Linguistic Literacy and Later Language Development

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Abstract The chapter addresses the topic of developing literacy from the perspective of "later language development", focusing on linguistic literacy. Attitudes to written language as a key component of linguistic literacy are reviewed across different periods in history and from the perspective of different disciplines. Lexical, syntactic, and discursive features of text construction are then analyzed as relatively more or less impacted by whether the medium of expression is speech or writing. The data-base consists of 160 personal-experience narratives produced by the same participants in both speech and writing, half in Californian English, half in Israeli Hebrew, from four age/schooling levels (middle childhood, pre-adolescence, adolescence, and educated adults). The chapter concludes by considering what changes in developing linguistic literacy from grade-school to middle- and high-school as manifested in writing/speech distinctiveness. Modality-driven differences between the two means of expression are evident from the youngest age-group: Written texts show greater density in packaging of information, while their spoken counterparts are longer and include more repetitions, and disfluencies. That is, processing factors inherent in the output demands of each modality tend to apply irrespective of age. On the other hand, speech/writing distinctiveness manifests a somewhat U-shaped developmental curve: In 4th and 7th grade, written expression is still largely anchored in the more familiar medium of spoken language; later, from high-school on, increasing differentiation between writing and speech reflects the two modes of expression as distinct styles of discourse; at a third phase of knowledge integration, literate adults manifest bi-directional effects between the two modes of expression, such that their spoken language demonstrates the impact of familiarity with written discourse.

Keywords Linguistic literacy • Later language development • Text construction • Narrative texts • Spoken and written language • Hebrew • English

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This paper is dedicated in affection and admiration to Liliana Brenman Tolchinsky Landsmann, a woman of many parts who fulfils her multiple roles – as wife, sister, daughter, mother, grandmother, as scholar, mentor, teacher, and to the author of this chapter as a cherished friend and esteemed colleague – with a rare combination of integrity, dedication, and self-effacing humor. I selected the topic of this chapter in recognition of the impact that Liliana's thinking on writing – "a rather ambiguous term in English" (Tolchinsky 2003, p. xvii) – has had on the domain in general and on my own work specifically. I am indebted to her intellectual insights and her imaginative research methods in this as in a wide range of issues, among them her contrastive analysis of children's early perceptions of sounds and letters in Hebrew and Spanish (Tolchinsky and Teberovsky 1997, 1998); her ideas on untutored writing development in the path-breaking book of 2003 on "What children know about writing and numbers before being taught"; the notion of "linguistic literacy" in her 2002 paper with Dorit Ravid; and ongoing work at the University of Barcelona reviewing the relationship between low-level transcription skills and higher-level facets of text quality at early school-age.

The topic of developing linguistic literacy is addressed below from the perspective of "later language development" (Berman 2007; Tolchinsky 2004). The chapter starts by specifying what is meant by "literacy" in the present context (Sect. 1), followed by a brief review of attitudes to written language as a key component of linguistic literacy (Sect. 2), and delineation of various facets of text construction as relatively more or less impacted by whether the medium of expression is speech or writing (Sect. 3), and concludes by outlining features of the developmental route in distinguishing between speaking and writing from middle childhood to adolescence (Sect. 4).

1 Facets of Developing Literacy

The notion of "literacy development" in the present context concerns first and foremost *linguistic* literacy, defined as "gaining control over a larger and more flexible linguistic repertoire and simultaneously becoming more aware of one's own spoken and written language systems" (Ravid and Tolchinsky 2002, p. 420). The domain of concern here is both narrower than and yet also goes beyond the idea of "discursive literacy", which focuses on general pragmatic development anchored in interactive communication as a precursor to and subsequent support for autonomous monologic discourse (Blum-Kulka 2004; Ninio and Snow 1996; Pellegrini and Galda 1998). Importantly, both views emphasize the idea of linguistic *variation* in the sense of access to a range of different communicative settings from everyday conversation to academic writing (Biber 1988; Swales 1990). The particular varieties of language use considered below are confined to traditional notions of writing and speech as two major means of verbal expression, so disregarding electronic and other media, which impinge increasingly on language and communication in the modern world (see, for example, Kress 2002, 2010).

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Linguistic literacy in the sense at issue here involves the ability to use language in different discursive contexts and for varied functions by appropriate deployment of three inter-related facets of language use: genre, register, and stance. *Genre-distinctiveness* involves adapting linguistic expression to different communicative settings, including: interactive conversation compared with extended text, storytelling versus expository discussion, description compared with information or argumentation, poetry as distinct from prose (Berman and Nir 2010a; Paltridge 2002; Pappas and Pettigrew 1998; Steen 1999). Genre-dependent linguistic differentiation emerges well before reading and writing skills are consolidated. For example, preschool children use language differently in producing scripts compared with personal-experience narratives (Hudson and Shapiro 1991), they can even distinguish between different types of narratives (Allen et al. 1994; Hicks 1991), between prose narratives and nursery rhymes (Lee et al. 2001), between pretend-play and storytelling (Benson 1993), and fictional narrative compared with description (Sandbank 2002; Tolchinsky and Sandbank 1994). Moreover, findings from a large-scale crosslinguistic study in which grade-school, middle-school, and high-school students, native speakers of seven different languages, were asked to tell and write a story about interpersonal conflict and to discuss the issue in the form of a class talk and a written essay on the same socially relevant topic (Berman 2008; Berman and Verhoeven 2002) showed that by middle childhood, 9–10-year-old schoolchildren express themselves in very different ways when telling or writing a personal-experience narrative as against when expressing their thoughts and ideas on a given topic (Berman and Katzenberger 2004; Berman and Nir-Sagiv 2004; Ragnarsdóttir et al. 2002; Ravid et al. 2002; Reilly et al. 2002; Tolchinsky et al. 2002). Relevant distinctions manifested across a range of linguistic variables in different languages included: level and formality of vocabulary (Bar-Ilan and Berman 2007; Nir-Sagiv et al. 2008; Ravid and Berman 2009), Noun Phrase complexity (Mazur-Palandre 2009; Mazur-Palandre and Jisa 2012; Ravid and Berman 2010; Salas 2010), and use of Passive voice (Jisa et al. 2002; Tolchinsky and Rosado 2005). For example, in the domain of *temporality*, participants favored past tense and (where relevant) perfective aspect in narratives, versus timeless present and reference to future-projected contingencies in expository texts; in *nominal reference*, they relied on personal pronouns and concrete, imageable names for people and objects in narratives, as against generic or impersonal pronouns and more abstract, lexical noun phrases in the expository texts; and their narratives used mainly agentive type clauses with dynamic predicates in active voice, versus more passive or middle voice and impersonal, agent-demoting constructions with largely stative predicates in their expository texts. Moreover, by later school-age, around adolescence, speaker-writers show greater flexibility in no longer relying exclusively on genre-canonic forms of expression. For example, they include reflective, expository-type generalizations in their personal-experience accounts, and intersperse narrative, episodic illustrations in their expository texts (Berman and Katzenberger 2004; Berman and Nir 2007).[1]

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[1] Concern here is with between-genre distinctions, so disregarding for present purposes related notions of different text-internal rhetorical functions (Giora 1990; Paltridge 2002) or "modes of

A second, related facet of developing literacy involves *register modification*, in the sense of adapting level of language use along a continuum from intimate slang to everyday colloquial usage and on to formally elevated styles of expression (Biber 1995; Eggins and Martin 1997; Grimshaw 2003; Martin 1983). Findings from the crosslinguistic study on later language development noted above revealed marked differences in the level of language characterizing the four types of texts produced by participants in different languages – most markedly though not only in vocabulary (Bar-Ilan and Berman 2007; Ravid and Berman 2009; Strömqvist et al. 2002). Oral personal-experience narratives emerged as closest to everyday colloquial conversational usage, whereas written expository texts relied far more on formal, elevated usages in lexicon and grammar. Between these two extremes lay written narratives and oral expository texts: These were mixed in the sense that in some instances they were closer to the more everyday, colloquial end of the continuum and in others to the more formal, elevated extreme. These convergent findings suggest that the notion of linguistic register represents an intersection between discourse genre (narrative/expository) and medium of expression (oral/written) – the focus of the next section. Developmentally, these two interrelated facets of linguistic literacy – genre-distinctiveness as reflecting communicative function and register-modification as reflected in level of linguistic expression – impose different demands on speaker-writers. Sensitivity to genre, as noted, is an early developing ability, whereas register variation – a largely culture-bound, sociolinguistically determined aspect of language use – develops only later. Appropriate and flexible alternation of linguistic register in different communicative setting depends on prolonged, extensive experience with school-based literacy activities coupled with advanced social cognition such as consolidates only around adolescence. In fact, while second/foreign language learners carry over sensitivity to genre-distinctions from their native language, the ability to manipulate register variation appropriately to suit different communicative situations often constitutes a stumbling block for even highly proficient speaker-writers of a language other than the one in which they were immersed from an early age.

A third, interrelated requirement for achievement of linguistic literacy concerns the notion of *discourse stance* – the ability to adjust one's verbal expression to the needs of both interlocutor and text as taking a personalized, subjectively involved point of view compared with a more distanced and detached perspective (Berman et al. 2002; Chafe 1994; Du Bois 2007). In the cross-linguistic study on developing literacy, this factor was realized, inter alia, by typologically appropriate use of passive voice and impersonal constructions for expressing a more objectively detached stance on situations (Berman 2011a, Sect. 4; Jisa 2005; Jisa and Viguié 2005; Ragnarsdóttir and Strömqvist 2005; Tolchinsky and Rosado 2005). Even middle-school pre-adolescent students, let alone younger children, have difficulty abandoning a personalized, subjective perspective on events in favor of a more abstractly generalized, cognitively motivated outlook – an ability which, again, demands

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discourse" (Du Bois 1980; Smith 2003) such as argumentation, classification, definition, description, or evaluation.

considerable socio-cognitive sophistication (Berman and Slobin 1994; Jisa 2004; Jisa and Tolchinsky 2009; Reilly et al. 2005; Rosado et al. 2014).

These intertwined facets of proficient language use underscore the complex array of social-cognitive abilities involved in becoming a literate speaker-writer. "Literacy" here requires keen sensitivity to social norms and distinctions along with highly-developed cognitive flexibility – which in turn both feed into and are fed by command of an extensive repertoire of linguistic devices and experience with deploying them skillfully in different communicative circumstances.

2   Speech and Writing

Scholarly attitudes to spoken versus written language at different points in time reveal pendulum-like shifts, reflecting prevailing views of linguistics as a domain of research (Daniels 1996, 2002). In traditional philological studies in the past as today, concern is primarily with deciphering and exegesis of written texts, with classical languages considered the prime objects of scholarly investigation. With the onset of modern linguistics in the first half of the previous century, and a renewed interest in non-European languages, often lacking in writing systems, anthropologically oriented fieldwork turned to the spoken language as its primary object of research. In the wake of Chomskian-inspired formal linguistics in the second half of the twentieth century, focus shifted to the introspections of the individual scholar, with no explicit concern for the medium of expression, whether writing or speech, both of which were viewed as manifesting merely different types of language use or "performance" rather than abstract internalized linguistic knowledge or "competence". Recent decades have witnessed yet another shift in the pendulum. With the development of non-formalist orientations, such as functional linguistics and conversation analysis, scholars have shown a renewed interest in analysis of authentic speech, aided by contemporary technologies such as audio- and video-recordings and computerized documentation of both spoken and written language use. Common to these very different orientations is a relative lack of concern for the topic at issue here: the contrasts and/or interrelations between speech and writing.

There is, however, also a rich body of literature going back well into the last century that analyzes language use in the written compared with the spoken modality. Such research derived initially from mainly pedagogic concerns (e.g., Bushnell 1930; Lull 1929), being subsequently motivated by more directly linguistic approaches (e.g., DeVito 1967; Drieman 1962). Most relevant to the present study are comparisons of the two modalities undertaken in recent decades from different perspectives, including: Biber's (1988) corpus linguistics analyses of textual dimensions; notions of relative linguistic complexity (Chafe and Danielewicz 1987; Halliday 1989); communicatively oriented discourse studies (Chafe 1994; Tannen 1982); socio-psychologically driven concern with the conceptual impact of writing and reading on cultures and individuals (Olson 1994; Ong 1982; Tolchinsky 2003); and the nature of the cognitive processes and mental representations involved in

speaking and writing (Bourdin and Fayol 1994; Cleland and Pickering 2006); while advanced technologies have promoted research on online processes comparing spoken and written language output of school-age students (Maggio et al. 2012; Johansson 2009; Strömqvist et al. 2004).

Views on the relation between the two media of expression range from the simplistic idea that "writing mirrors speech" at one extreme to the traditional belief that "writing transcends speech" and that written language is more complex and elevated, and better suited to abstract thinking than speech. Psycholinguistic approaches to the topic, in contrast, take into account differences in *processing* of largely immediate online speech output compared with the more self-consciously monitored character of writing as an offline process. Cognitively motivated perspectives suggest that speech and writing represent distinct ways of looking at the world, two "modes of consciousness" as it were, so that "thinking for speaking" elicits not only different forms of linguistic expression but also reflects distinct thought processes than its counterpart "thinking for writing" (Slobin 1996, 2003, 2005). Other researchers highlight the difference in *function* of the two, suggesting that speech as a special instance of "cooperative activity" (Clark 1996) uniquely allows it to serve in the "co-construction of meaning" (Gee 2006; Goodwin 1992) and hence is a socially more primary form of human intercourse. While recognizing differences in both processing and function between these different means of linguistic expression, the view proposed here is that the two modes of verbalization are complexly intertwined in ways that have important consequences for the relationship between "orality and literacy" in general (Ong 1982; Tannen 1982) and for acquisition and development of literacy in particular.

3 Spoken and Written Usage in Narrative Text Construction

As background to tracing developmental trajectories in how students tell a story orally and in writing (Sect. 4 below), different facets of text construction can be regarded as relatively sensitive or immune to the impact of mode of production – speech or writing. This analysis derives from two related assumptions: first, that medium of expression will affect the *how* rather than the *what* of text production, with major differences expected in the form rather than content of spoken versus written discourse; second, that written language will be more marked as a special style of discourse in terms of *product* whereas spoken language will be more marked as a special style of communication in terms of *process*. These distinctions are manifested both procedurally and linguistically: For example, effects of rapid online processing of verbal production in speech will result in longer, more extensive outputs and recourse to use of non-referential material such as reiterations, false starts, self-repairs, and other disfluencies. In contrast, the relatively monitored nature of offline written language production will be reflected in use of more marked linguistic features such as greater density of lexical and syntactic constructions and less frequent, higher-register means of expression. As against such modality-anchored

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variations, the more substantive and/or structural aspects of discourse – including thematic content and global organization of texts, on the one hand, and realization of discourse functions such as reference and temporality, on the other – will be relatively less affected by the medium of expression.

To substantiate these ideas, a range of lexical, syntactic, and discursive features were analyzed in 160 personal-experience narratives elicited from the same participants in both speech and writing.[2] Half the texts were produced by native speakers of Californian English, the other half by speaker-writers of Israeli Hebrew, in the context of the crosslinguistic project mentioned earlier.[3] Twenty participants in each of four age groups (9–10-year-old 4th graders, 12–13-year-old 7th graders, 16–17-year-old high-school students, and university graduate adults in their 20s and 30s) were asked to tell and write a story about an incident in which they had been involved in a situation of interpersonal conflicted (defined as "problems between people") – following a short wordless, culturally neutral video on the topic. Presentations were balanced for order, with half the participants first telling and the other half first writing "the same story". Analysis was confined to the narrative texts, so neutralizing the factor of genre in order to focus on medium of expression rather than on type of discourse. Besides, it was assumed that for grade-school children particularly, the narrative genre would be more accessible and better-established than the more abstract, less familiar expository discourse genre (Berman 2009a, b; Berman and Nir 2007).

Findings are reviewed below for statistically significant trends documented elsewhere (Berman and Nir 2011), taking into account features of text construction that emerged as relatively "medium dependent", that is, as having higher frequency, hence more typical of material that is produced in either (a) speech or (b) writing respectively, compared with (c) properties of text that appear "cross-modally neutral" since they remain much the same in the spoken and the written versions of a given narrative. Three properties markedly characterized the spoken as against written materials: overall text length, amount of non-referential "ancillary" material, and strategies of clause combining. Overall *text length* – termed, variously, unit size, language productivity, or verbal output, and typically measured by number of words per text – has been shown to differentiate between age-schooling levels in different languages (Berman and Slobin 1994; Berman and Verhoeven 2002; Malvern et al. 2004), between normally-developing versus language-impaired students (Davidi and Berman 2014; Scott 2012), as well as between written versus spoken texts (Berman and Nir-Sagiv 2009a; Berman and Ravid 2009). The present analysis revealed that in both English and Hebrew, the spoken narrative texts are significantly longer than their written counterparts – irrespective of the order in which they

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[2] Dr. Bracha Nir was actively involved in developing all the relevant measures, as well as being responsible for statistical analyses, details of which are provided in a chapter written in Hebrew (Berman and Nir 2011). Graphs for each finding noted here can be supplied by the author on request.

[3] The English-language texts were elicited in San Diego, California, under the supervision of Judy S. Reilly, and Hebrew data-collection was conducted in Israel by the author and her associates.

were produced. This robust finding is supported by analyses of text length in both words and clauses, in larger populations, for narrative and expository texts, across languages and age-groups (Berman and Verhoeven 2002).

A second robust finding differentiating the spoken from written narratives in both English and Hebrew is the amount of what we termed *"ancillary material"* (Ravid and Berman 2006) – in the form of hesitation markers, false starts and repetitions, and other indicators of disfluency, and also discourse-marker qualifers (intensifying terms like *very, really, madly*, hedges like *just, kinda, like*) and segment-taggers (like *and then, so, and that's about it*). Clark (1996, p. 241) interprets such elements as indicating a second conversational "track", not the one concerned with carrying out "official business" but the one that "attempts to create a successful communication", in the form of repetitions, reformulations, false starts, repairs, filler morphemes (Clark and Wasow 1998), and other elements typically described as "disfluencies". In the present context, these contrast with informatively novel, substantive narrative content of three main kinds: "eventives" – specifying what happened, the content of the narrative plot, "descriptives" – alluding to factual situations and physical states of affairs that constitute the background circumstances surrounding events, and "interpretives" – providing the narrator's perspective on and attitude towards the events recounted (Berman 1997).

The sample texts in (1) and (2) (taken from the English language data-base for reader convenience) illustrate these differences from the story told and written by two boys in 4th and 7th grade respectively, the first writing then telling the same story orally and the second in the reverse order. Items in italics represent various types of "ancillary" elements.

(1) 4th grade boy's story – written before spoken [eG16]
(a) ORAL: *Well um* my sister had a friend over and it was a boy and *um* they were playing with the computer and we just got it and it was *really* expensive and *they were playing on the computer* and *we just got it* and my sister kept telling him *over and over* again and then I started telling him and he wouldn't get off so I started pulling him and he held onto the mouse and I had to grab *the mouse* out of his hands and he fell, but then he told my mom I threw him on the ground, but I didn't so I *just* felt *kind of* bad *but* I *still* didn't throw him on the ground.
[120 words]
(b) WRITTEN: Once I had a problem with a boy named Dylan. It was my sister's turn with the computer and he would not let go of the mouse. We'd just got the computer it was very valuable but he still never let go. I asked bim a lot of times *to let go* so I had to pull him and he would not *let go*. Finally I got him off, he fell and tripped and he told my mom I threw him on the ground but I did not so I felt *very* bad. [93 words]

Both in length and amount of non-novel material (repetitions, reiterations) and non-referential elements (hesitations and other disfluencies and discourse markers like *very, over and over* or *just, kind of*), overall online processing constraints show a clearly greater effect in the oral than the written version of the story, even though the child could have relied on the more fluently compact text he had produced just several minutes earlier in reporting the same events.

These differences are even more marked in (2), from an older, middle-school student.

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(2) 7th grade boy's story – spoken before written [eJ05]

(a) ORAL: *Well*, it's not my brother, but *one guy* one time this kid named Phil, we were *like just* getting in fights about arguments *and stuff*, and *his like* his parents were weird *and stuff. So* so then we doorbell-ditched him one day. And *likehe like* had *like* his grandparents over *or something*. And theygot *really* mad. *So so then* we had to run around the street. And then his parents found out and *then* they called our parents, and we had to go up and apologize to them. And the grandparents that we didn't even know *we had to go apologize to them. That's how it ended.* [109 words]

(b) WRITTEN: A kid named Phil and I used to get in a lot of fights and arguments. One day my friends and I doorbell-ditched his house while his grandparents were home. His parents found out and called our parents. Then our parents made us go up and apologize to the grandparents. [51 words]

The more marked differences between the two versions in (2) compared with (1) can be attributed not only to order of production, where the oral text in (1) had a previous written version for reference, but also to age-schooling level, since by and large the written versions are more clearly distinct from their spoken counterparts among middle-school students than among younger, 4th-grade students. Besides, analysis of a similar data-base of English and Hebrew-language narratives (Ravid and Berman 2006) found that two types of "ancillary" elements – intensifying and hedging "qualifiers" – occurred with significantly higher frequency in the oral texts of the middle-school 7th graders than in the other three age-schooling groups in the population (4th grade, 11th grade, and adults).

A third significant feature of the oral compared with the written narratives emerged in the domain of syntactic packaging (Berman and Slobin 1994) or clause-combining. Earlier analyses showed that more clauses were combined together in a single "clause-package" in the English than in the Hebrew texts (Berman and Nir 2009b). Yet in both languages alike, the oral narratives packaged together on average significantly more clauses in a single syntactic unit of discourse than the written. This appears to run counter to the commonsense idea that written language is more "complex" than spoken, although it accords well with Halliday's (1989) insights as to the non-straightforward nature of what in fact constitutes "complexity" in language use. One reason for the finding that clause-packages were typically longer in oral than in written narratives is that the clause-combining strategies, in the sense of the *type* of clauses that were packaged together, differed as a function of mode of production: Spoken texts turned out to use three types of clauses significantly more than their written counterparts: (i) *direct speech* in favor of syntactically marked complements in reported or indirect speech, (ii) thematically related though syntactically unmarked *juxtaposed* clauses, and (iii) *parenthical* comments as asides that interrupt the sequential flow of events. These are illustrated in the adult texts in (3a) and (3b) respectively where, again, ancillary elements are indicated in italics.

(3a) Woman's Spoken Narrative – following her written text [eS06fnsb]*

CP1 *okay um* recently *<and* I believe [MC-PAR] *<it* was a couple days ago [CMP-PAR]> a friend and I *<who's* also a teaching assistant at school [RC-PAR]> *<we* share an office [MC-PAR]> and... we had *a little bit of* an argument about thumb tacks [MC]

CP2 I threw... *okay* let me think of the story [PAR] ... I asked her [MC] to put the thumb-tacks in her drawer [CMP] although I must have said it in a not *so* desirable tone [ADV] and she shot back with [CO] "Don't tell me [DIR] what to do [DIR]!"

CP3 *so* # we um # hmmm god what was it <u>we had</u> *a little bit of* <u>an argument about that</u> [MC-REP] and we... # something horrible [MCJ-GAP] <what did I say? [PAR] *okay so* <u>we had</u> *a little bit of* <u>an argument about that</u> [MC-REP] I didn't like the way [MCJ] she said that to me [NCMP]

CP4 *and* # we are *pretty* good friends [MC] so I wanted to work it out *right* then and there [ADV] and she didn't want to talk about it [CO]

CP5 *so um* # on the way home from school <cuz we car+pool [ADV-PAR]> we talked about it [MC] I *sort of* forced the situation [MCJ] she really didn't want to [MCJ] which created more tension [RC] than we had before *and* # [ADV] ...

(3b)<u>Text Written by Same Woman, produced before the oral</u> [eS06fnsb]

CP1 *Just* recently a fellow teaching assistant and I had an argument about something as meaningless as thumbtacks in the office [MC] we share at school [RC]

CP2 I had told her [MC] to put some supplies <including thumbtacks [R]> in her drawer [CMP] where the other supplies were [RC]. She shot back with [MCJ] "Don't tell me [DIR] what to do [DIR]".

CP3 *Of course* I realize now [MC-PAR] that I had been insensitive [CMP] though at the time was not attempting to be a dictator [ADV].

CP4 *Anyway* being that she is one of my closest friends [ADV] I wanted to work out the problem [MC] which turned out to be an issue about something [RC] that had happened previously [RC].

CP5 She was not interested [MC] in talking about it [CMP] though I was demanding [ADV] that we did [CMP] which created further tension [RC].

* <u>Note</u>: CP=Clause Package
  MC=Main Clause
  PAR=Parenthetical Clause
  RC=Relative Clause
  GAP=Gapped Clause
  MCJ=Juxtaposed Main Clause

<...>=Embedded Clause
CMP=Complement Clause
CO=Coordinate Clause
DIR=Direct Speech Clause;
ADV=Adverbial Clause

These two texts produced by a university graduate manifest the trends noted earlier as typifying oral narratives compared with their written counterparts: The oral version is longer than the written, and contains far more ancillary elements in the form of reiterations, communicatively motivated discourse markers, as well as false starts and other disfluencies. Moreover, it demonstrates a further significant difference between the oral and written texts: Not only are more clauses packaged together in a single unit of narrative syntax, the spoken narrative in (3a) also relies far more on strategies of inter-clausal connectivity that are almost totally lacking in the written texts: *Direct Speech* instead of *that*-marked or non-finite Complement Clauses – as a mimetic device mirroring interactive conversational usage rather than more distanced and monitored written means of conveying information; *Juxtaposed* clauses where the thematic relation between two main clauses is discursively infer-able on semantic/pragmatic grounds rather than explicitly marked by lexico-syntactic means specifying inter-clausal connectivity; and *Parenthetical* asides that have the effect of creating an intimate, less distanced discourse stance, in which the speaker appears to be directly addressing the interlocutor by personalized com-ments on the events that are being described.

The sample texts in (1) through (3) – from two boys in grade- and middle-school (pre-adolescent) and a university graduate adult – illustrate, as noted, statistically significant distinctions between the spoken versions in (a) and their written counterparts in (b), largely irrespective of the order in which they were produced vis-à-vis one another. They demonstrate the effect of online output of verbal material such that oral expression, even in production of extended, ostensibly monologic texts, tends to be highly interactive and personalized in nature.[4] The greater overall verbal output – due in part to reiterations, false-starts and other indicators of processing disfluencies, and heavy reliance on communicatively rather than referentially oriented discourse markers – combine with the interactive strategies for non-explicit marking of inter-clausal relations to create a mode of expression that is essentially *diffuse* and spread out in time.

These features of the oral narratives contrast markedly with their written counterparts, showing writing to be stylistically more marked and far denser than spoken language, and underscoring the claim that "written language represents a special style of discourse" (Ravid and Tolchinsky 2002) rather than a straightforward one-to-one reflection of speech. Characterizations of written language as representing increased *density* of expression (e.g., Biber 1988; Halliday 1989) are supported by findings noted earlier (in Sect. 1 above) for parallel texts produced by speaker-writers of different languages in the cross-linguistic literacy project – elicited from the same participant in the same genre and on the same topic in both speech and writing. Relevant analyses revealed, for example, significant differences in lexical usage along several dimensions: *word length* – written texts made use of more polysyllabic words, of three syllables or more – typically indicative of words of lower frequency, hence also of a higher, more elevated register of usage (Nir et al. 2008); *open class items* – relatively greater reliance on nouns, verbs, and adjectives – as items that carry the bulk of the semantic information of a message (Strömqvist et al. 2002); *higher-register*, more elevated, less everyday and often thus also less common vocabulary was far commoner in written than in oral narratives (Bar-Ilan and Berman 2007; Berman and Nir-Sagiv 2010b; Ravid and Berman 2009). Syntactically, *noun phrase constructions* were longer and syntactically more complex in texts produced in writing than their oral counterparts (Mazur-Palandre and Jisa 2012; Salas 2010; Ravid and Berman 2010). Both in lexicon and syntax, the more monitored and carefully considered medium of writing appears to enhance tighter, more economical packaging of information within a text than does speaking – a trend that finds expression not only but most dramatically in the shorter texts produced in writing than in speech. These varied criteria of language use represent written language as "a special style of discourse", one favoring more academic, book-like language and a higher, more literate lexicon than its spoken counterparts.

Comparisons of the two modes of verbalization also yielded largely *shared trends* and statistically non-significant differences along several dimensions. Prior studies in the framework of the larger cross-linguistic project that formed the

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[4] This trend is no doubt intensified by the particular sub-genre of narrative, a personal-experience account of a situation in which the narrators themselves were directly involved, but the subjective discourse stance provoked by this communicative context applies similarly in the written medium.

background to the present study indicate that there are few if any modality-driven differences in *genre-typical* forms of linguistic expression. For example, as noted in Sect. 1 above, in the domain of temporality, both written and spoken narratives are predominantly in past tense and, where relevant, perfective aspect, in contrast to the atemporal and irrealis forms favored for expository discourse; while in reference, these personal-experience narratives rely more on personal and deictic (rather than generic or impersonal) pronouns and they are less lexically heavy than other types of discourse, again in writing and speech alike.

Two additional dimensions that appear relatively insensitive to medium of expression concern the content or substance of narrative discourse rather than linguistic means of expression. First, *units of narrative information* emerged as having very similar distributions across both written and spoken texts, in the following sense: In both media, across the English and Hebrew corpora, around one-third to 40 % of the clauses were "eventive", describing the events and activities that constituted the narrative plot episodes; half were "descriptive", conveying factual information or relating to physical states of affairs concerning when, where, and under what circumstances events took place; and the remaining 10–15 % clauses took the form of "interpretive" elements, representing the narrators' perspective on the events recounted and/or the attitudes and motivations they attribute to the participants in the events. Relatedly, in *global organization of text structure*, mode of expression did not appear to affect the relative structural well-formedness of the texts analyzed. Thus, in terms of an overall narrative "action structure" with initial background setting, followed by episodic events, and a concluding resolution or coda, an internalized representation of a narrative schema was realized similarly in both speech and writing from as young as 4th grade up. Further, analysis of overall text quality in the two languages, defined for narratives as the integration of local, bottom-up core events and a global, top-down narrative schema (Karmiloff-Smith 1992) showed little if any effect of whether the text was constructed in speech or writing.

These similarities are underscored by the fact that the texts in both speech and writing were elicited not only in the same sub-genre of narrative, but also on the exact same topic. Nonetheless, the written texts analyzed for present purposes contrast with their oral counterparts in at least three interlocking ways: They use more academic, book-like language, and a lower-frequency, more literate lexicon; they manifest more condensed packaging of informational content, reflected by shorter overall output, greater reliance on heavy NPs, and more syntactically dependent means of clause linkage; and they present a more detached and distanced discourse stance, generally avoiding subjective, interlocutor-oriented commentary. Taken together, these trends clearly support the characterization of "written language as a special discourse style" (Ravid and Tolchinsky 2002). In contrast, the texts produced in speech more directly reflect the impact of processing constraints dictated by the pressures of rapid online production of speech output without the possibility of monitoring, re-reading, and rewriting. This results in widespread use of "ancillary material" such as hesitations, false starts, and repetitions, supplemented by interactively motivated communicative strategies of

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"para-syntactic" and "para-semantic" clause-combining. In sum, both as a cause and a result of processing constraints, spoken texts are more interactive and more communicatively oriented than their written counterparts. And this is true even when they are monologic like those in our analysis, hence lacking in turn-taking as the hallmark of conversational interaction.

4 Developmental Trends

The developmental trajectories proposed below for the interrelations between text production in writing compared with speech derive from the analyses outlined above, combined with findings from related studies conducted in the framework of the cross-linguistic project on developing literacy noted in Sect. 2. All alike concern texts constructed in both speech and writing by the same participant, in the same genre, and on the shared topic of interpersonal conflict, focusing on later language development, from middle childhood (age 9–10 years) across early and later adolescence (12–13 and 16–17 years of age respectively) compared with university graduate adults, native speakers of different languages. The question addressed here is: What changes in developing linguistic literacy from grade-school to middle- and high-school as manifested in writing/speech distinctiveness?

A key finding is that "modality-driven differences" are evident from the youngest age-schooling level involved: Across the population, texts produced in writing show greater density in packaging of information, while their spoken counterparts are longer and include more ancillary elements, repetitions, and disfluencies. That is, *processing factors* inherent in the output demands of each modality tend to apply irrespective of age. This is certainly the case for the youngest participants who, as 4th-grade students, are already beyond the stage of "emergent literacy", having had extensive experience with the transcription demands of handwriting, spelling, and punctuation. On the other hand, while by 4th grade, writing "as a notational system" (Ravid and Tolchinsky 2002) is largely automatized, it is not as yet completely mastered – as shown by the numerous spelling errors in 4th-graders' texts, which also typically contained little in the way of normative or conventional punctuation. In this respect, as in others noted below, middle-school 7th-grade students emerge as "en route" to fully proficient literacy – as evidenced by the fact that their written texts tend to include far more crossings-out and self-corrections than those of the high-school 11th graders. Moreover, while the key factor of *text size* distinguished significantly between the shorter, more concise output of written texts compared with their longer, more diffuse spoken counterparts across age-groups and languages, the disparity in overall verbal productivity between the two modes of expression was most marked among the 4th-grade students – evidence of their being less experienced and less skilled in expressing themselves in writing than in speech.

Another development beyond 4th grade that can be attributed to the impact of processing factors is the amount of *ancillary material* (repetitions, non-referential discourse markers, false starts, hesitations, and other disfluencies) characterizing

the spoken texts. The overall amount of such material decreases significantly with age, reflecting a key facet of developing linguistic literacy, namely, that with age, most noticeably from high school on, texts produced in speech are typically more fluent and more coherent than those of younger students. They contain fewer features indicative of difficulty in rapid and efficient processing of verbal output, clear evidence of the impact of general cognitive development and improved online executive abilities on developing literacy by high-school.

With age, collateral, ancillary elements of text production not only decrease in quantity, they also change in *quality*. For example, around adolescence, between 12 and 16 years of age, participants' oral texts are liberally sprinkled with hedging discourse markers such as *like, sort of, kind of* while younger 4th graders rely far more on unconventional "segment-taggers" to begin and end units of text, like *well, okay* or *that's all, that's it*. In contrast, older speakers use less interactively motivated, more text-based means of marking off texts segments by such expression as *meanwhile, finally* in narratives or *for example, as a result* in expository texts. And even the specific discourse markers preferred by high-schoolers and adults differed from those used by the younger children. For example, in English, older participants tended to use the term *basically* where younger students preferred *really*.

Features of spoken language change not only in form but also in *function* from childhood across adolescence. For example, in the two younger age-groups, reiterations of informative content that has already been mentioned earlier are a sign of disfluency, whereas older narrators use reiteration as a rhetorical device for dramatizing or highlighting subjectively important information. An analogous, communicatively interlocutor-oriented functional shift applies to juvenile use of direct speech by younger children compared with the deliberately rhetorical effects it represents among high school and university level students.

Age-schooling based distinctions between written and spoken texts are even more marked in dimensions of discourse relating to the *product* rather than the process of verbalization in the two modalities. On the one hand, the differences noted earlier for reliance on more condensed syntactic packaging and greater density as well as more elevated, lexical usage in texts produced in writing compared with speech are evident across the age-groups considered here. Yet in each case, the distinctions become more marked as a function of age-schooling level, most particularly from high school on. Three other features of text-construction emerge from a range of studies in the cross-linguistic project as showing increased sensitivity to written language as a special discourse style. One is increased reliance from adolescence up – particularly in the non-narrative, expository texts – on individual use of epistemic modals relating to possible or probable future contingencies compared with the younger children's preference for more socially conditioned "deontic" types of modal expressions referring to prohibitions or prescriptions. A second finding is that the written narratives of older participants include relatively far more "interpretive" elements in the form of commentary reflecting the narrators' subjective attitude towards and perspective on the events recounted and the protagonists participating in them. Third, texts written in both genres reflect the general development with age from monoticity to variation, or from "dichotomy to divergence",

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such that, with age, narratives produced in writing contain more abstract, atemporal generalizations, while the expository texts of high schoolers and adults may include narrative-like episodic illustrations.

In conclusion, the *overall developmental trajectory* of text construction abilities in speech and writing reflects the following trends in later language development. On the one hand, enhanced depth and originality of thematic content as well as general discourse abilities in global structure and organization of texts emerge as a function of age-schooling in *both* modes of expression – due to added experience with diverse varieties of language use combined with social-cognitive development and greater world knowledge. On the other hand, speech/writing distinctiveness appears to manifest a U-shaped developmental curve, as follows. In the earlier stages of later language development, from 4th across 7th grade, written expression is still largely anchored in the more familiar medium of spoken language. Subsequently, increasing differentiation is manifested between the two modes of expression, reflecting writing and speech as distinct styles of discourse – a development that is most marked in this as in other domains of linguistic knowledge and language use from high-school adolescence on (Berman 2008, 2011b). As a third phase of knowledge integration or re-representation (Karmiloff-Smith 1992), research suggests that well-educated literate adults manifest bi-directional effects between the two modes of expression, such that their spoken language demonstrates the impact of their familiarity with written discourse (Jisa 2004; Johansson 2009; Olson 2006; Strömqvist 2006). This bi-directionality has been shown to apply in the formal usage of educated adults (as in lectures, talks, and other public settings), but it is also evident in the impact of spoken language in contemporary usage in written media such as texting and email. These developments, like other aspects of the lengthy and complex route to linguistic literacy, can be attributed to the combined factors of an ever-growing repertoire of means of linguistic expression, enhanced cognitive abilities for the flexible deployment of these devices, and increased social awareness and sensitivity to usage appropriate to varied communicative settings.

References

Allen, M., Kertoy, M., Sherblom, J., & Pettit, J. (1994). Children's narrative productions: Comparing personal events and fictional stories. *Applied Psycholinguistics, 15,* 149–176.

Bar-Ilan, L., & Berman, R. A. (2007). Developing register differentiation: The Latinate-Germanic divide in English. *Linguistics, 45,* 1–36.

Benson, M. S. (1993). 4- and 5-year olds' narratives in pretend play and storytelling. *First Language, 13,* 203–224.

Berman, R. A. (1997). Narrative theory and narrative development: The Labovian impact. *Journal of Narrative and Life History, 7,* 235–244.

Berman, R. A. (2005). Introduction: Developing discourse stance in different text types and languages. *Journal of Pragmatics, 37*(2), 15–124.

Berman, R. A. (2007). Developing language knowledge and language use across adolescence. In E. Hoff & M. Shatz (Eds.), *Handbook of language development* (pp. 346–367). London: Blackwell.

Berman, R. A. (2008). The psycholinguistics of developing text construction. *Journal of Child Language, 35*, 735–771.

Berman, R. A. (2009a). Beyond the sentence: Language development in narrative contexts. In E. Bavin (Ed.), *Handbook of child language* (pp. 354–375). New York: Cambridge University Press.

Berman, R. A. (2009b). Linguistic, cognitive, and pragmatic issues in developing narrative abilities. In J. Guo, E. Lieven, S. Ervin-Tripp, N. Budwig, S. Özçalişkan, & K. Nakamura (Eds.), *Crosslinguistic approaches to the psychology of language: Research in the tradition of Dan I. Slobin* (pp. 119–126). New York: Taylor & Francis.

Berman, R. A. (2011a). Revisiting impersonal constructions in Hebrew: Corpus-based perspectives. In A. Malchov & A. Sierwieska (Eds.), *The typology of impersonal constructions* (pp. 323–355). Amsterdam: John Benjamins.

Berman, R. A. (2011b). Language and literacy in adolescence. In J. R. Levesque (Ed.), *Encyclopedia of adolescence* (pp. 1320–1332). Berlin: Springer.

Berman, R. A., & Katzenberger, I. (2004). Form and function in introducing narrative and expository texts: A developmental perspective. *Discourse Processes, 38*, 57–94.

Berman, R. A., & Nir, B. (2010a). The language of expository texts: Developmental perspectives. In M. Nippold & C. Scott (Eds.), *Expository discourse in children, adolescents, and adults: Development and disorders* (pp. 101–123). New York: Taylor & Francis.

Berman, R. A., & Nir, B. (2010b). The lexicon in speech-writing differentiation: Developmental perspectives. *Written Language & Literacy, 13*, 185–206.

Berman, R. A., & Nir-Sagiv, B. (2004). Linguistic indicators of inter-genre differentiation in later language development. *Journal of Child Language, 31*, 339–380.

Berman, R. A., & Nir-Sagiv, B. (2007). Comparing narrative and expository text construction across adolescence: A developmental paradox. *Discourse Processes, 43*, 79–120.

Berman, R. A., & Nir-Sagiv, B. (2009a). Cognitive and linguistic factors in evaluating expository text quality: Global versus local? In V. Evans & S. Pourcel (Eds.), *New directions in cognitive linguistics* (pp. 421–440). Amsterdam: John Benjamins.

Berman, R. A., & Nir-Sagiv, B. (2009b). Clause-packaging in narratives: A crosslinguistic developmental study. In J. Guo, E. Lieven, S. Ervin-Tripp, N. Budwig, S. Özçalişkan, & K. Nakamura (Eds.), *Crosslinguistic approaches to the psychology of language: Research in the tradition of Dan I. Slobin* (pp. 149–182). New York: Taylor & Francis.

Berman, R. A., & Nir-Sagiv, B. (2011). Spoken and written language across the school years. In D. Aram & O. Korat (Eds.), *Literacy and language: Interactions, bilingualism and difficulties; Festschrift in Honor of Iris Levin* (Vol. I, pp. 211–229). Jerusalem: Magnes Press [in Hebrew].

Berman, R. A., & Ravid, D. (2009). Becoming a literate language user: Oral and written text construction across adolescence. In D. R. Olson & N. Torrance (Eds.), *Cambridge handbook of literacy* (pp. 92–111). Cambridge: Cambridge University Press.

Berman, R. A., & Slobin, D. (1994). *Relating events in narrative: A crosslinguistic developmental study*. Hillsdale: Lawrence Erlbaum Associates.

Berman, R. A., & Verhoeven, L. (2002). Developing text production abilities in speech and writing: Aims and methodology. *Written Languages and Literacy, 5*, 1–44.

Berman, R. A., Ragnarsdóttir, H., & Strömqvist, S. (2002). Discourse stance: Written and spoken language across development. *Written Language & Literacy, 5*(2), 255–290.

Biber, D. (1988). *Variation across spoken and written English*. New York: Cambridge University Press.

Biber, D. (1995). *Dimensions of register variation: A crosslinguistic comparison*. New York: Cambridge University Press.

Blum-Kulka, S. (2004). The role of peer interaction in later pragmatic development: The case of speech representation. In R. A. Berman (Ed.), *Language development across childhood and adolescence* (pp. 191–210). Amsterdam: John Benjamins.

Bourdin, B., & Fayol, M. (1994). Is written language production more difficult than oral language production? A working memory approach. *International Journal of Psychology, 29*, 591–620.

Linguistic Litera

Bushnell, P. P. (
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Bushnell, P. P. (1930). *An analytic contrast of oral with written language* (Vol. 451, pp. 87–95). New York: Bureau of Publications: Teachers College Contributions to Education.

Chafe, W. L. (1994). *Discourse, consciousness, and time: The flow of language in speech and writing*. Chicago: Chicago University Press.

Chafe, W. L., & Danielewicz, J. (1987). Properties of spoken and written language. In R. Horowitz & S. J. Samuels (Eds.), *Comprehending oral and written language* (pp. 83–112). New York: Academic.

Clark, H. H. (1996). *Using language*. Cambridge: Cambridge University Press.

Clark, H. H., & Wasow, T. (1998). Repeating words in spontaneous speech. *Cognitive Psychology, 37*, 201–242.

Cleland, A. A., & Pickering, M. J. (2006). Do writing and speaking employ the same syntactic representations? *Journal of Memory and Language, 54*, 185–198.

Daniels, P. T. (1996). Introduction: The study of writing systems. In P. T. Daniels & W. Bright (Eds.), *The world's writing systems* (pp. 1–18). New York: Oxford University Press.

Daniels, P. T. (2002). The study of writing in the twentieth century: Semitic studies interacting with non-Semitic. In S. Izre'el (Ed.), *Israel oriental studies 20: Semitic linguistics: The state of the art at the turn of the twenty-first century* (pp. 85–111). Winona Lake: Eisenbrauns.

Davidi, O., & Berman, R. A. (2014). Writing abilities of pre-adolescents with and without language/learning impairment in restructuring an informative text. In B. Arfé, J. Dockrell, & V. Berninger (Eds.), *Writing development in children with hearing loss, dyslexia, or oral language problems* (pp. 143–157). Oxford: Oxford University Press.

DeVito, J. A. (1967). Levels of abstraction in spoken and written language. *Journal of Communication, 17*, 354–361.

Drieman, G. H. (1962). Differences between written and spoken language. *Acta Psychologica, 20*, 36–58.

Du Bois, J. W. (1980). Beyond definiteness: The trace of identity in discourse. In W. Chafe (Ed.), *The pear stories: Cognitive, cultural, and linguistic aspects of narrative production* (pp. 74–203). Norwood: Alex.

Du Bois, J. W. (2007). The stance triangle. In R. Englebretson (Ed.), *Stancetaking in discourse: Subjectivity, evaluation, interaction* (pp. 39–182). Amsterdam: Benjamins.

Eggins, S., & Martin, J. R. (1997). Genres and registers of discourse. In T. A. van Dijk (Ed.), *Discourse as structure and process* (pp. 230–256). London: Sage.

Gee, J. (2006). Oral discourse in a world of literacy. *Research in the Teaching of English, 41*, 153–159.

Giora, R. (1990). On the so-called evaluative material in informative text. *Text, 4*, 299–319.

Goodwin, C. (1992). Rethinking context: An introduction. In C. Goodwin & A. Duranti (Eds.), *Rethinking context: Language as an interactive phenomenon* (pp. 1–42). Cambridge: Cambridge University Press.

Grimshaw, A. D. (2003). Genres, registers, and contexts of discourse. In A. C. Graesser, M. A. Gernsbacher, & S. R. Goldman (Eds.), *Handbook of discourse processes* (pp. 25–82). Mahwah: Lawrence Erlbaum.

Halliday, M. A. K. (1989). *Spoken and written language*. Oxford: Oxford University Press.

Hicks, D. (1991). Kinds of narrative: Genre skills among first graders from two communities. In A. McCabe & C. Peterson (Eds.), *Developing narrative structure* (pp. 55–88). Hillsdale: Lawrence Erlbaum.

Hudson, J. A., & Shapiro, L. R. (1991). From knowing to telling: The development of children's scripts, stories, and personal narratives. In A. McCabe & C. Peterson (Eds.), *Developing narrative structure* (pp. 55–88). Hillsdale: Lawrence Erlbaum.

Jisa, H. (2004). Growing into academic French. In R. A. Berman (Ed.), *Language development across childhood and adolescence* (pp. 135–162). Amsterdam: John Benjamins.

Jisa, H. (2005). Developing alternatives for indicating discourse stance. In D. Ravid & H. Shyldkrot (Eds.), *Perspectives on language and language development: Essays in honor of Ruth A. Berman* (pp. 357–374). Dordrecht: Kluwer.

Jisa, H., & Tolchinsky, L. (2009). Developing a depersonalised discourse stance in typologically different languages: Written expository texts. *Written Language and Literacy, 12,* 1–25.

Jisa, H., & Viguié, A. (2005). A developmental perspective on the role of French 'on' in written and spoken expository texts. *Journal of Pragmatics, 32,* 125–142.

Jisa, H., Reilly, J., Verhoeven, L., Baruch, E., & Rosado, E. (2002). Passive voice constructions in written texts. *Written Language & Literacy, 5,* 163–182.

Johansson, V. (2009). *Developmental aspects of text production in writing and speech.* Lund: Travaux de l'Institut de Linguistique de Lund.

Karmiloff-Smith, K. (1992). *Beyond modularity.* Cambridge, MA: MIT Press.

Kress, G. (2002). *Literacy in the new media age.* London: Routledge.

Kress, G. (2010). *Multimodality: A social semiotic approach to contemporary communication.* London: Routledge.

Lee, E., Torrance, N. G., & Olson, D. (2001). Young children and the say/mean distinction: Verbatim and paraphrase recognition in narrative and nursery rhyme contexts. *Journal of Child Language, 28,* 531–543.

Lull, H. C. (1929). The speaking and writing abilities of intermediate grade pupils. *Journal of Educational Resources, 20,* 73–77.

Maggio, S., Lété, B., Chenu, F., Jisa, H., & Fayol, M. (2012). Tracking the mind during writing: Immediacy, delayed, and anticipatory effects on pause and writing rate. *Reading and Writing, 25,* 2131–2151.

Malvern, D. M., Chipere, N., Richards, B. J., & Durán, P. (2004). *Lexical diversity and language development.* London: Palgrave Macmillan Publishers.

Martin, J. R. (1983). The development of register. In J. Fine & R. O. Freedle (Eds.), *Developmental issues in discourse* (pp. 1–40). Norwood: Ablex.

Mazur-Palandre, A. (2009). *Le flux de l'information, aspects syntaxiques et discursifs. Une étude fonctionnaliste et développementale.* Unpublished doctoral dissertation, Université Lyon 2, Lyon.

Mazur-Palandre, A., & Jisa, H. (2012). La complexité lexicale des syntagmes nominaux: Une étude développementale. *Enfance, 4,* 359–371.

Ninio, A., & Snow, C. (1996). *Pragmatic development.* Boulder: Westview.

Nir, B., Bar-Ilan, L., & Berman, R. A. (2008). Vocabulary development across adolescence: Text-based analyses. In A. Stavans & I. Kupferberg (Eds.), *Studies in language and language education: Essays in honor of Elite Olshtain* (pp. 47–74). Jerusalem: Magnes Press.

Olson, D. R. (1994). *The world on paper: The conceptual and cognitive implications of writing and reading.* New York: Cambridge University Press.

Olson, D. R. (2006). Continuing the discourse on literacy. *Research in Teaching of English, 41,* 175–179.

Ong, W. (1982). *Orality and literacy: The technologizing of the word.* London/New York: Methuen.

Paltridge, B. (2002). Genre, text type, and the English for Academic Purposes (EAP) classroom. In A. M. Johns (Ed.), *Genre in the classroom: Multiple perspectives* (pp. 73–90). Mahwah: Lawrence Erlbaum.

Pappas, C. C., & Pettigrew, B. S. (1998). The role of genre in the psycholinguistic guessing game of reading. *Language Arts, 75,* 36–44.

Pellegrini, A. D., & Galda, L. (1998). *The development of school-based literacy.* London: Routledge.

Ragnarsdóttir, H., & Strömqvist, S. (2005). The development of generic *maður/man* for the construction of discourse stance in Icelandic and Swedish. *Journal of Pragmatics, 32,* 143–156.

Ragnarsdóttir, H., Aparici, M., Cahana-Amitay, D., van Hell, J., & Viguié, A. (2002). Verbal structure and content in written discourse: Narrative and expository texts. *Written Language and Literacy, 5,* 95–126.

Ravid, D., & Berman, R. A. (2006). Information density in the development of spoken and written narratives in English and Hebrew. *Discourse Processes, 41,* 117–150.

Ravid, D., & Berman, R. A. (2009). Developing linguistic register across text types: The case of Modern Hebrew. *Pragmatics and Cognition, 17*, 108–145.

Ravid, D., & Berman, R. A. (2010). Developing noun phrase complexity across adolescence: A text-embedded analysis. *First Language, 30*, 1–29.

Ravid, D., & Tolchinsky, L. (2002). Developing linguistic literacy: A comprehensive model. *Journal of Child Language, 29*, 417–447.

Ravid, D., van Hell, J., Rosado, E., & Zamora, A. (2002). Subject NP patterning in the development of written and spoken text production. *Written Language and Literacy, 5*, 69–95.

Reilly, J. S., Baruch, E., Jisa, H., & Berman, R. A. (2002). Propositional attitudes: Development of modal expression. *Written Language and Literacy, 5*, 182–218.

Reilly, J. S., Zamora, A., & McGivern, R. F. (2005). Acquiring perspective in English: The development of stance. *Journal of Pragmatics, 37*, 185–208.

Rosado, E., Salas, N., Aparici, M., & Tolchinsky, L. (2014). Production and judgment of linguistic devices for attaining a detached stance in Spanish and Catalan. *Journal of Pragmatics, 60*, 36–53.

Salas, N. (2010). *Developmental and discursive underpinnings in the expression of Spanish NPs. Diploma de Estudios Avanzados*. Barcelona: University of Barcelona.

Sandbank, A. (2002). The interplay between the written language and writing conventions in writing texts. In L. Tolchinsky (Ed.), *Developmental aspects of learning to write* (pp. 55–76). Dordrecht: Kluwer.

Scott, C. M. (2012). Learning to write. In A. Kamhi & H. Catts (Eds.), *Language and reading disabilities* (3rd ed., pp. 244–268). Boston: Pearson.

Slobin, D. I. (1996). From "thought and language" to "thinking to speaking". In J. J. Gumperz & S. C. Levinson (Eds.), *Rethinking linguistic relativity* (pp. 70–96). Cambridge: Cambridge University Press.

Slobin, D. I. (2003). Language and thought online: Cognitive consequences of linguistic relativity. In D. Gentner & S. Goldin-Meadow (Eds.), *Language in mind: Advances in the investigation of language and thought* (pp. 157–191). Cambridge, MA: MIT Press.

Slobin, D. I. (2005). Relating events in translation. In D. Ravid & H. B. Shyldkrot (Eds.), *Perspectives on language and language development: Essays in honor of Ruth A. Berman* (pp. 115–129). Dordrecht: Kluwer.

Smith, C. S. (2003). *Modes of discourse: The local structure of texts*. Cambridge: Cambridge University Press.

Steen, J. G. (1999). Genres of discourse and the definition of literature. *Discourse Processes, 28*, 109–120.

Strömqvist, S. (2006). Learning to write: A window on language, communication, and cognition. In J. Bernicot (Ed.), Pragmatique Développementale: Perspectives Européennes, special edition of Le langage et l'Homme (Vol. 41).

Strömqvist, S., Johansson, V., Kriz, S., Ragnarsdóttir, H., Aisenman, R., & Ravid, D. (2002). Toward a cross-linguistic comparison of lexical quanta in speech and writing. *Written Language & Literacy, 5*, 45–67.

Strömqvist, S., Nordqvist, Å., & Wengelin, Å. (2004). Writing the frog story: Developmental and cross-modal perspectives. In S. Strömqvist & L. Verhoeven (Eds.), *Relating events in narrative: Typological and contextual perspectives* (pp. 359–394). Mahwah: Lawrence Erlbaum.

Swales, J. M. (1990). *Genre analysis: English in academic and research settings*. Cambridge: Cambridge University Press.

Tannen, D. (Ed.). (1982). *Spoken and written language: Exploring orality and literacy. Advances in discourse processes* (Vol. IX). Norwood: Ablex.

Tolchinsky, L. (2003). *The cradle of culture: What children know about writing and numbers before being taught*. Mahwah: Lawrence Erlbaum.

Tolchinsky, L. (2004). The nature and scope of later language development. In R. A. Berman (Ed.), *Language development across childhood and adolescence* (pp. 233–247). Amsterdam: John Benjamins.

Tolchinsky, L., & Rosado, E. (2005). The effect of literacy, text type, and modality on the use of grammatical means for agency alternation in Spanish. *Journal of Pragmatics, 37*(2), 209–238.

Tolchinsky, L., & Sandbank, A. (1994). Text production and text differentiation: Developmental changes and educational influences. In S. Strauss (Ed.), *Learning environments and psychological development*. Norwood: Ablex.

Tolchinsky, L., & Teberosky, A. (1997). Explicit word segmentation and writing in Hebrew and Spanish. In C. Pontecorvo (Ed.), *Writing development: An interdisciplinary view* (pp. 77–98). Amsterdam: John Benjamins.

Tolchinsky, L., & Teberosky, A. (1998). The development of word segmentation and writing in two scripts. *Cognitive Development, 13*, 1–21.

Tolchinsky, L., Johansson, V., & Zamora, A. (2002). Text openings and closings: Textual autonomy and differentiation. *Written Language and Literacy, 5*, 219–254.