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Verbal and nominal expression in narrating conflict situations in Hebrew*

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1.0 Introduction

Narrative texts are dynamic in nature, relating the unfolding of events in time. The content of narratives is predominantly *verbal*, referring to actions, events and states. Therefore verbs, especially those that are lexical, dynamic, active, and transitive (e.g., *hit*) constitute the prototypical, default expression of narration, particularly in personal narratives, which take a subjective, personalized, dynamic, highly specific discourse stance. Nevertheless the verbal content of narratives is sometimes expressed in deverbal *nominals*, abstract nouns related to verbs and adjectives (e.g., *purchase, activation, blackness*). In this paper we examine the claim that using deverbal nominals alongside with verbs in expressing verbal content in personal narratives is diagnostic of linguistic and cognitive development, indicating an ability to take a more distanced, objective and generic stance on personal events.

1.1 Verbs

The lexical-syntactic category of verbs is universally recognized and occurs in practically every language in the world (Croft, 1990; Schachter, 1985). From a semantic point of view, it typically refers to events, processes, and states. From a Cognitive Grammar perspective, verbs belong in the class of *relational* (as opposed to *nominal*) predications, expressing interconnections among entities. Such verbs constitute a separate class of relational predications which profile "processes" by scanning sequentially through a complex relation whose component states are distributed continuously through a span of conceived time (Langacker, 1991: 78-81, 152-154). All verb categories, including grammatical and lexical, stative and active, intransitive and transitive, active and passive, accomplishment and achievement, share this semantic feature – "summary scanning" through time – which sets verbs apart from other lexical categories.

From a structural-formal point of view, verbs are often inflected for tense, aspect and mood, and may agree with their syntactic subjects in number, gender and person (Anderson, 1985; Chung & Timberlake, 1985). Hebrew verbs are inflected for tense (but not for aspect), as well as for number, gender and person agreement, and often allow pronominal subject omission, which leaves them as the surface representatives of their subjects (Berman, 1980; Berman & Slobin, 1994).

The semantic properties of verbs, coupled with their overt grammatical marking for tense and subject agreement, render them the natural and prototypical expressers of verbal content in personal narratives, which relate the unfolding of events in time, describe actions taken by people and changes in states and qualities attributed to them, and take a personalized, subjective stance (Cahana-Amitay, 1999). Indeed, across the project languages, children as young as nine years use past tense verbs (often in perfective aspect where this applies) in two-thirds to three-quarters of the clauses of their narrative texts, as opposed to expository texts, where they typically rely on verbs in the timeless present (Berman, 2000; Hragnarsdottir, Aparici, Cahana-Amitay, van Hell, Viguié, in press). A typical example of the distribution of past tense verbs in narrative texts is shown in a narrative written by a seventh grade girl, Stav, which describes how one of her classmates annoyed all of the children in class until she was eventually ostracized. The text contains 19 clauses, of which 15 are predicates which are verbs anchored in past tense (e.g., *icbena* 'annoyed-3rd-SG-F', *yacanu* 'went-1st-PL [on a trip]', *yashanu* 'slept-1st-PL', etc.). Thus, verbs are expected to carry the main burden of expressing verbal content in narratives, even in texts produced by gradeschoolers.

1.2 Derived nominals

Verbs are not the only lexical class that expresses verbal content in narrative texts. In the written narrative above, the writer, Stav, uses three verb-related derived nominals expressing verbal content: *tiyul* 'schooltrip' (cf. *tiyel* 'traveled'), *macav* 'situation' (cf. *hiciv* 'set up'), and *xérem* 'ostracizing' (cf. *hexrim* 'ostracized'). These provide an alternative linguistic option to verbs, which necessarily also entails a change in perspective and discourse stance.

Derived nominals are abstract nouns derived from verbs and adjectives, e.g., English *acquire/acquisition, warn/warning, black/blackness.* The process whereby verbs and adjectives change their lexico-syntactic category to become nouns is termed nominalization (Chomsky, 1970). In our work, 'derived nominals' refer mainly to nominalized forms which derive from verbs and adjectives and denote activities, states and events, e.g. English *running, belief* and *demonstration,* but also resultative meanings (e.g., *gift, offer*) (Berman, 1976; Comrie & Thompson, 1985; Sproat, 1985). These include what in English would be both gerundive *-ing* nominals, such as *amusing, giving*, as well as derived nominals, such as *amusement, gift* (Asher, 1993). The former are more verb-like in their regularity and transparency, predictability and extreme productivity (Fabb, 1988; Zucchi, 1993). The latter are more noun-like, often referring to concrete entities (*gift*) or to discrete events and abstract entities (*demonstration, belief*); their morphophonological structure and meaning are often unpredictable and idiosyncratic (di Sciullo & Williams, 1987).

Nominalization in Hebrew is expressed primarily in the morphological class of action nominals (e.g., *sgira* 'closing', *hesber* 'explanation'), which semantically and syntactically corresponds to English nominal gerunds and derived nominals (Ravid & Avidor, 1998). Like their English counterparts, Hebrew action nominals have an

abstract, dual verbal / nominal character, and serve as heads in synthetic (=deverbal) compounds, e.g. *nituax ha-ma'amar* 'analysis (of) the-article', *axilat avokado* 'avocado eating' (Berman, 1988; Hazout, 1995; Lieber, 1988). Action nominals are formally and systematically related to verbs in that they take one of the specific verbal patterns in Hebrew *(binyanim = P1-P7)*, e.g., *sagar* (P1) 'closed' / *sgira* (P1) 'closing'. They also have a systematic semantic relationship with paradigms of inflected verbs by conveying an abstract, compositional, non-count gerundive meaning of 'the act or the state of *V-ing'*, e.g., *sagar* 'closed' / *sgira* 'the act of closing'. Despite the general productivity of the action nominal system, it contains considerable formal and semantic irregularities and idiosyncrasies (Ravid, 1999). For example, *hisbir* (P5) is related to two action nominals, one with a regular pattern but an unpredictable meaning *hasbara* 'propaganda', and a second with a minor pattern and a predictable meaning *hesber* 'explanation'. This means that action nominals have to be learned as separate lexical items, in addition to their complex morphological structure.

A second verb-related class of nominalized forms in Hebrew is the class of deverbal nouns, which are related to verbs in non-systematic and unpredictable ways, e.g., P3 *sixek* 'play', *misxak* 'game', *miCCaC* pattern (cf. expected P3-based *sixuk*). These are even more removed from the verbs they are related to, semantically, syntactically and morphologically, and so require lexical learning (Berman, 1976; Ravid, 1999). In this paper we treat both verb-related abstract nominal categories (action and deverbal nominals) together as *derived nominals* (henceforth: DNs).

Results about the acquisition of Hebrew DNs are reported in Ravid and Avidor (1998), who tested 100 subjects aged 5-15, and a group of educated adults, on comprehension and production of these forms. Their findings show that although

young children sometimes come up with abstract, verb-related nouns, systematic knowledge of DNs emerges very late – towards puberty, consolidating only in adulthood. This is because such nouns refer to verbal entities, denoting abstract, conceptual content, and often appear in complex constructions that reflect their propositional ancestry (Lieber, 1983; Hazout, 1995). Hebrew morphology adds an extra dimension of complexity to this array of semantic, grammatical and pragmatic factors.

A large number of high-frequency everyday verbs are related to a number of DNs (both action nominals and deverbal nouns) ranging in structure and meaning. For example, the verb *halax* 'walk, go' is related to *halixa* 'walking', *mahalax* 'move', *halix* 'procedure', *tahalix* 'process', *tahaluxa* 'procession', and *halaxa* 'Jewish law'. Each and every one of these nouns has a unique lexical meaning and is used in specific contexts, but they are all related through root *h-l-x* and bear a semantic and formal relationship to each other, creating a morphological family (Berman, 1987; Ravid, 1990; de Jong, Schreuder & Baayen, 2000). Using DNs thus involves both lexical and morpho-syntactic knowledge and highlights the critical role of the lexicon in developing use of morpho-syntactic structures and text production abilities.

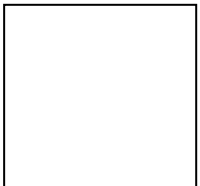
DNs characterize high-register, especially written, discourse rather than spoken everyday usage, and their number increases markedly in more formal expository texts (Berman, 1985:355; Biber, 1988; Halliday, 1988). In fact, abstract nouns (most of which are verb-related) are the hallmark of written expository texts, which are less dynamic than narratives and are concerned with ideas, processes and concepts, consequently taking a more objective, distanced and generic stance (Berman & Strömqvist, in press). Concomitantly, expository texts are characterized by higher lexical density and diversity, a high proportion of clauses with non-lexical verbs, as

well as long and complex syntactic structures (Berman, 2000; Katzenberger, in press; Ravid, van Hell, Rosado & Zamora, in press). As such, DNs are not expected to be the default choice for expressing verbal content in personal narratives, which, as noted, focus on personal events from a concrete, subjective perspective, and so are expected to appear mainly in more mature texts.

In a preliminary analysis of how verbal content is expressed in spoken and written narratives, we found a shift in both discourse stance and its expression by verbs and DNs with age and level of literacy (Cahana-Amitay & Ravid, 1999). We compared spoken and written personal-experience narratives produced by junior high students and adults describing fights or quarrels in which the subjects were involved in a different database from the one used in the current paper. We found that while verbs were without doubt the most widespread device of expressing verbal content across age groups, only adults used a high proportion of DNs for expressing verbal content, especially in the written modality. To illustrate this shift from a personal, subjective stance, where narratives are filled mainly with verbs, to a more distanced, objective stance, where the texts also contain many derived nominals, consider the two personal narratives below (from the database this paper uses) written by a 7th grader and an adult, respectively. The narratives, which are translated into English, describe a problem that each of the writers experienced with one or more persons personally. Verbal content is underlined.

Stav, girl, Hj17fnwdx.doc

When I <u>was</u> in 10th grade there <u>was</u> a girl in my class who <u>kept annoying</u> the kids in my class and among them me. Kids <u>started to pick</u> on her, and when we <u>went</u> on <u>a school trip</u> I <u>was</u> with some girls in one room where we <u>slept</u>. The girl <u>brought</u> some girls she <u>found</u> where we <u>slept</u> and <u>started telling</u> them how much we the girls



were disgusting and all sorts of things, that annoyed us the girls and we decided to join the boys and start picking on her. This situation got to a stage of ostracizing and the girl left that school just because of us.

Yoram, man, Hu09mnwax

My place of work mostly consists of sympathetic and friendly people. Nevertheless there are two girls who probably have not internalized the importance of proper working relations. Today I had to type on the computer a large number of documents. Since during the typing I received a number of telephones which I answered and also talked to people about work topics, my typing was lengthened beyond its predictable time. One of the girls, Sarit, was bothered by this, and after a number of times when she asked me when I was going to be finished with the computer and give it over to her, she started whispering with the secretary about my "rudeness" in both typing and talking to people. Her self-confidence (and maybe her stupidity) made her attack me when I am near her and can hear her talking to the secretary. This proved to me that her bad relations with the other workers were based on her problematic character which caused unnecessary friction.

In the girl's narrative, there are 19 occurrences of verbal content (underlined), of which 16 are expressed by verbs (e.g., *found, slept*), and only three by DNs (e.g., *ostracizing*). In the man's narrative, in contrast, there are 37 occurrences of verbal content, of which 22 are expressed by verbs (e.g., *received, answered, talked*), and as many as 15 by DNs (e.g., *importance, typing, friction*). Adults clearly express a more distanced and less subjective stance in their personal stories than do children and

adolescents, and this is expressed in their choice of the linguistic means of expressing personally experienced events: More than half of the slots expressing verbal content in this adult narrative consist of DNs, compared with only about one-sixth in the junior highschool text.

Based on this, we decided to analyze verbs and derived nominals in spoken and written narratives produced by gradeschool children, junior highschool students, highschoolers, and adults, which describe personal conflicts and conflict situation they have experienced. We predict that with age and schooling, narratives will become less uniformly verbal, and will contain more DNs, and that this trend will be more conspicuous in writing than in speech. This morpho-lexical choice should express a gradual shift away from the typically personalized, concrete, dynamic, subjective discourse stance characterizing narration, towards abstract, distanced, objective and generic discourse stance which is more typical of expository writing. To this end, we present a statistical analysis of the distribution of verbs and DNs expressing verbal content – that is, events, actions, processes, and states. Following this analysis, we present a qualitative analysis of the verbal and abstract nominal "conflict lexicons" of Hebrew-speaking children and adults, and of the related syntactic structures that develop alongside with this lexicon. This is done in order to show how lexical items of different categories and their satellite syntactic structures are used to express the flow of information in the development of personal narratives.

2.0 Methodology

Our database consists of spoken and written narratives produced by Hebrew-speaking schoolchildren aged 9-10, 12-13, and 16-17 (n=60) and adult university graduates majoring in the Sciences and Humanities (n=20). Subjects were shown a silent, three-minute video clip introducing different conflict situations in a school

setting, after which they were asked to produce two narratives – one spoken and one written (and two expository texts which are not analyzed here), yielding a total of 160 texts. Subjects were then asked to tell and to write a personal story about a problem they experienced with someone.

The following procedure was undertaken to examine the distribution of verbs and DNs expressing verbal content in our database:

Texts were divided into clauses, based on the criteria defined in Berman & Slobin (1994). This was done in order to determine text length across our variables of age and modality.

All finite and nonfinite lexical verbs that served as predicates of clauses, and all DNs were counted in the sample. The sum of these elements was termed "total verbal content".

The proportion of lexical verbs and DNs within this total was calculated for each text (to avoid problems with calculations involving variable text lengths). This allowed us to examine the differential distribution of the two categories expressing verbal content across age groups and modalities.

The "total verbal content", the number of lexical verbs, and the number of DNs were divided by the total number of clauses in each text. This allowed us to determine how much verbal content there was in each clause, and which particular categories were used to express it across age and modalities.

3.0 Results

We first present basic data concerning text length and "total verbal content" in the narratives of our sample, followed by rigorous statistical analyses of the proportion of the two lexical categories across the variables concerned here – age and modality.

3.1 Text length and verbal content

Table 1 presents for each text type and each age group the mean number of clauses, the "total verbal content" (the sum of lexical verbs and DNs), and verbal content/clause ratios (the "total verbal content" divided by the number of clauses).

PLEASE INSERT TABLE 1 ABOUT HERE

Two analyses were conducted on the data presented in Table 1. First, we compared text length in terms of mean number of clauses across age groups and modalities. A two-way ANOVA of age (4 groups) x modality (2: spoken, written narratives) was carried out on text length in clauses (presented in column I, Table 1). There was an age effect ($F(3,76) = 4.05$, $p<.02$), with a significant increase in text length with age. There was also an effect of modality ($F(1,76) = 36.44$, $p<.001$), where spoken narratives were found to be longer (M=23.08) than written narratives (M=13.56).

Second, we compared the ratios of "total verbal content" and number of clauses in each text. A two-way ANOVA of age (4 groups) x modality (2: spoken, written narratives) was carried out on the data in column III, Table 1. There was an age effect ($F(3,76) = 21.24$, $p<.001$), with an increasing amount of verbal content in texts with age. There was also an effect of modality ($F(1,76) = 20.97$, $p<.001$), with written narratives containing more verbal content (M=0.94) than spoken narratives (0.79).

For the analysis of the distribution of lexical classes expressing verbal content in narratives, we examined the distribution of finite and non-finite verbs, both of which may function as predicates of clauses in narrative texts. However, finite verbs, which constitute the core of verbal predicates, carry the major burden of narrating events, participate in creating the time axis along which events unfold, and carry overt

agreement markers with their grammatical subjects, thus enhancing the personalized character of narratives. Non-finite verbs, in contrast, may also function in other grammatical roles, e.g., as complements of finite verbs, do not carry agreement markers, and so are less strictly "verbal". And we indeed found that non-finite verbs never exceed 5% of the total number of forms expressing verbal content. Therefore we pooled together finite and non-finite lexical verbs under a general category of lexical verbs.

3.2 Lexical verbs versus derived nominals

We predicted that with age and schooling, narratives will become less uniformly verbal, and will contain more derived nominals, and that this trend will be more conspicuous in written than in spoken narratives. To test these predictions, we calculated the proportion of lexical verbs versus DNs out of the "total verbal content" in the spoken and written narratives.

PLEASE INSERT TABLE 2 ABOUT HERE

A three-way ANOVA of age (4 groups) x modality (2: spoken, written narratives) x category (2: lexical verbs, derived nominals) was carried out on the data in Table 2. In addition to the age and modality effects which are uninteresting since they relate to the total verbal content (see above), a third effect of category emerged ($F(1,76) = 577.08$, $p<.001$), showing that across-the-board there were more lexical verbs (M=80.05%) than DNs (M=19.96%) in the narratives. Two interesting interactions emerged. The first, a category and modality interaction ($F(1,76) = 5.56$, $p< .03$), shows that there are more verbs in spoken than in written texts, AND that there are more DNs in the written than in the spoken texts. A second interaction of age and category emerged ($F(1,76) = 53.93$, $p< .001$), presented in Figure 1.

PLEASE INSERT FIGURE 1 ABOUT HERE

A further analysis on the difference between proportions of verbs and DNs in the spoken and written narratives of the four age groups presents an even more extreme picture. The data is shown in Figure 2.

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Figure 2 shows a steep decline in the difference between verbs and DNs in the two modalities. This difference is greater in the spoken (M=63.24%) than in the written texts (56.94%) ($F(1,76)=5.56$, $p< .02$), and decreases significantly with age ($F(1,76)= 53.93$, $p< .001$). A post-hoc Bonferroni test shows that all age groups differ from each other, except for the gradeschoolers and the junior highschoolers. Figures 1 and 2 show, then, that with age, speaker-writers use more DNs at the expense of verbs to express verbal content, with dramatic changes from junior highschool to highschool and from highschool to adulthood, especially in writing.

From a slightly different perspective, we also compared the raw number of verbs and DNs out of number of clauses in each text. A three-way ANOVA of age (4 groups) x modality (2: spoken, written narratives) x category (2: lexical verbs/number of clauses, derived nominals/number of clauses) was carried out. Age ($F(3,76)= 21.24$, $p< .001$), modality ($F(1,76)= 20.97$, $p< .001$), and category ($F(1,76)= 294.80$, $p< .001$) all proved to be significant. A three-way interaction among these variables emerged ($F(3,76)= 3.42$, $p< .02$), presented in Figure 3.

PLEASE INSERT FIGURE 3 ABOUT HERE

Figure 3 shows that in gradeschool and junior highschool texts, verbs dominate expression of verbal content per number of clauses in both spoken and written narratives. From highschool onwards, DNs are also used, more so in writing than in speech. The differences between number of verbs and number of DNs out of number of clauses in spoken and written narratives are all significant[1] [Where is this

shown? If no figures or tables are given to illustrate our point, maybe this observation should be in a footnote].

3.3 Summary of results

Text length and verbal content: While spoken narratives are longer than written narratives, written narratives contain MORE verbal content in terms of verbs and DNs than spoken narratives.

Expressing verbal content: As expected, the major category expressing verbal content in our personal narratives is lexical verbs, the overwhelming majority of which are finite. Two separate analyses show the following: Written texts contain a higher proportion of DNs than do spoken texts. Older participants use more DNs to express verbal content at the expense of verbs, especially highschoolers and adults, and this increase is more conspicuous in writing than in speech.

Finite verbs are thus the default expressors of verbal content in personal narratives. But with age and schooling, narratives, and especially in the written modality, take on a more abstract, objective, generic and distanced stance in expressing this characteristic thematic core. This shift in stance is expressed overtly in the increasing occurrence of DNs at the expense of lexical verbs.

Side by side with these quantitative changes in development, major thematic, semantic and morphological changes take place in both verbs and DNs and in the syntactic environments in which they occur. These are described and analyzed in the next section.

4.0 Conflict lexicons in acquisition

The verbal content of the personal-experience narratives generally concerns conflict situations, referred to in our instructions as “problems among people”. The nature and setting of the conflicts narrated in our data changes with age and

schooling. Schoolchildren and junior highschoolers describe in their narratives physical fights and social conflicts with schoolmates, which took place at school or during school-related activities such as trips and sports events, in neighborhood get-togethers, games and contests. These stories are overwhelmingly personal in character, focusing on individual conflicts where the narrator was either a victim or one of a group of youngsters abusing a single victim. Highschoolers' conflicts extend beyond the school setting and the immediate neighborhood to social interaction in the context of general extra-curricular activities and/or organizations such as youth orchestras, ballet groups, educational camps, and dance clubs. They typically involve conflict situations with problematic moral aspects such as theft, drug abuse, abuse of handicapped peers, and conflicts with racist and ethnic underpinnings. Some of these stories are told from a distanced perspective, and involve labeling of clashing community sectors and groups such as members of kibbutz vs. non-kibbutz members, "northerners", a term that refers to individuals with privileged backgrounds vs. "southerners", and Jews of Sephardi origin vs. those from Ashkenazi background. Adults' conflicts usually depict an individual in the context of an interpersonal conflict with other specific individuals, such as extended family members, neighbors, co-workers, former classmates, etc. These conflicts cover a much greater variety of spatial, temporal and social settings, including military service, the workplace, training centers, school, university, driving on the road, and traveling abroad. Some of the adults narrate highly personalized stories, but others express a more distanced perspective on interpersonal problems, making general comments on hypothetical conflicts rather than narrating a personal-experience story.

These changes in thematic focus, scope, and location of conflicts find expression in the types of verbs and DNs that appear in the narratives studied here, the syntactic environments in which they occur.

4.1 Verbs

From a semantic point of view, verbs change from general, all-purpose, dynamic, concrete, and imageable verbs, which are typically active, to semantically specific, abstract, mental, psychological, and affective verbs, including verbs in passive voice (Jisa, Reilly, Verhoeven, Baruch & Rosado, in press), which express a non-agent-oriented perspective on the scene. This shift in verb content is gradual, as shown in the examples below, which list the conflict lexicons of verbs typical of each of the four age groups:

Gradeschoolers: *ravnu* 'we fought', *dibarnu* 'we talked', *halaxti* 'I went', *amarti* 'I said', *asa* 'he did', *anta* 'she replied', *mecikot* 'they tease,Fm', *mafria* 'it bothers', *caxaknu* 'we laughed', *hizmanti* 'I invited', *cilma* 'she took a picture', *hexzarti* 'I gave back', *hishlamnu* 'we made up', *hexlitu* 'they decided', *mevina* 'she understands', *mekalelim* 'they curse'.

Junior highschoolers: *nexbat* 'was struck', *ka'asti* 'I was angry', *hosifu* 'they added', *soxaxti* 'I conversed', *hitgabarnu* 'we overcame', *meraxelet* 'she gossips', *hitxilu lehitkotet* 'started brawling', *icbena* 'she annoyed', *iyma* 'she threatened', *nitpalim* 'they pick up on'.

Highschoolers: *tuxnena* 'was planned,Fm', *hitkayma* 'existed,Fm', *ginu* 'they condemned', *mit'alelim* 'they abuse', *novea me* 'derives from', *lexaper al* 'to atone for', *yufac* 'will be distributed', *mitpataxat* 'is developing,Fm', *laxashti* 'I whispered', *murxak* 'is expelled'.

Adults: *hirkiv* ‘assembled’, *nihalti* ‘I conducted’, *yitav* ‘will benefit’, *nota* ‘is inclined to,Fm’, *hizmanu* ‘we ordered’, *me’unyan* ‘is interested’, *bisarti* ‘I announced’, *sovevim* ‘they surround’, *megiva* ‘she reacts’, *hit’orer* ‘it arose’, *giliti* ‘I discovered’, *sateta* ‘made a detour,Fm’, *mehadhadot* ‘echo,Pl,Fm’.

The semantic changes in verb category observed with age and level of literacy indicate an increasingly literate or “advanced” specific vocabulary deriving from written, school-related sources, together with an overall shift in the content of the narratives.

Syntactically, most verbs in the younger age groups occur in finite, simplex constructions, usually consisting of one finite verb followed by another nonfinite verb, typically with aspectual and/or modal meanings related to different phases of the conflict e.g., *matxilim la-rédet alay* ‘they start to-pick on-me’ (Avihay, boy, G, NW); *hitxalnu le-hitkotet* ‘(we) started brawling’ (Adam, boy, J, NW); *lo hiskim le-nakot* ‘did not agree to-clean’ (Uri, boy, J, NW). Complex predicates, followed by what are known as “prefabricated” elements[1] are rare, and are usually restricted to everyday frozen expressions such as *kibalti makot* ‘(I) received blows’ (Smadar, girl, G, NW). Some of these contain syntactic errors, e.g., *hem lo hiskimu li* ‘they (did) not agree to-me’ instead of *lo hiskimu le-bakashati* ‘(did) not agree to-my-request’ (Tom, boy, G, NW).

With age, Hebrew verbs occur in increasingly more complex syntactic environments containing both finite and nonfinite verbs in the older age groups (Hragnarsdottir, Aparici, Cahana-Amitay, van Hell, Viguié, in press). These constructions consist of various elements and express a wide range of meanings.

[1] Prefabricated elements typically consist of a number of free morphemes that conventionally combine together to form a restricted idiomatic meaning (Wiktorsson, 2000).

Sometimes they contain stacked nonfinite verb complements (Cahana-Amitay, 1999), e.g., *le-nasot ve-limco pitron* 'to-try and to-find (a) solution' that go beyond aspects of the actual narrated conflict by referring to past habitual aspectual meanings, as in *hayinu coxakim alyeha* 'we used to make fun of her', or irrealis states, as in *haya yaxol lihyot* 'could have been', *hayiti roce lir'ot* 'I would like to see'. Highschoolers also combine verbs to form text segments that span beyond the clause (Cahana-Amitay & Berman, 1999; Cahana-Amitay & Sandbank, 2000; Cahana-Amitay & Katzenberger, submitted) with coordinated structures interspersed by modifiers, e.g., *lo hayta muxana le-hakshiv bixlal ve-bétax lo la'azor* '(she) was not willing to listen at all and-certainly not to-help'. However, their writing still contains typically spoken, even slang expressions, e.g., *tofes memadim gdolim* 'catches (=takes on) big dimensions'; *báti le-hikanes la-xéder* '(I) came (=intended) to-enter the-room'; *hoci et acmo naki mi-kol ha-sipur* 'got himself clean from the whole story (=got himself off the hook)'. Prefabricated verb constructions are used more commonly than in younger ages but still contain some grammatical errors, especially in writing, e.g., *niftexu ksharim* 'new relations were opened' instead of *hitpatxu* 'relations developed'.

Adult verb constructions are the most complex and diverse, with a wide variety of syntactic structures consisting of coordinated, stacked and subordinate components, e.g., *histakren ve-kara bo* 'became-curious and read in-it', *le-hamshix ve-le-shamesh ke-* 'to continue and-to-function as'. Verb constructions display subtle aspectual distinctions taking various perspectives on described scenes, e.g., *amad ve-hisbir* 'stood and-explained', *hishtadlu li-rshom* 'made an effort to write-down', *macati acmi omédet mul* 'found myself standing opposite = facing'. A full range of modal elements are used in interaction with complex syntactic structures and specific lexical items, e.g., *amura hayta le-nakot* 'was supposed to clean', *eyno muxan li-*

shmo'a, le-ha'azin o le-shanot de'a 'is not willing to hear, to-listen or to change (her) opinion'. Affect is expressed explicitly by informative verb combinations, e.g., *hirgashti nivgad* 'I felt betrayed', *pgu'a ve-ko'evet* 'hurt,Fm and aching,Fm'. Adults sometimes use Biblical Hebrew expressions and prefabricated structures which are not available to younger speaker-writers, e.g., aspectual *higdil ve-amar* 'made-bigger and-said = went on to say more', idiomatic *xara ha-davar* 'made-angry the-thing = (he) was annoyed by' and *sasa eley krav* 'happy (= eager),Fm towards battle'; and even prophet-like *hoxaxti oto al hitnahaguto* '(I) reproached him on his behavior'. Their prefabricated structures often contain work-related idiomatic verb complements such as *ba be-maga im* 'come into contact with', *yikanes la-tafkid* 'will-enter to-the-job = will start taking over the job', and, at times, involve deliberate violations for increased rhetorical effect, e.g., *adif le-vater ve-le-hagia le-pshara me-asher le-hagia le-vikuax* 'better to give in and to reach a compromise than to reach an argument'.

Counter to what might have been predicted for a Semitic language such as Hebrew, whose verb phrase components show a limited variety of grammatical distinctions (Berman & Neeman, 1994; Berman, 1999; Hragnarsdottir, Aparici, Cahana-Amitay, van Hell, Viguié, in press), semantic and pragmatic development of Hebrew verbs involves growing diversification and complexity in verb phrase production, along two main dimensions. One, verbs combine with other verbs in large constructions to express not only tense but also modal, aspectual and voice distinctions. Two, verbs participate in idiomatic "prefabricated" units that express rich shades of meanings appropriate to a variety of narrative contexts.

4.2 Derived nominals

Like verbs, DNs undergo radical qualitative changes both in their semantics and morphology as well as in their syntactic environments. The analysis of DNs in each age group provides a clear picture of the concurrent development of lexical and morphosyntactic features in schoolage children and adolescents.

Gradeschool. Narratives in the younger age groups contain few DNs and verbal content is overwhelmingly expressed by verbs. Only eight out of forty gradeschool narratives, contained DNs. These include the words *makot* 'blows', *misxak* 'game', *shi'ur* 'lesson', *rikud* 'dance', *sipur* 'story', *reshut* 'permission', and *hitnahagut* 'behavior'. They are all lexicalized, mostly school-related terms of everyday register, obligatory in the sense of having no simpler alternatives, dynamic and imageable. Gradeschool DNs appear in simplex NPs, and never at syntactic subject position, which indicates greater cognitive and processing difficulty (Ravid, van Hell, Rosado & Zamora, in press), e.g., *nim'as li me-ha-hitnahagut ha-zoti la-xaverim shelax* 'I'm tired of this behavior of yours to your friends' [Hg18fnwdx].

Junior Highschool. 7th grade DNs constitute emergent linguistic forms between concrete nouns to abstract derivation. Unlike gradeschool narratives, most Junior High texts, regardless of length, contain at least one, and usually more and different DNs. From a morpho-semantic point of view, some of these are again dynamic, imageable, lexicalized no-alternative DNs, as in *misxak* 'game', *sipur* 'story' *riv* 'fight', *maka / makot* 'blow / s', *klalot* 'curses', *onashim* 'penalties', *sritot* 'scratches', *tiyul* 'trip'. But others already designate more abstract nouns with a wider range of meanings embedded in broader pragmatic contexts, indicating cognitive and social growth, as in *mivxan* 'examination', *siba* 'reason', *ezra* 'help', *cxok* 'laughter', *xerem* 'ostracizing', *mikrim* 'cases', *hacaga* 'presentation', *xevra* 'society', *vikuax*

'argument', *alimut* 'violence', *be'aya* 'problem'. However, very few of the 7th grade DNs are genuinely derived – e.g., *xaverut* 'friendship', *iyumim* 'threats'; and an equally smaller number are high-register lexical items – e.g., *merivot* 'fights', *sixsux* 'conflict', *hitkotetuyot* 'quarrels', *girsa* 'version' (Ravid & Berman, 2000). Many of the more advanced DNs are in the plural form (e.g., *iyumim* 'threats', *merivot* 'quarrels', *hitkotetuyot* 'quarrels', *mikrim* 'cases'), consistent with findings reported in Ravid & Avidor's (1998) experimental study of the development of DNs in Hebrew, according to which DNs in plural number are interim forms expressing Hebrew speakers' developing construal of the dual nature of deverbal nominals as nouns, and so inflected for plural, that are specially linked to verbs [I'm not sure I understand the part in red so I don't have a good suggestion for how to word it]. Plurality serves as a bridge towards a full understanding of the nature of DNs since younger children find it easy to latch onto the notion of 'derived nominal' via its more concrete pluralizable meaning.

In addition, other complex DN constructions also begin to emerge, such as (1) combinations with *i*-suffixed denominal modifying adjectives, which are a clear indication of later language development and literate Hebrew style (Levin, Ravid & Rappaport, in press; Ravid & Zilberbuch, 2000) e.g., *be'ayot ishiyot* 'personal problems', *xerem kitati* 'class ostracizing', and *mikrim ekroniyim ve-lo ekroniyim* 'principled and non-principled cases'. (2) Occurrence with relative clauses as modifiers, but almost never as syntactic subjects. For example, *siba she-etnaged le-xax* 'reason for me to oppose this'; *ha-siba ha-yexida she-lo nitkalti be-be'ayot kashot* 'the only reason that I did not face difficult problems; *xaverut she-nirkema bemeshex kol kax harbe shanim* 'a friendship that had been built over so many years'; and *ha-limud be-Me'ona she-haya be-rama nemuxa* 'the study at Meona which was at a low

level'. (3) Occurrence in free or analytic compound constructions (e.g. *shalav shel xerem* 'a stage of ostracizing'; *ha-sipur shel ha-riv shelanu* 'the story of our fight'), even of a DN as head of the literate construct-state *smixut* (*hacagat sof shana* 'end-of-the-year show'), and as head of the high-register so-called 'double' compound construction (e.g., *girsata shel Na'ama* 'Naama's version') which is typical of mature written expository texts (Ravid & Shlesinger, 1995). These initial attempts to generate complex structures with DNs sometimes yield grammatical errors, e.g., **paxad shel onashim* 'fear *of penalties' instead of correctly marked *paxad me-onashim* 'fear from penalties'; or awkward, convoluted structures where the information flow is stilted, e.g., *ani hayiti yéled dey xalash ve-ani kvar hirgashti et ha-hafixa le-matara* 'I was a somewhat weak boy and I already felt the turning into a target – [that is, the fact that I was turning into a target]'.

Highschool. Highschool DNs show tremendous qualitative growth compared with the previous age groups. All texts contain DNs, which show greater diversity and constitute genuine morphological derivations. They typically refer to abstract processes, actions, states and entities, indicating the consolidation of a literate "advanced" lexicon, e.g., *simanim* 'signs', *sikun* 'endangering', *memadim* 'dimensions', *inuy* 'torture', *he'ara* 'comment', *kalut* 'ease', *timtum* 'idiocy', *yeci'a* 'going out', *uvda* 'fact', *noxut* 'comfort', *tofa'a* 'phenomenon', *ginuy* 'condemnation', *gneva* 'theft'.

The 'conflict DN lexicon' of highschoolers contains clusters of diverse nouns sharing semantic fields typical of the dynamic, subjective, personal stance of the personal-conflict narrative. One such cluster is the semantic field of <u>emotions</u> associated with the conflicts described in the narratives: *regashot* 'feelings', *rigshot ashma* 'guilt feelings', *ka'as* 'anger', *pgi'a* 'hurt', *yedidutiyut* 'friendliness', *kin'a*

'envy'. Another is the field of conflicts, which includes various nouns designating different types of conflicts – physical (*milxama* 'war', *krav* 'battle', *sde krav* 'battlefield') and interpersonal (*yerida* 'pestering', *xikuxim* 'friction,PL', *hitnagduyot* 'objections', *riv* 'fight', *dxiya* 'rejection', *meriva* 'quarrel', *métax* 'tension', *be'ayot* 'problem'). A third cluster is school-related terms and events, which cover a broad range of referents (*séder ha-yom* 'agenda', *mivxanim* 'tests', *she'elot* 'questions', *ciyun* 'grade', *mikcóa* 'subject', *avodat gmar* 'final paper', *bxinat bagrut* 'matriculation examination', *memuca ciyunim* 'grade average').

Alongside with semantic development, the syntactic environments in which DNs occur become increasingly complex. DNs are often followed by relative clauses, e.g., *he'ara she-efshar le-faresh ota bishtey draxim* 'a comment that can be interpreted in two ways', *mikre she-bo ben kita sheli paga bi* 'a case where my classmate hurt me', and also form the nucleus of innovative, wellformed, large NPs with literate modification, e.g., *tnu'at go'al* 'a motion of [expressing] disgust' (construct state), *riv metupash* 'a stupid fight' (resultative adjective modification), *kalut yaxasit* 'relative ease' (denominal adjective modification), *métax taxaruti* 'competitive tension' (denominal adjective modification). Many DNs occur in post-verbal subject positions in presentative clauses, introducing new states, e.g., *hayu harbe hitnagduyot le-ze she-ani hovalti* '[there] were many objections to the fact that I led'; *nocru beyni le-veyno harbe me'od merivot, ce'akot ve-xikuxim* '[there] were formed between us many quarrels, shouts and frictions'; *hishtapru hayexasim* 'improved the-relationships = relationships improved'; *niftexu ksharim xadashim* 'opened up new ties = new ties opened up'; *hitkalkela lanu ha-yeci'a* 'was spoiled to-us the going-out = our evening out was spoiled'.

Highschoolers' DNs, however, are not entirely adult-like, since at times they occur in awkward, mixed-register constructions such as *he'arot shel yedidutiyut ve-shel yerida* 'comments of friendliness and of pestering'. They also demonstrate a number of emergent patterns, which consolidate only in adulthood. One involves semantic development, where the extention of concrete noun meanings expands to include abstract interpretations, e.g., *draxim* originally 'roads' extended into 'methods', *basis* 'basis' used in motivating people's behavior, *irbuv* 'mixing of topics', and *ksharim* 'ties' extended to the sense of 'relationships'. Another is the use of DNs as slang terms, e.g., *yerida* 'picking on somebody/pestering', *yeci'a* 'going out (on a date)'. A third emergent phenomenon is the co-occurrence of DNs and the verbs from which they derive, e.g., *mit'alelim be-yeled exad u-me'anim oto - ze haya inuy* '[they] abuse one boy and torture him – it was torture'; *hi ganva masheu – hi nora hicta'ara al hagneva* 'she stole something – she was so sorry about the steeling (=theft)'; *ginu oti – ginuy ze* '[they] condemned me – this condemnation'… DNs in highschool thus become increasingly literate, more numerous and diverse, and indicate more flexible pragmatic usage, with an increasing ability to zoom in and out of the verbal and the nominal "modes", so to speak, in order to depict narrative events, states and actions.

Adults. Semantically, DNs in adult narratives are diverse and typically abstract, e.g., *toxniyot* 'plans', *ta'ana* 'claim', *sixa* 'conversation', *bitaxon acmi* 'self confidence', *tipshut* 'stupidity', *imutim* 'conflicts', *cipiyot* 'expectations', *axzavot* 'disappointments', *te'urim* 'descriptions', *hagdara* 'definition', *macavim* 'situation', *laxac* 'tension', *hetkef lev* 'heart attack', *maxlóket* 'controversy', *slida* 'abhorrence', *zehut* 'identity', *ne'emanut* 'loyalty', *kfiyut tova* 'ungratefulness', *córex* 'need', *ga'ava* 'pride', *elbon* 'taking offense', *ogmat néfesh* 'distress', *pshara* 'compromise',

sovlanut ‘tolerance’, *maga* ‘touch’, *xoser* ‘lack’. They are morphologically complex and serve as genuine nominal alternative to verbs, in the sense that the verb and the DN constitute a viable morphological dyad, where both categories can be used interchangeably. In other words, use of a DN in a text can be viewed as a genuine choice to express content otherwise expressed by a verb. For example, *yi’uc* ‘consultation’, *ishur* ‘confirmation’, *pgisha* ‘meeting’, *biluy* ‘having fun’, *haxlata* ‘decision’, *hitnas’ut* ‘experiencing’, *diburim* ‘talk,PL’, *ma’asim* ‘actions’, *bikur* ‘visiting’, *hafra’ot* ‘disturbances’, *trifa* ‘devouring’, *hoca’a* ‘expelling’, *hitlahavut* ‘enthusiasm’, *xazara* ‘coming back’, *shitot cayid* ‘hunting methods’, *harca’a* ‘lecture’, *nehiga* ‘driving’, *zilzul* ‘condescension’, *hitxashvut* ‘consideration’, *sakanat te’una* ‘danger of accident’, *harkava* ‘assembling’, *hitxamkuyot* ‘avoidance’, *xatuna* ‘wedding’, *hitnagshut* ‘clash’, *aliyot* ‘going upPL’, *yeridot* ‘going downPL’, *aziva* ‘leaving’, *haklada* ‘typing’.

The morphological complexity of DNs is reflected in two types of optionally inflected constructions, which occur almost exclusively in the adult narratives. One structure is “double” compounds with DN heads, the hallmark of expert abstract expository writing (Ravid & Shlesinger, 1995), e.g., *nikyono shel xadar ha-sherutim* ‘the cleanlinessPOS of the toilet room’, *hitnahagutam shel anashim svivxa* ‘the behaviorPOS of people around you’, *gvarvareyha ha-mizdamnim shel ha-shxena* ‘the occasional menPOS of the neighbor’, *avodato shel ha-minhalan* ‘the workPOS of the administrator’, *xashivutam shel yaxasey avoda takinim* ‘the importancePOS of correct working relations’; *mekoro shel ha-elbon* ‘the sourcePOS of the offense’. The other is nouns with optional genitive marking, typical of adult written narratives (Cahana-Amitay & Ravid, 2000), which are usually accompanied here by complex and diverse complementation e.g., *xibata lizrok zével mi-koma shlishit dérex xavley*

ha-kvisa haysher la-xacar ha-bayit ‘fondness-hers for dumping garbage from third floor through the laundry lines to the building yard’; *xanayatenu ha-pratit* ‘private parking space-ours; *be-taxanati ha-shniya be-holand* ‘in second stop-mine in Holland’; *lo hayta ve-lu hit’anyenut kala bi, be-ma’asay, bi-txumey hithanyenuti* ‘[there] was not any interest wahtsoever in me, in actions-mine, in domains of interest-mine’; *slidato me-ha-arec ba gadal ve-xunax* ‘abhorrence-his for the country in which he grew up and was educated’.

Syntactically, DNs in adult narratives are almost always modified, serving as an abstract nucleus of a complex NP. Adult DNs thus take on their prorotypical textual role promoting the flow of information in the text by participating in large and complex NPs expressing entire propositions in syntactically diverse NP architectures (Halliday, 1988). Such DNs frequently occur in pre-verbal subject position, which together with their modifiers form diverse syntactic configurations that serve as the hallmark of NPs in mature, literate written texts. For example, *ha-diburim shelo al ne’emanut xadasha li-medina xadasha ve-al slidato me-ha-arec ba gadal ve-xunax* ‘his talkPL about a new loyalty to a new country and about his abhorrence for the country where he was born and educated’; *be’aya xevratit she-ha-réka shela eyno hitnagshut craxim amitiyim* ‘a social problem whose background is not a clash of genuine needs’; *ha-zilzul ve-xóser ha-hitxashvut ha-mufgan she-nehagim mesuyamim marshim le-acmam linhog klapey zulatam, ha-mevi’im oti le-macav bo ani ke-nosa’at margisha me’uyémet o be-sakanat te’una* ‘the condescension and explicit lack of consideration with which certain drivers feel free to behave towards others, which bring me to a state where I as a passenger feel threatened and in danger of accident’. Each of these densely packed NPs could have been expressed in the form of a number of loosely related simplex clauses with finite verbs instead of DNs; but constructing

them around a DN head permits for smoother, more coherent transition from backgrounded to foregrounded narrative information.

Modification of adult DNs takes almost every possible form. For example, every type of adjectival complementation of DNs is represented in adult narratives, e.g., resultative adjectives (*hafra'otav ha-txufot* his frequent disturbances'), denominal adjectives (*hetkef lev miyadi* 'immediate heart attack'), and pattern-related adjectives (*haxlata amica u-mehira* 'a brave and quick decision'). Many constructions combine a number of DNs in a variety of hierarchical syntactic configurations, with modification by adjectives, PPs and free or analytical compounds which permit the construction of even larger syntactic units, e.g., *regashot shel kfiyut tova me'xoéret ve-nivzit* 'feelings of ugly and nasty ungratefulness'; *dfusey hitnahagut shelo she-avuri hayu xadashim ve-garmu li li-slida mimenu ad kedey nituk ha-késher* 'behavior patterns of his which for me were new and caused me to feel abhorrence for him to the extent of cutting off the relationship'.

Use of DNs and their associated nominal structure instead of verbs and their associated argument structure results in a personal narrative which takes a less involved, more distant, abstract and detached stance even on active, dynamic, emotional events. To illustrate this, consider excerpts from a story written by a teacher about a boy who used to disrupt his classes on a regular basis (***Yariv, man, Hs18mnwax***). DNs are underlined.

At first I did not let his frequent <u>disturbances</u> disturb me, but with time it was simply impossible to instruct and concentrate with Paul's <u>shouts</u> and <u>comments</u> echoing in the classroom. At first I tried to punish him by <u>sending</u> him <u>out</u> of class but immediately upon his <u>return</u> Paul continued to disturb his classmates.

After a couple of weeks… I brought a female green praying mantis to class to demonstrate to the children a devouring of this insect. Of course the kids became enthusiastic and with them Paul who was always keen on fighting. Seeing his enthusiasm I asked Paul to collect praying mantises in the wadi by the school… Paul stood up and explained to the class for 20 minutes the hunting methods he used and where he hunted.

Though 'verbal content' in this narrative denotes active, imageable events and emotional states, actually very little of it is expressed by inflected verbs, the obvious choice for expressing such notions; instead, most of the narrative is expressed by DNs, sometimes with a double marking by both a DN and a verb (e.g., *disturbances / disturb, hunting methods / hunted*), which results in the expression of narrative-like thematic content but from a less personalized, detached perspective.

4.3 Conclusion

This study traces the development of verbal and nominal expression of 'verbal content' in spoken and written personal narratives of children, adolescents and adults. One clear quantitative finding is that with age and schooling, expression of verbal content relies less and less on verbs which prototypically express narrative content and involves additional, more marked devices in the form of derived nominals, especially in writing, which generally contains more verbal content than spoken narratives in spite of being shorter. Consequently mature narratives take a less concrete and involved stance even on highly personal events.

A qualitative analysis of the verbs and DNs in these narratives and the contexts in which they occur shows that they increase in semantic diversity and specificity and at the same time they take a broader cognitive and pragmatic outlook

on events. Moreover, both verbs and DNs appear in increasingly complex and more diverse syntactic configurations offering a number of perspectives on the same events. Especially interesting are DNs, which with age and schooling take on new functions that later on become assimilated into the story telling of older narrators. Highschoolers, and adults in particular are able to zoom in and out of verbal and nominal viewpoints at will.

This work demonstrates the lexicon / grammar interface in development, and that vocabulary complexity, density, and diversity cannot be treated in isolation, divorced from grammatical structure, discourse usage, and information processing. Conversely, syntactic constructions such as noun phrases and verb phrases (or clause-linking, subordination) need to be evaluated in relation to lexical content as interacting with and impinging on linguistic form and structural complexity.

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Age Group	Modality	# of clauses		Total verbal content		Verbal content/ clause ratios	
		Mean	SD	Mean	SD	Mean	SD
Gradeschool	Spoken	4.95	9.59	0.60	4.56	.70	0.21
	Written	.35	.23	.55	.93	.77	0.21
Junior Highschool	Spoken	5.15	0.40	5.70	2.00	.62	0.20
	Written	4.80	.75	0.30	.77	.70	0.19
Highschool	Spoken	9.30	4.60	5.10	0.51	.85	0.20
	Written	3.20	.97	3.90	.23	.10	0.41
Adults	Spoken	2.90	4.42	1.65	0.46	.00	0.22
	Written	8.90	0.85	2.55	3.09	.18	0.24

Table 1. Number of clauses, total verbal content (verbs + derived nominals), and verbal content/clause ratios by age group and modality

Age Group	Modality	% of lexical verbs		% of derived nominals	
		Mean	SD	Mean	SD
Gradeschool	Spoken	97.62	4.85	2.38	4.85
	Written	99.08	2.83	0.92	2.83
Junior Highschool	Spoken	92.70	10.38	7.30	10.38
	Written	88.80	9.85	11.20	9.85
Highschool	Spoken	76.57	16.86	23.43	16.86
	Written	71.38	20.87	28.64	20.87
Adults	Spoken	59.62	13.42	40.41	13.42
	Written	54.66	12.27	45.35	12.25

Table 2. Proportion of lexical verbs versus derived nominals out of "total verbal content" by age group and modality

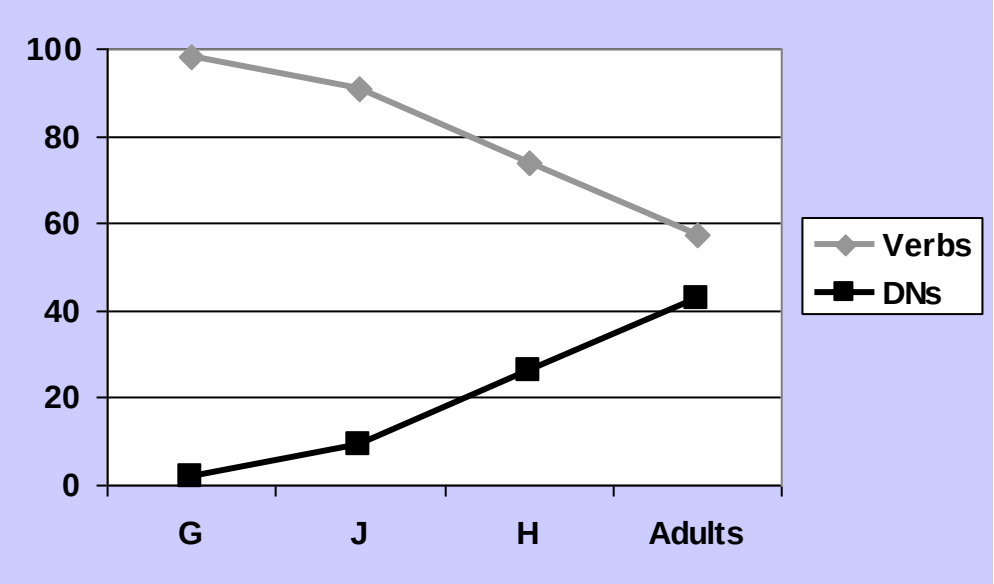

Figure 1. Proportion of verbs and derived nominals in the four age groups

(Gradeschool=G; Junior highschool=J; Highschool=H; Adults)

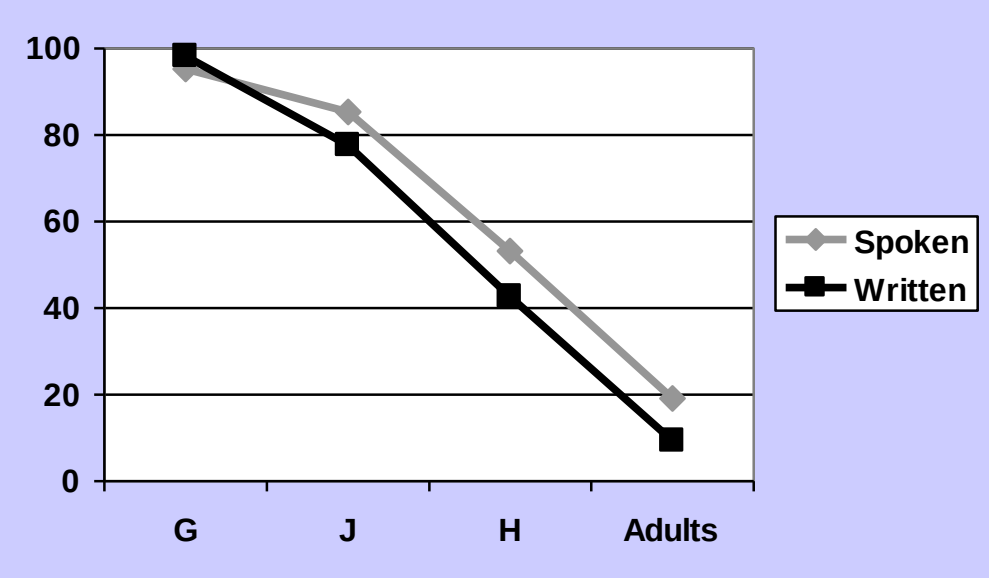

Figure 2. Differences between proportion of verbs and of derived nominals in the spoken and written texts in the four age groups (Gradeschool=G; Junior highschool=J; Highschool=H; Adults)

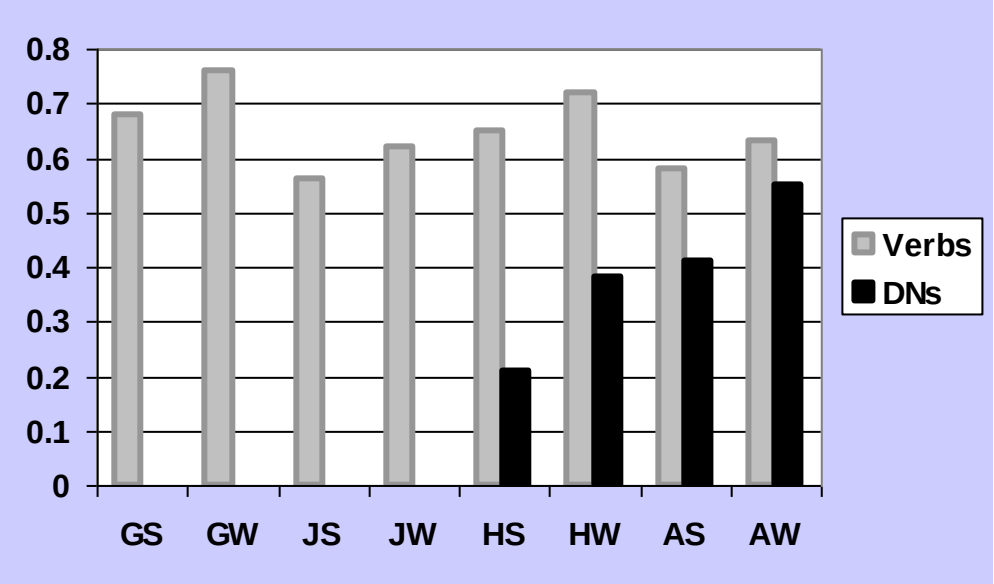

Figure 3. Number of verbs and derived nominals out of number of clauses, by are group and modality (spoken and written narratives in each age group)

[1] Except for the difference between verbs-nouns (out of clauses) in the spoken narratives of junior highschoolers and highschoolers.