Prepositional Phrases as Manner Adverbials in the Development of Hebrew L1 Text Production

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The present investigation centers on the development of Hebrew written discourse syntax, focusing on prepositional phrases (PPs) as a specific syntactic construction. Specifically, we examined prepositional phrases that function as manner adverbials (e.g., Be-istiẖut, “in-slowness = slowly”) across development. We analyzed 160 narrative and expository texts produced by eighty writers from pre-adolescence to adulthood. Analysis focused on the effects of age and genre on the prevalence of manner PPs, the complexity of their internal structures, and their different syntactic functions. Additionally, we examined the discourse-specific uses of manner PPs in each developmental stage and in each genre. Results showed that (1) manner PPs grow more prevalent and more internally complex with age and schooling; (2) most manner PPs modify verbs, but some function as noun modifiers, adjective modifiers, and predicates; and (3) many manner PPs do not constitute optional adjuncts, but rather function as obligatory, focal elements of clauses. The use of such focal manner PPs and of their optional counterparts is discussed in terms of choices that writers make to achieve certain rhetorical goals in discourse. The study contributes to our understanding of the development of Hebrew written discourse syntax, and sheds new light on the nature of manner PPs and their uses in discourse.

Introduction

Advanced syntactic abilities are often associated with clause combining, especially with different types of subordination, in both native language users (e.g., Nippold et al. 2005; Saddler and Graham 2005) and second language learners (Ortega
However, a plethora of evidence points to clause-internal syntax as a domain of significant attainments, especially in later L1 developmental stages (Beers and Nagy 2009; Brandes 2015; Hunt 1965), and advanced L2 proficiency levels (Byrnes, Maxim, and Norris 2010; Norris and Ortega 2009). This is clearly evidenced in the well-documented age-related increase in mean clause length in L1 text production (Berman and Ravid 2009; Scott 1988), mostly determined by numerous and elaborated clause-internal phrases (Berman, Nayditz, and Ravid 2011; Ravid and Levie 2010).

Consider the following excerpt (all examples are translated from the Hebrew study texts): *In my opinion, the issue of theft must be handled in all schools with the utmost severity*. This clause starts out with a PP functioning as a discourse marker (*in my opinion*), followed by the extended subject noun phrase (NP), whose head (*the issue*) is modified by a PP (*of theft*). The PP consists of a modal auxiliary (*must*), an infinitive copula (*be*), and a passive participle (*handled*), modified by two PPs—a place adverbial (*in all schools*) and a manner adverbial (*with the utmost severity*)—both of which contain extended complement NPs, whose head nouns (*schools; severity*) are modified by a quantifier and an adjective, respectively (*all; utmost*). Constructing such a hierarchical structure of elaborated phrases nested within each other, to concisely convey a detailed argument regarding abstract concepts, is an ability generally attained by mature, experienced writers (Berman 2008).

The current study concerns syntactic development in Hebrew L1 written text production, focusing on a specific clause-internal construction—prepositional phrases functioning as manner adverbials (henceforth: manner PPs)—exemplified by *with the utmost severity* above. Manner PPs are examined across the school years as participating in increased clausal complexity of the kind demonstrated above, in the service of written expression.

Complexity, a central construct in research on both native language development (Ravid 2005, 2013; Berman, forthcoming), and second language learning (Bulte and Housen 2012; Ortega 2012), is conceptualized in the current context not only in structural terms (Pallotti 2015), but as deriving from a form–function approach. Our construal reflects the view of syntax (shared by most contemporary linguistic frameworks) as having both structural and semantic/functional facets (Croft 2001; Givón 1993; Goldberg 2006; Langacker 1986). As syntactic structures convey meanings in different communicative contexts, syntactic complexity by nature should be expressed in both form and content, with structurally complex syntactic construction serving to deliver complex content within discourse (Berman and Nir Sagiv 2009).

Increased syntactic complexity is expressed structurally in the amount and variety of elements in a construction, as well as in the layeredness of their hierarchical organization (Givón 2009; Ravid and Berman 2010). In a clause, this is manifested (i) in numerous clause-internal phrases nested within each other, and (ii) in the complexity of the phrases themselves, which in turn is expressed in the number and variety of modifiers and the incorporation of phrase-internal coordination and subordination (Berman 2007; Scott 1988). Importantly, complex clausal structure goes hand in hand with semantic complexity, expressed in an elaborated description of different aspects of the situation that the clause delineates. For instance, heavy NPs give more
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PPs as Manner Adverbials

Manner adverbs are regarded as verb modifiers that describe some manner in which the event designated by the verb occurs or is performed (Hengeveld 1992; Shaer 2003). Following Halliday (1985), manner is conceived here as a broad semantic space, ranging over quality (e.g., explain nicely), means (solve through dialogue), degree (change completely), and comparison (think differently). Modern Hebrew lacks a productive morphological class of manner adverbs (like English -ly adverbs), using instead syntactic PPs as the prevalent manner adverbial device (e.g., Be-adlut, "in-gentleness = gently"; Berman and Nir–Sagiv 2011; Ginert 1989). Thus, Hebrew manner adverbials typically take the form of periphrastic (often multi-lexemic) phrases, while seman-
tically functioning as units of meaning, and can hence be viewed as intermediate entities, lying between syntax and the lexicon (Ravid and Shlesinger 2000). A typological factor that enhances the intermediate status of Hebrew manner adverbials is the fact that the four basic prepositions, including the primary manner-conveying be- ("in = with"), are written as single letters attached to the following word (Ravid 2012). Given Olson’s (1994) script-as-model, this phenomenon is certain to shape literate Hebrew users’ perception of PPs. Specifically, it encourages fusion processes, whereby originally syntactic PPs have become opaque lexical items (Nir and Berman 2010). Hebrew adverbial PPs are best viewed as delineating a continuum, from
completeness words (e.g., Leit, "to-slowly = slowly"), through intermediate cases, which include most manner PPs (e.g., Be-rakat, "in-sofness = softly"), to separately
represented word pairs (e.g., Blireshut "without permission").

The construction grammar approach (Goldberg 1995, 2003) provides a useful
framework for the analysis of Hebrew manner PPs along a lexicon-syntact continuum (Langacker 1990). Conceptualizing manner PPs in terms of a construction—that is, a unique pairing of form (PP) and meaning (manner)—allows us to view them as unified wholes in discourse syntax. The Hebrew manner PP construction consists of
two open slots, the first for a preposition, typically be- ‘in/with’, the second for
a complement, usually an abstract noun (e.g. Be-*zanna,* “in-intention = intentionally”). This flexible construction creates manner adverbials by inserting different NPs into the second slot, often modified in various ways to yield complex manner expressions (e.g., Be-*otama* *adhin*, “in-power great = very powerfully”).

**Manner PPs in discourse**

Our motivation for studying manner adverbials in the context of written discourse across adolescence is threefold, relating to the role of manner PPs in developing clause-internal complexity, their syntactic functions, and their uses in discourse.

**Clausal complexity**

Investigating manner PPs contributes to our understanding of the growth of clausal complexity across development. Older, more-skilled writers were expected to use more manner PPs in clauses, for packing in additional, manner-oriented information. Moreover, manner PPs themselves were expected to become longer and more complex with age, expressing more sophisticated manner meanings, as in answer with as much detail and elaboration as possible.

**Syntactic functions**

The category of manner adverbials is typically restricted to elements functioning as verb-modifiers (e.g., Berman and Nir-Sagiv 2011; Shaer 2003). In the current analysis, we defined manner PPs as pairings of form and meaning, with no additional syntactic constraints—thus expanding the traditional category boundaries, allowing for manner PPs in syntactic contexts other than modifying verbs. This was motivated by the fact that nouns and adjectives also both designate predicative content such as events, states, processes, and relations (Hengeveld 1992; Raviv and Cahana-Amiray 2005), and can thus also receive manner modification. Moreover, PPs that are themselves predicates can present a state of affairs with a built-in sense of manner. The following excerpts are examples of manner PPs functioning respectively (i) as a predicate, (ii) a noun modifier, and (iii) an adjective modifier: (i) *I was* in *acute* stress; (ii) a solution *through legislation* might help this issue; (iii) anyone who is *different in skin color*. We expected to find increasing syntactic flexibility, with older writers using a wider range of syntactic alternatives for expressing manner, based on the insight that developing linguistic abilities involves recruiting new forms for designating familiar functions (Berman 2009; Berman and Slobin 1994).

**Uses in discourse**

Examining manner PPs within written texts highlights their discourse-level roles (Goldberg 2003; Slobin 1977). The question of genre is of special significance in this context, since each genre constitutes a distinct social practice with different communicative purposes, giving rise to unique cognitive requirements and the deployment of appropriate linguistic forms (Blum-Kulka, Huck-Taglicht, and Avni 2004; Longacre 1983). Narratives, which revolve around people participating in events that unfold in a temporal context, seem to be the most natural environment for manner adverbials for qualifying events and states of mind. Rather than driving the storyline
forward, manner adverbials are expected to be incorporated into eventive units to convey evaluative (descriptive or interpretative) information (Berman 1997; Labov 2010; Ravid and Berman 2006), thus going beyond recounting events to express the writer's attitudes, signaling the mental and emotional states of protagonists (Kang 2003; McCabe, Peterson, and Connors 2006; e.g., *Paul came to class with 5 jars of praying mantis which he showed to his classmates with pride*). As expository discourse deals with general, abstract situations rather than actual events, we might expect fewer manner adverbials in expository writing. An exception might be to serve what Giora (1990) calls the 'poetic' function—that is, as elements used to attract the reader's attention, making the text more aesthetically appealing, as in the following example: *there exists racism in abundance*.

Thus, in accordance with their optional status in clausal syntax, manner PPs were also predicted to play a supplementary role in discourse as 'digressive' elements, straying away from the basic event sequence of a narrative or the line of argumentation running through an essay. However, when actual usage is considered, some surprising outcomes might emerge. We show below that a great portion of Hebrew manner PPs are neither clausally optional nor discursively digressive.

### Method

**Participants and materials**

The texts analyzed in this study were collected in the framework of a large-scale crosslinguistic project (Berman and Verhoeven 2002). The subset used here consists of 160 narrative and expository written Hebrew texts produced by eighty participants in four age/schooling groups: fourth graders (aged nine to ten), seventh graders (aged twelve to thirteen), eleventh graders (aged sixteen to seventeen), and graduate university students (aged twenty-five to thirty). Participants were normally developing native Hebrew speakers from middle to high socioeconomic backgrounds. Each participant wrote a personal experience story about problems between people and an expository essay discussing this topic (for further details, see Berman and Katzenberger 2004).

**Analysis**

All manner PPs were identified, counted, and coded using three criteria: (1) length in words; (2) internal structure; and (3) syntactic function. The data were manually coded by each of the two authors working independently. Cases of discrepancy were resolved by discussion.

To calculate manner PP length, we counted words as strings appearing between two spaces. As prepositions may or may not appear as separate words (see above), they were excluded from this calculation, so that the length of a manner PP was determined solely by the length of its complement.

Regarding internal structure, each manner PP was classified into one of seven structure types, ranked on a scale of complexity. The scale was constructed along similar lines as previous scales of different linguistic domains (e.g., Ravid 2006; Ravid and Berman 2010; Ravid and Levie 2010), largely based on research by the...
second author and colleagues on NP complexity (Ravid and Berman 2010; Ravid and Zilberbach 2003). In line with our multifaceted approach to complexity, each level of the scale is motivated by structural, semantic, and functional considerations:

1. **Noun:** a single-word NP (e.g., *Matzati oatm txaxhot be-lisher,* “I found them laughing in-quietness”)
2. **Noun + modifier:** an NP with a single modifier such as adjective or quantifier, extending the head-noun meaning (e.g., *I’m dvarim histaynu be-rav gadol,* “the-things ended in-fight big = things ended in a big fight”)
3. **Nominal compound:** an NP consisting of two nouns in a construct construction (Ravid and Shlesinger 1995; e.g., *Menagev et ha-yad shel be-tmud gadol,* “wipe acc the-hand his in-gesture disgust = wipe his hand with a gesture of disgust”)
4. **Noun + extended modifier:** an NP containing an extended AP or PP (e.g., *Hem kilelu exad et ha-sheni be-kilof meod meid gassot,* “they cursed one acc the-other in-curse very very rude = they cursed each other with very very rude curses”)
5. **Coordinated head:** two nouns or adjectives coordinated in a single head, giving a double description of manner (e.g., *Hu lisepid lehatig et atovo be-muntifex ve rov minigen,* “he insisted to-present acc himself as-successful and-good; from-me = he insisted on presenting himself as better and more successful than I am”)
6. **Pronominal demonstrative reference:** an inflected pronoun or demonstrative, referencing a constituent of a preceding clause, thus promoting discourse-level cohesion (e.g., *fi patra be- o.k. u-ni-ec nistaynu iscitu,* “she dismissed in- o.k. and-in-this ended conversion-ours = she dismissed me with an o.k. and thus ended our conversation”)
7. **Subordinate construction:** an NP containing a subordinate clause, so that the situation designated by the main verb is described while presenting a second situation (e.g., *Hu lisepid lehityaxes elay be-el-ylad batan she-isaric letappel be,* “he insisted treating to-me as-to child little that-needs caring in-him = he insisted on treating me like a little child that needs taking care of”)

In instances where two or more structure types were incorporated within a single manner PP (e.g., a nominal compound governing a relative clause), the one ranked as more complex was taken into account.

Regarding syntactic function, each manner PP was classified as verb modifier, noun modifier, adjective modifier, or predicate. Finally, a detailed qualitative analysis was conducted, aimed at revealing the different discourse-specific uses of manner PPs in each age/schooling group and in each of the two genres. Details regarding the statistical methods employed, along with the main outcomes, are found in the appendix.

**Results and Discussion**

**Prevalence of manner PPs**

Overall, manner PPs were not very prevalent in our corpus consisting of 160 texts and 2,191 clauses. We identified 161 manner PPs in total, which, on average, means
one instance per text and roughly one in every 14 clauses. Figure 4-1 presents the mean number of manner PPs per clause by age.

As predicted, the prevalence of manner PPs increased with age, with older writers using these constructions more frequently (see appendix). On the average, grade school and junior high students produced one manner PP per roughly 22 clauses. The use of manner PPs increased to about one in every 13 clauses in high school and more than doubled by adulthood, reaching an average of one manner PP in roughly every 10 clauses.

These statistics point to the role played by manner PPs in generating the increase in mean clause length throughout development—using more manner PPs being one way for skilled writers to construct longer and more elaborate clauses. Additionally, the results show that older writers have a greater tendency to relate to aspects of manner regarding the situations that they write about, manifesting the kind of richness and diversity of content characteristic of mature expression.

Regarding the effect of genre on the prevalence of manner PPs, our findings were somewhat counterintuitive. Recall that the evocative nature of narratives, compared with the abstractness of expository, led us to predict that manner PPs would be more frequent in the former. However, no significant effect of genre was found (see appendix). That is, across development, writers were as likely to use manner PPs when writing an essay as when they wrote a story.

The findings reported in this section call our perception of manner PPs into question, emphasizing the need for a discourse-based investigation into the ways in which they are employed in different genres.

**Internal structure of manner PPs**

Another aspect of the development of using manner PPs is the construction of longer and more complex expressions by older writers (see appendix). Figure 4-2 presents the mean length of manner PPs in each age group by genre. Figures 4-3 and 4-4 present the proportions of the different types of internal structures of manner PPs in each group in narratives and expository respectively.
Figure 4-2. Mean number of words per manner PP by age and genre

Figure 4-3. Proportions of manner PPs' internal structures by age in narratives

Figure 4-4. Proportions of manner PPs' internal structures by age in expositories
The developmental trends were especially clear in the narratives. Manner PPs in grade school narratives were, without exception, of the shortest and simplest one-word kind. In junior high and high school, the average manner PP length nearly doubled, reaching two words (min length: 1; max: 6), and the proportion of one-word manner PPs dropped to roughly one-half and one-third of all manner PPs respectively. Three new structure types emerged in this period, representing levels 2–4 in the manner PP complexity scale: noun + modifier, nominal compound, and noun + extended modifier (see examples earlier). Thus, junior high and high school students in many cases produced longer and more complex manner PP expressions. However, the set of syntactic means that they recruited for doing so was still relatively limited, restricted to the lower and intermediate levels of the complexity scale.

The process of manner PPs becoming more elaborate continued into adulthood. The manner PPs in the adult narratives had an average length of three words (min: 1; max: 13), exhibiting the widest variety of internal structure types, including those ranked most complex: coordinated head, pronominal/demonstrative reference, and subordinate construction. Adults not only referred to aspects of manner more frequently, but did so using more complex, informatively heavy expressions. The next excerpt, from an adult woman’s narrative, represents the peak of manner PP complexity in our corpus: Some drivers drive in a physically violent manner, which they wouldn’t have allowed themselves if they weren’t sitting behind a wheel in a closed car.

The data from expositories revealed similar developmental trends. Here too, manner PPs grew longer and more complex with age. The average manner PP length increased from just under two words in grade school (min: 1; max: 4) to almost three words in adulthood (min: 1; max: 9), and the proportion of simple manner PPs diminished from roughly two-thirds to less than a quarter.

A qualitative analysis of the data comparing the two genres revealed that writing expositories yielded greater complexity earlier on. Manner PPs with even a level 2 complexity rank did not emerge in narratives prior to junior high, but were already found in expositories written by grade schoolers. Similarly, manner PPs with coordinated heads, found only in adult narratives, already emerged in high school expositories. These are examples of how writers are pushed to recruit more advanced linguistic resources in order to meet the higher conceptual demands of producing expository discourse, achieving the literate register characteristic of this genre (Nippold et al. 2005; Ravid 2005).

**Syntactic function of manner PPs**

Recall the current construal of manner PPs differed from manner adverbs as they were previously conceptualized (e.g., Berman and Nir-Sagiv 2011; Ravid and Shlesinger 2000) in the breadth of their possible syntactic functions. Our target constructions were all PPs conveying a sense of manner, regardless of whether they were verb modifiers or had some other syntactic function. Unsurprisingly, verb modification was by far the most common function of manner PPs, applying in roughly 80 percent of the cases. Yet it was not the only syntactic function of manner PPs. The remaining 20 percent were PPs judged as having manner semantics, syntactically functioning as predicates, noun modifiers, and adjective...
modifiers. Figures 4–5 and 4–6 present the proportion of each type of manner PP in each age group in narratives and expositories respectively.

Predicative manner PPs are special instances of a PP functioning as the predicate of a verbless clause (Hengeveld 1992), for example, *Ant hayiti dey ha roch.* "I was quite in-the-head,* = "I was pretty much at the lead"; *andza ha bëgge,* "we in anger,* = "we are not speaking.*" The predicative manner PP relates to the subject entity, saying how it "is." Typically, the impression is that the subject entity is not completely passive, though there is no verb to delineate its actions. The manner PP can be viewed as an alternative means for conveying some information regarding the manner this entity operates in. Overall, seventeen predicative manner PPs were identified, making up about 10 percent of all manner PPs. They were especially prevalent in grade school narratives, where they constituted over one-half of all instances of manner PPs. In absolute terms, however, this is due to only four instances, three of which were of the form *bëgge,* a fused juvenile expression from *bë-rogë,* "in anger" describing a situation where two children are not on speaking terms.

Noun-modifying manner PPs qualify events that are coded in nouns. Only seven cases were identified, constituting 4 percent of the manner PPs. An examination of
these manner PPs reveals that they make quite a homogenous group—they were almost all used for pointing to the means for solving a certain problem (e.g., Antiloxochev she-pitra al yedey onashim taisor: “I do not think that solving by punishments will help = I don’t think that solving this with punishments would help”). Noun-modifying manner PPs sporadically occurred in expositions—one instance in junior high, one in high school, and four in adult expositions. The narratives contained only a single noun-modifying manner PP, produced by a seventh grader. Note that grade schoolers did not produce any noun-modifying manner PP.

Adjective-modifying manner PPs can be viewed as delineating a manner in which the quality designated by the adjective is descriptive of an entity (e.g., Mishpat ze pasham le-havva, “sentence this simple to-understanding = this sentence is simple to understand”; beqefot beyn anashim nefosor lemor anashim, “problems between people common as people = problems between people are as common as people”). Seven adjective-modifying manner PPs were identified, constituting 4 percent of the total. Notably, they were found solely in adult expositions.

Developmentally, different trends emerged in each of the two genres (see appendix). Expositions showed the predicted pattern of manner PPs becoming more syntactically diverse with age and schooling. Fourth-grade expositions contained only the most prototypical verb-modifying manner PPs, while predicates and noun modifiers were added in junior high and high school. Finally, adult writers used all three types, with the addition of adjective modifiers. This finding testifies to growing linguistic flexibility, allowing older writers to recruit new syntactic mechanisms for the expression of manner.

The opposite process was evident in narratives. Here, the proportion of the less typical non-verb-modifying manner PPs diminished from more than half in grade school to roughly a quarter in junior high to virtual absence in the two oldest age groups. That is, when writing a story, adult writers used only verb-modifying manner PPs, illustrating their need to elaborate on the manner facets of the event structure.

With regard to what seems to be a greater diversity of syntactic functions in the youngest age group, recall that the large proportion of predicative manner PPs in fourth-grade narratives was mainly due to a few instances of the fused expression bë-gë, “in anger.”

### Uses of manner PPs in discourse

We now turn to discuss the different uses of verb-modifying manner PPs within narrative and expository discourse. Underlying this discussion of the uses of verb-modifying manner PPs is the unexpected discovery that many of them did not at all function as the optional adjuncts typical of the adverbial function. Rather, these manner PPs appeared to be obligatory, in the sense that omitting them would render the clause meaningless or ungrammatical, or, alternatively, cause a dramatic change in meaning (Huddleston and Pullum 2002). Consider the following examples:

1. Ant rosa leqot be-shalom im ha-sivva ve-im atsmi: “I want to live in peace with the surroundings and with myself = I want to live in peace with my surroundings and with myself”
2. *Hu mtnahg elay bno yadda ktona* — he behaves to—me as girl little = he treats me like a little girl.

3. *Efsar litarn et ha-nyantin ha-ele b-duxun wafor* — possible to-end acc the—matters these in—ways pretty = these matters can be resolved nicely.

Fillmore (1994) discusses similar cases, where 'circumstantial' adverbial elements seem to be obligatory, suggesting that such adverbials are specified in the semantic frames of the verbs they are associated with. We do not believe that such an account captures the source of obligatoriness of the various manner PPs in our sample. For instance, the manner PP *be shalon* ("in peace") in (1) above does not seem to be licensed by the verb *to-live*, since *I want to live* does not raise any difficulty. Goldberg and Ackerman (2001) suggest a different account, relating the clause's information structure. Taking such a perspective, any clause must convey some new information not already given in the discourse, or otherwise there would be no reason to produce it (Chafe 1984; Halliday 1985). The part of a clause that conveys this new information is sometimes referred to as focus (Ward and Birner 2001). Goldberg and Ackerman (2001) suggest that the obligatory status of some adverbials is a result of their being a part of the clause's focus domain. Thus, omitting them would not leave enough new information to justify the existence of the clause in discourse, rendering it pragmatically improbable.

Such an account seems to hold well for the various relevant cases in our sample. Consider (1), repeated in its English version as (6) below, and its variations in (4) and (5).

4. I want to live.
5. ≠*I want to live with my surroundings and with myself.*
6. I want to live in peace with my surroundings and with myself.

As mentioned above, (4) seems completely probable. This is because this stripped-down version of the clause advances a contrastive reading, where the desirable state of being alive is contrasted with its obvious alternative of being dead. Saying that one prefers living over dying is adequately new information to justify producing this clause. With the addition of the two complements *with my surroundings and with myself* in (5), the verb phrase no longer delineates the mere state of being alive, but rather a state much more specific than that, which rules out a contrastive reading. However, these complements, which defuse the clause's original focus, do not convey enough new information to replace it; everyone, whether they want to or not, is alive (at least at the time the discourse is produced), and necessarily live both with themselves and their surroundings. This leaves a clause that does not say anything pragmatically worth saying — salvaged, however, with the addition of the manner PP *in peace* in (6). What the clause now means is that given the obvious state of the writer being alive, she wants her necessarily occurring interactions with herself and her surroundings to be peaceful. The manner PP conveys the focal point that the writer is making, and hence constitutes the clause's focus. Accordingly, this type of manner PP will be henceforth referred to as focal.
Note that focal manner PPs were not at all marginal. In fact, they constituted roughly one-half of all verb-related manner PPs in our sample. We suggest that using them represents a choice made by writers to highlight the manner aspect of a situation, not as some additional elaboration but as its main content—a choice that has unique rhetorical effects within discourse. Particularly, the use of manner PPs often promotes generality and abstraction over concrete specifics, for example, from an expository:

7. Yeish ama’tim pe’er mel’shakin ve-eleyhem mitzu’asim be-tora z’hora me-achor le-ama’tim.

me’el’shakin: “there are people less popular and to them treat in-form different from that to people popular = there are less popular people and they are treated differently than popular people.”

This writer discussed the way less popular people are treated, but without giving any details. His goal is not to describe specific behaviors that they are exposed to, but rather to make a comparative claim: these are not the same behaviors popular people are exposed to. The use of a focal manner PP conspires with the choice of a generic noun and the timeless present tense in creating a general, abstract stance (Berman 2005). It seems that such an effect of using focal manner PPs is well-suited to the expository genre, which deals with general issues, relating to their broad social contexts rather than to specific events.

In contrast, using focal manner PPs in narratives is a choice somewhat contradictory to the typically specific, involved nature of the genre:

8. Oto gabi hitrukeg lamed le xel oxar ha-shik ha-u’re ha-tihau in-sor in ked ktesh mel’shakin that was new to me = that Gabi treated me throughout my visit with a kind of condescension that was new to me.”

The writer does not describe a certain event, rather making a generalization, derived out of a series of specific behaviors occurring over a period of time. Additionally, he does not say what this friend/rival actually did, instead focusing on the way in which he perceived his actions and the feelings that they stirred in him—conveyed chiefly by the focal manner PP. Taking such a generic, almost detached stance when recounting a personal and emotionally charged experience and focusing on internal mental states rather than external actions is characteristic of the narratives of literate adults (Ravid and Chen-Djemal 2015).

The rest of the manner PPs—those that did indeed function as optional adjuncts—had different uses than their focal counterparts. In expository, most optional manner PPs resembled intensifiers, which Giora (1990) regards as digestive “attention-grabbers,” serving a poetic function:

9. Tzarte le’sapal ha-itman ha-se be-maseiut: “need to attend in-the-matter the-this in-devotion = this matter needs to be attended to with devotion.”

10. Kvesrot ha-nilxamot be-kunait be-kvesrot azecot: “groups that fight in-zealousness in-groups others = groups that fight other groups zealously.”
11. *Ha-teknolojye shiuta et zayénu li-vi lehek.* “the—technology changed life—ours to—without recognition = technology has changed our lives completely.”

Notice how each verb is tailored with its own intensifying expression: you fight zealously, but attend to something with devotion, and when something really changes a lot, it becomes so different that you cannot even recognize it anymore. A rich representation of the various intensifiers and of the appropriate contexts for using each of them reflects high lexical quality (Perfetti 2007), necessarily acquired gradually with the accumulation of discursive experience. The use of intensifying manner PPs is an opportunity for writers to impress their audience with their command of valued linguistic conventions, and indeed seems to serve a poetic function.

In narrative discourse, some of the optional manner PPs functioned as true digressive elements:

12. *Mutsaté etan tsorakot be-shuker.* “found—I them laughing in—quietness = I found them laughing quietly.”

13. *...hir'é pol la kita ve-ito 5 tšinušiot im gmaley/shíomo she-hera be-gány le-kíato; “... came Paul to-the-class and—with—him 5 jars with camels’soylomon that showed in—pride to—class—his — ...Paul came to class with 5 jars of praying mantises which he showed to his classmates with pride.”*

14. *Ishi bá-yekar... ha-nuxana be zot ha-yéga letapes im tát mida yerek esh el koma šelbhiite.* “wife—mine the—dear... that—prepared in—this the—moment to—climb with sub—machinegun spitting fire to floor third = my dear wife... who is prepared to instantly climb with a fire—spitting machinegun to the third floor.”

These manner PPs seem to signal the social—emotional significance of the recounted events as subjectively perceived by the narrator, and thus constitute evaluative devices (Labov and Waletzky 1967). Such evaluative manner PPs add some flavor to what would otherwise be a dry, matter—of—fact account of events. Used skillfully, they can create an almost cinematic effect by promoting the visualization of events, which in turn leads to a greater effect on the reader. This is probably closest to the intuitive perception of manner adverbials and certainly what we had in mind when we first started this study. A discourse—based investigation revealed that it is just one of the ways in which manner PPs are actually used.

**General Discussion and Conclusion**

While the centrality of clausal complexity to writing development is widely acknowledged (Beers and Nagy 2009; Berman and Ravid 2009), few studies have traced the developmental courses of specific clausal elements, with the exception of the much—investigated NP (Ravid and Berman 2010). The current study regarded the development of clausal complexity in writing narrative and expository texts in Hebrew, illuminating the hitherto unexplored contribution of manner PPs. Adopting a view of the form and function of syntactic constructions as tightly connected facets of syntactic complexity, manner PPs have been shown as Hebrew—specific constructions which advance clausal complexity in both structure.
and content, conveying information regarding the manner aspects of events and situations. The findings presented here reveal a developmental growth in manner PPs prevalence, which drives the age-related lengthening of clauses, reflecting a growing tendency to relate to the manner aspect of situations in narrative and expository discourse alike. Moreover, manner PPs themselves became longer and increasingly complex with age and schooling, similarly to the previously reported increase in NP complexity. This points to a growing ability to construct more elaborate phrase structures concurrent with more elaborate descriptions of manner.

The study extended the definition of manner adverbials, traditionally restricted to verb modifiers (Ravid and Shlesinger 2000; Shaer 2003), to more syntactic environments. Acknowledging the role of elements other than verbs in designating situations and events (Hengeveld 1992), we presented examples of noun-modifying, adjective-modifying, and predicative manner PPs. These analyses suggest a possible rethinking of the traditional boundaries of the category of manner adverbials.

Finally, investigating syntax within text, as opposed to relying on structured experiments (Costa et al. 2014; Ravid and Saban 2008), enabled us to go "beyond the sentence" (Berman 2009) to reveal the discourse-level uses of manner PPs—yielding some unexpected outcomes. Some manner PPs functioned in the predicted way, as digressive evaluative devices in narratives, and poetic attention-grabbers in expositions. A great portion, however, unexpectedly constituted obligatory, focal elements of clauses shown to promote the generality and abstraction of expository discourse and the detached stance characteristic of mature narration—highlighting the crucial importance of usage-based research.

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Notes
1. Broad phonemic transcriptions of Hebrew phrases are given in italics. They are meant to make the pronunciation of these phrases accessible for readers with no Hebrew background and generally do not represent Hebrew orthography. The voiceless velar fricative, which is absent from English phonology, is transcribed as x. The glottal stop and the voiceless pharyngeal fricative, which are in many cases omitted in casual speech, are marked with an apostrophe only in word-middle position, as in gaww ("pride"). Word stress is marked only when non-ultimate, and therefore words transcribed with no stress mark are stressed on their final syllable. Following the transcription, and given between double quotes, are the exact literal translations, meant to present the reader with the morpho-syntactic structure of the phrase, and the looser translations into English. Grammatical elements that constitute independent words in English, but in Hebrew are orthographically attached to the following word, are separated from the words following them with a hyphen, in both the transcription and the literal translation (e.g., le-smi, "in-gladdness = gladly").
2. Data collection was funded by a major research grant from the Spencer Foundation, Chicago, for the study of developing literacy across different text types, ages, and languages (1997–2000). Ruth Berman, Principal Investigator.
3. We are aware that age and schooling are two different constructs that do not always correlate. In this specific population, however, it was the case that the older a participant was, the more education (s)he had received. The separate effects of age and schooling cannot be teased apart in this study. Also keep in mind that due to this study’s cross-sectional design, the developmental trends are not directly observed over time, but inferred from comparing different participant groups.

References
Prepositional Phrases as Manner Adverbials


Appendix

Statistical methods and main outcomes

For manner PP prevalence, a generalized estimating equation (GEE) regression analysis was employed, with age and genre as explanatory variables. Text length was
controlled, using the number of clauses as covariate. A significant age effect emerged (χ²(1) = 9.44, p < 0.05). A post hoc least significant difference (LSD) test revealed that there was a higher prevalence of manner PPs in adult and high school texts, compared with junior high and grade school.

For manner PP length, internal structure, and syntactic function, multilevel analyses were employed, which account for a possible connection between manner PPs originating from the same text. Due to computing limitations, caused by the relatively small number of manner PPs, the narratives and expository texts were analyzed separately, using age as the only explanatory variable.

Regarding manner PP length, an age effect emerged in both narratives (b = 0.28, p < 0.01) and expository texts (b = 0.17, p < 0.01). The mean manner PP length was significantly higher in the adult texts compared with grade school (LSD test).

For internal structure, analysis regarded the proportion of the simplest one-word manner PPs (level 1 of the complexity scale), compared with all other more complex structures (levels 2–7). An age effect emerged in narratives (b = −0.88, p < 0.01), with a smaller proportion of simple structures in adult and high school texts compared with junior high and grade school. In expository texts, a near-significant trend emerged (b = −0.42, p = 0.066), and the proportion of simple manner PPs was significantly smaller in adults compared with grade schoolers.

For syntactic function, analysis regarded the proportion of verb-modifying manner PPs, compared with all other less-typical functions. An age effect emerged in narratives (b = 1.77, p < 0.001), but not in expository texts (b = 0.40, p > 0.05). In narratives, the proportion of verb-modifying manner PPs was significantly higher in adult and high school texts compared with junior high and grade school. Further details are found in Brandes 2015 (in Hebrew).