early literacy in the context of immigration: Literate versus primarily oral cultures

Immigration is a universal phenomenon and both adult immigrants and their children are faced with the challenges associated with learning to speak and read in the societal language. In this regard, Gee (1994: 189) has stated: "Language and literacy acquisition are forms of socialization into mainstream ways of using language in speech and print".

The last decade has witnessed a proliferation of studies that examine various aspects of the development of language and literacy skills in immigrant school children (see for example the systematic review produced by the National Literacy Panel, August & Shanahan 2006). However, very little research is available on the early literacy of children of immigrants (Hammer, Miccio & Wagstaff 2003; National Early Literacy Panel (NELP) 2008; Tabors & Snow 2001). Most available studies on the early literacy of children of immigrants were carried out with children of families who immigrated from what Gee (1994) termed, 'full literacy cultures' (for a review see Ardila & Rosselli 2007). Children of immigrants growing up in literate cultures are exposed in varying degrees to literacy in their homes and in their communities, and this exposure can be an important introduction to formal literacy instruction (August & Shanahan 2006). Some cultures are characterized as having 'restricted literacy' (Gee 1994) or 'primarily oral literacy' (Ong 1982). In these cultures, values and knowledge are transmitted through speech.¹ Goody (1995) has argued that an oral/ literate distinction can be mapped onto a distinction between lower versus higher socioeconomic status, and to groups associated with 'residual orality' or 'restricted literacy' versus full access to literacy.

Before we continue the discussion on restricted literacy in immigrant communities, it should be noted that some authors have taken issue with this terminology due to its potential to express judgment regarding the relative value of oral versus literate culture (MacSwan 2000; MacSwan, Rolstad & Glass 2002; Pray 2005). In this study, we do not wish to contribute to prejudice or labeling of any culture. Our aim is to understand the factors that may hinder or facilitate the process of adjustment of young immigrants coming from oral cultures to the academic environment of primarily literate countries.

The cognitive consequences of learning to read and write are substantial and include changes in visual perception, phonological awareness, linguistic knowledge, logical reasoning, and memory strategies. In comparison to literate adults, adults who come from primarily oral cultures exhibit lower performance on such skills (Loureiro et al. 2004). Studies in this area show that illiterate adults differ

significantly from literate adults in their performance of oral processing tasks that require an awareness of linguistic segments (Tarone & Bigelow 2005). It is important to determine whether these differences are passed on to children of adults with restricted literacy, affecting their ability to develop early reading and writing skills.

Korat (2005) describes how emergent literacy relates to early steps taken by children in reading and writing, before and during early formal schooling. These early steps require integration and coordination of knowledge, attitudes, and cognitive and linguistic skills that precede literacy (August & Shanahan 2006; Whitehurst & Lonigan 1998). The skills affecting emergent reading and writing have been categorized in a number of ways (for review, see Korat 2005). In general, many of the categorization schemes make reference to a division between environmental or contextual factors (such as understanding the social function of literacy) and specific or non-contextual factors (such as phonemic awareness and letter naming). While the contribution of non-contextual factors to the normal development of reading and writing tends to be widely accepted, there is a debate regarding the extent to which emergent literacy depends on and is affected by environmental factors (Korat 2005). A related debate concerns the contribution of oral language and metalinguistic components to emergent reading and spelling (Sénéchal, LeFevre, Smith-Chant & Colton 2002).

It is in the context of this debate that the effects of restricted parental literacy on children from primarily oral cultures should be considered. There is evidence that parents from primarily oral cultures are restricted in their ability to enhance and transmit literacy skills to their young children (Kim, Miranda & Olaciregui 2008), so that their children's literacy development depends primarily on schooling (Loureiro et al. 2004). Parents who immigrate from primarily literate countries can bring forth emergent literacy skills in establishing an oral and written home language (L1), and this in turn can foster emergent literacy in the second (societal) language (L2) (Schwartz, Share & Leikin 2009). However, parents who immigrate with their families from primarily oral cultures, and lack written language skills in their L1 and in the societal language L2, may not be able to support high level language development and pre-literacy activities in their children. This might put their children at risk in terms of the development of early literacy, and be related to subsequent academic failure.

We have not been able to locate studies that have specifically examined emergent literacy in preschool children of families who immigrated from primarily oral cultures, such as Ethiopia. In this study, we investigated emergent literacy in Hebrew of preschool children of families who immigrated to Israel from Ethiopia, a culture that is primarily oral (Hoot, Szente & Mebratu 2004; Spolsky 2001). It appears that unlike other immigrant groups, adult immigrants from Ethiopia are

less likely to develop oral and reading proficiency in Hebrew, the societal language (Barkon & Avinor 1995; Bar-Yosef 2001; Spolsky 2001). Anteby-Yemini (2005) reported that the majority of Ethiopian immigrants to Israel continue to use their native tongue, Amharic; most are illiterate in their native language; and they have difficulties in acquiring oral and written proficiency in Hebrew.

1.2 Developmental and environmental perspectives on emergent literacy in monolingual children

There is general agreement that literacy learning emerges from a very young age and is a long and gradual process (Clay 1991; Strickland & Shanahan 2004; Teale & Sulzby 1986). The literature on emergent literacy is concerned with the earliest awareness of the function and form of literacy, namely the development of language, reading and writing skills prior to and at the beginning of formal schooling (Korat 2005; Purcell-Gates 1998; Teale & Sulzby 1986; Whitehurst & Lonigan 1998). Emergent literacy has been discussed from developmental cognitive-linguistic perspectives, in terms of parental involvement, and from the perspective of socioeconomic status (SES). In the next section we provide an overview of key findings pertinent to each of these perspectives in the general literature and in research on emergent literacy in Hebrew. Each perspective refers to variables that underlie normal development of emergent literacy. In each case, deficiencies in these variables put children at risk for developmental delays. There is no published research on emergent literacy in children whose home language is Amharic.

Developmental perspective

The National Early Literacy Panel (NELP 2008) recently conducted a scientific research synthesis on the development of early literacy skills in English speakers or English language learners ages zero to five. Six literacy-related variables were found to have consistent moderate to strong relationships with later conventional literacy outcomes. These variables include alphabet knowledge, phonological awareness, rapid naming of letters and digits, rapid naming of objects and colors, writing names, and phonological short term memory. Another set of variables is moderately correlated with at least one conventional literacy skill. Included in this are concepts about print, print knowledge, reading readiness, oral language, and visual processing. Studies of emergent literacy conducted in Israel suggest that many of these precursors are equally relevant for Hebrew.² For example, phonological awareness is strongly related to early literacy acquisition in Hebrew (Bentin & Leshem 1993; Share & Levin 1999; Shatil & Share 2003). As in other orthographies (Tolchinsky & Teberosky 1998), the development of phonological awareness proceeds from gross auditory distinctions to more refined ones. Developmental

research by Share and Blum (2005) revealed that for preliterate children, syllables were more accessible units than sub-syllabic units.

Similar to other orthographies (Treiman, Weatherston & Berch 1994), knowledge of letter names in Hebrew helps preschool children to learn basic letter-sound (grapheme–phoneme) relations because most names contain the relevant sounds (Share 2005). This knowledge helps children to construct the bridge between oral language and the written system and prepares children for the formal reading instruction that begins in first grade (Levin, Patel, Margalit & Barad 2002; Ravid 2005). As found with English orthography (Wagner & Torgesen 1987), the relation between phonological awareness and letter knowledge is also reciprocal in Hebrew (Bentin & Leshem 1993) and letter naming knowledge contributes to word recognition (Levin, Shatil-Carmon & Asif-Rave 2006). As has been the case in studies involving various languages (e.g. Bus, Leseman & Keultjes 2000; Lonigan, Burgess & Anthony 2000; Scarborough & Dobrich 1994), individual differences in letter knowledge in Hebrew have been attributed to differences in phonological processes as well as to morphological knowledge, familiarity with print, and children's home literacy environment (Aram, Korat & Levin 2005; Levin, Ravid & Rapaport 2001).

Print exposure. In line with other studies, monolingual Hebrew speaking preschoolers were able to recognize environmental print in familiar commercial logos and in covers of familiar children's books names (Saraf 2000). Monolingual Hebrew speakers, like children in other countries, gradually acquire some of the conventions of print, including, for example, that in written Hebrew reading proceeds from right to left and from top to bottom, and that printed words are separated from one another by spaces (Shatil 2002). Early exposure to environmental print and to book reading has been shown to drive early phonological processing skills in English (e.g. Dickinson, McCabe, Anastopoulos, Peisner-Feinberg & Poe 2003; Fowler 1991; Walley, Metsala & Garlok 2003) as well as in Hebrew (Saraf 2000).

Oral language. Oral language proficiency and literacy skills develop in tandem, and what children learn prior to the onset of formal schooling through listening and speaking contributes to their emerging reading and writing skills (Bowey 1994; Nation & Snowling 2004; Scarborough 1998) and to later written language performance (Catts, Fey, Zhang & Tomblin 1999; Sénéchal & LeFevre 2001). Vocabulary is related to early literacy in various ways. Vocabulary growth drives early phonological processing skills, which, in turn, facilitate early reading and spelling (Dickinson et al. 2003; Fowler 1991; Walley et al. 2003). Among Hebrew speaking kindergarteners, vocabulary has also been found to be associated with writing (Saraf 2000).

Side by side with an increase in the lexicon, there is a growth in grammatical development which is manifested by a growing sensitivity to word morphology (Gillis & Ravid 1999). Hebrew is a synthetic, Semitic, morphologically rich language (Ravid 2005). As is the case in English (Ku & Anderson 2003), young Hebrew speaking children master inflectional morphology earlier than derivational morphology, due to the relative regularity, transparency and predictability of Hebrew inflections (Gillis & Ravid 1999). Levin et al. (2001) found among Hebrew-speaking children that inflectional morphology skills in kindergarten were associated with spelling in first grade and, conversely, writing levels in kindergarten predicted mastery of oral morphology in first grade.

Along with the acquisition of morphological knowledge, oral forms of Hebrew *morpho-syntax* develop, and various *syntactic* constructions are acquired. Around the age of five, monolingual Hebrew speakers have acquired the basic grammar of their mother tongue. For example, they can identify the subject of a sentence and understand the structure of simple clauses and some complex constructions and frequently used function words (Gillis & Ravid 1999). Syntactic knowledge has been found to contribute to listening comprehension and vocabulary growth (Gillon & Dodd 1995).

One of the questions we examined in this research concerns the order of the acquisition of various aspects of emergent literacy in children who may be vulnerable because they come from low SES Ethiopian homes and have parents whose culture is primarily oral. To set the stage for examining this aspect we briefly review pertinent research on Hebrew monolingual children.

Share and Gur (1999) investigated strategies employed by Hebrew speaking preschoolers when identifying printed names. As was found in studies with other languages, Share and Gur's study supports the existence of developmental growth from a partial-alphabetic strategy, with reliance on contextual cues such as location or pictorial information, to alphabetic reading with more attention to print.

The vast majority of Hebrew words contain consonants and vowel letters. Studies of monolingual Hebrew speaking children in kindergarten and grade 1 show that children in kindergarten already have some knowledge about consonant writing and represent consonants earlier than vowel letters (Ravid & Haimowitz 2006).

Parental involvement

It is well established that parental involvement in children's education and the quality of school-family relationships have important implications for children's educational outcomes (Mattingly, Prislín, McKenzie, Rodriguez & Kayzar 2002; Sénéchal & LeFevre 2002). Parent engagement in pre-literacy activities with their children (e.g. book reading, exposure to letter names and sounds, language games) fosters the growth of phonological awareness skills in children (Evans, Shaw &

Bell 2000; Leseman & de Jong 1998; Lonigan 1994), though families differ in how they deliver the importance of written language and mediate linguistic sophistication to their young children (Aram et al. 2005). Parental involvement also varies as a function of differences in cultural attributions, different expectations about the nature of the relations between schools and families, and the role that parents should undertake to foster the literacy related skills of their children (e.g. Duda & Allison 1989; Holloway 1988; McGoldrick 1993; Roberts et al. 2005; Rueschenberg & Buriel 1995).

Socioeconomic status (SES)

The construct of SES has been widely used in the social sciences as an explanatory mechanism for differences in academic achievement. Parental education level may be the best indicator of SES in general and of factors known to be related to SES in immigrant families, such as parenting style and the provision of a stimulating environment (Bradley & Corwyn 2002). Income can also serve as an important distal socioeconomic variable, because access to resources is often determined by family income (Yeung, Linver & Brooks-Gunn 2002). Children from low SES homes are disadvantaged not only because of home factors but also because they are likely to attend low SES schools that have fewer resources than schools in middle-class neighborhoods (Gould, Lavy & Paserman 2003; Willms 2003).

The relationship between children's early literacy development and SES has been amply documented (e.g. Hart & Risley 1999; Snow, Burns & Griffin 1998; Teale & Sulzby 1986; Wells 1985). A number of studies have demonstrated the SES-achievement connection with regard to emergent literacy skills of monolingual children learning to read in their L1. This has been shown with regard to letter naming knowledge and phonological sensitivity (Aram & Levin 2002; Bowey 1995; Korat Bachar & Snapir 2003; Lonigan, Burgess, Anthony & Baker 1998; Raz & Bryant 1990), letter-sound correspondence (Clements, Reynolds & Hickey 2004), word recognition skills, and emergent writing skills (Aram & Levin 2002). Differences in the home literacy environment, including exposure and access to literacy 'tools' such as books, newspapers, and computers; sustained experience with literacy activities; the quality of interactions that parents have with their children (Tabors & Snow 2001); and the quality of parental literacy mediation have all been found to be related to differences in young children's competencies in language and literacy development (e.g. Aram & Levin 2001; Bus et al. 2000; Korat & Levin 2001; Neuman & Celano 2001; Purcell-Gates 1998; Sénéchal & LaFevre 2002). Researchers maintain that the linguistic interaction between parents coming from low SES and their children is more limited (e.g. Nunes 1993; Snow & Tabors 1993) and less well matched to the language of schools (Heath 1983). Vocabulary, an important aspect of emergent literacy (National Reading Panel 2000;

Scarborough, Charity & Griffin 2003), is related to various SES indicators (Farkas & Beron 2004; Hemphill & Tivnan 2008). According to Hart and Risley (1999) almost half of these social class differences in vocabulary growth rates can be attributed to differences in how mothers teach language skills to their children, and these differences vary as a function of social class.

The first objective of this study was to examine developmental patterns associated with literacy skills in the societal language, in children whose low SES parents come from a primarily oral culture. These patterns were compared to those noted in a group of children who come from low SES families, live in the same neighborhoods, may be exposed to another language at home, but come from primarily literate homes. Because parents who come from a primarily oral culture are more restricted in their L1 and L2 literacy and in their ability to transmit the L1 to their children, we expected that children whose parents had immigrated from Ethiopia would not be at par with children in the comparison group on various aspects of oral language and cultural knowledge. At the same time, in line with the modularity hypothesis (Shatil & Share 2003), the transparency of the Hebrew orthography, and suggestions made in the NELP (2008) report, we expected that the Ethiopian children would be similar to children in the comparison group on rudimentary aspects of written language that are targeted specifically in the kindergarten curriculum.

A second, related objective was to examine whether similar factors predict individual differences in the acquisition of letter naming, a key aspect of literacy, in these two groups. We examined the contribution of several factors, including cultural and environmental literacy, phonological awareness, and various aspects of oral language. Unlike monolingual children, Ethiopian children who are not proficient in the societal language need to acquire various aspects of the written and oral language simultaneously (Geva & Yaghou-Zadeh 2000). It was therefore hypothesized that the predictors would not be identical in the two groups.

1.3 Emergent literacy in L2 contexts

Only a handful of studies are available on emergent literacy skills in language-minority children whose home language differs from the societal language. The findings of these studies are generally in line with studies involving monolingual children in that they point to strong association between home literacy practices and children's literacy development (e.g. Hemphill & Tivnan 2008; Hood, Conlon & Andrews 2008; Lonigan et al. 2000; Muter & Diethelm 2001; Roberts et al. 2005; Silven & Rubinov 2009; Stage, Sheppard, Davidson & Browning 2001; Stuart 1999; Van Steensel 2006).

The bilingual environments created by the parents and reflected in the languages used at home and in the community affect both the development of the L2 and the maintenance of the home language (L1) (Tabors & Snow 2001; Silven & Rubinov 2009). For example, Hammer et al. (2003) found that Latino mothers who encouraged their children to acquire L1 (Spanish) and L2 (English) simultaneously also exhibited 'higher press for achievement' in their children, in comparison with mothers whose children acquired the languages in a sequential manner with the L1 preceding the L2.

Recent research points to the advantages of enhancing bi-literate skills in children from an early age (Silven & Rubinov 2009; Schwartz, Share & Leikin 2009). These studies involved children whose country of origin as well as the society they immigrated to are primarily literate. Yet, very little is known about how language proficiency and use by parents and their children relate to various emergent literacy components in the case of families that immigrated to a primarily literate culture (e.g. Israel) from a strong oral culture (e.g. Ethiopia). This was the third research objective addressed in this study.

1.4 The Ethiopian Israeli community

The purpose of this section is to situate the current research in its sociological and demographic context. This is important because not much is known about early literacy acquisition in children whose families have immigrated from a rural, primarily oral culture.

Along with other groups, many Ethiopian Jews fled from Ethiopia to Sudan in the 1970s due to a civil war and famine, and subsequently lived in refugee camps. Many were airlifted to Israel in a number of waves in the mid 1980s and early 1990s. The migration experience was especially traumatic (Bar-Yosef 2001) and brought about major changes in community organization. The rural, communal, patriarchal and interconnected community structure crumbled gradually (Ben Ezer 2002; Bodovski, David & Eran 1994; Kaplan 1992). In Israel, most Ethiopian families live in distressed neighborhoods in small towns. The unemployment rate in the Ethiopian community is higher than in the general population, and 72% of Ethiopian families live below the poverty line (Offer 2004; Svirsky & Svirsky 2002).

Most of the Ethiopian immigrants came to Israel from rural areas where the quality of schools is poor, and rates of literacy of the population above the age of 10 are extremely low (Bender 1985; Shenkut 1991; Spolsky 2001). In Ethiopia, the communities were led by elders and traditional priests who played an important role in the oral transmission of communal cultural knowledge (Bodovski, & David 1996). Upon arrival, many Ethiopian parents attended a one-year, intensive Hebrew language and literacy program, known as 'Ulpan'. In our sample, about 35%

of the mothers and fathers attended this free, basic adult education program, and for most this was the first time they were exposed to written language.

Most Ethiopians speak Amharic. The status of Amharic in Israel is low because it is a language of immigrants without a strong literate tradition (Spolsky & Shohamy 1999). Research indicates that unlike other ethnic groups, immigrants from Ethiopia are less likely to develop proficiency in Hebrew (Barkon & Avinor 1995, Bar-Yosef 2001; Spolsky 2001). Demographic information shows that parents of Ethiopian children typically have 1 or 2 years of education (Gould et al. 2003), compared to Russian immigrants who, on average, have about 14 years of schooling (Schwartz et al. 2009). On the whole, wide cultural, social, and literacy differences persist between the community of Ethiopian origin and the host Israeli society (Bodovski & David 1996; Levin- Rozalis 2000).

While many Ethiopian adults continue to communicate with each other in Amharic, the interaction of parents with their children is a mixture of Amharic and various levels of Hebrew. The first language (Amharic) is not fully transferred by the Ethiopian parents to their children; most children have little if any command of spoken Amharic and prefer to use Hebrew among themselves and when they respond to their parents (A School Guide to Ethiopian Israelis 2008). As Schleifer (2007) points out, many Ethiopian parents do not engage their children in various oral language activities in Amharic that were typical in their country of origin, such as telling fables, riddles, and word games, but at the same time, many have not adopted Western modes of literacy related activities, such as reading bedtime stories. In addition, due to low proficiency in Hebrew, many parents have difficulty in helping their children to master the spoken and written Hebrew.

This background is crucial for the understanding of the antecedents to academic failure experienced by many youths in the Ethiopian community living in Israel. A recent large scale, comprehensive study of academic achievement in mathematics and literacy skills compared Ethiopian and Russian immigrants to non-immigrant students in grades 5, 10 and 11 (Levin et al. 2003). This study showed that the academic achievement of youths of Ethiopian origin is consistently lower than that of the Russian and non-immigrant students, and that the gaps continue to be rather large even for the 10% of Ethiopian Israeli students who have not dropped out of high school.

The early precursors of this academic failure in the Ethiopian community and in similar communities around the globe have not been investigated to date; this gave the impetus to the current study, which focused on the development of early language and literacy skills in this group.

1.5 Objectives and hypotheses

The objectives of the present study were: (1) to compare the developmental patterns of emergent literacy skills among children coming from primarily oral versus primarily literate ethnic groups, (2) to investigate whether similar factors contribute to individual differences in the acquisition of letter-sound relations in these two groups, and (3) to examine how patterns of language used by Ethiopian parents and their children relate to emergent literacy.

As described above, based on the findings presented, we examined the following hypotheses. (1) We expected that Ethiopian children would be similar to children in the comparison group with respect to the sequence and quality of basic aspects of written language acquisition specifically targeted in the kindergarten curriculum. However, due to evidence of compromised proficiency in the Hebrew language among Ethiopian families, gaps between the groups were expected to occur on more complex literacy skills. (2) We predicted that phonemic awareness would explain variance in knowledge of letter-sound relations in both groups. In addition, we hypothesized that sensitivity to language components would be especially challenged in Ethiopian children, and as such that individual differences in the attainment of other Hebrew language components would explain additional variance in letter naming in this group. We also expected that letter naming would be associated with emergent reading and writing in both groups and (3) we expected positive correlations between parents' proficiency in Hebrew and various emergent literacy skills of their children.

2. Method

2.1 Participants

Participants were recruited in two consecutive waves. In Year 1, the sample of senior kindergarten (SK) children consisted of 19 Ethiopian and 25 Non-Ethiopian children in 5 kindergartens. These children were given the whole task battery, except for 2 tasks (vocabulary and conversational skills) that assessed proficiency in spoken Amharic. In the following year, an additional sample of SK children (45 Ethiopian and 27 Non-Ethiopian) was added from 3 additional kindergartens. Altogether, the SK sample consisted of 116 children attending senior kindergarten in 8 kindergartens located in 7 small towns in the north and center of Israel. The percent of Ethiopian children in each kindergarten classroom ranged from 28% to 69%, with an average of 52%. All the Non-Ethiopian children were born in Israel. Of the Ethiopian Israeli children, 78% were also born in Israel, and the remainder

were born in Ethiopia but came to Israel before the age of 2. Children who came to Israel after age 2 were not included in the study. The Ethiopian Israeli and Non-Ethiopian samples comprised all kindergarten children in the 8 different schools.

Data for 3 children of Ethiopian background were removed because their performance on all the language measures in Hebrew and Amharic was at least 3 standard deviations below the mean, and they were receiving speech therapy. Therefore the final sample of Ethiopian Israeli children consisted of 61 children (26 boys and 35 girls). The Non-Ethiopian sample included 52 children (37 boys and 15 girls), all of whom were born in Israel to Non-Ethiopian families. A chi-square analysis examining the distribution of males and females was significant ($\chi^2(1, N=9) = .263; p = .002$). There were more females in the Ethiopian Israeli group and more males in the Non-Ethiopian group. The mean age was 72.3 months ($SD = 5.05$) in the Ethiopian Israeli group and 73.7 ($SD = 5.27$) in the Non-Ethiopian group. Ethiopian and Non-Ethiopian students lived in the same poor neighborhoods surrounding each senior kindergarten.

Demographic questionnaire

Demographic information was obtained through questionnaires filled out by the classroom teachers, linguistic/ cultural mediators, and through school records.³ The questionnaire explored demographic and family language and literacy factors and was divided into two main sections. The first focused on the children and involved items such as age of onset of kindergarten education, country of birth, gender, spoken language(s), and level of mastery. The second part focused on family variables such as parental occupation, number of children and other adults living with the family, and level of mastery of spoken and written language skills in Hebrew and Amharic. Parental oral and literacy proficiency were rated as 0 (not proficient), 1 (partially proficient), and 2 (proficient). Information about language(s) spoken to the child at home by the mother and father was provided by the child and confirmed by the linguistic/ cultural mediators and the kindergarten teachers. Responses ranged from Hebrew only, a mixture of Hebrew and the home language, to only home language. The home-school linguistic/ cultural mediators were of Ethiopian background, and lived in the respective communities.

Languages spoken by children

According to self-report of Non-Ethiopian children, 96% spoke only Hebrew and the remainder spoke Hebrew and an additional language. In the Ethiopian Israeli sample, 84% reported that they spoke Hebrew and Amharic, and 16% reported that they spoke only Hebrew. The difference in the distribution was significant ($\chi^2(2) = 74.67, p = .001$). Homeroom teachers indicated that participants in both groups used Hebrew exclusively when communicating with their friends.

Socio-economic status

According to official statistics (The Israeli Municipalities 1995), all 8 kindergartens are located in low SES neighborhoods. The SES index reflects the degree of affluence (or poverty) at the neighborhood level and is used by the Israeli Ministry of Education to define schools and kindergartens serving children at risk (Korat 2005). Data gathered from questionnaires indicated that compared to Non-Ethiopian mothers, most Ethiopian Israeli mothers were likely to be unemployed ($\chi^2(1)=20.20$; $p<.001$), and the same was true for the Ethiopian fathers ($\chi^2(1)=19.76$, $p<.001$). Ethiopian families had significantly more members than non-Ethiopian families ($M=6.44$, $SD=2.06$ and $M=4.68$, $SD=1.36$, respectively; $F=9.96$ $p=.002$). This finding echoes the conclusions of a report submitted to the Israeli Parliament (Knesset) by Vertsberger and Noyfeld (2003).

Parental literacy

Oral language proficiency. The analysis of demographic information pertaining to the Ethiopian Israeli and the Non-Ethiopian families indicates that among the Non-Ethiopian parents 52% spoke only Hebrew, and the remainder spoke Hebrew as well as one other language (including Russian and Georgian, followed by French, Persian, Kurdish, Romanian, Spanish, and Portuguese). With regard to Hebrew language proficiency, most Non-Ethiopian mothers were rated as being proficient in Hebrew, whereas most Ethiopian Israeli mothers were rated as having partial control in Hebrew, and some did not speak Hebrew at all ($\chi^2(2)=2.82$, $p<.001$). Likewise, Non-Ethiopian fathers were more likely to be fluent in Hebrew whereas the Ethiopian Israeli fathers were less fluent ($\chi^2(1)=50.24$, $p<.001$). Non-Ethiopian mothers and fathers were significantly more likely to speak Hebrew to their children than Ethiopian Israeli mothers and fathers ($\chi^2(2)=57.27$, $p<.001$, and $\chi^2(2)=53.45$, $p<.001$, for mothers and fathers, respectively). Stravas and Olshtain (2006) reported similar results.

Written language proficiency in Hebrew. According to self-reports, most Non-Ethiopian mothers rated themselves as proficient in reading Hebrew. On the other hand, the mediators reported that Ethiopian Israeli mothers either had poor reading skills in Hebrew or were unable to read Hebrew altogether ($\chi^2(2)=65.35$, $p<.001$). Likewise, most Non-Ethiopian fathers were proficient in reading Hebrew, whereas Ethiopian Israeli fathers either had only some reading skills in Hebrew or were unable to read Hebrew at all ($\chi^2(2)=55.55$, $p<.001$).⁴

The Senior Kindergarten Literacy Environment

Senior Kindergarten begins at the age of 5 and is compulsory in Israel. Children attend the 5-hour school day, 6 days a week. Education in Israel is centralized and

the programs are controlled by the Ministry of Education. For this reason, differences among kindergartens in terms of the formal curriculum are not substantial. In each kindergarten there is a teacher, an educational assistant, and a teacher with special educational training who works in small groups with children who need additional attention. In the literacy domain, the Ministry of Education expects senior kindergarten teachers to develop pre-literacy skills, including letter-naming and letter recognition, phonemic awareness, writing, and arithmetic related pre-literacy skills. However, no formal instruction of reading and writing takes place until grade one (Korat 2005; Ministry of Education Israel 2008).

2.2 Measures

Cognitive ability

Non-verbal intellectual and reasoning ability was assessed by the Raven's Matrices test (Raven, Raven & Court 1998). The test, considered by some to be relatively culture-free, consists of 5 subtests. Scores can range from 0–36, and the analyses were based on the raw scores.

Environmental print

Print exposure. The 'Title Recognition Test' was used. This measure was adapted from Stanovich and Cunningham (1992) by Shany (2000). It includes the names of 20 popular real and 20 fictitious titles of young children's books. The real titles were chosen from the children's books' bestseller lists provided by central book stores in Israel. Of the 20 real books, 13 are original Hebrew books and 7 are translated (such as 'The Lion King').

In these yes/ no items, children are asked whether they are familiar with each title. Based on Stanovich and Cunningham, a wrong indication of a fictitious book as a real one receives –2 points while recognition of a real book receives 1 point. The Cronbach alpha for the real books is .80 and for the fictitious books .89.

This measure was chosen based on yet unpublished findings from a master thesis (Saraf 2000) showing that it predicts phonemic awareness in preschool children, which in turn predicts letter naming and emergent reading and spelling.

Oral language in Hebrew

Phonological awareness. Two subtests taken from 'Alef Ad Taf' (Shany, Lachman, Shalem, Bahat & Zeiger 2006) were administered to measure phonological awareness. (1) In the *Syllable deletion task*, children need to segment real spoken words into syllables, e.g. "Say geshem" (rain). "Now say it without the /ge/" [response: /shem/ (name)]. The remaining syllable is always a real high frequency word in Hebrew. Scores range from 0–14, and the Cronbach-alpha is .80. (2) In the *Phoneme*

deletion task, children have to segment real spoken words into phonemes (e.g. “Say xatul” (cat). “Now say it without the /x/” (response: /atul/). The outcome of this phoneme-level word manipulation is never a real Hebrew word. Scores can range from 0–16, and the Cronbach- alpha is .85.

Vocabulary. We examined children’s receptive vocabulary using the Hebrew version of the Peabody Picture Vocabulary Test (PPVT-R) (Solberg & Nevo 1979). This test has 110 items. Analyses are based on raw scores.

Morpho-syntactic and syntactic knowledge

Sentence completion. A standardized test developed by Shatil (2002) was administered. In this 20-item task, children listen to a sentence and have to complete the missing word that takes a different inflectional form than its occurrence in a stem-sentence. The focus is on morphological inflections of plurals, feminine/masculine, and tenses. In each item the child hears a target sentence (e.g. “Today Daddy is traveling”) and is asked to provide the appropriately inflected word in a subsequent sentence (e.g. “Yesterday Daddy...? (traveled) too”; in Hebrew: “Hayom abba no’sē’ah; Gam etmol abba?” Correct answer: “na’sah” (masculine, singular, past tense)). Each item received a score of 0 for no or a wrong answer, 1 for a partially correct answer (e.g. /nas’uh/ (plural, past tense) instead of /na’sah/ (masculine, singular, past tense)), and 2 for a correct answer. Scores on the test range from 0–40. Shatil (2002) reports a test-retest correlation (assessed 1 year apart) of $r = .56$.

Adjectival inflections. In Hebrew adjectives have to match the nouns and subject for gender and number. In this experimental, 9-item task, children’s ability to apply the rules associated with these skills was assessed. The child hears a sentence such as “The chocolate (male, singular) is tasty. The cake (feminine, singular) is ...?” (e.g. /Ha’shokolad ta’im. Ha’ugah...?/) Correct answer: /te’imah/ (tasty). Each item is scored as 0 or 1, and the range of scores is 0–9.

Syntactic knowledge. The Receptive Oral Grammar test (TROG; Bishop 1989) was administered. This task was adapted from English. Children listen to progressively longer and increasingly more complex sentences and point to the one of four pictures that matches the sentence. There are 4 items testing each of 20 syntactic categories such as negatives, passives, x but not y, and complex sentences. Unless all the items within a category are correct, the whole category is discounted. Each correct category receives a score of 1, and test scores can range from 0 to 20. The Cronbach alpha for this test is .70.

Amharic oral language

Command of Amharic oral language proficiency was evaluated in two domains: vocabulary and conversational skills. These tasks were administered to the second cohort of SK children ($n=45$) by trained Ethiopian Israeli community workers who were native speakers of Amharic.

Vocabulary. Vocabulary skills in Amharic were assessed with an experimental adaptation of the Hebrew PPVT-R, carried out by an Ethiopian Israeli psycholinguist (Anbase' Tapere').

Conversational skills. A 10-question interview evaluated children's conversational skills in Amharic. The first question, "What is your name?" is considered a practice item. The following 9 questions include items such as: "How old are you?"; "What do you like to play with in kindergarten?"; and "What season is it now?" The questions are presented in Amharic and the child is encouraged to respond in Amharic. Each item that is answered correctly in Amharic receives 2 points. If the child responds appropriately in comprehensible Hebrew it receives 1 point, and if the tester has to present the question in Hebrew, that item is scored as 0. Scores can range from 0–18.

Emergent reading and spelling

Letter naming. Children are asked to name 22 Hebrew print letters, presented in a random order. Four of the Hebrew letters are written differently when they appear at the end of a word, but final form of letters was not tested because this skill is acquired later (Share & Levin 1999).

Book title reading (Shany 2000). This task involves popular Israeli kindergarten level Hebrew books that are found in all kindergarten classrooms in Israel (e.g. "Mitz Petel" (Raspberry Juice); "Shilgiya" (Snow-white); "Peter ve'ha'ze'ev" (Peter and the Wolf)). In this 15-item test, children are asked to read the (voweled) name of a book, printed on a card. Scores can range from 0–15.

Book cover to book title matching (Shany 2000). In this 15-item task, children see one at a time a copy (in the original color) of a book cover of one of the books used in the Book Title Reading described above. Each book cover is accompanied by 3 index cards, one containing the correct printed title of the book (e.g. "Mitz Petel" — Raspberry Juice); a second with a partially correct title of the book (e.g. "Mitz Tut" — Strawberry Juice), and the third with an unrelated title (e.g. "Dag Ba'ma'yim" — Fish [in the] Water). The 3 cards accompanying each book cover are presented in a random order. Children have to place the correct card in a space on the book cover. Each item receives a score of 2 when the correct title is chosen, a

score of 1 if the partially correct title is selected (i.e. one word was identified), and a 0 when the selected title is incorrect. Scores can range from 0–30.

Spelling. Children are asked to write 15 high frequency words taken from the titles of the books discussed above (e.g. /mitz/ (juice); /tsav/ (turtle); /bayit/ (home)). The list consists of single nouns that do not have derivatives. Some words require children to include vowel letters ('mothers of reading' — /imot hakriah/). These 4 graphemes can represent consonants as well as vowels. A developmental scoring procedure adapted from Tangel and Blachman (1992) was applied.

The *consonants score* consists of the total number of phonetically acceptable consonants that are attempted across the 15 words (range 0–44). The *Vowel letters score* consists of the number of vowel letters attempted (range 0–10). The correlation between consonants writing and vowel letters writing was $r = .60$, $p < .001$.

2.3 Procedure

Data collection was conducted towards the end of the senior kindergarten year, between April and June, for each of the two cohorts. Tasks were administered individually in three sessions, with the same set of tasks in each session. There was an interval of 3 to 4 days between sessions. Hebrew testing was carried out by four graduate students, all with classroom teaching experience. Testing of Amharic language skills in the second cohort was carried out by five home-school linguistic/cultural mediators, who were all from an Ethiopian background and had post-secondary training. The third author was present in each of these sessions to ensure that the tasks were administered in a systematic and consistent manner

3. Results

3.1 Developmental patterns of emergent literacy skills in the two groups

Hypothesis 1 examined whether the developmental patterns of emergent literacy skills in the two groups are alike. Table 1 presents descriptive statistics and ANOVA results for the comparison of Ethiopian Israeli and Non-Ethiopian groups on the complete battery that included cognitive, cultural and environmental literacy, oral language in Hebrew, and emergent reading/ spelling tasks.⁵ The two groups differed significantly on some tasks but not on others. As can be seen, the performance of the Non-Ethiopian group was significantly higher than that of the Ethiopian Israeli group on measures of cognitive, cultural and environmental literacy, and on the Hebrew oral language measures. However, as predicted, the two groups did not differ from each other on the emergent reading and spelling tasks.

Table 1. Performance on emergent literacy components in 2 groups varying in culture and home literacy background — summary statistics

Variable	Israeli – Non- Ethiopian (n = 52)	Israeli – Ethiopian (n = 61)	η^2	Significance Test $F_{(1,111)}$
	M (SD)	M (SD)		
Cognitive ability				
Raven's (0–36)	19.29 (4.88)	16.21 (3.84)	.112	14.05, $p = .001$
Environmental print				
Print exposure — Title Recognition Test (0–20)	11.02 (8.97)	6.66 (7.70)	.065	7.75, $p = .006$
Hebrew Oral Language				
Phonological awareness				
Syllable deletion (0–14)	4.08 (3.35)	2.44 (2.55)	.072	8.63, $p = .004$
Phoneme deletion (0–16)	3.25 (3.63)	1.54 (2.43)	.074	8.88, $p = .004$
Vocabulary				
PPVT — III	46.10 (6.74)	39.64 (7.82)	.164	21.71, $p = .001$
Morpho-syntactic and Syntactic knowledge				
Sentence completion (0–40)	26.06 (4.73)	24.05 (4.94)	.042	4.83, $p = .030$
Adjectival inflections (0–9)	8.19 (1.05)	6.77 (2.68)	.202	28.01, $p = .001$
Receptive oral grammar (0–20)	11.23 (3.15)	9.18 (2.36)	.123	15.59, $p = .001$
Emergent Reading and Spelling				
Reading				
Letter naming (0–22)	13.71 (7.02)	11.69 (7.21)	.020	2.26, $p = \text{ns}$
Book title reading (0–15)	1.27 (2.13)	.60 (1.90)	.031	3.53, $p = \text{ns}$
Book cover to book title matching (0–15)	6.12 (2.91)	5.84 (2.52)	.003	2.98, $p = \text{ns}$
Spelling				
Consonants (0–45)	8.27 (13.24)	5.87(10.42)	.012	1.36, $p = \text{ns}$
Vowel letters (0–8)	.27 (.60)	.18 (.53)	.006	.222, $p = \text{ns}$

To examine the order of the acquisition of literacy skills, we first contrasted syllable splitting with phonemic awareness. A 2-way repeated measures ANOVA, with group (Ethiopian Israelis/ Non-Ethiopians) as the between factor and task (syllable/ phoneme awareness) as the repeated measure, confirmed that while overall the Non-Ethiopians outperformed the Ethiopian Israelis ($F(1,110) = 12.511$,

$p < .001$), in line with normative observations (Share & Blum 2005), performance on the syllable awareness task was higher in both groups than performance on the phonemic awareness task ($F(1,110) = 13.28$, $\eta^2 = .107$, $p < .001$). The interaction of group by task was not significant ($F(1,111) = .189$, $p = .664$).

In line with other developmental studies of monolingual Hebrew speakers (e.g. Share & Gur 1999), in both groups children performed significantly better when the reading task required matching the printed book titles to book covers than when requested to read book titles in the absence of contextual cues ($F(1,110) = 353.70$, $\eta^2 = .763$, $p < .0001$).

As for early spelling, a 2-way, repeated measures ANOVA, with group (Ethiopian Israelis/ Non-Ethiopians) as the between factor and task (consonant and vowel spelling) as the repeated measure, indicated a significant effect of task ($F(1,1) = 34.95$, $\eta^2 = .239$, $p < .001$). Again, in line with other developmental studies of monolingual Hebrew speakers (e.g. Share & Levin 1999), in both groups children's spelling attempts were more likely to include consonants than vowel letters.

3.2 Predictors of letter-sound relations in the two groups

Hypothesis 2 examined whether the same factors predict individual differences in the alphabetic code acquisition in both groups. Table 2 presents Pearson correlations between letter naming and related aspects of emergent literacy. In both groups, letter naming correlated positively and significantly with phonological awareness and with consonant writing. The groups differed in that in the Ethiopian Israeli group, but not in the Non-Ethiopian group, letter naming also correlated positively and significantly with syntactic knowledge.

Due to sample size we were limited in the number of variables we could enter into hierarchical multiple regression analyses. Therefore, we first computed a hierarchical regression analyses for each group, where general biological aspects (age and gender) were entered in step 1, cognitive ability in step 2, and cultural and environmental literacy in step 3. This analysis confirmed that in both groups, none of these predictors contributed to variance in letter naming. In the Non-Ethiopian group, the overall variance explained by these factors was $R^2 = .119$ and the F change was not significant for each step ($F = .556$, $p = .577$; $F = .966$, $p = .331$ and $F = 1.89$, $p = .163$, respectively). In the Ethiopian group, the variance explained was $R^2 = .137$ and the F change was likewise not significant at each step ($F = 2.032$, $p = .140$; $F = .034$, $p = .854$ and $F = 2.184$, $p = .122$).

Based on the developmental literature, our next goal was to predict variance in letter naming with phonemic awareness and oral language components. To reduce the number of variables, we first computed a combined score for the two measures

Table 2. Pearson correlations between letter naming and biological factors, cognitive ability, cultural and environmental print, oral language components and emergent reading/spelling, within groups

Variables	Israeli – Non-Ethiopian (n = 52)	Israeli – Ethiopian (n = 61)
<i>Biological factors</i>		
Age	-.138	.256*
Gender	.057	-.038
<i>Cognitive ability</i>		
Raven's	.103	.034
<i>Environmental print</i>		
Title Recognition Test	.274*	-.027
<i>Oral language in Hebrew</i>		
Phonological awareness ^a	.403**	.383**
Vocabulary	.030	.312*
Morpho syntactic knowledge ^b	.293*	.313*
Syntactic knowledge	.125	.487**
<i>Emergent reading/ spelling</i>		
Book title reading	.270	.207
Book cover to book title matching	.293*	-.133
Consonants writing	.577**	.541**
Vowel letters writing	.406**	.293*

* $p < .05$; ** $p < .01$ ^a Phonological awareness — a combined score of 'syllable deletion' and 'phoneme deletion' tests^b Morph-syntactic knowledge — a combined score of 'sentence completion' and 'adjectival inflections' tests

of phonological awareness (given that the correlation between syllable and phonemic deletion was $r = .674$, $p < .001$) and another for the two measures of morpho-syntactic knowledge (given that the correlation between sentence completion and adjectival inflections was $r = .486$, $p < .001$).

A hierarchical regression analysis was computed for each group, with letter naming as the dependent variable (see Tables 3 and 4). Phonological awareness (the combined score) was entered in step 1, vocabulary was entered in step 2, and the morpho-syntactic (combined score) and syntactic knowledge were entered in step 3. This analysis confirmed that in both groups phonological awareness was a significant predictor of letter naming, explaining a similar percent of the variance in both groups (16.2% and 14.6% in the Non-Ethiopian and Ethiopian groups,

Table 3. Hierarchical regression analyses summary table: Predicting letter naming in the Non-Ethiopian group

Predictors	β	t	R	R2	$\Delta R2$	ΔF
First step			.403	.162	.162	9.69**
Phonological awareness	.403	3.11**				
Second step			.404	.163	.001	.048
Phonological awareness	.403	3.08**				
Vocabulary	.029	.219				
Third step			.420	.176	.013	.371
Phonological awareness	.338	2.22*				
Vocabulary	-.018	-.119				
Morpho-syntactic knowledge	.130	.775				
Syntactic knowledge	.019	.115				

* $p < .05$; ** $p < .01$

Table 4. Hierarchical regression analyses summary table: Predicting letter naming in the Ethiopian group

Predictors	β	t	R	R2	$\Delta R2$	ΔF
First step			.383	.146	.146	10.11**
Phonological awareness	.383	3.18**				
Second step			.484	.234	.088	6.68*
Phonological awareness	.371	3.22**				
Vocabulary	.297	2.58*				
Third step			.586	.344	.109	4.66*
Phonological awareness	.269	2.21*				
Vocabulary	.168	1.43				
Morpho-syntactic knowledge	.072	.569				
Syntactic knowledge	.341	2.74**				

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

respectively). As can be seen in Table 4, in the Ethiopian-Israeli group vocabulary explained an additional 8.8% of the variance, and syntactic knowledge added, over and above phonological awareness and vocabulary, 10.9% to the explained variance, bringing the total explained variance in letter naming to 34.4%. The contribution of oral language to variance in letter naming was not significant in the case of the Non-Ethiopians.

3.3 How do patterns of language use of parents and their children relate to emergent literacy?

Parental language proficiency

Hypotheses 3 examined how patterns of language use of parents and their children relate to emergent literacy. As indicated above, due to the lack of variance on parent literacy in Amharic we focus in this section on information that the Ethiopian Israeli parents provided to the linguistic/ cultural mediators about their oral proficiency and literacy in Hebrew. This information was available for 42 families of Ethiopian origin. Pearson correlations were calculated between children's performance on cultural and environmental print, components of oral language proficiency and early reading and spelling, and mothers' Hebrew oral proficiency ($X = 1.119$, $SD = .504$, range 0–2), mothers' written language proficiency ($X = .595$, $SD = .500$, range 0–1), fathers' Hebrew oral proficiency ($X = 1.190$, $SD = .397$, range 1–2), and fathers' written language proficiency ($X = .786$, $SD = .519$, range 0–2). Results indicated that fathers' proficiency in oral and written Hebrew did not correlate with any aspects of children's early literacy. On the other hand, mothers' Hebrew oral proficiency correlated significantly with elements of cultural and environmental print, oral language, and early reading and spelling. Specifically, mothers' Hebrew oral proficiency correlated with print exposure ($r = .369$, $p = .01$), phonological awareness (combined score) ($r = .422$, $p = .005$), and letter naming ($r = .340$, $p = .020$). In addition, mothers' Hebrew written language proficiency correlated with Hebrew vocabulary ($r = .373$, $p = .015$).

Children's home language proficiency

In this section, we examine proficiency of the Ethiopian Israeli children in their home language and whether aspects of language proficiency evaluated in the home language might be related to emerging language and literacy skills in Hebrew. Note that data about home language were only available for the second cohort of Ethiopian Israeli children ($n = 42$). The correlation between the Amharic vocabulary task and Amharic conversational skills was $r = .67$, ($p < .001$), indicating that those children who had relatively better vocabulary in Amharic were also more likely to have somewhat better conversational skills. In general, children's vocabulary knowledge in Hebrew was higher than their vocabulary knowledge in Amharic. On the Amharic version of the PPVT, the group mean was 20.40 (18.5%) ($SD = 8.76$), whereas on the Hebrew version the mean for the same children was 39.64 (36%) ($SD = 7.82$). A t-test for related samples indicated that there was a significant difference between children's receptive vocabulary scores in Amharic and Hebrew ($t(1, 41) = 14.23$, $p < .001$). As for conversational skills, 18% of the children were able to understand and respond in Amharic, 20% were able to understand

when spoken to in Amharic but responded in Hebrew, and the remaining 62% were unable to understand or respond when spoken to in Amharic. The mean score for this conversational task was 11.23 ($SD=5.82$) and the range was 0–18. The conversational task did not correlate with any of the literacy or cognitive tasks in Amharic or Hebrew, probably due to a floor effect.

To explore whether vocabulary knowledge in Hebrew and Amharic contribute to letter naming, a multiple hierarchical regression analysis was conducted. In the first step we entered vocabulary in Hebrew and in the second step vocabulary in Amharic. Results indicate that Hebrew vocabulary was significantly associated ($p<.05$) with letter naming and explained 13% of the variance, while vocabulary in Amharic was not associated with Hebrew letter naming. When vocabulary in Amharic was entered first, results remained the same.

4. Discussion

There is ample research on the relation between low SES and emerging literacy skills, but little attention has been given to the emergence of literacy skills in immigrant children (Hammer et al. 2003; NELP 2008; Tabors & Snow 2001) and specifically to children coming from families with a primarily oral culture, where rates of literacy are restricted. This study was designed to uncover the early conditions that enable or hinder the emergence of literacy skills in children who come from such a background. To this end, we compared an Ethiopian Israeli group to a group of low SES children, attending the same kindergartens, on emergent reading and spelling skills as well as cognitive, cultural and environmental literacy, and oral language related skills.

4.1 A developmental perspective on emergent literacy in low SES children with different culture and home literacy background

While there were differences between the two groups on various aspects of cognitive, cultural and environmental literacy and oral language, the groups did not differ on their performance on early reading and writing tasks. There is documentation about the high educational vulnerability of students of Ethiopian origin in higher grades. At the same time, one of the important outcomes of this study is the finding that this vulnerability is not ubiquitous across the early language and literacy skills of children in this group.

Researchers such as Scarborough (2001) and Dickinson et al. (2003) have proposed that various language and literacy strands, including phonology, semantics, syntax, discourse, reading, and writing, emerge at various times during early

development and that they are interdependent. The current study demonstrates that these strands do not emerge at the same time in vulnerable groups, but are also interdependent in children who come from low SES and minority language backgrounds. However, the results also underscore the importance of distinguishing between less complex, modularized, aspects of emergent literacy such as letter naming and consonants writing which can be learned through direct instruction, and more complex and multidimensional aspects of emergent literacy such as language proficiency and cultural and environmental literacy, where the cumulative effects of poverty, lack of cultural resources, and consistent and rich exposure show their impact early on.

In relation to the order of acquisition, we found that in the Ethiopian and Non-Ethiopian groups alike children were more successful in recognizing names of books when contextual cues were present than in a task requiring them to actually read the titles of books without the support of such cues. This finding suggests that the children are able to utilize a partial-alphabetic strategy, with reliance on the book covers as contextual cues, before they learn to use alphabetic reading with more attention to print (Share & Gur 1999). Likewise, even though the comparison group had higher scores on phonemic awareness tasks, in line with the normative observations (Share & Blum 2005), the sequence of acquisition of phonological awareness in Hebrew was identical, with the unit-size effect present in both groups. More specifically, performance on the syllable awareness task was higher in both groups than performance on the phonemic awareness task.

Another aspect involving the alphabetic code on which the Ethiopian children were not different from non-Ethiopians involved rudiments of spelling skills (Share & Levin 1999). In both groups, children were more likely to represent consonants than vowel letters. In general, both the Ethiopian and the Non-Ethiopian groups performed more poorly than the normative samples on these early aspects of using the alphabetic code, confirming that low SES children and children of immigrant parents who do not have a full command of the societal language may master the same basic skills somewhat more slowly, but the sequence of acquisition mirrors that noted in more privileged groups.

4.2 Parental oral and written language and children's emergent literacy

Parental language proficiency

It is interesting that it was maternal rather than paternal language and literacy skills that were related to emergent literacy in Hebrew (see Neuman & Celano 2001 for similar results). In line with other studies (Anteby-Yemini 2005; Barkon & Avinor 1995, Bar-Yosef 2001; Spolsky 2001; Stravas & Olshtain 2006), most Ethiopian Israeli mothers were rated as having partial control of oral Hebrew and poor reading

skills, and some were unable to speak or read Hebrew at all. When mothers had more opportunity to develop their own oral and written skills in Hebrew, their children were more likely to have better developed environmental print, phonological awareness, and Hebrew vocabulary. In addition, proficiency of mothers in spoken Hebrew enabled their children to master more letter names. These findings suggest that when mothers are more literate in L2 they can promote the early development of literacy skills of their children (Aram et al. 2005; Evans, Shaw & Bell 2000; Lese-man & de Jong 1998; Lonigan 1994). It is important to note, however, that these correlation-based findings cannot shed light on the causal relations between parental literacy and development of literacy in children. To do so will require intervention studies, which have the potential to show improvement in the developing literacy of children following intervention to improve parental literacy.

Children's language proficiency

Children's proficiency in Hebrew was positively related to initial stages of alphabetic code learning. In addition, as might be expected, children's command of Hebrew and Amharic vocabulary was related to the language the mothers used to communicate with them. Other studies (e.g. Hammer et al. 2003; Laurent & Martinot 2009; Schwartz et al. 2009), also found that mothers who encouraged their children to simultaneously acquire their L1 (Spanish) and L2 (English) exhibited higher press for achievement.

In this study, most Ethiopian parents (84%) used a mixture of Amharic and semi-proficient Hebrew with their children, and 16% reported that they spoke only Hebrew. The children spoke mainly Hebrew. In such a bilingual environment, children of immigrants are not capable of developing the full array of language skills in two languages simultaneously (Tabors & Snow 2001). They may develop productive use of only one language, their L2, and their bilingualism status is at risk. As pointed out by Tabors and Snow (2001), children whose bilingualism status is at risk may also be at risk in acquiring L2 oral language. Discontinuity in the language environment leads to a truncated development of aspects of pre-literacy. It appears that the Ethiopian parents' own literacy skills are not valued and young children do not acquire the literacy of their cultural inheritance (Thakaria 2003).

4.3 Predicting the acquisition of the alphabetic code in low SES children who differ in their home literacy background

The third objective of this study was to examine the extent to which similar factors explain individual differences in the acquisition of the alphabetic code in children who differ in their home literacy background. At first glance it appears that the pattern is not identical across the two groups. We found that by the end of

kindergarten, letter naming, a pivotal literacy skill that is essential for subsequent literacy development, had not been mastered completely by children who came from low SES families.

In both groups, letter naming skills were predicted by phonological awareness that explained an almost identical percentage of the variance. These results are in line with other studies in Hebrew (Share & Levin 1999; Shatil & Share 2003). In the Ethiopian Israeli group, oral language components explained an additional 19.7 % of the variance, beyond phonological awareness. Both vocabulary and syntactic knowledge were significant predictors. However, the oral language components did not explain any unique variance on letter naming skills in the non-Ethiopian group.

These subtle differences in predictors of letter naming reflect two related developmental aspects. First, in the case of the Ethiopian Israeli children there was more within-group variance in children's command of Hebrew vocabulary and morpho-syntactic and syntactic skills relative to the Non Ethiopian group (see Table 1). Over and above the contribution of variance in exposure to Hebrew at home, these differences reflect individual differences in the ability to acquire the societal language (Farnia & Geva, under review). On the other hand, the language skills of the Non-Ethiopian children were better developed due to the fact that they were exposed more systematically to Hebrew in their homes. Therefore, in the Non-Ethiopian group persistent individual differences in consonant writing and phonological awareness appeared to predict letter naming, whereas command of the Hebrew language did not.

Second, it is important to be mindful of the fact that aspects of phonological awareness and language skills share variance, and the pattern of relationships between letter naming, oral language skills and phonological awareness is rather similar in the two groups. Indeed, this pattern does not diverge from what has been reported in the literature with regard to preschool L1 children. Presumably, sensitivity to the language components was especially challenged in the Ethiopian children (Geva & Yaghuoub-Zadeh 2000) and therefore individual differences in the attainment of Hebrew language skills explained variance on letter naming, which also requires sensitivity to phonological information. Research has shown that phonological sensitivity, print knowledge, and vocabulary are related to each other in monolingual preschool children (Dickinson et al. 2003). The present results indicate that this is also true for low SES minority children whose families come from a predominantly oral culture. The current results therefore extend the argument made by Dickinson et al. (2003) to minority children who are less proficient in the societal language. In the case of the minority children coming from a primarily oral culture, variance in Hebrew language skills may be more sensitive to subtle changes in the development of spoken word representations, grammatical

inflections, and phonological sensitivity (Metsala & Walley 1998). Such an advantage enables some L2 children who are good language learners to have relatively better developed language skills. Concomitant with better developed Hebrew vocabulary, morpho-syntactic and syntactic skills, they have developed increased sensitivity to sound sequences and phonemic contrasts, and this sensitivity enables them, in turn, to acquire additional Hebrew vocabulary. It is promising that with the onset of formal instruction in kindergarten these interrelated skills, which are essential for subsequent language and literacy development, begin to emerge in tandem in the Ethiopian Israeli and Non-Ethiopian groups.

However, as was noted in the previous section, the Ethiopian Israeli children have much catching up to do on multiple factors, including their home and societal language. Related research indicates that unfortunately this gap does not close and that their language and literacy skills do not sufficiently develop to enable them to experience academic success in subsequent years (Shany & Geva, *in press*).

4.4 A communal perspective: poverty, cultural resources, and emergent literacy

The comparison of Ethiopian Israeli and Non-Ethiopian children magnifies the effects of differences in cultural resources. Even though the two groups reside in the same poor neighborhoods, their families differ in terms of various SES indicators such as parental education, parental literacy (whether in the L1 or the societal language), and employment. Moreover, primarily oral culture homes do not have the tools to promote cultural and environmental literacy and oral language components in the home and the societal language. This was noted in the Ethiopians' low scores on the Title Recognition Test and on all the oral language measures. The low language proficiency profile of the Ethiopian Israeli group is especially alarming given that there was a significantly larger number of girls in the Ethiopian Israeli sample than in the Non-Ethiopian sample, and typically girls do better than boys on language measures.

In addition to the well-documented effects of poverty, a consideration of the primarily oral environment in which these children grow up points to a mismatch between the cultural resources that the Ethiopian Israeli families may still possess and the kind of cumulative language and pre-literacy resources that are necessary in order to succeed in a literate society. Families that are somewhat more fortunate economically and culturally can mobilize these resources to help their children (Bourdieu & Passeron 1990). The Ethiopian Israeli parents do not have the tradition and tools necessary to prepare their children for Western-type schools, are less attuned with the language and literacy needs of their children (Stravas & Olshtain 2006), and are unable to mediate and foster the budding of literacy skills in both

the L1 and the L2 of their children (Aram & Levin 2002; Korat & Levin 2002). This study demonstrates the serious effects of the combined impact of poverty, dearth of relevant cultural capital, and language and literacy resources (in L1 and L2) necessary for the development of higher level literacy and academic achievement.

From a socio-cultural perspective one might argue that the criteria researchers use in the Western world for examining parent mediation (e.g. shared book reading, talking about topics that do not refer to the 'here and now', meta-linguistic tasks) are not appropriate when one considers developmental issues in children whose families come from a tradition of oral culture and that it is necessary to examine the way in which this oral tradition engenders language and literacy development (Stravas & Olshtain 2006). For example, one practice that was highly valued in rural Ethiopian culture (as it has been in other similar oral cultures) was story telling that involved word play (Schleifer 2007). However, a related study based on in-depth parent interviews with Ethiopian parents (Segal 2006) reported that with the immigration to Israel, the community faced changes in cultural institutions, family dynamics and living arrangements, and these rich cultural resources and institutions have been gradually depleted. The Ethiopian immigrant parents have stopped transmitting this cultural knowledge using traditional modes of communication. In other words, the Ethiopian Israeli community has lost the cultural capital that enabled it to function in traditional rural Ethiopia, but has not acquired the cultural capital 'ingredients' of a primarily written language society. Such a mismatch in adaptive cultural resources coupled with L1 loss exacerbates the situation for children who emigrate to literate societies from 'fifth world' countries. Children of immigrants or refugees who come from such countries constitute an especially vulnerable group of minority-L2 learners. Due to political, socio-cultural, and sociolinguistic factors they have not had the opportunity to acquire developmentally appropriate language and cultural literacy in their home language or in the societal language (Cummins 1986; Skutnabb-Kangas 1978).⁶

Finally, it is important to acknowledge that while in this kindergarten-based study the Ethiopian Israeli and the Non-Ethiopian groups did not differ significantly from each other on rudimentary aspects of emergent literacy, the detrimental effects of SES are evident in that both groups performed rather poorly on more complex aspects of language and literacy indices, and in no case did we find that the Ethiopian Israeli group approximated the performance of the more representative samples. Additional research is needed to find out what gaps disappear with schooling and increased language proficiency, what aspects persist, and whether it is possible to prevent these trends with very early multi-faceted intervention.

With global political and demographic trends, developed nations will continue to receive immigrants who come from non-literate societies, and preventative, proactive measures need to be undertaken to minimize academic failure in the

children of these families. It is important to recognize that in ethnic/ linguistic minority communities that have made an abrupt shift from living in a generally preliminary oral society to a preliminary literate society, lack of literacy skills either in the first language or in the language of the host country is not limited to the first generation, but continues also into the next generation (Offer 2004). There is a dearth of experimental and intervention research on emergent literacy in children who not only live in poverty and struggle with theirs and the societal language, but whose community lacks the cultural capital that equips middle class families with the cultural and economic resources and strategies for preparing their children to develop language and literacy skills. Results of the research reported here need to be replicated with larger samples, different ethnic and linguistic groups, and multi-level designs that would enable teasing apart the contributions of SES, community, individual and developmental differences, and instructional effects.

The question of how to enhance the literacy attainment of L2 learners, reduce high-school dropout rates, and prepare immigrant children for the literacy needs of industrialized countries is at the forefront of agendas of policymakers in Western countries (OECD 2006). The present study underscores the importance of paying attention to emergent literacy and its antecedents in light of the finding that in comparison with children whose parents are poor but literate, children whose parents come from a primary oral culture are at an extreme risk. Regardless of home language, substantial deficits in early language and semantic-cultural knowledge development will set the stage for subsequent deficits on other interrelated aspects of emergent literacy development, and these deficits will only snowball as children enter school (Dickinson et al. 2003, Shany & Geva, *in press*). Pivotal differences in community cultural resources, SES, parental education and literacy, and opportunities to develop language skills, at home, in the community, and at preschool all contribute to the emergence of literacy skills. It is therefore important to study in a systematic manner the effects of timely, comprehensive, sustained, preventative intervention programs targeting children and their caregivers.

In closing, we wish to address certain limitations of this study. First, the parental literacy measures in this study were based solely on data from questionnaires. In the future, it will be beneficial to collect more direct and reliable data through personal interactions with parents, such as structured interviews and direct observations. Second, we would also like to use improved measures of emergent reading and spelling, providing more sensitivity to developmental aspects of these skills. Finally, our current results relate only to families of low SES. It will be interesting to extend this type of research to include upper-middle class families.

Notes

* The research reported in this paper was supported by a grant from the Ministry of Education, Chief Scientist's Office, Israel.

1. In some of the literature terms such as illiterate and semiliterate are used but we avoid this terminology because of its strong emphasis on deficiency.
2. For an overview of the features of the Hebrew orthography and literacy development, see Share and Levin (1999), Ravid (2005), and Share (2008).
3. Permission to conduct this study, which was sponsored by the Chief Scientist, stipulated two conditions: That all children in each kindergarten would be included, and that parents could not be contacted for individual interviews because of cultural sensitivity considerations.
4. According to the mediators, Ethiopian parents were proficient in reading Amharic. Census data suggests that Ethiopian immigrants have had 1–2 years of schooling in Ethiopia at most. Unfortunately, the information provided by the mediators was not nuanced enough to distinguish between those who had basic reading skills in Amharic and parents who had higher level of literacy skills in Amharic. There was no variance on this measure and it could not be used in subsequent analyses.
5. Given the available sample size, a cut-off point of $p < .01$ was chosen for accepting significance.
6. It is not our intention to use this term in a negative sense or to attribute the very low performance and worrisome educational prospects of this group to bilingualism, but rather to depict the roots of a complex interplay of very low language skills in the home and societal language, dire lack of opportunities, and language and literacy outcomes.

References

- A *school guide to Ethiopian Israelis* (2008). Retrieved November 1, 2008, from: www.peopleil.org/details.asp.
- Anteby-Yemini, Lisa (2005). From Ethiopian villager to global villager: Ethiopian Jews in Israel. In Andreh Levy & Alex Weingrod (eds.), *Homelands and diasporas*. Palo Alto, CA: Stanford University Press.
- Aram, Dorit, Ofra Korat & Iris Levin (2005). Maternal mediation in young child's writing activity: A sociocultural perspective. In R. Maletsha Joshi & P.G. Aaron (eds.), *Handbook of orthography and literacy*, 709–734. New York: Routledge.
- Aram, Dorit & Iris Levin (2001). Mother-child joint writing in low SES: Sociocultural factors, maternal mediation, and emergent literacy. *Cognitive Development* 16: 831–852.
- Aram, Dorit & Iris Levin (2002). Mother-child joint writing and storybook reading: Relations with literacy among low SES kindergartners. *Merrill-Palmer Quarterly* 48: 202–224.
- Ardila, Alfredo & Mónica Rosselli (2007). Illiteracies and cognition: The impact of education. In Barbara P. Uzzell & Marcel Ponton (eds.), *International handbook of cross-cultural neuropsychology*, 181–198. New York: Routledge.

- August, Diane & Timothy Shanahan (2006). *Developing literacy in second-language learners: A report of the National Literacy Panel on language-minority children and youth*. Mahwah, NJ: Erlbaum.
- Barkon, Elisheva & Eleanor Avinor (1995). Academic difficulties and early literacy deprivation: The case of Ethiopians in Israel. *Language, Culture, and Curriculum* 8(2): 201–210.
- Bar-Yosef, Rivka W. (2001). Children of two cultures: Immigrant children from Ethiopia in Israel. *Journal of Comparative Family Studies* 32: 231–246.
- Bender, M. Lionel (1985). Ethiopian language policy 1974–1981. *Anthropological Linguistics* 27(3): 273–279.
- Ben Ezer, Gadi (2002). *The Ethiopian Jewish exodus: Narratives of the migration journey to Israel 1977–1985*. New York: Routledge.
- Bentin, Shlomo & Haya Leshem (1993). On the interaction between phonological awareness and reading acquisition: It's a two-way street. *Annals of Dyslexia* 43: 125–148.
- Bishop, Dorothy V.M. (1989). *Test of the Reception of Grammar (TROG)*. 2nd ed. London: Medical Research Council.
- Bodovski, Dani & Yosef David (1996). *Ethiopian Jews' legacy*. Jerusalem: Bahalachin and Gutman Publishers. [Hebrew].
- Bodovski, Dani, Yosef David & Yehiel Eran (eds.) (1994). *Issues in the treatment of families from different cultures*. Jerusalem: Beithachin Publishers. [Hebrew].
- Bourdieu, Pierre & Jean C. Passeron (1990). *Reproduction in education, society and culture*. London: Sage.
- Bowey, Judith A. (1994). Phonological sensitivity in novice readers and nonreaders. *Journal of Experimental Child Psychology* 58(1): 134–159.
- Bowey, Judith A. (1995). Socioeconomic status differences in preschool phonological sensitivity and first grade reading achievement. *Journal of Educational Psychology* 87: 476–487.
- Bradley, Robert H. & Robert F. Corwyn (2002). Socio-economic status and child development. *Annual Review of Psychology* 53: 371–399.
- Bus, Adriana G., Paul P.M. Leseman & Petra Keultjes (2000). Joint Cultures: A comparison of Surinamese Dutch, Turkish Dutch and Dutch book reading across parent child dyads. *Journal of Literacy Research* 32: 53–76.
- Catts, Hugh W., Marc E. Fey, Xuyang Zhang & J. Bruce Tomblin (1999). Language basis of reading and reading disabilities: Evidence from a longitudinal investigation. *Scientific Studies of Reading* 3: 331–361.
- Clay, Marie M. (1991). *Becoming literate: The construction of inner control*. Portsmouth, NH: Heinemann.
- Clements, Melissa A., Arthur J. Reynolds & Edmond Hickey (2004). Site-level predictors of children's schools and social competence in a Chicago child-parent center. *Early Childhood Research Quarterly* 19: 273–296.
- Cummins, Jim (1986). Empowering minority students: A framework for instruction. *Harvard Educational Review* 56: 18–36.
- Dickinson, David K., Allyssa McCabe, Louisa Anastopoulos, Ellen S. Peisner-Feinberg & Michele D. Poe (2003). The comprehensive language approach to early literacy: The interrelationships among vocabulary, phonological sensitivity, and print knowledge among preschool-aged children. *Journal of Educational Psychology* 95: 465–481.
- Duda, Joan L. & Maria T. Allison (1989). The attributional theory of achievement motivation: Cross-cultural considerations. *International Journal of Intercultural Relations* 13: 37–55.

- Evans, Mary Ann, Deborah Shaw & Michelle Bell (2000). Home literacy activities and the influence on early literacy skills. *Canadian Journal of Experimental Psychology* 54: 65–75.
- Farkas, George & Kurt Beron (2004). The detailed age trajectory of oral vocabulary knowledge: Differences by class and race. *Social Science Research* 33: 464–497.
- Farnia, Fataneh & Esther Geva (under review). Developmental and cognitive perspectives on the development of vocabulary in ESL children. Manuscript.
- Fowler, Anne E. (1991). How early phonological development might set the stage for phoneme awareness. In Susan A. Brady & Donald P. Shankweiler (eds.), *Phonological processes in literacy: A tribute to Isabelle Y. Liberman*, 97–117. Hillsdale, NJ: Erlbaum.
- Gee, James P. (1994). Orality and literacy: From the savage mind to ways with words. In Janet Maybin (ed.), *Language and literacy in social practice*, 168–192. Clevedon, UK: Multilingual Matters.
- Geva, Esther & Zhoreh Yaghoub-Zadeh (2000). Understanding individual differences in word recognition skills of ESL children. *Annals of Dyslexia* 50: 123–154.
- Gillis, Steven & Dorit Ravid (1999). Effects of phonology and morphology in children's orthographic systems: A cross linguistic study of Hebrew and Dutch. In Eve V. Clark (ed.), *Proceedings of the 30th Stanford Child Language Research Forum* 30: 203–210. Stanford: CSLI Publications.
- Gillon, Gail & Barbara Dodd (1995). The effects of training phonological, semantic, and syntactic processing skills in spoken language on reading ability. *Language, Speech, and Hearing Services in the Schools* 26: 58–68.
- Goody, Jack (1995). *Literacy, criticism and the growth of knowledge: The domestication of the savage mind*. Cambridge, MA: Cambridge University Press.
- Gould, Eric D., Victor Lavy & M. Daniele Paserman (2003). Immigrating to opportunity: Estimating the effects of school quality using a natural experiment on Ethiopians in Israel. *The Quarterly Journal of Economics* 119(2): 489–526.
- Hammer, Carol S., Adele W. Micco & David A. Wagstaff (2003). Home literacy experiences and their relationship to bilingual preschoolers' developing English literacy abilities: An initial investigation. *Language, Speech, and Hearing Services in Schools* 34(1): 20–30.
- Hart, Betty & Todd R. Risley (1999). *The social world of children learning to talk*. Baltimore: Brookes Publishing.
- Heath, Shirley B. (1983). *Ways with words: Language life and work in communities and classrooms*. Cambridge, UK: Cambridge University Press.
- Hemphill, Lowry & Terrence Tivnan (2008). The importance of early vocabulary for literacy achievement in high-poverty schools. *Journal of Education for Students Placed at Risk* 13(4): 426–451.
- Holloway, Susan D. (1988). Concepts of ability and effort in Japan and the United States. *Review of Educational Research* 58: 327–345.
- Hood, Michelle, Elizabeth Conlon & Glenda Andrews (2008). Preschool home literacy practices and children's literacy development: A longitudinal analysis. *Journal of Educational Psychology* 100(2): 252–271.
- Hoot, James L., Judit Szente & Belete Mebratu (2004). Education in Ethiopia: Progress and prospects. *Early Childhood Education Journal* 32(1): 3–8.
- Kaplan, Rachel (1992). The psychological benefits of nearby nature. In Diane Relf (ed.), *The role of horticulture in human well-being and social development: A national symposium*. Portland, OR: Timber Press.

- Kim, Paul, Talia Miranda & Claudia Olaciregui (2008). Pocket School: Exploring mobile technology as a sustainable literacy education option for underserved indigenous children in Latin America. *International Journal of Educational Development* 28: 435–445.
- Korat, Ofra (2005). Contextual and non-contextual knowledge in emergent literacy development: A comparison between children from low SES and middle SES communities. *Early Childhood Research Quarterly* 20: 220–238.
- Korat, Ofra, Etti Bacha & Miriam Snapir (2003). Functional-social and cognitive aspects in emergent literacy: Relations to SES and to reading-writing acquisition in first grade. *Mega-moth* 42: 195–218.
- Korat, Ofra & Iris Levin (2001). Maternal beliefs and child development: Comparison of text writing between two social groups. *Journal of Applied Psychology* 22: 397–420.
- Korat, Ofra & Iris Levin (2002). Spelling acquisition in two social groups: Mother-child interaction, maternal beliefs and child's spelling. *Journal of Literacy Research* 34(2): 209–236.
- Ku, Yu-Min & Richard C. Anderson (2003). Development of morphological awareness in Chinese and English. *Reading and Writing* 16: 399–422.
- Laurent, Angélique & Clara Martinot (2009). Bilingualism and phonological awareness: The case of bilingual (French-Occitan) children. *Reading and Writing* [10.1007/s11145-009-9209-3](https://doi.org/10.1007/s11145-009-9209-3) (online).
- Leseman, Paul P.M. & Peter F. de Jong (1998). Home literacy: Opportunity, instruction, cooperation and social-emotional quality predicting early reading achievement. *Reading Research Quarterly* 33(3): 294–318.
- Levin, Iris, Sigal Patel, Tamar Margalit & Noa Barad (2002). Letter names: Effect on letter saying, spelling, and word recognition in Hebrew. *Applied Psycholinguistics* 23: 269–300.
- Levin, Iris, Dorit Ravid & Sharon Rapaport (2001). Morphology and spelling among Hebrew-speaking children: From kindergarten to first grade. *Journal of Child Language* 28: 741–772.
- Levin, Iris, Sivan Shatil-Carmon & Ornit Asif-Rave (2006). Learning of letter names and sounds and their contribution to word recognition. *Journal of Experimental Child Psychology* 93(2): 139–165.
- Levin, Tamar, Alena Shohamy, Dov Spolsky, Michal Levi-Keren, Ofra Inbar & Michal Shemesh (2003). *Educational status of immigrant students. Report to the Chief Scientist of Israel*. School of Education, University of Tel-Aviv.
- Levin-Rozalis, Miri (2000). Social representations as emerging from social structure: The case of the Ethiopian immigrants to Israel. *Papers on Social Representations* 9: 1–22.
- Lonigan, Christopher J. (1994). Reading to preschoolers exposed: Is the emperor really naked? *Developmental Review* 14: 303–323.
- Lonigan, Christopher J., Stephen R. Burgess & Jason L. Anthony (2000). Development of emergent literacy and early reading skills in preschool children: Evidence from a latent-variable longitudinal study. *Developmental Psychology* 36: 596–613.
- Lonigan, Christopher J., Stephen R. Burgess, Jason L. Anthony & Theodore A. Baker (1998). Development of phonological sensitivity in 2- to 5-year old children. *Journal of Educational Psychology* 90: 294–311.
- Loureiro, Clara, Lucia Willadino-Braga, Ligia do Nascimento Souza, Gilberto Filho, Elizabeth Queiroz & Georges Dellatolas (2004). Degree of illiteracy and phonological and metaphonological skills in unschooled adults. *Brain and Language* 89: 499–502.
- MacSwan, Jeff (2000). The Threshold Hypothesis, semilingualism, and other contributions to a deficit view of linguistic minorities. *Hispanic Journal of Behavioral Sciences* 22: 3–45.

- MacSwan, Jeff, Kellie Rolstad & Gene V. Glass (2002). Do some school-age children have no language? Some problems of construct validity on the pre-LAS Español. *Bilingual Research Journal* 26: 395–419.
- Mattingly, Doreen J., Radmila Prislin, Thomas L. McKenzie, James L. Rodriguez & Brenda Kayzar (2002). Evaluating evaluations: The case of parent involvement programs. *Review of Educational Research* 72: 549–576.
- McGoldrick, Monica (1993). Ethnicity, cultural diversity and normality. In Froma Walsh (ed.), *Normal family processes*, 331–360. New York: The Guilford Press.
- Metsala, Jamie L. & Amanda C. Walley (1998). Spoken vocabulary growth and the segmental restructuring of lexical representations: Precursors to phonemic awareness and early reading ability. In Jamie L. Metsala & Linnea C. Ehri (eds.), *Word recognition in beginning literacy*, 89–120. New Jersey: Erlbaum.
- Ministry of Education Israel (2008). Retrieved on September 23, 2008, from: <http://cms.education.gov.il/Education/CMS/Units/preschool>.
- Muter, Valerie & Kay Diethelm (2001). The contribution of phonological skills and letter knowledge to early reading development in a multilingual population. *Language Learning* 51(2): 187–219.
- Nation, Kate & Margaret J. Snowling (2004). Beyond phonological skills: Broader language skills contribute to the development of reading. *Journal of Research in Reading* 27: 342–356.
- National Early Literacy Panel (NELP) (2008). *Developing early literacy: Report of the National Early Literacy Panel*. Washington, DC: National Institute for Literacy.
- [National Reading Panel] Eunice Kennedy Shriver National Institute of Child Health and Human Development (2000). *Report of the National Reading Panel: Teaching children to read*. Washington, DC: U.U. Government Printing Office.
- Neuman, Susan B. & Donna Celano (2001). Access to print in low-income and middle-income communities: An ecological study for four neighborhoods. *Reading Research Quarterly* 36: 8–26.
- Nunes, Terezinha (1993). Psychology in Latin America: The case of Brazil. *Psychology and Developing Societies* 5: 171–184.
- Offer, Shira (2004). The socio-economic integration of the Ethiopian community in Israel. *International Migration* 42: 29–55.
- Ong, Walter J. (1982). *Orality and literacy: The technologizing of the word*. London: Methuen.
- Organization for Economic Co-Operation and Development (OECD) (2006). *Where immigrant students succeed — A comparative review of performance and engagement in PISA 2003*. Retrieved May 15, 2006, from: www.oecd.org/dataoecd/2/38/36664934.pdf.
- Pray, Lisa (2005). How well do commonly used language instruments measure English oral-language proficiency? *Bilingual Research Journal* 29: 387–409.
- Purcell-Gates, Victoria (1998). Growing successful readers: Homes, communities and schools. In Jean Osborn & Fran Lehr (eds.), *Literacy for all: Issues in teaching and learning*, 51–72. New York: Guilford Press.
- Raven, John, John C. Raven & J. H. Court (1998). *Raven manual, Section 1, General overview, 1998 edition*. Oxford, UK: Oxford Psychologists Press.
- Ravid, Dorit (2005). Hebrew orthography and literacy. In R. Malatesha Joshi & P. G. Aaron (eds.), *Handbook of orthography and literacy*, 339–364. New York: Routledge.
- Ravid, Dorit & Sarit Haimowits (2006). The vowel path: Learning about vowel representation in written Hebrew. *Written Language and Literacy* 9(1), 67–93.

- Raz, Ita S. & Peter E. Bryant (1990). Social background, phonemic awareness and children's reading. *British Journal of Developmental Psychology* 8: 209–225.
- Roberts, Joanne, Julia Jurgens & Margaret Burchinal (2005). The role of home literacy practices in preschool children's language and emergent literacy skills. *Journal of Speech, Language, and Hearing Research* 48: 345–359.
- Rueschenberg, Erich J. & Raymond Buriel (1995). Mexican American family functioning and acculturation: A family systems perspective. In Amado M. Padilla (ed.), *Hispanic psychology: Critical issues in theory and research*, 15–25. Thousand Oaks, CA: Sage.
- Saraf, Einat (2000). *The contribution of print exposure to early development of reading and writing*. Unpublished master's thesis, Faculty of Education, Tel-Aviv University.
- Scarborough, Hollis S. (1998). Early identification of children at risk for reading disabilities: Phonological awareness and some other promising predictors. In Bruce K. Shapiro, Pasquale J. Accardo & Arnold J. Capute (eds.), *Specific reading disability: A view of the spectrum*, 75–119. Timonium, MD: York Press.
- Scarborough, Hollis S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In Susan B. Neuman & David K. Dickinson (eds.), *Handbook for research in early literacy*. New York: Guilford Press.
- Scarborough, Hollis, Anne Charity & Darion Griffin (2003). Linguistic challenges for young readers. Paper presented at the *Annual meeting of the Society for the Scientific Study of Reading*, Boulder, CO.
- Scarborough, Hollis S. & Wanda Dobrich (1994). On the efficacy of reading to preschoolers. *Developmental Review* 14: 245–302.
- Schleifer, Michal (2007). Aspects in absorption in Israel as a multicultural society. *Haulpan Hchadash* 92: 61–71. [Hebrew].
- Schwartz, Mila, David L. Share & Mark Leikin (2009). General and specific benefits of bi-literate bilingualism: A Russian-Hebrew study of beginning literacy. *Reading and Writing* [10.1007/s11145-009-9210-x](https://doi.org/10.1007/s11145-009-9210-x) (online).
- Segal, Bluma (2006). *Literacy indices in Ethiopian families in Israel and their contribution to the literacy development of their children*. Unpublished master's thesis, Faculty of Education, University of Haifa, Israel.
- Sénéchal, Monique & Jo-Anne LeFevre (2001). Storybook reading and parent teaching: Links to language and literacy development. *New Directions for Child and Adolescent Development* 92: 39–52.
- Sénéchal, Monique & Jo-Anne LeFevre (2002). Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child Development* 73: 445–460.
- Sénéchal, Monique, Jo-Anne LeFevre, Brenda L. Smith-Chant & Karen V. Colton (2002). On refining theoretical models of emergent literacy: The role of empirical evidence. *Journal of School Psychology* 39: 439–460.
- Shany, Michal (2000). Test of the assessment of early reading, spelling and related cognitive/linguistic aspects. Unpublished manuscript.
- Shany, Michal & Esther Geva (in press). Cognitive, language, and literacy development in socio-culturally vulnerable school children: The case of Ethiopian Israeli children. In Mark Leikin, Yishai Tobin & Mila Shvartz (eds.), *Israel as a natural laboratory of multilingualism*.
- Shany, Michal, Dorith Lachman, Zila Shalem, Amira Bahat & Tali Zeiger (2006). '*Aleph — Taph*' — *An assessment system for reading and writing disabilities*. Tel Aviv: Yesod Publishing. [Hebrew].

- Share, David L. (2005). Knowing letter names and learning letter sounds: A causal connection. *Journal of Experimental Psychology* 88(3): 213–233.
- Share, David L. & Peri Blum (2005). Syllable splitting in literate and pre-literate Hebrew speakers: Onsets and rimes or bodies and codas? *Journal of Experimental Child Psychology* 92(2): 182–202.
- Share, David L. & Talya Gur (1999). How reading begins: A study of preschoolers' print identification strategies. *Cognition and Instruction* 17: 177–213.
- Share, David L. & Iris Levin (1999). Learning to read and write in Hebrew. In Margaret Harris & Giyoo Hatano (eds.), *Learning to read and write: A cross-linguistic perspective*, 89–11. Cambridge: Cambridge University Press.
- Shatil, Evelyn (2002). *Shatil test for the assessment of at risk preschool children*. Haifa: Ach Publishing.
- Shatil, Evelyn & David L. Share (2003). Cognitive antecedents of early reading ability: A test of the modularity hypothesis. *Journal of experimental child psychology* 86: 1–31.
- Shenkut, Mammo Kebede (1991). Mobilizing for literacy: The Ethiopian experience. *L'Alphabetisation et la Formation des Adults* 5(3): 12–16. [Hebrew].
- Silven, Maarit & Evgenia Rubinov (2009). Language and preliteracy skills in bilinguals and monolinguals at preschool age: Effects of exposure to richly inflected speech from birth. *Reading and Writing* 10.1007/s11145-009-9206-6 (online).
- Skutnabb-Kangas, Tove (1978). Semilingualism and the education of migrant children as a means of reproducing the caste of assembly line workers. In Norbert Dittmar, Hartmut Haberland, Tove Skutnabb-Kangas & Ulf Teleman (eds.), *Papers from the First Scandinavian-German Symposium on the Language of Immigrant Workers and Their Children, Roskilde, March 19–23. 1978*, 221–252 (ROLIG-papir 12). Roskilde: Roskilde University Centre.
- Snow, Catherine E., Susan M. Burns & Peg Griffin (eds.) (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.
- Snow, Catherine E. & Patton O. Tabors (1993). Language skills that relate to literacy development. In Bernard Spodek & Olivia N. Saracho (eds.), *Language and literacy in early childhood education. (Yearbook in Early Childhood Education, 4)*. New York: Teachers College Press.
- Solberg, Shaul & Baruch Nevo (1979). Preliminary steps towards an Israeli standardization of the Peabody Test. *Megamoth* 3: 407–413. [Hebrew].
- Spolsky, Bernard (2001). Language in Israel: Policy, practice, and ideology. In James E. Alatis & Ai-Hui Tan (eds.), *Georgetown University round table on languages and linguistics 1999*, 164–174. Washington, DC: Georgetown University Press.
- Spolsky, Bernard & Elana Shohamy (1999). Languages of recent immigrants: Amharic and other Ethiopian languages. In Bernard Spolsky & Elana Shohamy (eds.), *The languages of Israel: Policy, ideology and practice*, 242–246. Clevedon, UK: Multilingual Matters Publishing.
- Stage, Scott A., Jodi Sheppard, Marcia M. Davidson & Mary M. Browning (2001). Prediction of first-graders' growth in oral reading fluency using kindergarten letter fluency. *Journal of School Psychology* 39(3): 225–237.
- Stanovich, Keith E. & Anne E. Cunningham (1992). Studying the consequences of literacy within a literacy society: The cognitive correlates of print exposure. *Memory & Cognition* 20(1): 51–68.
- Stravas, Anat & Elite Olshtain (2006). Literacy patterns in bilingual Ethiopian immigrant parents in Israel: A developmental perspective. Poster presentation at the *BAL conference*, Toronto, Canada.

- Strickland, Dorothy S. & Timothy Shanahan (2004). Laying the groundwork for literacy. *Educational Leadership* 61: 74–77.
- Stuart, Morag (1999). Getting ready for reading: Early phoneme awareness and phonics teaching improves reading and spelling in inner-city second language learners. *British Journal of Educational Psychology* 69(4): 587–605.
- Svirsky, Shlomo & Barbara Svirsky (2002). The Ethiopian Jews in Israel: Housing, employment and education. *Meida al Shivion* 11: 1–38. [Hebrew].
- Tabors, Patton O. & Catherine E. Snow (2001). Young bilingual children and early literacy development. In Susan B. Neuman & David K. Dickinson (eds.), *Handbook of early literacy*, 159–178. New York: Guilford Press.
- Tangel, Darlene M. & Benita A. Blachman (1992). Effect of phoneme awareness instruction on kindergarten children's invented spelling. *Journal of Reading Behavior* 24: 233–261.
- Tarone, Elaine & Martha Bigelow (2005). Impact of literacy on oral language processing: Implications for second language acquisition. *Annual Review of Applied Linguistics* 25: 77–97.
- Teale, William H. & Elizabeth Sulzby (1986). *Emergent literacy: Writing and reading*. Norwood, NJ: Ablex.
- Thakaria, Rita (2003). Review of multilingual literacies: Reading and writing different worlds: Studies in written language and literacy. *Child Language Teaching & Therapy* 19(3): 370–372.
- The Israeli Municipalities (1995). *Physical data*. Jerusalem, Israel: Author.
- Tolchinsky, Liliana & Ana Teberosky (1998). The development of word segmentation and writing in two scripts. *Cognitive Development* 13(1): 1–24.
- Treiman, Rebecca, Sarah Weatherston & Denise Berch (1994). The role of letter names in children's learning of phoneme-grapheme relations. *Applied Psycholinguistics* 15: 97–122.
- Van Steensel, Roel (2006). Relations between socio-cultural factors, the home literacy environment and children's literacy development in the first years of primary education. *Journal of Research in Reading* 29(4): 367–382.
- Vertsberger, Rachel & Dana Noyfeld (2003). *The Ethiopian community in Israel*. A report to the Knesset, Israel. Retrieved from: www.knesset.gov.il/MMM/data/docs/m00799.doc
- Wagner, Richard K. & Joseph K. Torgesen (1987). The nature of phonological processing and its causal role in the acquisition of reading skills. *Psychological Bulletin* 101: 192–212.
- Walley, Amanda C., Jamie L. Metsala & Victoria M. Garlock (2003). Spoken vocabulary growth: Its role in the development of phoneme awareness and early reading ability. *Reading and Writing* 16(1–2): 5–20.
- Wells, Gordon (1985). Preschool literacy related activities and success in school. In David R. Olson, Nancy Torrance & Angela Hildyard (eds.), *Literacy, language and learning*, 229–255. Cambridge: Cambridge University Press.
- Whitehurst, Grover J. & Christopher J. Lonigan (1998). Child development and emergent literacy. *Child Development* 69: 848–872.
- Willms, J. Douglas (2003). *Ten hypotheses about socioeconomic gradients and community differences in children's developmental outcomes*. Final Report, Applied Research Branch, Strategic Policy, Ottawa: Human Resources Development Canada.
- Yeung, W. Jean, Miriam R. Linver & Jeanne Brooks-Gunn (2002). How money matters for young children's development: Parental investment and family processes. *Child Development* 73(6): 1861–1879.