

Acquiring and expressing temporality in Hebrew: A T/(M/A) Language*

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Notions involved in linguistic temporality are introduced, followed by description of the structure and function of relevant categories in Modern Hebrew, a language with impoverished grammatical Aspect and Mood. Marking of temporal distinctions is then analysed from the perspectives of language use in different discursive contexts – oral picturebook-based narratives, written fable reconstructions, personal experience accounts, and expository prose – and of language development from pre-school age across adolescence. Even young children emerge as sensitive to the major typological features of their native language, while maturely proficient speaker-writers are shown to rely on more varied rhetorical options for expressing discourse-embedded temporality.

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1. Linguistic ‘Temporality’

Across the languages of the world, notions of time and temporality are grammatically encoded by a restricted set of linguistically specific categories – defined by the three interacting dimensions of Tense, Mood, and Aspect (T/M/A) – which have no direct correlates in other knowledge domains such as philosophy and epistemology or cognitive psychology and psychoanalytic theory (Gell 1992: 120-126). *Tense* specifies where a situation – a state, activity, or event – is anchored with respect to the time of speaking or writing (Comrie 1985; Dahl 1985); *Aspect* characterizes the internal contour of situations, for example, as durative or punctual, ongoing or completed (Comrie 1976; Hopper 1982; Smith 1994); and *Mood* concerns the speaker/writer’s attitude to the possibility, likelihood, necessity, or desirability of the situation’s eventualizing (Bybee and Fleischmann 1995, Palmer 1986).

These categories of linguistic temporality are defined as ‘grammaticized’ when they are marked by bound inflectional morphology – e.g., English *walks*, *walked* – and/or by closed class particles and auxiliaries – as in *is walking*, *has walked* (Bybee 1985). On the other hand, semantic distinctions in expression of temporality may also be realized through various other linguistic means, including lexical and syntactic constructions, so illustrating Slobin’s (2004) idea of a ‘distributed semantics’, where diverse linguistic devices conspire together in expressing a given function.¹ And from the point of view of conceptual complexity, notions of time play an important role in claims concerning language acquisition (see, for example, Shirai, Slobin, and Weist 1998: 245-253) and the relationship between language, thought and culture associated with the work of Benjamin Lee Whorf (see Lucy: 42-48).

In contrast to languages like English, Spanish, or Turkish, but in common with many others, Modern Hebrew does not mark aspectual distinctions grammatically in order to encode different perspectives on a given real-world state of affairs. Consider, for example, observations that might be made by someone watching a friend participating in a swimming competition. The

five expressive options underlined in (1) all translate in Hebrew into the two forms of so-called present and past tense respectively, one of them (in 1d and 1e) into either of the two forms, depending on context.

- | | |
|--|-------------------------------|
| (1) a. He <u>swims</u> really well. | Hebrew: <i>soxe</i> – Present |
| b. He <u>is swimming</u> really well. | <i>soxe</i> – Present |
| c. He <u>has been swimming</u> really well lately. | <i>soxe</i> – Present |
| d. He <u>has swum</u> since he was a baby. | <i>soxe</i> – Present |
| e. He <u>has swum</u> better before. | <i>saxa</i> – Past |
| f. He <u>swam</u> much better last season. | <i>saxa</i> – Past |

The examples in (1) illustrate the fact that, unlike English, Hebrew has no grammatical means of using progressive aspect to indicate differences between events as ongoing or habitual, and perfect aspect to mark present relevance. In this, Modern Hebrew differs from its classical antecedents, reflecting the post-Biblical shift from a largely verb-initial language that relied primarily on marking of aspectual distinctions in narrative discourse (Fajngold 1998, Goldenberg 2013: 202-205, Hatav 1997) to a predominantly (S)VO, tense-based typology (Berman 1978, 1980a, 2011; Givón 1976, Ravid 1997).² The consequences of Hebrew as a language “that marks time without aspect” (Berman and Dromi 1984) are a key theme of the present study.

The sparse grammatical marking of temporality in Hebrew also affects the domain of mood or modality. Hebrew lacks a dedicated, grammatically distinct set of auxiliary verbs like English *can* ~ *could*, *may* ~ *might*, *must*, *shall* ~ *should*, *will* ~ *would*, instead relying on predicative operators that are often morphologically anomalous, invariably followed by a verb in the infinitive, e.g., *yaxol* ‘be able to’, *alul*, *asuy* ‘be likely, liable to’, *carix* ‘have to, should’ (Reilly et al. 2002). Moreover, Hebrew has no grammatical category of Subjunctive mood, and only one form of expressing counterfactual conditional mood, where English has two, as in (2) and (3).

- (2) a. I would help you if you asked – and I am still ready to do so.
 b. I would have helped you if you had asked – but now it’s too late.

The underlined elements in (2a) and (2b) are both rendered by Hebrew *hayiti ozer lexa ilu ša’alta* ‘was:1st help(ing) you if asked:2nd’: The apodosis in the main clauses is expressed by the past tense auxiliary *haya* ‘be’ in the 1st person, literally ‘I was’ plus the participial form of the verb *ozar* ‘help(ing)’ while the protasis expressing the condition is in simple past tense, with no overt distinction between the two types of counterfactual statements. A similar structural identity between conditions that were or were not necessarily fulfilled is illustrated in (3a) and (3b), with the Hebrew versions of the underlined expressions both rendered as *hayiti carix la’azor* ‘was:1st must to-help’.

- (3) a. I had to help my sister with her assignment – so I couldn’t go out.
 b. I should have helped my sister with her assignment – but I didn’t.

Speakers of Hebrew are able to distinguish conceptually between different types of contingencies: where a possibility of helping still exists as in (2a) compared with where such a possibility no longer exists as in (2b), or an obligation that was necessarily fulfilled in (3a) as against one that may or may not have been met in the case of (3b). But since these contrasts are not grammatically marked in their language, they may resort to other sources of information to interpret such distinctions – including world knowledge shared by speakers and their addressees, the extralinguistic situation in which utterances are produced, and the linguistic content of surrounding discourse. Moreover, following Slobin’s (1996) idea of “thinking for speaking” – that the means selected by speakers for encoding their thoughts verbally will necessarily be governed by the grammatical, lexical, and rhetorical options available and/or favored in their native language – Hebrew speaker-writers can but need rely on alternative, non-grammaticalized forms in their language for expressing relevant distinctions in the domain of temporality.

Below, structural consequences of the paucity of grammatical Aspect and Mood in Hebrew are noted (Section 2) as background to consideration of various means for expressing temporality in extended discourse in the language (Section 3).

2. Modern Hebrew as a T(M/A) Language

The five categories of Tense/Mood that are grammatically marked in Modern Hebrew are illustrated in Table 1 for the two verb-roots *r-q-d* ‘dance’ and *g-d-l* ‘grow’ in three different morphological *binyan* ‘conjugation’ patterns.

Pattern	Root	Gloss	Infinitive	Imperative	Future	Past	<i>benoni</i> = ‘Intermediate’
P1 <i>pa’al</i>	r-q-d g-d-l	dance grow (Intr.)	<i>li-rkod</i> <i>li-gdol</i>	<i>rakod</i> <i>gdal</i>	<i>yirkod</i> <i>yigdal</i>	<i>rakad</i> <i>gadal</i>	<i>roked</i> <i>gadel</i>
P3 <i>pi’el</i>	r-q-d g-d-l	skip grow (Trans.)	<i>le-raked</i> <i>le-gadel</i>	<i>raked</i> <i>gadel</i>	<i>yeraked</i> <i>yegadel</i>	<i>riked</i> <i>gidel</i>	<i>meraked</i> <i>megadeal</i>
P5 <i>hif’il</i>	r-q-d g-d-l	dance (Caus.) enlarge	<i>le-harkid</i> <i>le-hagdil</i>	<i>harked</i> <i>hagdel</i>	<i>yarkid</i> <i>yagdil</i>	<i>hirkid</i> <i>higdil</i>	<i>markid</i> <i>magdil</i>

Table 1 *Five categories of Mood and Tense for two verb-roots in three binyan patterns*³

In surface *form*, the categories of Infinitive, Imperative, and Future reflect their association with irrealis mood, sharing the same morphological stem. *Infinitives* are invariant, marked by a prefixal *l-* plus a vowel that depends on the following syllable (e.g., *li-rkod* ‘to-dance’, *le-raked* ‘to-skip’, *la-xlom* ‘to-dream’) – a prefix that, as in many languages, also functions as the preposition ‘to’ indicating motion towards as well as both dative and benefactive case in three-place predicates.⁴ *Imperatives* are inflected suffixally for 2nd person and singular or plural number, masculine or feminine gender. *Future Tense* forms are marked by prefixes for person

and gender (e.g., *te-gadel* ‘you,SG ~ she will-grow’, *ye-gadel* ‘he-will-grow’) and by suffixes for number (e.g., *te-gadlu* ‘you,PL will-grow’), while *Past Tense* forms are suffixed for person, gender, and number (e.g. *gidal-ti* ‘I grew’, *gidal-ta* ‘you:SG,MASC grew’, *gidal-t* ‘you:SG,FEM grew’, *gidal-nu* ‘we grew’). Verbs in the *benoni* literally ‘intermediate’ category in some contexts correspond to Present tense in European languages, but they are like Nouns and Adjectives in taking suffixes for number and gender, but not for person. The functions described below disregard Imperatives, which are semantically quite straightforward, while, normative imperatives are rare in everyday spoken usage, replaced largely by Future forms (Berman 1985, Bolozky 1979, 2009).

In an earlier, structure-based analysis, the four other categories were distinguished as follows (Berman 1978: 139-179): Infinitives were defined as [-TENSE], Past and Future as [+TENSE], and *benoni* forms as [0 = ZERO TENSE]. The present discussion follows this analysis, in functional rather than purely structural perspective, to argue that a major consequence of Hebrew’s minimal grammatical marking of Aspect and Mood is that the forms illustrated in Table 1 are typically *multi-functional*.

Infinitives serve (a) as main verbs in hortative mood, expressing exhortatives (orders and prohibitions), often in addressing children or pets, e.g. *la-ševet* ‘sit (down)!’, *lo le-daber* ‘not to-talk = don’t talk!, no talking!’; (b) as “complement taking verbs” (Diessel 2004) in constructions termed ‘complex VPs’ (Givón 2009: 129-203) or ‘extended predicates’ in Hebrew grammars (Azar 1977, Blau 1966); these typically occur with modal operators or aspectual verbs marked for Tense (e.g., *ata yaxol la-ševet* ‘you can = are able to-sit’, *hem himšixu le-daber* ‘they continued to-talk = went on talking’), with the second verb invariably in the infinitive – without the option of a base or participial verb form (e.g., *can sit, start talking*); (c) Infinitives also serve for non-finite subordination, as complements (e.g., *hu bikeš (mehem) la-ševet* ‘he asked (of them) to sit’) and as adverbial clauses of purpose (e.g., *hu ala la-duxan (kdey) le-daber* ‘he climbed the dais (in order) to-talk’).

Future forms serve a variety of irrealis functions that in other languages might be marked by subjunctives or by modals like English *would* as in (2) and (3) above. They function (a) for predictions or declarations about events assumed to occur at some future time (e.g., *hem yešvu efo še-yošivu otam* ‘they will-sit where will-seat them = where they are put’; *ata tedaber ba-šavua ha-ba* ‘you will-talk next week’; (b) as imperatives in 2nd person (e.g., *tešvu bevakaša* ‘sit (down), please’, *nu, tedaber kvar* ‘well, talk already = say something!’); and (c) in conditional and subjunctive constructions, in both the main clause and the conditional clause (e.g., *im tešev, nuxal le-hatxil* ‘if you-will sit, we’ll be able to start’, *kše-tedaber, nismax li-šmoa* ‘when you will-talk, we’ll be happy to listen’).

Past Tense forms in Hebrew are likewise multifunctional, translatable in English into all of the following ‘simple’, ‘progressive’, and ‘perfect’ forms: *sat, talked; was sitting, were talking; has/had been sitting, talking; has/had sat, talked*. The only alternative is use of a complex construction of *haya* ‘be, PAST’ plus a *benoni* form participle, illustrated in (2) and (3) above as serving for counterfactuals (e.g., *hayiti ozer lexa* ‘was:1st help(ing) you = I would help ~ would have helped you’ and *hayiti carix la’azor* ‘was:1st must to-help = I had to help ~ should have helped you’). This same construction also serves optionally to express habitual aspect in the past, as in (4a) compared with the synonymous (4b):

- (4) a. *kše-hayinu ktanim, hayinu holxim yexefim*
 when-were:1stPLUR small:PLUR, were:1stSING walk(ing):PLUR barefoot:PLUR
 ‘When we were little, we would = used to go barefoot’.
- b. *kše-hayinu ktanim, halaxnu:1stPLUR yexefim*
 ‘When we were small, we walked = went barefoot’

Choice of the ‘simple’ past tense form in (4b) reflects the general tendency of Modern Hebrew to use simplex verb constructions in expressing both Tense and Aspect (Berman 2001).

Forms in the so-called *benoni* ‘intermediate’ category are typologically specific and highly multifunctional. As noted, these differ from tense-marked Past and Future verbs in Hebrew, since they agree with the grammatical subject in Number and Gender but not for Person, reflecting their partially nominal and partially verbal (participial) Biblical origins, and structurally analyzable as complements of the copula verb *haya* ‘be’ (Berman 1978, Gordon 1982). Since post-Biblical times, *benoni* forms have functioned (a) to express Present tense – both extended or habitual and immediate or ongoing (e.g., *hu tamid yošev levad* ‘he always sits alone’, *lama at yošev-et im ha-gav elay* ‘Why (are) you:FEM sitting:FEM with your-back to-me?’; *hu medaber xameš safot* ‘he speaks five languages’, *hi medaber-et ba-telefon, al tafria la* ‘she (is) talking:FEM on-the-phone, don’t disturb her’. Yet *benoni*-form verbs continue to function as participles in several contexts, where they differ from their Romance or Germanic counterparts in agreeing with the subject noun in Number and Gender. Such constructions include: (b) as complements of verbs of perception in ‘small clauses’, e.g., *hem ra’u otam yošvim šam* ‘they saw them sit(ing): PLUR there’, *hu šama ota medaber-et* ‘he heard her talk(ing):FEM’; (c) in non-finite adverbial clauses expressing attendant circumstances, e.g., *hem yašvu ba-cad, medabrim im acmam* ‘they sat apart, talk(ing): PLUR among themselves’ deriving their temporal reference from the tense of the matrix verb in (b) and (c). Another participial function of *benoni* forms noted earlier is (d) complements of *haya* ‘be:PAST’ as a unique instance of an “auxiliary” verb (Berman 1980b), to express counterfactual conditions – as in (2) and (3) – or habitual past as in (4a). Finally (e) *benoni* forms also serve as passive participles expressing resultant endstate, as in: *ha-tinok yašuv al kise gavoā* the-baby is-seated on a high chair’, *ha-nose me’od medubar* ‘the-topic very is-spoken = the topic is very much talked about’ (Berman 1994).

This paucity of surface marking of distinctions in the domains of Tense, Aspect, and Mood in Hebrew contrasts with the otherwise rich bound morphology of the language. Inflectionally, Subject-Verb and Noun-Adjective agreement is marked for Number (Singular/Plural) and Gender (Masculine/Feminine) and, in [+Tense] Past and Future, for Person (1st, 2nd, 3rd). Derivationally, moreover, all verbs in Hebrew are formed in one of five *binyan* conjugations – termed morphological patterns or prosodic templates – which serve, inter alia, to express valence-changing processes (Bat-El 2011, Berman 1993, 2003). These include, in addition to the three illustrated in Table 1, two typically intransitive patterns – P2 *nif’al* and P5 *hitpa’el* – and the two grammatically conditioned passive voice patterns (*pu’al* as the passive of verbs in P3 *pi’el* and *hof’al* of P5 *hif’il* verbs). While *binyan* verb morphology is obligatory in the sense that all Hebrew verbs must be constructed in at least one or more such patterns, they are not grammatically constrained (except for the two strictly passive conjugations): They reflect

only partially regular and predictable form-function mappings (e.g., verbs in P3 *pi'el* are typically but not necessarily active and transitive, P5 *hif'il* are largely causative), and the system reflects many lexical gaps and inconsistencies. On the other hand, from the point of view of the present study, the *binyan* systems affords Hebrew-speakers a pervasive, and readily accessible means, for alternating forms of predicates, so enriching the verbal texture of a given piece of discourse, as discussed further below.

3. Expression of Temporality in Extended Discourse

This section addresses the question of how Hebrew speaker-writers at different levels of age-schooling express temporality in extended discourse on the basis of the relatively impoverished set of formal T/M/A distinctions available in their language? The following issues are considered in light of findings from research projects which elicited various types of texts from native Hebrew speakers from preschool into adulthood: Inter-genre distinctiveness in telling a story compared with discussing a topic (Section 3.1); expressive options deployed by Hebrew speaker-writers in relating past events and in discussing an abstract topic (3.2); and realization of TMA in Hebrew discourse as reflecting general developmental trends from pre-school across adolescence (3.3).

3.1 *Inter-genre distinctiveness*

An important facet of temporality in extended discourse is the role it plays in distinguishing between different types of text. For example, narratives of all kinds are typically formulated in past tense, perfective aspect, and realis modality, whereas expository, argumentative, or descriptive texts rely mainly on the timeless present, generic aspect, and irrealis modality (Longacre 1996, Ragnarsdóttir et al. 2002, Reilly et al. 2002). Research has shown that even young preschool children are able to mark predicates differentially in distinguishing, for example, between atemporal scripts and episodic narratives (Hudson and Shapiro 1991), between different types of narratives (Hicks 1991), fictional narratives versus descriptions (Tolchinsky and Sandbank 1994), and prose narratives versus nursery rhymes (Lee, Torrance, and Olson 2001). Inter-genre distinctiveness is dramatically demonstrated by analyses of TMA in the framework of a cross-linguistic project in which schoolchildren, adolescents, and adults – native speakers of seven languages, including Israeli Hebrew – were asked to write and tell a story about an experience with interpersonal conflict and to write an essay and give a talk discussing the same topic (Berman 2008, Berman and Verhoeven 2002). Across the data-base, from the youngest age-group, the narratives were formulated primarily in past tense and, where available, in perfective aspect, so in realis modality, whereas the expository discussion type texts relied largely on atemporal extended present (rather than progressive, where available), generic aspect, and irrealis modality (Ragnarsdóttir et al. 2002). Tense/Mood forms in texts written by the same participants in the two genres (IVth graders aged 9 to 10 years, middle-school students aged 12 to 13, high schoolers aged 16 to 17, and adult graduate-school students in their 20s and 30s) revealed the following breakdowns: Expository – over 50% *Present* tense (= Hebrew *benoni*) forms, around 5% *Past* tense; Narratives – over 60% *Past* tense, between 15% to 20% *Present* –

with the Hebrew texts largely similar to their counterparts in English and Spanish (Kupersmitt 2006). Moreover, *Irrealis* mood – Future tense, Conditionals, and modal operators in English, French, Hebrew, and Spanish (supplemented by grammatical modals in English, and Subjunctives in Spanish and French) accounted for nearly 25% of the predicates in Expository texts, but only around 5% in the Narratives (Reilly et al 2002).

These trends are illustrated by the personal-experience narrative and expository essay written by a graduate school science major in (5) and (6). Verbs are underlined, clause-boundaries marked by a bracket], a hyphen – separates conjunctions grammatical functors prefixed to the following word in Hebrew orthography (e.g., those meaning *and*, *when*, *the*, *in*), parentheses () represent elements that do not occur in the Hebrew original, and three dots stand for additional, non- predicating elaborations.

- (5) *hayom ba-misrad haya imut beyn šney mehandesim be-misradi ...]*
 today in-the-office was:PA confrontation between two engineers in my-office ...
karati:PA *le-šney-hem*]
 called:1st = I called-in both of them
ve-hoxaxti:PA *oto al hitnahaguto*]
 and-admonished:1st him [=the senior engineer] for his-behavior.
leaxar miken hegia elay]
 afterwards Q came:3rd:PA to-me
ve-ba be- teanot al kax]
 and had:PA complaints about it
še-hoxaxti oto]
 that admonished:1st:PA him.
 ‘Today in the office was a confrontation between two engineers in my office (a senior man and lower-level woman). I called them in and admonished him for his behavior. Afterwards he came to see me and voiced complaints about (the fact) that I (had) admonished him = my having admonished him’

All the verbs in (5) are in (the single) simplex Past tense, and only the first clause has a subject, the noun *imut* ‘confrontation’, following the existential copular *haya* ‘(there) was’. Compare the essay in (6), written by the same man on the same topic of interpersonal conflict.

- (6) *anašim mi-teva ha-dvarim Q šonim ze mi-ze]*
 people from (the) nature (of) things (are) different this (one) from that (one)
ka'ašer boxanim hitnahaguyot šel anašim šonim ba- xevra]
 when examine:PR,PLUR behaviors of different people in society
nitan lehavxin be-ma'arexet šel interakciyot beyn-išiiyot]
Q possible to-distinguish (a) system of inter-personal interactions
ha-meviot liydey bituy et ha-šoni beyn ha-pratim ba-xevra
 that-lead:PR,FEM,PLUR to expression of the-difference between persons in-society
tox yisum šel ha-ndividual ve-netiyotav ba-sviva]
 through application of the-individual and-his tendencies in-the-environment

= ‘People by the-nature of things (are) different = differ from one to the next. When (we ~ people) examine behaviors of different people in society, it is possible to-distinguish a system [=a system can be distinguished] of interpersonal interactions that give expression to the differences in society’

The two quite typical texts in (5) and (6) illustrate statistically significant distinctions in use of Tense/Mood in different types of texts identified in a range of studies in this project (e.g., Berman and Nir-Sagiv 2004 for Hebrew; Kupersmitt 2006 for English, Hebrew, and Spanish; Ragnarsdóttir et al. 2002 for Dutch, French, Hebrew, Icelandic, and Spanish; Reilly et al. 2002 for English, French, Hebrew, and Spanish). And they show that the impoverished grammatical categories of Tense/Mood in Hebrew do not rule out genre-appropriate expression of temporality. This conclusion is supported by another facet of inter-genre distinctiveness that emerged from the same data-base across languages and age-groups: Reliance on a “confluence of cues” in the expression of the temporally-related dimensions of *episodic specificity* of narrative accounts as against *genericity* of expository discussions, with different linguistic categories conspiring together in marking this distinction. Thus, differences in Tense/Mood were supplemented by distinct types of grammatical *Subjects*, with referentially specific pronominal or lexical subjects preferred across narratives as against impersonal, often subjectless, constructions in the expository texts (Berman 2011, Ravid et al. 2002). Predicate-types **also** differed: Narratives were anchored in lexical, mainly dynamic predicates while expository texts relied significantly more on stative predicates, in Hebrew often in the form of (verbless) copular constructions in the Present tense (Berman and Nir-Sagiv 2004). In other words – along with Past Tense versus *benoni* extended Present and Future, irrealis mood forms of verbs – Hebrew speaker-writers can resort to a range of linguistic systems to present a personalized, involved, and subjective versus a generalized, distanced discourse stance (Berman 2005).

As demonstrated further in the next section, the overall consequence in inter-genre terms is that, while the temporal texture of Hebrew narratives remains relatively restricted when compared with languages that have richer systems of aspectual marking, Hebrew speaker-writers can and do rely on a wide range of expressive options for making generalized propositions and for referring to irrealis contingences in constructing expository discourse.

3.2 Expressive options in constructing different types of texts

Alternative means of expressing discursive temporality in Hebrew narratives are analyzed below in contrast to Spanish and French, as two languages which make an overt, grammatically obligatory distinction between Imperfective and Perfective aspect. One such set of contrasts compares the first two clauses of a *fable* read to schoolchildren and adults, native speakers of Israeli Hebrew and Argentinian Spanish, who then reconstructed its contents in writing (Sandbank 2004). The original wording of the two versions are given in (7), with Simple Past and *benoni* Participial verbs in Hebrew and Imperfective Past and Present Participial verbs in Spanish.

- (7) Hebrew: *štey pradot halxu ba-dérex*
 ‘two mules went=walked:PAST on-the-way’
nos ’ot masa al gaban
 ‘bear(ing):*benoni*, FEM, PLUR (a) load on their backs’
- Spanish: *Caminaban dos mulas*
 ‘walked:IMPFV, PLUR two mules’
llevando su carga
 ‘carrying:PRTC their load’

The question is what, if any, alternatives were selected by Hebrew speaker-writers to express the predicate in the opening clause, describing a durative background event of walking, marked as Imperfective in Spanish, but in the single Past tense form in Hebrew. First, analysis revealed that, across the Hebrew sample, *stative* verbs were used significantly more in this than in their Spanish counterparts, as illustrated in (8), from texts written by a schoolchild and an adult.

- (8) a. *pa’am axat hayu štey pradot, hen halxu ba-ya’ar* [Itay, 7;3]
 ‘Once (there) were two mules, they went=walked in-the forest’
- b. *sipurenu hu al štey pradot masa co’adot: benoni*, FEM, PLUR *be-masa’an* [Ido, adult]
 ‘Our tale it [=is] about two pack mules marching with their load’

The examples in (8) reflect a general tendency for heavy reliance on the copula verb *haya* ‘be’ – realized in Present tense by zero or by a pronominal copy as in (8b) – in constructing background setting elements in Hebrew narrative discourse (Berman 2001). Other participants distinguished walking as a background event from the subsequent episodic elements by changing or elaborating on the general-purpose motion verb *halax* ‘go, walk’, as in (9) and (10).

- (9) a. *benoni*: *štey pradot holxot be-švil*
 ‘Two mules go/are walking:*benoni*, FEM, PLUR on a path’
- b. Adverbs: *yom exad halxu štey pradot le-tiyul*
 ‘One day went:PAST, PLUR two mules for (a) walk’
- c. Repetition: *hem halxu ve halxu*
 ‘They walked and walked’

These options, selected by several participants at different ages, provide means of contrasting the main plot-advancing events in Past tense by use of *benoni* in (9a), more typically by older students and adults; by temporal contextualization of the setting with an adverbial in (9b); and by the accepted Hebrew device of repetition of a motion verb to express protracted aspect in (9c), common in children’s oral picturebook narratives as well (Berman and Neeman 1994).

Other, less frequent, more sophisticated, means of elaborating the past-tense verb of the original included addition of a dative marked pronominal as in (10a) and (10b), including alternation of the basic verb-pattern P1 *pa’al* of the original verb – as in (10c).

(10) a. Reflexive Dative:

štey pradot halxu:P1 lahen

‘Two mules walked: PLUR to-them(selves):FEM,PLUR’

b. Reflexive Dative+Adverb:

halxu:P1 lahen štey pradot le’itan

‘Walked to-them(selves):FEM,PLUR two mules at-leisure’

c. Verb-Pattern Alternation:

(i) *štey pradot hithalxu:P4 lahen ba-derex*

‘Two mules walked-around to-them(selves) on-road’

(ii) *pa’am hilxu:P3 lahen štey pradot be-derex ha-melex*

‘Once strolled-to-them(selves) two mules on the royal road’

The alternatives in (10), used sporadically, mainly by older participants, reflect two expressive options. (1) The *reflexive dative*, a dative-preposition fused with a pronoun coreferential to the subject noun in (10a) and (10b), added optionally to verbs of position or motion as a means of accentuating, possibly thus lengthening the duration of, the activity – a construction extended from its classical function of heightened exhortation (cf. Genesis 12:1 *lex lexa mi-arcexa u-mi-moladetxa* ‘go thou from-thy-country and-from-thy-homeland’). (2) *Verb-pattern switching* from the basic P1 *binyan* of the verb *halax* ‘go, walk’ in (10c), to (i) iterative P4 *hitpa’el*, expressing iterative activity on certain motion verbs (e.g., *hitrocec* ‘ran around’, *hit’ofefef* ‘fluttered’) or (ii) in the, high-register P3 *pi’el* in the sense of ‘stroll, wander about’.

These Hebrew-specific means of expressing what is grammatically encoded by Spanish Imperfective aspect in the examples in (8) through (10) reflect non-grammaticized, hence non-obligatory ‘rhetorical options’ for expressing semantic and discursive contrasts – in this case, between the durative background event of walking and the punctual, episodic event which follows it in the fable.

Analogous contrasts between story setting events and the onset of plot episodes are reflected in French by the switch from *Imparfait* to *Passé Composé* in the opening segments of personal-experience narratives recounted by a grade-school girl and an adult in (11) and (12).⁵ Clause boundaries are marked by a square bracket], *Imparfait* forms are underlined, and *Passé Composé* forms (corresponding to Perfective) are **bolded**.

(11) Sophie, 9;11 years – élémentaire

*Un jour dans la cour les garçons jouaient au foot] et Victoire une amie voulait jouer au foot.] Alors elle **a demandé** aux garçons] mais ils ne voulaient pas.] Victoire était mécontente] et elle **a donné** des coups de pied] et les **a frappés**.] Victoire **a dit** aux surveillants] que les garçons ne pas voulaient pas les faire jouer] et les surveillants **ont dit**] ...*

In these first nine clauses (out of a total 20), Sophie uses *Imparfait* only once to mark an activity as backgrounded (*jouaient* ‘played ~ were playing’) and once with the stative modal verb *voulait* ‘wanted’ before switching to *Passé Composé* forms to describe events in sequence (e.g., *a*

demandé ‘asked’, *a donné* ‘gave’, *a frappés* ‘hit’). Compare this with the initial excerpt from an adult’s account in (12), with Present tense verbs marked by double-underlining.

- (12) Virginie, 22 years – université
Il s’agit d’une situation] qui date de la classe de sixième ou quatrième] il me semble] que ce devait être en cours de sport.] En fait il s’agissait d’un match de basket.] Je faisais équipe avec une fille] que je ne supportais pas] et ceci n’est évidemment pas conseillé dans une équipe.] Mais bon, ce n’était qu’un match banal sans enjeu.] Le problème était] que cette fille ne jouait pas avec l’équipe] et cherchait toujours à posséder la balle] pour pouvoir marquer.] Ce comportement m’excédait] puisque le principe du basket en tant que sport collectif est] de faire jouer l’équipe.] Si mes souvenirs sont bons,] je crois] qu’à la fin du match je me suis approchée d’elle] et je l’ai giflée.]

This initial excerpt is almost entirely in *Imparfait*, supplemented by several instances of timeless present tense, with *Passé Composé* first used for the initial episodic event (*je l’ai giflée* ‘I slapped her’) near the end of the account (Clause #23 out of a total 26). The text in (12) reflects maturely proficient narration, a relatively large part of which is taken up by evaluative and background elements compared with the sequential plotline focused on by younger children (Berman 1997, 2001, Reinhart 1983, 1994). The narrative in (12) also reflects skillful variation of verb forms in creating temporal texture, with 9 *Imparfait* and 12 other TMA forms supplementing the two *Passé Composé* forms assumed to be basic to narrative discourse (see, further, Section 3.3 below).

How, then, do Hebrew narrators cope with achieving temporal variety in the absence of grammaticized aspectual distinctions in languages like Spanish, French, or English? Young Hebrew-speaking narrators, as discussed in Section 3.3 below, only rarely overtly mark such distinctions. This is demonstrated by comparing how 5-year-olds events encode a picturebook scene depicting a punctual event of falling and a durative event of running in English and Spanish – languages which mark these by grammatical aspect as in (13) – versus in German and Hebrew, languages with no such obligatory distinction in (14).

- (13) 5-year-old descriptions of a punctual and durative event (from Slobin 1987):

English: *The boy fell out ... and the bees were flying after the dog.*

Spanish: *Se cayó el niño y le perseguían al perro las avispas.*

‘The boy fell:IMPFV and the bees chased:PFV the dog.

~ *Se cayó... y el perro salió corriendo*

‘(He) fell ... and the dog came-out:PFV running

The English-speaking child in (13) contrasts the punctual event of falling in Simple Past versus Progressive Aspect for the concurrent, ongoing durative event of the dog’s running. Spanish speakers can also mark the contrast between the alternatives of (Perfective) past and Progressive, but they prefer to do so by contrasting Perfective for punctual and Imperfective or Participial

forms for durative events (as in the opening segments of a fable in (7) above). Compare these options with the German and Hebrew versions in (14).

- (14) German: *Der Junge fällt vom Baum runter ... und die Bienen gehne hinter dem Hund her.*
 ‘The boy falls down from the tree .. and the bees go after the dog’
Hebrew: *hu nafal ve hakelev barax.*
 ‘He fell (down) and the dog ran (away).’

In the examples in (14), children mark both events by Present tense in German and by Past in Hebrew. Yet Hebrew speakers, can and several, though by no means all, do distinguish between the two events by switching of tenses, as in Slobin’s (1996) example from another 5-year-old – *ha-yeled nafal ... ve hakelev boreax* ‘The boy fell ... and the dog runs-away: *BENONI*’. Some older narrators distinguish between the two events by lexical markers of their co-occurrence, such as *benatayim* ‘meanwhile’ or *be’od še-* ‘whereas, while’. Comparing the proportion of narrators across three age-groups in the four languages in (18) and (19) who use the same Tense/Aspect form for both the punctual and falling events in his scene – as in the two 5-year-olds’ Present-tense forms in German and Past tense in Hebrew in (19) – Slobin (1987: 438) proposes that “if the figures for Hebrew and German were uniformly 100%, and for English and Spanish 0%, we could only conclude that speakers strictly adhere to the formal contrasts provided by their language ... But the deviations from these extremes indicate that other options are possible.”

On the other hand, older more proficient narrators do select various such “other possible options”, including some noted above on the basis of Sandbank’s (2004) study of written reconstruction of fable settings. The personal-experience account written by a 9-year-old Israeli schoolgirl in (15) illustrates various such alternatives in relating events in Hebrew narrative discourse. Past tense verbs are in **bold**, Present tense are underlined or, if copular, marked by a zero.

- (15) 1 **hayta** li xavera tova me’od]
 was to-me friend good very]
 2 ve-šma 0 Gal]
 and her-name 0 Gal]
 3 ve hayta yalda]
 and was girl]
 4 še šma 0 Koral]
 that her-name 0 Koral]
 5 aval hi kol hazman hayta mesaxsexet beni le-ven Gal]
 but she all the time was:3RDFEM meddle:3RDFEM between me and Gal]
 6 yom exad ba’a Koral le-Gal]
 One day came Koral to Gal]
 7 ve-šaala ota]
 and asked her]

- 8 *im hi roca le-hamšix li-hyot xavera šeli*]
 If she wants to-continue to-be friend of-me]
- 9 *ve-Gal amra še-ken*]
 and Gal **said** that=yes]
- 10 *aval Koral šixne'a ota*]
 but Koral **convinced** her]
- 11 *lo liheyot xavera šeli*] not to-be friend of-me]
- 12 *ve-Gal hiskima*]
 and Gal **agreed**]
- 13 *ve-az hitpatxa benenu meriva*]
 and then **developed** between us quarrel
- 14 *kol axat me'itanu racta liheyot xavera šel Gal*]
 each one of us **wanted** to-be friend of Gal]
- 15 *hayinu marbicot axat la-šniya*]
 were:1stPLUR hit:FEM,PLUR one to-the other] and curse:FEM,PLUR]
- 16 *ve-mekalelot*]
 and curse: :FEM,PLUR
- 17 *ax ba-sof hayinu šloštenu xaverot*]
 yet in-the-end were:1stPLUR the-three-of-us friends
 = ‘ I had a very good friend whose name (was) Gal, and there was a girl whose name (was) Koral, but she always was meddling (=used to make trouble) between me and Gal. One day Koral came to Gal and asked her if she wants to go on being friends with me, and Gal said that she did. But Koral convinced her not to be friends with me, and Gal agreed. And then there developed a quarrel. Each of us wanted to be friends with Gal. We were hitting (= would / used to hit) each other and curse. Yet in the end the three of us were friends.’

In content, the story written by this schoolgirl is rather childish and repetitive, yet it deploys a range of different TMA forms to create a varied temporal texture. It starts quite typically, as noted earlier for the Hebrew fables, describing a background setting with a stative copular verb in past tense in clauses #1 and #3, interspersed with present-tense verbless, atemporal copular propositions in clauses #2 and #4. Clause #6 introduces the plot-advancing events by the time-anchor of *yom exad* ‘one day’ – with all subsequent verbs up to clause #13 in past tense (those translated by *came, asked, said, convinced, agreed, developed, wanted*). These are interspersed by grammatically conditioned (“sequence of tense”) present tense or infinitival forms in the complement clauses following the verbs meaning *asked, convinced* in clauses #7 and #11 respectively. Moreover, this girl’s story includes several *haya + benoni* constructions to describe habitual states of affairs in the past (in clauses #5, #14 and #15). Temporal texture is thus achieved by various means: Copular propositions with an overt form of past-tense *haya ~ hayinu* or infinitival *liheyot* are interspersed with verbless copular clauses in present tense contrasting with use of lexical verbs, while one-time episodic events are differentiated from habitual states of affairs by *haya + benoni* constructions, all of which are elaborated by complex VPs in the

form of ‘extended predicates’ with the modal verb *raca* ‘want’ and an Infinitive in clauses #8 and #13 or as complement of the verb *šixnea* ‘convince’ in #11.

Other, more mature and varied, rhetorical devices for creating temporal texture in Hebrew narratives where grammaticalized alternatives are not available are vividly demonstrated in (16), a personal-experience account of an incident of interpersonal conflict written by a young man, translated freely with predicates and other temporally relevant devices underlined, *binyan* patterns marked by Pn, thus: P1 *pa'al* – basic, semantically neutral, both active and stative, both transitive and intransitive verbs; P3 *pi'el* – typically active transitive verbs; P5 *hif'il* – mainly causative verbs; P2 *nif'al* – change-of-state intransitive, sometimes passive verbs; P4 *hitpa'el* – mainly middle-voice intransitive verbs.

- (16)
1. *bi-mekom meguray ha-kodem, nahagti-P1 lehaxnot-P5 et ha-rexev ba-rexov ha-samux ve lo ba-xanaya šel ha-bayit*
‘In my former place of residence, had-habit:1st to-park [=I habitually parked] my car in the next street, and not in the building’s parking-lot
 2. *ha-davar xasax-P1 mimeni timrun meyetar kol boker ve-erev*
‘the-practice **saved** me from-me unnecessary manouvering morning and evening
 3. *kdey lehikanes-P2*
‘In-order to-get-in
 4. *ve-lacet-P1 me-ha-xanaya šel habayit derex rexov car.*
‘and to-get-out of the building’s parking lot via a narrow street.
 5. *yom exad bi-zman še-yacati-P1 me-ha-mexonit*
‘One day at-the-time that [=right when] **got-out**:1st of my car
 6. *mofta-P5 baxur mevugar*
‘**appears**:BENONI (an) elderly fellow
 7. *ve-šo'el-P1 oti*
‘and asks:BENONI me
 8. *eyfo ani gar-P1.*
‘where I live:BENONI.
 9. *le-axar še-aniti-P1*
‘After I answered
 10. *hexel-P5 lic'ok-P1*
‘began:3rd to-yell
 11. *u-leayem-P3*
‘and to-threaten [=make threats]
 12. *še-im amshix-P5 laxanot-P1 leyad habayit šelo*
‘that if **will-continue**:1st [=if I continue] **to-park** next to his house
 13. *hu yifga-P1 ba-mexonit*
‘he will-damage my car.
 14. *ani kamuvan ka'asti-P1 meod*
‘I of-course angered very [=was very mad]
 15. *ve-nisxofti-P2 le-ton gavao u-le-iyum negdi*
‘and got-carried (away) to loud voices and counter-threats

16. *mitox tikva še-iyum negdi yegen-P5 al atida šel mexoniti*
 ‘in-the hope that a counter-threat **will-defend** the future of my car.
17. *be-mešex šavua le-axar mi-ken paxadeti-P1 lehaxnot-P5 et ha-mexonit be-oto makom*
 ‘During [=for] (a) week afterwards was-afraid:1st to-park the car in that place
18. *le-axar mi-ken xazarti-P1 elav*
 ‘Afterwards returned:1st to-it
19. *ve-davar lo kara-P1*
 ‘and not a thing happened.

The morphological option of alternating verb forms by different *binyan* patterns (noted further in developmental perspective in Section 3.3 below) is clearly varied in the text in (16): Only around half (13 out of 24) of its verbs are in the basic, unmarked P1 pattern that dominates child language (Berman 1993); the rest are mixed among the other four non-passive patterns, including several instances of P2 and P4 intransitives; and in one instance, the same verb root *x-n-y* ‘park (a vehicle)’ – the key predicate motivating the entire altercation -- is deployed by the protagonist in P5 causative in Clauses #1 and #17, representing the protagonist’s perspective, but in simplex P1 in #12, in citing what the antagonist said. Variety is also shown in inflectional markings for Mood/Tense. Only around *half* the 19 clauses are anchored in the canonic narrative (simple) Past tense, most with a 1st person suffix representing the narrator as protagonist (clauses #1, 5, 9, 14, 15, 17, 18), the rest in the unmarked more neutral 3rd person (clauses #2, 10, 19). Second, the other main verbs are in the tenseless Infinitive (#3, 4, 11), Future (#12, 13), and *Benoni* (#6, 7, 8), so representing all the Mood/Tense distinctions listed in Table 1, except Imperative. Third, the three non-Past forms clearly illustrate the *multi-functionality* of these categories in Hebrew noted earlier (see Section 2): *Infinitives* occur in two conjoined adverbial clauses of purpose (#2, 3) and in another conjoined string (in #10, 11) as complements of so-called “extended predicates” with a tense-marked aspectual verb (the high-register *hexel* ‘started’ in #10), as a means of predicate expansion in a language lacking in auxiliaries and other devices for creating complex verb clusters (Berman 1980b). Semantically, unlike the modal operators to which Infinitives function as complements in expository discourse (Section 3.1), here Infinitives serve as complements of lexical verbs of aspect, like *nahagti* ‘I used-to, was in the habit of’ in Clause #1,⁶ *hexel* ‘began’ in #10, and *amšix* ‘I-will-continue, keep-on’ in Clause #12. The *Future* forms in #12 and #13 occur – in both the initial conditional clause and the subsequent main clause – in a canonic conditional construction in Hebrew (see Section 2). Finally, the *benoni* forms in Clauses #5 to #8 serve the discursive function of *tense-switching*, from the background Past tense events introduced by the aspectual verb *nahagti* ‘I used to / was in the habit of’ in setting the scene for the story (#1-4) to the high-point initiated by the temporal adverbial *yom exad* ‘one day’ indicating a specific point in time (Berman 2001, Labov 1972). Here, use of ‘present tense’ forms marks a dramatic shift from background to the high-point event introduced by the appearance of the antagonist in Clause #6, with the special status of the change-of-state verb *mofia* ‘appears, turns up’ underscored by the switch to VS word order, followed by a typical sequence of a *verba dicendi* plus complement construction, both in *benoni* in clauses #7 and #8 (‘he asks where I live’).

The sample text in (16) thus demonstrates various options available to Hebrew speakers for creating temporal texture in their narrative discourse, by alternation of the four multi-functional Mood/Tense categories delineated earlier. Another favored means of avoiding monotonic reliance on lexical verbs in Past tense in Hebrew narratives are so-called “nominal sentences”. These are copular constructions without an overt verb in Present, often but not necessarily with a pronominal copy of the subject – used in the opening and closing segments of personal-experience narratives of a 12-year-old girl in (17a) and a high-school 17-year-old in (17b) as a means of temporal shifting from dynamic narrative events to generalized propositions.

- (17) a. *aval biglal še ze Ø kita bet ve-banim hem ixs, az lo hayu la xaverot*
 but because that this Øsecond grade and boys they yucky, so not were to-her friends (‘But because it’s 2nd grade and boys are yucky, she didn’t have any girlfriends’)
- b. *aval basof dibarnu al ze ve ha-kol nigmar. axšavanaxnu Ø šuv xaverot*
 but in-the-end talked:1stPLUR about it and everything **ended**. now we Øagain friends (‘But in the end we talked about it and it was all over. Now we are friends again.’)

Commonly used in narrative texts for setting off unbounded, non-telic background states of affairs in initiating a narrative or for making concluding remarks at the end, as in the excerpts in (17), these verbless copular constructions are far more frequent in making generalized propositions in expository texts. Such instances are illustrated in (18) from the introductory segments of a 4th grader in (18a), a middle school student in (18b), a high schooler in (18c), and an adult in (18d), asked to write an essay about “problems between people”.

- (18) a. *be’ayot beyn anašim ve-yeladim be-eynay ze kmo maxala*
 problems between people and-children in-my eyes it [=is] like (a) disease
- b. *ha-kavana hi be’ikar le-be’ayot šel yaxas ve-hitnahagut*
 the-reference:FEM **she** mainly to-problems of attitude and-behavior
 = ‘My meaning is mainly to problems of attitude and behavior’
- c. *ha-olam Ømucaf be-anašim u-le-xol exad mehem Øbe’ayot rabot u-merubot. le’itim carato šel exad hi carat rabim, ve-lif’amim nexama*
 the-world Øflooded with people and-to-every one-of-them Ønumerous problems.
 at-times the problem:FEM of one she the problem of many ...
 = ‘The world is flooded with people, and every one of them has numerous problems. Sometimes one person’s problem is the problem of many...’
- d. *beayot inherentiyot hinan ulay sug shaxiax ve-kashe le-fitaron*
 inherent problems:FEM they:FEM a type frequent and hard-for-solution
 = ‘Inherent problems are a frequent type of problem, which is hard to solve’

In such verbless constructions, along with zero, a pronominal copy of the Subject noun may serve as a surface link between subject and complement. In line with other developmental trends

noted in the next section, the examples in (18) reflect an age-related change in level of linguistic register from the colloquial generic pronominal *ze* > the Subject-agreeing personal pronouns *hi / hem* ‘it = she/they’ > to occasional adult use of the elevated, literary suffixed pronominal *hino, hinan* in (18d).

As noted in Section 3.1, different expressive options for encoding temporality are selected in non-narrative discourse compared with narratives in Hebrew, as in other languages. In addition to the stative verb *haya* ‘be’ in general, and in Present-tense verbless constructions specifically, Hebrew speaker-writers favor two other means making generalized, often atemporal propositions: Predicate-initial impersonal subjectless constructions with modal predicates or with verbs in 3rd personal plural masculine (Berman 1980a, 2011). These are illustrated in (19a) and (19b), from essays written on the topic of violence in schools by two girls aged 9 and 16 years respectively, and in (19c) from the coda to a graduate student’s narrative on interpersonal conflict.

- (19) a. *iy-efšar le-hištaxrer mimena ad še-medabrim im ha-iš al ha-be’aya*
 non-possible to-get-free of-it: FEM until that-talk:PLUR with the-person about the
 problem:FEM
 = ‘One / you / people cannot get free of it [=of the problem] until one/you / people
 talk with that person about the problem’
- b. *yaxol liheyot še-lo meyaxasim le-xax maspik xašivut ba-xevra ha-yisra’elit*
can to-be that-not relate PLUR to-it enough importance in-the-society the-israeli
 = ‘It could be that it is not attributed ~ that people don’t attribute to it enough
 importance in Israeli society’
- c. *besofo še₁ davar higati la-maskana še 0 adif le-vater ve le-hagia li pešara me’ašer*
le-hagia le-vikuax
 in-the-end of things reached:1stSING the-conclusion that 0 preferable to give in and to
 reach compromise than to reach argument
 = ‘Eventually I came to the conclusion that it is preferable to give in and reach a
 compromise than to arrive at an argument’

The excerpts in (19) demonstrate how Hebrew speaker-writers express generalized propositions by means of (1) subjectless modal operators like *(iy)-efšar* ‘(im)possible’, *yaxol liheyot* ‘can to-be’ = ‘it’s impossible, people cannot’ or ‘it might be, perhaps’, *adif* ‘preferable = is better’ followed by one or more verbs in the Infinitive; and (2) subjectless impersonal constructions with a verb in 3rd person masculine plural. In a subject-requiring language like English, such irrealis or atemporal generalizations might be expressed by ‘agent-’ or ‘subject-oriented’ modals (Heine, 1995; Palmer, 1985:103) and/or by passive voice constructions (Jisa et al. 2002).

The examples from narratives in (15) and (16) and from expository texts in (18) and (19) reflect the nature of “rhetorical choices” for expressing a given discursive function. These apply in various languages, including Hebrew, to various linguistic domains, including as motion events (Slobin 2004) and clause-combining complex syntax (Nir and Berman 2010) and, in the present analysis, to temporality. Hebrew speaker-writers select such expressive options from the available repertoire of devices in their language for creating the temporal texture, inter alia, to

give voice to the specific, episodic nature of narrative discourse in contrast to the generalized, impersonal stance of expository prose. Below, development of the ability to achieve a richly varied temporal texture emerge in constructing discourse is reviewed from preschool age across adolescence.

3.3 *Developmental Trends*

Research in developmental psycholinguistics demonstrates that, across languages, children acquire grammatical forms – like the distinction between Perfective and Imperfective in French or Spanish and command of Tense/Mood in Hebrew – early on, typically at preschool age. In contrast, skillful deployment of a full repertoire of non-obligatory rhetorical options takes much longer to develop, generally only from high school on, in temporality as in other areas of linguistic expression. This section considers such development of increased *variation* in expression of discourse temporality as a function of age-schooling development.

Consider, first, *Tense/Aspect shifting* in oral narratives, where preschoolers, schoolchildren, and adults related the contents of a picturebook story depicting a little boy and his dog in search of their pet frog (Berman and Slobin 1994). Across the five languages in the sample, we found that “Tense/Aspect shifting becomes discursively functional only once a dominant narrative tense is established in late pre-school age, around 4 to 6 years” (1994: 601). When the “dominant” or “anchor” tense was defined as the Tense form (Past / Present / Future) used in 75% or more of the clauses in a given text, the following findings emerged for both Hebrew and English: First, the texts of the 3-year-olds were either in ‘picture-description’ mode, hence in Present tense (Hebrew *benoni*, English both Simple and Progressive Aspect) or else they manifested a *mixture* of Present and Past tense; the 5-year-olds anchored around half their narratives in Past tense; while the 9-year-old schoolchildren did so most of the time. The adults in both languages, however, behaved rather differently, selecting Present as their anchor tense nearly half the time in Hebrew and over half in English. These findings reflect more general developmental tendencies, illustrated in the excerpts in (20) from the opening segments of the Hebrew oral ‘frogstory’ data-base from a 3-year-old, 9-year-old, and adult. (Predicates are underlined, clause boundaries marked by], and angled brackets represent center-embedded clauses).

(20) a. Nursery school girl, aged 3;5:

ze kelev, ve-magafayim ve-kise.] ve-ze yeled.] kan, ze kelev metapes al ha-yeled.] axšav ... ve-hu maxzik et ha-šaxor ha-ze.] (Girl, aged 3;5)
 ‘This/it (is a) dog, and-boots and-(a)-chair. And this (is a) boy. Here, this (is a) dog climbs on the-boy. Now ... and-he holds that black (thing)’.

b. Gradeschool boy, aged 9;0:

haya le-yeled exad cfardea ,] ve <še-hayeled yashan>] ha-cfardea yac’a] ve-hi barxa] ve-ba-boker <-še-ha-yeled kam>] az hu ra’a] še-ha- cincenet Q reka.]

‘(There) was to a boy [= A boy had] (a) frog, and <that [=when] the-boy slept>, the-frog went-out and she [=it] ran-away] and-in-the-morning <when-the-boy woke> then [=so] he saw that the-jar Q [=was) empty’]

c. Student, aged 23:

*tov, tmuna rišona, anaxnu ro'im yeled im klavlav šelo] mistaklim
al cfardea] še-hu maxzik btox cincenet.] balayla ha-cfardea
hitxamka] kše-hu ve-ha-kelev yašnu]*
‘Okay, first picture, we see (a) boy with his doggie] look(ing):PLUR
at (a) frog] that he keeps inside (a) jar]. At-night the-frog escaped]
when he-and-the-dog slept.]

The excerpts in (20) are typical of the oral picturebook stories across the Hebrew sample for preschool, school-age, and adult storytellers respectively. First, all the predicates are in one of the three surface forms available to Hebrew speakers in such contexts: zero if Present Tense copular, *benoni* – either main verb Present or Participial; or Past tense. Second, *Tense/Aspect shifting* between Past and Present Tense differed as a function of age-schooling level. Although not shown in (17a), the tendency among three-year-olds was to switch from one to the other in an *item-based* fashion, triggered either by Hebrew verbs that have the same surface form in both Past and Present (e.g., 3rd person masculine singular *rac* ‘ran ~ run’, *nixnas* ‘went-in ~ go-in’ respectively) or by the semantic shift from a durative verb such as *holex* ‘walks, goes’ to a change-of-state punctive event such as *nafal* ‘fell’ (Berman and Neeman 1994). Hebrew-speaking 9-year-old narrators – like the schoolboy in (20b) – switched tenses to observe grammatical inter-clausal sequence-of-tense or relative tense constraints (e.g., simultaneous *hu ra'a še-ha-cincenet Q reyk* ‘the-boy saw that the-jar (is) empty’ versus English ‘the-boy saw that the jar was empty’). Only the adults – as in (20c) – sometimes used Tense-shifting as a discursively motivated means of distinguishing background states of affairs from foreground episodes. Moreover, only adults (and, again, not all) selected the rhetorical option of relating the events in the pictures as though they were ongoing, in picturebook style, rather than in the canonic narrative mode of Past, expressing a personal stylistic preference, rather than the stereotypical past-tense narrative mode selected by schoolchildren.

These findings for discursively motivated alternations across Present and Past in oral Hebrew narratives underscore a more general finding for increased *variation* as a function of age-schooling. Defined earlier as a shift “from dichotomy to divergence”, we found that older speaker-writers tended to move out of canonic genre-typical mode – by embedding episodic, past-tense narrative-like illustrations in their expository essays, and /or expository-like atemporal or irrealis generalized commentary in their narratives -- yet only from high-school age, and by no means across the board (Berman and Nir 2007). This further underscores how speaker-writers may but need not choose to enrich temporal texture in constructing different types of discourse – including in Hebrew, which provides speakers with a relative paucity of formal grammatical options.

Increase in variation of linguistic means recruited for creating a rich temporal texture in discourse is further demonstrated by findings for a Hebrew-specific shift with age in use of *binyan* verb patterns in texts written by schoolchildren, adolescents, and adults. The basic,

unmarked P1 *pa'al* pattern, used for both transitive and intransitive verbs, both active and stative, had highest frequency across age groups, followed by the two typically transitive patterns (P3 *pi'el* activity verbs and P5 *hif'il* causatives), with far less reliance on the two intransitive patterns (P2 change-of-state *nif'al* and P4 middle-voice *hitpa'el*), while the strictly passive patterns (P3ps *pu'al* and P5ps *huf'al*) rank lowest of all (Berman & Nir-Sagiv 2004). This distribution is highly consistent with earlier findings for oral, preschool usage in both interactive conversations and children's narratives (Berman 1993), indicating that such pervasive patterns of usage from an early age reflect pervasive typological properties of the language that override factors of communicative context or type of data-base. On the other hand, we found a significant increase with age in the *variety* of verb patterns: Younger children's texts tended to be confined to two or three different patterns, as against a wider variety of patterns deployed by adolescents, and even more by adults, a language-specific indication of greater lexical diversity in later language development and text construction. Relatedly, there was a significant age-related decrease in use of the basic pattern P1, particularly in the narrative texts and among the adults, suggesting that less reliance on this semantically basic and syntactically neutral verb-pattern reflects more mature, literate style of use. And there was a concomitant, marked increase in use of the two intransitive patterns, P2 and P4 (from under 10% in grade-school to 20-25% in middle- and high school texts, up to one-third in adult texts). Moreover, across age groups, the intransitive P2 and P4 patterns were far commoner in expository essays than in narratives written by the same participants. This age- and genre-related increase in reliance on intransitive, middle-voice morphology expresses a "patient-oriented" perspective, confirming earlier findings for preference for an actor-agent orientation in narrative compared with expository discourse, and for a general age-related tendency to adopt a less involved perspective on narrative events in general (Berman and Slobin, 1994: 515-538). In Hebrew, importantly, this is typically realized by use of intransitive middle-voice rather than by passive-voice verb morphology (Berman 2004, Jisa et al. 2002, Ravid et al. 2003).

Analysis of 'temporality in texts' in these various projects in developmental perspective underscores the complex interaction between grammar, discourse, and cognition in this as in other domains. For example, in expression of *irrealis mood*, comer in expository texts across age-groups and languages (Section 3.1), younger children differed significantly from high-school students and adults in the type of propositional attitudes that they expressed by means of irrealis modality (in Hebrew, by reliance on Future tense, on Modal operators plus infinitive "extended predicates" as in (16), as well as conditional clauses. Developmentally, 9- to 12-year-olds, in Hebrew as in other languages, relied largely on 'deontic' types of modality, referring to socially determined prohibitions or prescriptions. In contrast, from adolescence up, writers shifted to more individual 'epistemic' attitudes expressing possible or probable future contingencies. Like the increased skill in varying a range of different means for creating temporal texture in discourse discussed above, this conceptual shift as a function of increased age and literacy is found across different languages, with Hebrew speaker-writers making use of the language-particular repertoire of formal devices available to them for this purpose.

4. Conclusion

Against the background of the relatively impoverished grammatical marking of TMA in Hebrew (Section 2), analysis revealed discourse-embedded temporality in the language to be a fruitful domain for investigation along the dimensions of inter-genre differentiation (Section 3.1), rhetorical options for expression of the domain in Hebrew compared with aspectually rich languages (3.2), and general age-related developmental trends (3.3). With respect to the first dimension of analysis, the means available to Hebrew-speaker writers enable them to give clear expression to the differentiation between specific, temporal anchored episodic nature of different kinds of narrative discourse compared with the generalized, atemporal and irrealis character of expository prose, including in a language like Hebrew (Section 3.1). As for the issue of rhetorical alternatives, proficient Hebrew speaker-writers prove able to deploy a range of expressive options to vary the temporal texture of the discourse they construct, both narrative and expository, by relying on both Hebrew-specific means such as verbless copular constructions and morphological verb-pattern alternation as well as means available in other languages, like tense-switching, or reliance on generalized impersonal and irrealis modality. However, as noted repeatedly, speakers do not necessarily seek to ‘compensate’ for the lack of a grammatical contrast by other linguistic means. Rather, choice of alternatives depends on a range of factors, including communicative context and discourse genre, individual as well as typological rhetorical preferences, and developmental level.

One conclusion from this discussion of acquisition and expression of temporality in Hebrew, as a language with grammatical marking of Tense but not Aspect or Mood, is that speakers are from early on attuned to the ‘typological imperatives’ of their native language (Berman 1986). A key motif of this analysis which follows is that, while children conform to the typological constraints of the grammar of their ambient language from an early age, rhetorically motivated individual styles of expression develop later. These then come to serve proficient speaker-writers in deploying all, and only, the devices available in their native language for expressing temporality in discourse. Moreover, these means are not confined to lexical elements typically associated with canonical expression of TMA – such as temporal conjunctions and adverbials like those meaning ‘while’, ‘later’, ‘suddenly’ or verbs of aspect specifying a process as beginning, continuing, or ending. On the contrary, as demonstrated by sample texts across the paper, expression of TMA conspires with other linguistic systems, such as morphological alternation between actor-oriented versus middle-voice perspectives on events by means of *binyan* verb-patterns, and syntactic reliance on impersonal subjectless propositions or verbless copular construction to express atemporal generalized situations, or subject-verb inversion for punctual events of (dis)appearance. Such flexible deployment of a range of both grammaticized and optional means is the hallmark of maturely proficient, literate use of language for expressing temporality, as in other domains of linguistic form-meaning mappings and in different discourse contexts.

Notes

- * The author is indebted to Dr. Judy Kupersmitt for her careful reading and insightful comments on an earlier version of the paper. Responsibility for inadequacies that remain is mine alone.
- ¹ For example, certain of the semantic contrasts expressed by the distinctive use of simple versus progressive aspect in English, as insightfully treated by Goldsmith and Woisetschlaeger (1982), correspond in some ways to the differentiation between the two forms of *be* in Spanish, *ser* and *estar* respectively
- ² The only grammatical marking of aspect in current Hebrew is the one case of where the language has an auxiliary verb in the sense of European ‘be’ or ‘have’ (Berman 1980b) in a construction made up of the past tense of the copula *haya ~ hayu* ‘was, were’ plus a *benoni* ‘intermediate’ participial form that agrees with the subject in number and gender (but not in person) to express habitual aspect in the past, e.g., *hu haya soxe kol yom* ‘he was swimming = used-to swim every day’, *anaxnu hayinu soxim kol yom* ‘we were+1stPl swimming = used to swim every day’ – and also in expressing counterfactual conditionals as in the examples in (2) and (3) of the text.
- ³ (i) Consonantal verb-roots are represented in their abstract, historical form, all other Hebrew forms are in broad phonemic transcription reflecting current pronunciation.
(ii) Forms in Future, Past, Present are listed in the morphologically simplex 3rd Person Masculine Singular
(iii) The two verb-roots in the table are ‘full’ roots in which all three consonants are realized across the lexicon, in contrast to weak or defective roots with glide or back consonants that are elided in many contexts (Berman 2012, Seroussi 2014).
- ⁴ One minor exception is occurrence of *benoni* participles as complements of verbs meaning ‘begin’ in very formal, high-register usage, e.g., *hexel ~ hitxil medaber* ‘began ~ started talk(ing)’.
- ⁵ Interestingly, verbs in the closely related language, Arabic, lack an Infinitive form, with consequences discussed in Laks and Berman (in press).
- ⁶ Thanks are due to Harriet Jisa, Université Lumière, Lyon2 for making these texts available to me and for help with analysis.
- ⁷ This phrase is a high-register alternative to the grammaticized habitual past *haya + benoni* in the form: *hayiti noheg lehaxnot ...* ‘was:1st behave(ing) = used to be-in-the-habit of parking’.

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