

Developmental Pathways in Child and Adult Hebrew: The Case of the Subordinator *še-*



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Abstract The paper is dedicated in affection and esteem to my former student, valued colleague, and dear friend, Dorit Diskin Ravid (The title of this paper deliberately echoes that of Ravid's (Language change in child and adult Hebrew: a psycholinguistic perspective. Oxford University Press, 1995) book *Language Change in Child and Adult Hebrew*. Oxford University Press. I am grateful to Sarah Winkler for editing the manuscript and to Dalit Assouline for help with transcriptions.). Focusing on a single multifunctional morpheme in Modern Hebrew—the quasi-equivalent of 'that' of English or *que ~ che* of Romance languages—it reflects themes from work of mine over the past several decades (including with Dorit), based on two principles: that language has a long developmental route well beyond preschool, and that general facets of this route can be illuminated by in-depth analysis of a particular linguistic construction. The chapter starts by noting changes in use of the grammatical morpheme *še-* and its alternatives between Biblical and Modern Hebrew, followed by description of the developmental trajectories it displays in different syntactic constructions and discursive contexts from early childhood to adolescence. Distribution and functions of this morpheme and its alternatives are analyzed in adult–child interchanges, extended texts, and structured elicitations to demonstrate how use of a single form changes across development. These findings are explained as due to the combined impact of factors of general linguistic and cognitive development, the typology of Hebrew as the ambient language, and the relationship between language change across time in individual development and in the history of the language.

Keywords Biblical Hebrew · Clause-combining · Language development · Register · Modern Hebrew · *še-* · Subordination · Usage-based

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The paper is dedicated in affection and esteem to my former student, valued colleague, and dear friend, Dorit Diskin Ravid. Many of the ideas framing this study echo themes in Ravid's (1995) pathbreaking book on language change in child and adult Hebrew. Based on analysis of some dozen grammatical systems in Modern Hebrew, Dorit investigated ten different groups of participants divided by age-schooling level and SES background to provide a thoroughgoing, evidence-based study of variation in Modern Hebrew. In diachronic perspective, she points to "the fact that Biblical Hebrew continues to constitute the major source of Israeli Hebrew morphology and lexicon"; sociolinguistically, her study provides an illuminating comparison between "normative and linguistic reality" in current Hebrew usage; and, psycholinguistically, she proposes that "literacy and cognitive maturation go hand in hand" to explain her findings for language development from age 3 years to adulthood.

The present study embraces these ideas in analyzing the morpheme *še-* (translated for the time being as 'that') in Modern Hebrew (MH). Underlying the analysis are two complementary principles: That language development follows an extended route "from emergence via acquisition to mastery" (Berman, 2004a) and that this path can be illuminated by in-depth examination of a particular linguistic form from toddlerhood to adolescence.

A major finding of psycholinguistic research over recent decades, spearheaded by the "frogstory" project on narrative development in different languages (Berman & Slobin, 1994), including Hebrew (Berman & Neeman, 1994), was that gaining mastery of language use extends well "beyond age 5" (Karmiloff-Smith, 1986). This insight has is at the core of studies in what has come to be called "later language development" (Berman, 2008; Tolchinsky, 2004). The present chapter aims to contribute to this domain by tracking developmental changes in use of the morpheme *še-*, which corresponds roughly to the English form 'that' or *que ~ che* in Romance languages.¹ As such, the grammatical marker *še-* joins earlier research of this author in tracking developmental trajectories in different domains of Hebrew linguistic structure and language use.²

The paper begins by comparing Biblical versus Modern Hebrew (MH): Relying on prior research in this area: Historical changes in the use and distribution of *še-* are noted by examples from Biblical Hebrew (Sect. 1.1) followed by data-based

¹This correspondence applies to Hebrew *še-*functioning as a subordinating marker, not as a question word or demonstrative, demonstrating that seeming similar grammatical functors are rarely *equivalent* across languages. For example, the Hebrew genitive marker *šel*, translated as 'of', never functions as a preposition, unlike English *of* or Romance *de* (as in English *learn of*, *be afraid of*), while in the linguistics literature, Hebrew *še* is translated variously as 'that' (Ariel, 1978; Glinert, 1989) or as 'that, which, who' (Maschler, 2020). Nir (2020) avoids translating Hebrew conjunctions including "due to their functional non-equivalence to apparently corresponding terms in English as well as at different periods in the history of Hebrew."

²My inquiries into language development from early childhood to adolescence include: inflectional morphology (Berman, 1986), narrative construction (1988), null subjects (1990), the verb-pattern *binyan* system (1993), use of the coordinating conjunction *ve-* 'and' (1996), impersonals (2011), and infinitival constructions (2018).

evidence surveying functions of the target form in current adult Hebrew (Sect. 1.2). The chapter then analyzes the distribution and functions of *še-* across three periods of development: early emergence among toddlers (Sect. 2.1), school-age acquisition in middle childhood (Sect. 2.2), and consolidation of grammar and usage in adolescence (Sect. 2.3). The study concludes (Sect. 3) by discussing what these changes reveal from the point of view of Hebrew typology, language acquisition, and the relationship between diachronic change and linguistic register (Sect. 3).

1 Linguistic Description of Hebrew *še-*

It might seem odd to pin so much on a single monosyllabic item like Hebrew *še-*, which is written as part of the next word, hence as a bound morpheme.³ Yet *še-* plays an important role in Modern Hebrew syntactic structure and discourse. Glinert (1989, p. 309) defines the form *še-* rather loosely, but quite accurately, as “the ‘unmarked’ all-purpose conjunction”. The present study aims to show that the morpheme *še-* serves both across the history of Hebrew and in child language development (i) as a *pre-clausal subordinating conjunction*, which (ii) marks *syntactic dependence* in clause-combining complex syntax, and (iii) represents a *multifunctional* marker of different grammatical and semantic relations.

1.1 Occurrence of Alternatives to *še-* in Biblical Hebrew

Studies of Biblical Hebrew demonstrate, as argued for example by Nir (2020), that “the following four conjunctions are typically found in the Biblical texts as markers of dependency ... : *ašer*, *še-*, *im*, *ki*”, challenging the common view that Biblical syntax was mainly paratactic (and see, too, Givón, 1991). Below, use of three of the items mentioned by Nir, together with the definite marker *ha-*, is illustrated from Biblical Hebrew (BH), as background to key themes of the present study: (i) Largely the same repertoire of forms is found in both early and current Hebrew, but (ii) they differ in distribution and in function from Biblical to Modern Hebrew, and (iii) older

³In written Hebrew, the morpheme *še-* is prefixed to the following word, not separated by a space, as are six other grammatical markers in Hebrew that are written as separate words in many European languages: the coordinator *ve-* ‘and,’ the prepositions *mi-* ‘from,’ *be-* ‘in, at,’ *ke-* ‘as, like,’ *le-* ‘to,’ and the definite marker *ha-*. It is not clear whether preliterate children regard *še-* as a separate “word,” on a par with non-attached “word-like” items such as the genitive marker *šel* ‘of,’ or the prepositions *al* ‘on,’ *im* ‘with.’ Preliminary psycholinguistic investigation into placement of *pauses* in extended spoken discourse suggests that speakers perceive *še-* as a *separate* item in the stream of speech (Nir & Berman, 2010). In-depth psycholinguistic study (beyond work on “reading prosody,” for example, of Koriat et al., 2002), could demonstrate whether literate adults regard *še-* as a bound form in speech as well.

forms, where retained in current usage, characterize more formal, elevated registers, which are largely irrelevant to the language of young children.

The first set of examples illustrates alternation of different markers of Relatives Clauses in BH, all roughly translatable as ‘that’: *ʔašer* in (1) and (2), *še*-in later Biblical Hebrew in (3), and the definite marker *ha*- in restricted contexts in (4). The first set of examples show uses of the Biblical Relative Clause marker *ʔašer*, variously translated as ‘whom,’ ‘that,’ ‘which’ (in the Gideon, 1974, translation based on the authorized King James version) in examples from the Pentateuch in (1a) to (1c) below.⁴

(1)

- a. וַיֹּאמֶר יְהוָה אֱמַקָּה אֶת הָאָדָם אֲשֶׁר בָּרָאתִי מֵעַל פְּנֵי הָאֲדָמָה (בראשית 1:26)
wayyōmer YHWH ʔemḥē ʔet hāʔādām ʔāšer bārāʔtī mēʔal pənē hāʔādāmā (Genesis 6:7)
 ‘And the Lord said I will destroy man **whom** I have created from the face of the earth’
- b. וַיֹּאמְרוּ כָּל אֲשֶׁר דִּבֶּר יְהוָה נַעֲשֶׂה וְנִשְׁמָע (שמות 24:7)
wayyōmərū kōl ʔāšer dibber YHWH naʔāšē wənišmāʔ (Exodus 24:7)
 ‘And they said **all that** the Lord hath said will we do, and be obedient’
- c. וַיִּקְרְבוּ לִפְנֵי יְהוָה אֵשׁ זָרָה אֲשֶׁר לֹא צִוָּה אֶתֶם (ויקרא 10:1)
wayyaqribū lifnē YHWH ʔēš zārā ʔāšer lō šiwwā ʔōtām (Leviticus 10:1)
 ‘And (the sons of Aaron) ... put incense thereon, and offered strange fire before the Lord, **which** he commanded them not’

The same form *ʔašer* also occurs, more restrictedly, as an *adverbial* conjunction, preceded by a bound preposition, as in the comparative markers *meʔašer* ‘from-that = than’ and *kaʔašer* ‘as-that = as, in the way that,’ as in (2).

(2)

- וַיְבָרֵךְ אֶתְכֶם כַּאֲשֶׁר דִּבֶּר לְכֶם (דברים 1:11)
wiybārēk ʔetəkem kaʔāšer dibber lākem (Deuteronomy 1:11)
 ‘and will bless you **as** He hath promised you’

In later books of the Bible, *ʔāšer* was increasingly replaced by *še* as a Relative and occasionally an Adverbial marker. Givón (1991) points out that gradual change in tense-aspect and word order “across the BH dialectal continuum is closely paralleled by the phonological reduction of the clausal subordinator *ʔāšer*, predominant in Early Biblical Hebrew (...e.g. Genesis), to *še*-, predominant in Late Biblical Hebrew (...e.g. Song of Songs) and Mishnaic Hebrew”. The examples in (3) are taken from Givón, and follow his transcription of written Hebrew and his free translations.

(3)

- a. *ve-saneʔāʔš-ti ʔani ʔet-kol ʔamal-i še- ʔani ʔamel*
 ‘And I hated all toil **that** I toiled
še- ʔaniah la-ʔadam še-yihye ʔaḥar-ay
 ‘**that/because** I will leave it to someone **who** would come after me’ [Eccl. 2.18]
- b. *ma dod-ekh mi-dod še-kakha hišbaʔt-anu*
 ‘...what is so special about your lover **that** you have thusly sworn us?’ [SoS. 5.11]

⁴The phonetic transcription in examples (1), (2), (4), and (5) observes the traditional conventions of Biblical scholars. The examples in (3), also based on the written language, adopt the version used by Givón (1991).

In contrast, across Biblical Hebrew, when directly followed by a *benoni* participial form of a verb, the preferred relativizer is *ha-*, the same form as the definite marker meaning ‘the,’ as in (4).

- (4)
- וְהָזָר הַקָּרֵב יוּקָת (במדבר א נא)
wəhazzār haqqārēḥ yūmāt (Numbers 1:51)
 ‘and **the** stranger **that** cometh shall be put to death’

In some current usage, too, the form *ha-* occurs as a relativizer, when immediately preceding a verb in the *benoni* participial form (Berman, 1978, pp. 143–145), just in case the relativized noun is understood as the subject of its clause (Glinert, 2004).

As for the subordinator *ki*, this served both as an adverbial marker and to introduce Complement Clauses in Biblical Hebrew, as in (5a) compared with (5b), both from the same passage.

- (5)
- a. וַיְהִי כִּי עָלִינוּ אֶל עַבְדְּךָ אָבִי (בראשית מ כד)
wayhī ki ʕālīnū ʕel ʕabdākā ʔābī (Genesis 40:24)
 ‘And it came to pass **that** we went up to your servant my father’
- b. אַתָּם יָדַעְתֶּם כִּי שְׁנַיִם יָלְדָה לִּי אִשְׁתִּי (בראשית מ כו)
ʔattem yadaʕtem ki šənáyim yāldā lī ʔišī (Genesis 40:26)
 ‘You knew **that** my wife gave birth to two sons of mine’

As demonstrated below, these three markers of clause-combining—*ʔašer*, *ha-*, and *ki*—occur in Modern Hebrew, too, but they differ in distribution as well as in syntactic and discursive functions (Sect. 1.2). Moreover, in language addressed to and produced by children, the form *ʔašer* is totally absent; *ha-* functions only as a definite marker, rarely as a relativizer; and *ki* serves to mark adverbial clauses of reason, not to introduce complement clauses (Sect. 2.1).

1.2 Directions of Change: The Spread of *še-*

This section notes differences between Biblical and Modern Hebrew (MH), in the sense of current usage of educated, non-Hebrew-language experts, native-speaking adults.⁵ The key motif here is the spread of *še-* in contemporary Hebrew, already noted in studies of different periods in the history of the language (e.g., Ariel, 1978; Nir, 2020; Reshef, 2004). The present analysis is based on two corpora of authentic, unedited data elicited from university students and graduates: (a) Ten lengthy oral interviews conducted between linguistics students and their friends or family

⁵ Many of these were attested in later Biblical and early post-Biblical periods (Ben-Hayyim, 1953; Givón, 1991; Rubinstein, 1985).

members telling about their life history, collected in the Berman Lab, and (b) texts produced by Hebrew-speaking university students in the study of Berman and Ravid (1999). In the latter sample, each participant produced four texts on the topic of violence in schools: (i) an oral personal-experience narrative recounted to a friend, (ii) a story written in class on the same topic; (iii) a talk to be given in a class setting discussing the problem; and (iv) a written essay on the topic. The present study compares texts of Type (iv) and Type (i) produced by the same speaker-writer, since written expository passages (iv) represent the most elevated and monitored style of usage, while oral narratives about personal experiences recounted to a peer use less formal, more colloquial forms of expression.⁶

This section details the extension of *še-* as the marker par excellence of the three main types of dependent clauses in Hebrew: Relative Clauses (Sect. 1.2.1), Complements (Sect. 1.2.2), and Adverbials (Sect. 1.2.3).

1.2.1 Marking of Relative Clauses (RCs)

Four changes are noted between Biblical and Modern Hebrew marking of RCs: (i) Replacement of *lašer* by *še-*; (ii) restricted use of the definite marker *ha-* to introduce RCs; (iii) unmarked asyndetic RCs; and (iv) headless RCs.

(i) Marking relative clause by *še-* in place of Biblical *lašer*

In MH, the Biblical relativizer *lašer* – as in (1a) to (1c) – is confined to formal usage.⁷ The ten oral interviews between Hebrew-speaking adults (sample (a) above) contained not a single use of *ašer*; nor did the corpus of personal-experience oral narratives told by university students (in sample (b)). But in the expository essays written by the same students on the same topic (violence in schools), two-thirds of the participants used the form at least once, as in (6a) and (6b).⁸

⁶A hierarchy from least to most formal and elevated register of the four text types emerged across different languages in a cross-linguistic project along similar lines as our 1999 study (Berman, 2008), as described for register in English (Bar-Ilan & Berman, 2007) and Hebrew (Berman & Ravid, 2009).

⁷The relativizer *lašer* is represented with an initial *alef* for Biblical Hebrew, but as *ašer* for current usage, where the glottal stop is generally not pronounced.

⁸Modern Hebrew forms are represented in *broad phonemic* script (see Berman, 2020a, Appendix, Tables 2 and 3). Phonetic symbols for non-English phonemes are as follows: *c* for English *ts* as in *tsunami*, *hats*; *x* for the velar fricative as in *loch*, *Bach*, standing for both the velar and pharyngeal letters *chaf* and *het*; *š* for English *sh* as in *sheep*, *push*. The guttural elements *alef* and *ayin* are not represented, since they are rarely pronounced in General Israeli Hebrew. Word stress is marked by an acute accent when non-word final (compare the verb *paam* ‘throbbed’ with word-final stress and the noun *pāam* ‘time’ with word initial stress). Orthographically bound morphemes (see footnote 2), except for the target form *še-*, are separated from the following word by a hyphen, e.g., *ha-iš* ‘the man,’ *ba-báyit* ‘at home.’ Non-normative but colloquially common spoken usages are retained (for example, a young man pronounces ‘in Jerusalem’ as *be-yerušaláyim* in place of normative *birušaláyim*. And see, too, the example in footnote 16 of mixed register, which has a common agreement error: *haya-SING li hamon tauyot-PLUR* ‘I had [literally, there was to me] tons of errors.’)

(6)

- a. *le-maase ha-alimut ha-milulit ha-“tmima” ve-ha-lo mazika šel ha-yom, ašer ke-negda lo poalim be-oda be-iba, hofézet la-alimut ha-fizit šel maxar*
 ‘In fact, the “innocent” and non-harmful verbal violence of today, against **which** people fail to act when it is still in the bud [= at its early stages], turns into the physical violence of tomorrow’
- b. *benisayon lehavin et ha-nose še be-yamim trufim eyle hafax le-kauf ... yeš le-havin et ha-mitanim še itam magim ha-yeladim ... be-derech klal kayamim xaverim ... ašer “mexamemim” et ha-avira*
 ‘In an attempt to understand the topic **that** in these crazy times has become painful ... we need to understand the handicaps with **which** children arrive ... usually there will be some students ... **who** “heat up” the atmosphere’

As shown by (6b), use of *ašer* alternates with *še-* in the written essays of these adult speaker-writers. In contrast, the oral stories that these two women told to a friend used only the subordinator *še-* for marking relative clauses. And this was true across the oral interviews and narratives produced by young adults talking to their peers, indicating that Biblical *ašer* is confined to the more formal and monitored context of expository writing.

(ii) **Use of *še-* as a relativizer in place of Biblical *ha-* preceding a *benoni* form**

The definite article marker *ha-* ‘the’, as in the Biblical example in (4), is infrequent for marking RCs in colloquial Hebrew, and is rare across our corpus. The excerpts in (7), from university graduate students, show that in their written essays, adults occasionally use *ha-* as a relativizing conjunction preceding a verb in the *benoni participial* or present-tense form.

(7)

- a. *barur še yéled ha-gadel mul masax ha-maxšev... yitkaše lehaciv et ha-gvul kaašer hu mesaxek im yeladim amitiyim ve-lo im dmuyot virtuáliyot al ha-mirka*
 ‘(It is) obvious **that** a child **who grows up ~ growing up** in front of a computer screen ... will find it difficult to set a boundary **when** he plays with real kids and not with virtual figures on the screen’
- b. *gam kaašer hem mabiim bikóret nokévet al more še yeš tofaot šel Mafia, protékšen, šxitut ve-xadome be-kérev ha-talmidim ... amura lehitkayem bahem alimut be-hetem la-alimut ha-rováxat bi-xlal ha-oxlusiya*
 ‘Even **when** they express biting criticism of a teacher **that** there are Mafia-like incidents, protection, corruption, and so on among the students, ... there is supposed to exist among them violence in keeping with the violence **that prevails ~ prevailing** in the population at large’
- c. *mítparseim yoter ve-yoter mikrim šel alimut be-mosdot ... še amurim lihyot ha-mexanxim klapey ha-mitxanxim ... rabim me-ha-anašim ha-oskim be-xinux eynam anšey xinux*
 ‘More and more incidents of violence are publicized in institutions ... **that are-supposed** to be the educators vis-à-vis the educatees ... many of the people **that work ~ working** in education are not educators’

The excerpt in (7c) demonstrates inconsistent use of *še-* alternating with *ha-* as a relative marker before a *benoni* passive participle: *mosdot ... še amurim* ‘institutions that (are) supposed ...’ versus *anašim ha-oskim be-xinux* ‘people that work in

education’ with the *benoni* serving as a present tense verb, similarly to *ha-rováxat* ‘that prevails’ in (7b). This tendency to avoid *ha-* as a marker of RCs except in formal or literary contexts reflects contemporary speaker-writers’ perception of what was originally the nominal *benoni* participle: Today it functions predominantly to mark present tense on verbs, alternating with person-inflected past and future tense verbs (Berman, 2014). Earlier structurally- motivated observations (Berman, 1978, pp. 146–149) are confirmed by usage-based evidence that today, *ha-* is increasingly confined to its function as a definite marker of nouns, rarely to mark RCs that open with a *benoni* form participle.⁹

In sum, two main differences emerge between MH usage compared with Biblical Hebrew in marking syntactically dependent clauses: First, historical forms—like the relativizers *ašer* and *ha-* as well as the adverbial conjunctions *kaašer* ‘when,’ *meašer* ‘than’ (see below)—are used only restrictedly by speaker-writers of MH, and only in the formal context of expository writing. Second, when they do use them, speaker-writers tend to intersperse these forms with the preferred subordinating conjunction *še-*.

(iii) Asyndetic relatives

RCs that are not introduced by an overt relative marker are common in English relatives on an object noun phrase (e.g., *students 0 the lecturer praised; the man 0 we were talking about*). In Hebrew, the corresponding construction would be an RC that is joined directly to its main clause, without any marking (e.g., *ani roce šaon ose tik-tak* ‘I want (a) clock goes tick-tock’ from a two-year-old boy). Not a single such example occurred in the adult corpus, since a clear property of relative clauses (in fact of dependent clauses in general) in Hebrew is that they must be overtly marked by a subordinating conjunction with *še-*, as the default case for this purpose.

MH has three ways of marking RCs, differing in how far they conform to the dictates of prescriptive norms (Mor, 2020). These are shown in (8): The examples in (8a) illustrate asyndetic RCs; those in (8b) and (8c) are constructed examples based on (8a), with (8c) the most approved by purists.¹⁰

⁹An additional constraint on use of *ha-* as a relativizer is that it is ungrammatical in *in situ* asyndetic RCs, as in the example below in (8ii), where *ha-baxurim še dibarnu itam* ‘the-boys that we spoke with-them’ cannot be replaced by a *benoni* form verb preceded by *ha-*—the corresponding RC *ha-baxurim ha-medabrim itam* ‘the-boys that-talk [PLURAL] to-them’ refs to the head noun as Subject, not Object, meaning ‘the boys that are talking to them’ and not ‘the boys that they are talking to.’

¹⁰Examples of asyndetic RCs from our database:

(i)	<i>ani ba bemaga im yeladim otam ani melamed nosim be-ekologiya</i> ‘I come in touch with kids them = whom I teach topics in ecology’
(ii)	<i>lemoxorat ima šeli halxa la-xéder bo rainu televízya</i> ‘The next day my mother went to-the-room in-it = in which we saw television’

- (8)
- a. ASYNDETTIC
 - (i) *ha-raayon oto heelénu*
'the idea it [Accusative] we-raised = the idea we suggested'
 - (ii) *ha-baxurim itam dibárnu*
'the-boys with-them we-spoke = the fellows we spoke to'
 - b. CLAUSE-INITIAL *še-*
 - (i) *ha-raayon še heelénu*
'the-idea **that** we-suggested'¹¹
 - (ii) *ha-baxurim še itam dibárnu*
'the fellows **that with-them** we-spoke'
 - c. IN SITU RESUMPTIVE PREP+PRO:
 - (i) *ha-raayon še heelénu oto*
'the-idea **that** we-suggested **it**'
 - (ii) *ha-baxurim še dibárnu itam*
'the people **that** we-spoke **with-them**'

Reshef's (2004) detailed study of type (8a) RCs, based on written sources, describes the Modern Hebrew asyndetic clause as "the rise of a new syntactic mechanism," one that was not attested in earlier stages of the language. Her intuition that speaker-writers consider the asyndetic type of RC in (8a) to represent formal, elevated usage is confirmed by seminar papers submitted to the author by university linguistics majors, while in the current database, asyndetic RCs were, again, confined largely to the written expository texts. The most widespread usage across the corpus was type (8b), with an introductory *še-* followed by an object-marking preposition (excluding nominative contexts like *ha-raayon še huala* 'the-idea that was raised,' *ha-baxurim še azvu* 'the boys that left'). The prescriptively favored *in situ* version of (8c) occurred only occasionally, once again only in written essays.¹²

Consistent findings emerged from Nir's (2015) analysis of Relative Clause usage in written and spoken texts analogous to the ones analyzed here, produced by another group of Hebrew-speaking adults (Berman, 2008). Nir found that RCs were the most common type of (bi-clausal) subordination in both the narrative and expository texts she examined, with high-register *ašer* and subordinating *ha-* as well as asyndetic relative clauses being relatively rare, and occurring mainly in the written essays.

(iv) **Headless RCs**

MH makes wide use of *non-referential* or 'headless' RCs. These typically replace Biblical forms like *kol ʔašer* 'all which,' as in (1b). Today, these constructions

¹¹ Hebrew RCs require a resumptive pronoun with prepositional objects, as in example (i) in (8b). This may be used but is generally not required when the verb takes a direct object, as in (8a-i) versus (8b-i).

¹² A personal anecdote. When the authorities at Hebrew University insisted that I have a Hebrew language expert edit my doctoral dissertation (Berman, 1973) for style and usage, almost the only change she made across the lengthy two volumes was to switch all relative clauses to the *in situ* type illustrated in (8c).

generally take the form of a grammatical question word followed by *še-* {Q + *še-*}, as in the following documented examples: From young preschool children—*ma še ani lokáxat* ‘**What** that-I take [= what I take]’; *hu kara kol ma še ha-horim kanu lo* ‘He read **all what** [= everything that] his parents bought him;’ and from older schoolchildren—*tivxar mi še ata roce* ‘choose **who**(ever) you want’; *xipásti efo še amárta li* ‘I looked **where** that [= wherever] you told me’; *ani avo matay še tagid li* ‘I’ll come **when** that [= whenever] you’ll tell me.’

These constructions are of interest for several reasons. While frowned on by purists, such extensions in contexts for using *še-* occur from early childhood. They can be seen to compensate for the lack of relative pronouns in Hebrew. In more normative usage, the question word in these {Q + *še-*} constructions is replaced by generic nouns such as *kol davar še* ‘any **thing** that,’ *kol adam še* ‘any **person** that,’ *kol makom še* ‘any **place** that,’ *kol páam še* ‘every **time** that,’ particularly in adverbials of place or time. But these are relatively formal in style, while the {Q + *še*} construction is well established in current usage of children and adults alike.

To reiterate, our usage-based records underscore the preference in MH for employing *še-* to mark different types of RCs at different levels of usage in MH.

1.2.2 Use of *še-* Replacing *ki* to Mark Complement Clauses

In Biblical Hebrew, as shown earlier in (5a) and (5b), the form *ki* served to introduce both Complement and Adverbial Clauses. Today, *ki* still may be used to mark complement clauses, as in (9).

(9)

- a. *kvar az yaxoltem lehivaxax ki en li hamon ma lomar ba-nose ve-še deotay enan maftiot klal*
‘Even then you could **recognize that** I do not have much what [=a lot] to say on the matter, and-**that** my opinions are not at all surprising’
- b. *nire ki yeš lehasbir la-morim še alehem limnóa kol akt šel alimut*
‘(it) appears **that** (one) needs to explain to teachers **that** (it) is incumbent upon them to prevent any act of violence’

Examples like those in (9) of *ki* introducing a complement clause were few and far between across the corpus.¹³ And, again, they alternate in the same context with *še-* functioning as the predominant marker of complement clauses across the corpus. Instead, *ki* is commonly used to mark **adverbial clauses of reason** as in (10).

¹³These are termed *noun clauses* in traditional grammars and *content clauses* in Hebrew language studies (e.g., Zewi, 2008.)

(10)

- a. *kanire še en brera ela lehitmoded im ha-alimut be-draxim metuxkamot*
'(it) seems that (there's) no alternative but to deal with violence in sophisticated ways'¹⁴
- b. *ha-baxur hitakeš ve amar še hu xayav livdok ha-im yeš li nešek o lo*
'the guy insisted and said that he had to check the if [= whether] I had a gun or not'
- c. *kday še nizkor ki higánu kvar le-xama ve-xama mikrey récax*
'(it's) worthwhile that [= we should] remember that we've already arrived at several cases of murder'

The morpheme *še-* is not only the favored marker of Relative clauses at all levels of style, it is also the main way of introducing Complement clauses in today's Hebrew.¹⁵ One reason for this spread is that the function of *ki* has shifted largely from marking complements in Biblical Hebrew to marking adverbials of reason in MH, from 'that' to 'because' as shown below.

1.2.3 The Construction {PREP + *še-*} Introducing Adverbial Clauses

The form *še-* also functions to introduce adverbial clauses in MH, in the distinctive construction {PREP + *še-*}. These are illustrated, by no means exhaustively, from our corpus, starting with reason clauses.

(i) Adverbial clauses of reason or causation

Different prepositions serve to express causal relations, having the same meaning, as shown by the translations in (11a) to (11d).¹⁶

(11)

- a. *giluyey alimut madigim mekevan še toceoteyhem alulot liheyot xamurot*
'signs of violence are worrying because (that) their results may be severe'
- b. *hi kaasa alay meod mipney še hi hidpisa rov ha-avoda*
'she was very angry with me because (that) she printed most of the paper'
- c. *ha-pekida lo azra lanu mišum še ha-davar lo hitafser la*
'the-clerk didn't help us because (that) it wasn't possible for her'
- d. *ani mecayer beikar biglal še ani ohev et ze*
'I draw mainly because (that) I like it'

Structurally, the bolded causal conjunctions are morphologically complex, taking the form {PREP + STEM + *še-*}. The preposition must be one of the four basic

¹⁴The modal expression *ka-nire še* 'as seems that = it seems that' is frowned on by purists, who advocate either omitting the preposition (> *nire še* + CLAUSE) or the conjunction (> *kanire* + CLAUSE) in this context.

¹⁵Indirect question complements are marked by a question word like *ha-im* 'whether' in (10b) or other interrogative morphemes in information-question complements like *hu lo yada ma kara ve-madúa hu nimca šam* 'He didn't know what happened and why he was there.'

¹⁶The etymologies of the introducing Prepositions may be suggestive in this connection, but these are known only by Hebrew language specialists and so not accessible to ordinary, even educated speaker-writers.

prepositions that serve to construct adverbial phrases in MH (Nir & Berman, 2010), illustrated in (11a) to (11c) by ablative *mi~ me* ‘from, than’ and in (11d) by locational *be-* ‘in, at’. Except for *mi-pney* in (11b), where the preposition is followed by a genitive form of the noun *panim* ‘face,’ translatable as ‘in the face of’, the bound stems *-kevan-*, *-šum*, *-glal* are opaque. The bound stem may sometimes serve as a preposition, as in elevated *mišum hitnagduto* ‘because-of his opposition,’ *biglal ha-ráaš* ‘because-of the-noise.’¹⁷ The four {PREP + STEM + *še-*} expressions in (11) differ in level of formality: *mekevan še* was restricted to written essays, *mipney še* occurred only once or twice in the oral materials, *mišum še* was distributed fairly evenly across the various samples—suggesting it is the most neutral in terms of usage.¹⁸ The expression *biglal še* in (11d) occurred only in the oral conversational materials, not in the extended texts. While it is common in everyday usage, speaker-writers perceive it as less suited to more formal contexts. And, indeed, *biglal še* is a recent extension of the {PREP + *še-*} construction, a sign of how available it is to innovation, although the usage is still frowned on by purists as not documented in ancient Hebrew sources.

Reason clauses are the only adverbials that are marked not only by the complex {PREP + *še-*} construction but also by monomorphemic *ki* as in (12). The special status of *ki* as a marker of cause rather than in its Biblical function as introducing complement clauses is illustrated in (12a), where a 4th-grade girl asked to talk about problems of interpersonal conflict uses both *biglal še* and *ki* to mark reason clauses in the same context (with the text divided into clauses). The example in (12b) is taken from the conversation of a young man telling the investigator (a friend of his) what he thinks about current Hebrew.

(12)

- a. *le-xavera yeš šináyim im géšer*
 ‘A friend of mine has teeth with braces [literally, a bridge]
ve ani lo roca liyot ita, biglal še yeš la géšer
 ‘and I don’t want to-be with her **because (that)** she has braces
az ze meod maaliv, ki ze klum, géšer.
 ‘and it’s very insulting, **because** it’s nothing, braces,
géšer ze stam le-yašer et ha-šináyim še- yihyu briyot
 ‘braces are just to-straighten the teeth (so) that they’ll be healthy’.

¹⁷Hebrew prenominal prepositions and pre-clausal conjunctions contrast morpho-syntactically with their counterparts in English. Compare *biglal ha-ráaš* ‘**because-of** the noise’ ~ *biglal še hu asa ráaš* ‘**because (that)** he made a noise.’

¹⁸This observation is underlined by the mixed register usage in a statement like the following, from a man in his 20s telling about his experiences in high school, where what are considered non-acceptable or very colloquial usages are **bolded**: *lo hicláxti afilu lehagía la-ciyun haxi namux ba-kita mišum še haya li hamon tauyot* ‘I didn’t manage **even** to get to the **lowest** grade in the class because there **was** to me [= I had] **lots** of errors.’

- b. *ani xošev še šoxaxim kcat et ha-makor*
 ‘I think that (people) forget the origin a bit
ki yeš hevdel ben sleng le-ben le-daber ivrit mekulkélet
 ‘**because** (there) is (a) different between slang and speaking bad Hebrew
ze kvar inyan šel xinux ...
 ‘It’s a matter of education
ki ešar ledaber ivrit im sleng
because you can talk Hebrew with slang ...
aval ledaber ota naxon.
 ‘but to-speak it correctly’.

The excerpts in (12) show how *ki* can alternate with complex {PREP + *še-*} constructions in reason clauses. Yet *ki* was used for this purpose only occasionally, as against the common use of *biglal še*, both in texts produced by younger children, as in (12a) and in adult spoken interchanges in (12b). And *ki* was rare in the classical function to introduce complement clauses, confined to the written essays of adults.

In sum, given the variety of forms available to MH speaker-writers for expressing causal relations between predications, we found that (i) even children prefer a lexically complex construction to monomorphemic *ki*, and (ii) in everyday usage *ki* expresses cause rather than to introduce complements.

(ii) Adverbial clauses expressing temporal relations

Temporal clauses also use {PREP + *še-*} constructions, but unlike reason clauses, these express different semantic relations (e.g., *ad še* ‘until (that),’ *lifney še* ‘before (that),’ *axarey še* ‘after (that),’ *bi-zman še* ‘at-the-time that = while,’ *kol od še* ‘all more that = as long as.’) These illustrate the multifunctionality of complex {PREP + *še-*} constructions as prototypical pre-clausal conjunctions in Modern Hebrew. Thus, expressions of simultaneity, in the sense of English *when*, *while*, alternated in the data-base between Biblical *kaʔašer*, reduced nowadays to neutral *kše-* ‘as that’ = when,’ commonly further reduced to unmarked *še-*—in (13) to (15) respectively.

(13)

- a. [Repeated from (7b)] *gam kaašer hem mabiim bikóret nokévet al more ... amura lehitkayem bahem alimut*
 ‘Even **when** they express biting criticism of a teacher ... there is bound to exist among them violence’
- b. [From the same speaker as (6a)] *kaašer ani xošévet al ha-mila “alimut” ani miyad xošévet al šimuš be-koax ha-zróa o be-xol emcai axer al mnat lifgóa ba-zulat pgia fízit*
 ‘**When** I think of the word “violence” I immediately think of use of bodily force as another means to hurt others by physical injury ... ‘
- c. *ha-more im gabo la-kita kaašer ani roa ha-kol be-hištakfut ba-xalon*
 ‘the teacher has his back to the class **when ~ while** I can see everything reflected in the window’

Use of *kaašer* occurred several times in adult written usage. Elsewhere, reduced *kše-* ‘as that’ was the most common means of expressing simultaneity between co-occurring events across the sample, in all types of usage, as in (14).

- (14)
- WRITTEN EXPOSITORY: *kše-hem niklaim lemacavim éle, hem ponim le-gorem samxuti*
‘**When**-they get caught in such situations, they turn to an authority ...’
 - WRITTEN NARRATIVE: *kše-hikarti ota ze haya axarey še hi yaca mi-tkufa kaša meod*
‘**When**-I met her, it was after she had come out of a very tough time’
 - ORAL INTERVIEW: *kše-xazárnu mi-xuc la-árec ... hi hitxála laxšov lo lehišær ba-mošav*
‘**When**-we returned from abroad ... she began thinking not to stay in the village’

A noteworthy feature is the further bleeding from *kaašer* > *kše-* > *še-* yielding an **underspecified** means of expressing ‘when’, as in (15).

- (15)
- Adult, oral narrative: *še hitxálti lilmod hexláteti lirkoš ofnóa*
‘**that** [= **when**] I began studying, I decided to buy a motorcycle’
 - 17-year-old, written narrative: *rávnu, ve-še hu nigen, kibíti lo et-ha-magber ...*
‘We argued, and-**that** [= **when**] he started playing, I turned off his amplifier’
 - 9-year-old boy, written narrative: *yom lemaxarat še báti la-betséfer, nixnásti ...*
‘The next day, **that** [= **when**] I came to school, I went into ...’

This under-specification of Main Clause / Dependent Clause relations is thus not confined to small children or to spoken usage, even though it leads to semantic opacity, since omission of the prepositional *k-* to indicate ‘as, at the time’ extends use of bare *še-* from post-nominal RCs and Complements to Adverbial clauses. Usages like those in (15) lack a preposition that explicitly specifies the semantic (causal) content and syntactic (adverbial) function of *še-*, even though, as shown earlier, the {PREP + *še-*} construction is readily available in varied contexts.

(iii) Purpose Adverbials

Expression of a relation of purpose between the main and dependent clauses is of interest like the reason clauses noted earlier, it uses different lexical options in the {PREP + *še-*} construction without a change in meaning. This is shown in (16) from written adult texts.

- (16)
- hu nizhar bidvarav al mnat še lo yipagu*
‘He was caution in his-words **on-account that** [=in order that] they would not be offended’
 - hem panu la-mora kdey še taazor lahem*
‘They turned to the teacher so that (she) would help them’

Purpose can also be expressed with the preposition *bišvil*, literally ‘in/on path = benefactive for’, is *bišvil še* ‘for that = so that’. As a recent innovation, not puristically acceptable, this form was found only in the spoken narratives, among younger

speakers. As we saw for reason clauses, choice of preposition preceding *še-* to express purpose is a matter of level of style, from elevated *al mnat* to more common and everyday *kdey* followed by non-normative *bišvil*.

Purpose clauses in MH often replace the {PREP + *še-*} construction with a non-tensed infinitival clause, as in (17), from picture-based stories told by schoolchildren (Berman & Neeman, 1994).

(17)

- a. *ha-yéled tipes al ha-ec le-xapes et ha-čfardéa*
'The boy climbed the-tree **0** to-look for the frog'
- b. *ha-yéled tipes al ha-ec kdey le-xapes et ha-čfardéa*
'The boy climbed the-tree **so as to**-look for the frog'
- c. *ha-yéled tipes al ha-ec al mnat le-xapes et ha-čfardéa*
'The boy climbed the-tree **in order to**-look for the frog'

The examples in (17) alternate in level of usage and associated frequency. Unmarked infinitives expressing purpose (Berman, 2018) are common across the sample, usually with the purposive preposition *kdey* 'as-enough = so that'. Moreover, again across the sample, purpose clauses favor the non-tensed infinitival form, unlike other types of adverbial subordination.¹⁹

In sum, current Hebrew makes extensive use of *še-* in a range of tensed subordinate clauses (Relatives, Complements, and Adverbials), with occasional exceptions: Alternating with zero in Asyndetic Relatives; with *ki* in reason clauses; with non-tensed infinitives in purpose clauses; with other markers in conditional constructions.²⁰ It is also occasionally replaced by the coordinator *ve-* 'and' in some restricted contexts.²¹

In interactive contexts, *še-* may introduce a clause that is not directly adjacent to its main clause, in what Evans (2007; Evans & Watanabe, 2016) terms "insubordination," where nonfinite clauses serve as main clauses. In her study of "the insubordinate – subordinate continuum" in Hebrew conversations, Maschler (2020) defines "insubordination" as "syntactically un- or loosely-integrated *še-* clauses."

These are contextually rather than syntactically dependent constructions and so confined to conversational interactions, and—as shown in the next section—play a role in early child language through the "supportive contexts" provided to toddlers by their caretakers (Berman & Lustigman, 2014).

¹⁹This disregards other adverbial relations that are also subordinated by {PREP + *še-*} constructions, including adversative (*lamrot še, af al pi še*), comparative (*kmo še, kfi še*), quantitative (*ad kama še, kexol še*). In all three cases, the two examples differ in register rather than in meaning, the first being more colloquial, the second more formal.

²⁰The main type of adverbial clause that does not rely on this construction in MH is conditionals, with factual conditionals introduced by *im* 'if, whether' and hypotheticals by *lu, ilu* 'in case.'

²¹A few complex causative constructions replace normative *še-* by the coordinating conjunction *ve-*, e.g., *heyot še* 'being that' versus everyday *heyot ve-*, *meaxar še* 'from after that = seeing that' ~ *meaxar ve-*.

2 Developmental Trajectories

This section addresses what is termed “acquisition of complex sentences” by Bowerman (1979) and Limber (1973) and, more recently, by Diessel (2004), while Clark (2012, pp. 229–253) heads this section as “combining clauses – more complex constructions” (2012). We take as our basic unit of analysis the *clause*—defined as a unified predication expressing a single situation (event, activity, or state)—so as to avoid attributing the abstract construct of “sentence” to early child utterances (possibly to oral language in general).

Here, we track changes in the distribution and functions of *še-* and its alternatives in three types of data as playing a role in *clause-combining* from toddlerhood to adolescence. Use of *še* is examined in different contexts—adult–child interchanges, extended texts, and structured elicitations—across three developmental stages (Berman, 2004a): *emergence* at ages 1–3 years (Sect. 2.1), *acquisition* in middle childhood at ages 7–10 years (Sect. 2.2), and *mastery* in adolescence and beyond (Sect. 2.3).

2.1 Emergence in Toddlerhood: Ages 1–3 Years

The database for this section derives from the following sources: (i) work with Lyle Lustigman (2016a, b, 2021; Berman & Lustigman, 2014, 2016, 2020) on longitudinal samples of four Hebrew-acquiring children between ages 1;0 to 3;6 years, supplemented by two cross-sectional corpora; (ii) Dafna Kaplan’s (1983) masters’ thesis analyzing the grammatical development of children clustered in six age-groups starting from 1;9–2;0 years and up to age 3;6 years (Klein, 2021); and (iii) cross-sectional recordings of 20 children at each of the year-groups 1–2 years, 2–3, 3–4, and 4–5 (Dromi & Berman, 1986).

The first finding is that *še-* emerges in Hebrew children’s usage at the same time as has been documented for early clause-combining in other languages, around age 2 years. Second, it occurs together with other markers of clause-combining, particularly the coordinator *ve-* ‘and,’ (Berman, 1996), together the two most neutral and widespread means of combining predications in Hebrew. That is, initial evidence of subordination and coordination co-occurs in Hebrew at all events. These two markers of clause-combining are soon followed, usually well before age 3 years, by two other markers of subordinate and coordinate clauses, respectively: *ki* meaning ‘because’ and *aval* ‘but’ (Lustigman, 2021; Lustigman & Berman, 2016).

A second, Hebrew-specific observation is as the following. Across the large and varied database, from the youngest age on, there was almost **no omission** of an overt marker of clause-combining, by ungrammatical juxtaposition of two clauses (like the one mentioned earlier from a 2-year-old boy *ani roce ša'on] ose tik-tak* ‘I want (a) clock] goes tick-tock’). Hebrew-speaking children appear to realize from the outset that the second of two predications which are linked together in a single intonational contour must be overtly marked as a single utterances. In this, Hebrew

complex syntax contrasts, for example, with English—in finite complement clauses like *the people 0 we spoke to*, *the stories 0 they told us* or in nonfinite relative clauses like *the people 0 speaking to us*, *the stories 0 told about us*. The corresponding Hebrew clauses would in each case be marked by *še-* in place of zero.

A third observation is non-Hebrew specific. Initially, *še-* like other markers of coordinated and subordinated clause-combining, does not occur autonomously in children's speech, but is *scaffolded* by various types of contextual input from caretakers. This helps to foster early clause-combining abilities as it does for other, less advanced areas of grammar, including verb inflections (Clark & de Marneffe, 2012) and stringing successive single-word utterances (Scollon, 1976; Veneziano, 1999). Of the different kinds of “supportive contexts” in our corpus (Berman & Lustigman, 2014), the example in (18) illustrates what we called *co-constructed clause combining*, where the adult provides an utterance that triggers the child's dependent clause.

(18)

- a. ADULT: *az ma at roca miméni?*
 ‘So what (do) you want from-me?’
 CHILD: *še taazri li*
 ‘That you’ll help me’
- b. CHILD: *ze gam li* [Lior, aged 2;3]
 ‘That (is) also for me’
 MOTHER: *ma amart, xamuda?*
 ‘What (did) you-say, sweetie?’
 CHILD: *še lo yihiye li kar, še lo naim li ba-roš*
 ‘(so) that I shouldn’t be cold, **that** my head isn’t comfy’
- c. ADULT: *láma uga ktana*
 ‘Why (do you want) small cookie?’
 CHILD: *še en la uga gdola* [Leor, 2;7].
 ‘That-there’s-no for-her (a) big cake (= because she does not have big cake)’

Such co-constructions of clause-combining sequences triggered by the adult (usually in the form of question–answer adjacencies as in “why–because” sequences) provide support to young children en route to autonomous formation of complex syntactic constructions. They reflect what in adult interactive conversation is termed “insubordination”—where a dependent clause, in this case introduced by *še-*, aids children in constructing clause linkages.

Lustigman identified four shared *developmental stages* for the children whose language she analyzed between ages 1;6 to 3: (i) Initially, children juxtapose clauses as separate utterances, without grammatical marking of the relations between them. (ii) At Stage II, they introduce a second clause in a single utterance, most often by the basic coordinating marker *ve-* ‘and’ as well as to a lesser extent by *še-*. At this early stage, *še-* often occurs as an unspecified “general purpose” marker of an ambiguous or vague relationship between the main and dependent clause, as in (19b) below. Subsequently, in Stage III, children use *še-* increasingly, and more conventionally, to introduce complement and adverbial clauses (mainly in the sense of ‘when,’ alternating with *ki* meaning ‘because’). Later, around age 3 years, at Stage IV, *še-* serves to mark Relative and non-temporal Adverbial clauses with {PREP + *še-*} complex conjunctions, mainly *biglal še* for reason, *kdey še* for purpose, and *ad še* ‘until’ for time.

These developments are illustrated in (19) from the corpus analyzed by Lustigman, combined with data from the cross-sectional sample, which confirmed the same developmental trends. Here, a hashtag # stands for the end of an utterance and a bracket] marks clause boundaries in a single utterance, and children's age are indicated by year and month.

(19)

Stage I

- a. **Sequential, Unmarked Simple Clauses**
- (i) *ze misxak. # oy, hu nogéa be-ze.*
'It's (a) game. # 'Oh, he's touching it' [Lior, 2;0]
- (ii) *hu hitxil laléxet # et mi hu raa šam?*
'He started to-leave, who (did) he see there?' [Hagar, 2;6]
- b. **Unspecified, General Purpose Marking**
- (i) *ani rak yoréket še ha-dúbi baxuc* [Lior, 2;6]
'I only spit **that** the (gummy) bear's out(side)'
- (ii) *at roa, še ze šašúax še ani yaamod al ha-ricpa ve-ani etgaleš*
[Leor, boy, 2;10]
'You see, **that** it's flat **that** I'll stand on-the-floor and I'll slip'
- (iii) *ani srufa] me-ha-šémeš še ani yašávti al ha-kise.* [Naama, 2;7]
'I'm burnt from the sun **that** I sat on the chair'

Stage II

- a. **Complement Clause**
- (i) *hu roe še ha-bank sagur*
'He sees **that** the bank's closed' [Leor, 2;11]
- (ii) *hi amra še hi lo roca*
'She said **that** she (does) not want (to)' [Maayan, 2;8]
- b. **Reason Clause** [with *ki*]
- gam lánu yeš ki Nican tinok*
'We also have (one), **because** Nitsan's (a) baby' [Lior, 2;9]
- c. **(Unspecified) Purpose Clause**
- tasimi po še Nican íga'*
'Put (it) here **that** Nitsan will-touch' [Lior, 2;7]

Stage III

- a. **Reason Clause** with {PREP + *še-*}
- hu boxe káxa biglal še hu rak tinok*
'he cries like that **because** he's only a baby' [Lior, 2;11]
- b. **Temporal Clause**
- nelex la-bank kše-yiftexu et ha-manul*
'We'll-go to-the-bank **when-**(they)-will-open the-lock' [Leor, 2;11]
- c. **Relative Clause**
- (i) *hu min zeev še ose hav hav*
'he's a kind of wolf **that** goes bow-wow' [Leor, 2;11]
- (ii) *ani roca buba še sáfta kanta li*
'I want (the) doll **that** granny bought me' [Naama, 2;10]

Stage IV**Adverbial Extensions with {prep + *še-*}**

- (i) *hi noténet li svéder kdey + še ani lo eheye xola*
'she gives me (a) sweater **in order that** I won't be sick'
[Ofra, 3;1]
- (ii) *elex lišon axarey še aba yavo habáyta*
'I'll go to sleep **after** Daddy will-come home' [Yiftach, 3;2]

Both the longitudinal and cross-sectional corpora show that once toddlers begin to use the morpheme *še-*, between ages 2 to 3 years, they do so increasingly, in a more conventional and explicit manner, and in a wider variety of syntactic and semantic contexts. Ages 3–4 years show a clear increase in such uses. This is shown in (20), from a girl named Maayan, aged 3;9 years talking to an investigator.

- (20) (i) *hu ba la-báyit šeli **biglal še** hu xaver šeli, rak **mi še** xaver šeli (h)u ba elay*
 ‘He came to my house **because** he’s a friend of mine, only (someone) **that (is)**
 a friend of mine comes to me.’
- (ii) *naxzor le-bet séfer **axarey še** yigamer (h)a-Pésax*
 ‘We’ll go back to school **after** Passover ends’.

The basic uses of *še thus* seem to be commanded early on in development. But they are confined to stringing two or three clauses together in a largely linear fashion. Only later do children make greater and more varied uses of *še-* by linking together longer syntactic packages.

2.2 Acquisition in Middle Childhood: 8–10 Years

By grade-school age, Hebrew-speaking children use *še-* in various syntactic and semantic contexts. This section illustrates a middle level of the developmental route in use of the target morpheme, based on **compositions** written by 4th-grade Israeli children asked to discuss the problem of violence in schools. This communicative context represents the most advanced and sophisticated type of language usage of the four text-types elicited (see Sect. 1.2) in both the Hebrew-based and cross-linguistic oral and written, narrative and expository texts analyzed (e.g., Bar-Ilan & Berman, 2007; Berman, 2008; Berman & Ravid, 2009). The excerpts that follow are from children aged 9 to 10 years: Clauses are numbered consecutively; clause-boundaries are marked by]; angle brackets <...> indicate embedded clauses that are inserted into another dependent clause; and double brackets]] indicate a separate syntactically and/or thematically linked “clause package” (Berman & Nir-Sagiv, 2009). Subordinate and coordinate conjunctions with a clause-linking function, including *še-*, are marked in **bold**.

- (21) **Gili, 4th grade girl, aged 9** [1st 10 of total 23 clauses]
 1–2 *ani xošévet] **še** lo carix alimut ba-olam] ...*
 ‘I think] **that** there should not be violence in the world]]
 3–10 ***im** ata rav im mišhehu]ve hu matxil lehakot otxa] **az** ata lo carix lehakot oto be-xazara]*
 ‘**If** you quarrel with someone] and he starts to hit you] **then** you shouldn’t hit him back]
*ata rak carix lehasbir lo] **še** ha-alimut zo lo ha-dérex ha-nexona]*
 ‘you just have to explain to him] **that** violence is not the right way]
***še** hi lo tiffor davar] ve **še** <im hu yarbic> **az** zot ha-dérex ha-kaša yoter ve-ha-lo*
nexona.]]
 ‘**that** it doesn’t solve anything] and that <if he hits> **then** that’s the hardest and not correct way.’

The text in (21) shows relatively advanced use of *še-* for a child in 4th grade. She begins with a discourse-marking introductory *complement* clause in the form *ani xoševet še* ‘I think-FEMININE that’. corresponding to English ‘I think that,’ French *je trouve que ...* in stating personal opinions (The phrase occurs no fewer than four times in her 23 clauses, to segment her text by each new idea she expresses). Second, most uses of *še-* in (21) mark **complement** clauses. These are a more linear, less complexly embedded form of clause-combining than Adverbials and Relatives, since they function as arguments of the Main Clause verb (Noonan, 1985, p. 42) and so are semantically and syntactically “highly integrated” in the sentences in which they occur (Cristofaro, 2003; Croft, 2001).²² Third, she alternates use of complement clauses with *conditionals* marked by *im ... az* ‘if ... then’ sequences, noted earlier as the main type of dependent clause in Hebrew that does not make use of *še-*. Fourth, and relatively rare at this age, she links together as many as seven coordinated and subordinated clauses in a single syntactic package surrounding the main clause *ata rak carix lehasbir lo* ‘you just have to explain to-him.’ Moreover, also rather unusual at this age, this package includes a dependent clause embedded inside a coordinate clause, both complements of the same predicate ‘explain’ in the main clause: ‘you have to explain to him] that violence is not the right way] **and that** it does not solve anything.’ Finally, she alternates use of *še-* with *ki* for cause and *im* for condition.

To show that these are not isolated instances, consider the excerpt from another 4th grade composition in (22).

(22)

Dana, 4th grade girl, aged 9 [Total 17 clauses]

- 7 *alimut yexola ledaati lifgóa mi-bxina nafšit yoter me-ašer mi-bxina gufanit*]
 ‘Violence can in-my-opinion harm emotionally **more than** physically]]
- 8–10 *kaašer šney xaverim ravim*] *kol exad mehem yipaga*]
 ‘**when** two friends quarrel each one of them will-get-hurt
ve-yeraxem al acmo]]
 ‘and feel sorry for himself’
- 14–17 *ani betuxa*] *še yeš od hamon yeladim xuc miméni*
 ‘I am sure] **that** there are lots of other kids besides me
še xošvim] *še olam bli alimut yiheye yoter yafe*]]
 ‘**that** think] **that** a world without violence would be nicer’

This child uses a self-consciously high register style of language, noted earlier for adult essays. For example, she uses elevated *le-daati* ‘in my opinion’ in place of the common *ani xošev/et* ‘I think/FEM’ and Biblical *ašer* in place of everyday *še-* in clauses 7–8. She, too, uses *še-* mainly in complement clauses, giving the passage a linear type of clause-linkage compared with the more complexly embedded constructions in (21). This may a function of the expository genre of discussion in (21) and (22), which presents grade-schoolers with considerable difficulty (Berman &

²²In contrast to complement clauses, Adverbials and Relative Clauses function as optional **Modifiers** of Main Clause verbs (Thompson & Longacre, 1985) and Noun Phrases (Keenan, 1985), respectively.

Nir-Sagiv, 2007). In contrast, the personal experience narratives of these and other 9-year-olds contained numerous instances of Adverbial {PREP + *še-*} constructions, as well as several Relative Clauses, as in (23).

- (23)
- a. **Gili [cf. (21)]:**
- 1–2 *ha-banot rávu im Nikol] lifney še báci* [TIME ADVERBIAL]
‘the girls quarreled with Nicole] **before** I came’
- 19 *raíti šam kama banot] še báu lesaxek itánu* [RELATIVE CLAUSE]
‘I saw there some girls] that came to play with us’
- b. **Dana [cf. (22)]:**
- 8–12 *axar kax raíti et ha-album] kaašer ha-madbekot axat al ha-shniya]*
‘Afterward I saw the album] **when** the stickers were on top of each other]
ve-madbekot axerot be-makom] še lo ahávti] še yiheyu]]
‘and other stickers (were) in a place] that I didn’t like] that (they) will-be.’
- 13–14 *hitragázi alehem] aflu še lifamim asíti lahem carot gdolot yoter]]*
‘I was mad at-them] **even that** [= **though**] I sometimes caused them worse trouble]]
- 18–20 *hayiti merugézet aleyhem harbe zman] mišum še ha-madbekot < še ahávti>*
I remained mad at-them a long time] **because** the stickers <that I liked>
hayíti crixa lizrok]]
‘I had to throw out’]].
- 21–23 *le-vasof hišlámti itam] lamrot še kolkax kaásti]]*
‘Eventually I made up with them] **even though** I was so angry.’]]
- 22–23 *aval ad hayom ani kcat koéset] al ma še hem asu li]]*
‘but to this day I am a little sore] **about what** (that) they did to me’]]

The excerpts in (23) show that the same girls who used *še-* primarily to introduce Complement clauses in writing expository essays in (21) and (22), use it to mark a variety of Adverbial relations—cause, time, adversity, contradiction—as well as different types of Relative Clauses in writing stories describing experiences with interpersonal conflict or violence. These comparisons demonstrate the impact of *genre* on use of *še-* in subordination by schoolchildren well as adults (noted in Sect. 1.2). The question then is what remains, if anything, en route to mastery in use of this item in adolescence.

2.3 *Mastery of Expressive Options: Adolescents Aged 16–18 Years*

High-school students use the target element *še-* in more diverse syntactic contexts to express more varied lexico-semantic relations than younger children. *Complement* Clauses are introduced by a wider range of matrix clause predicates, in addition to basic *xošev* ‘think,’ *amar* ‘said’, to include *verba dicendi* and cognitive verbs like *taan* ‘claimed,’ *savar* ‘assumed,’ *teer le-acmo* ‘describe to-himself = imagine.’ Second, in *Adverbial* clauses, adolescents use {PREP + *še-*} constructions beyond basic clausal and temporal expressions to include higher-register terms for ‘because’ like *mipney še*, *mikevan še*, and more specific temporal markings like *ba-réga še* ‘at the minute that = as soon as,’ *kol páam še* ‘each time that = whenever.’ High

schoolers also referred to more types of semantic relations, including *bimkom še* ‘in place that = instead of,’ to express alternatives, *kmo še* ‘like that’ or higher-register *kfi še* ‘as that’ for comparisons or to mark similarities, and *lamrot še* ‘in-spite that’ or high register *af al pi še* ‘even that = although’ for adversatives. With age, young people exploit their larger lexicon to express numerous alternative possibilities in linking Main Clauses to the circumstances restricting or depicting when, how, and why events did or did not take place.

Relative Clauses in the high school texts included more headless relatives beyond basic *ma še-* ‘what that’ (e.g. *lo hiskámti im ma še hu amar* ‘I didn’t agree with **that** [= **what**] he said’ to *kol mi še* ‘all who that = whoever,’ and with general purpose nouns like *kol davár še* ‘any thing that,’ *kol adam še* ‘all person that = anyone.’ They also make occasional use of asyndetic relative clauses, perceived as a higher register of usage—e.g., *ha-šulxan alav ani noheg lixtov* ‘the-table [MASC] **on-it** [MASC] I usually write = on which I write’; *ha-xinux še kiblu me-ha-sviva ba hem xayim* ‘the education that they received from-the-environment [FEM] **in-it** [FEM] they live = the environment in which they live.’ That is, the written essays of high-school students reflect greater sensitivity to register distinctions and different genres than do younger schoolchildren (Berman, 2016).

A particularly sophisticated usage found almost only in adolescence and beyond replaces tensed subordinate clauses with *še-*, not only in asyndetic Relative Clauses, but by means of abstract verb- or adjective-derived *nominalizations*. Examples include *lamrot kaasi* ‘despite anger-my = in spite of my anger’ (cf. *lamrot še kaásti* ‘although (that) I was angry’), *biglal ha-hitkahalut* ‘because (of) the gathering’ (cf. *biglal še hitkahalu* ‘because that they gathered together’), *mipney ha-hitnagdut šeli* ‘because-of my opposition’ (cf. *mipney še hitnagádeti* ‘because I was opposed’).

Finally, the sophisticated syntactic strategy of inserting one dependent clause inside another, as in the embedded clauses produced by younger schoolchildren in (21), reflect advanced cognitive abilities at preplanning and advance organization of what the writer links together in a single chunk of information. High schoolers package larger bits of information by stringing thematically related clauses together in a single syntactic chunk as in (24) below, and they do so in more varied ways, for example by embedding or inserting, say, a complement clause inside a coordinated clause, or a relative clause following the initial subject noun of a complex sentence, as in (25). Again, clauses boundaries are marked by], embedded clauses are enclosed in angle brackets < ... > and the entire chunk is marked off by]].

(24)

11th grade girl, age 17

- 17–18 *hi amra li] še hi maadifa linsóa la-festival]*
 ‘She told me] that she prefers to go to-the festival]
bimkom še nisa kulánu le-Eilat]]
 ‘instead that we all go to Eilat’]]
- 9–23 *ha-meriva nimšexa ke-šloša yamim] ad še le-va-sof nigmar be-xax]*
 ‘the quarrel lasted some three days] until eventually it-ended in-it]
še Keren ve-xaverta nasu ba-sof la-festival] ve-lo higú le-Eilat]
 ‘that Keren and her friend eventually went to-the-festival] and never got to Eilat]
kfi še nikba me-roš]]
 ‘according that = as had-been decided in advance’]]

(25)

11th grade girl

- 4–9 *ba-sof nocar macav] še kol axat me-itánu hevína zot le-xivun šone]*
 ‘In the end (there) arose a situation] that each of us understood it differently]
kax še <kše higía ha-réga le-haavir et ha-inyanim> kol axat nora kaasa al hašniya]
 ‘so that <when the time came to transfer matters > each of us was mad at the other]
še lo hevánu naxon] ve heevárnu méšer axer]]
 ‘that we hadn’t understood right’] and we’d sent a different message’]]

We conclude by considering implications of the changes we have traced in use of *še-* in the history of the language (Sect. 1) and of individuals (Sect. 2) in a range of communicative contexts.

3 Discussion

, Three major findings emerged from this study: First, the same forms occur in both Biblical and current Hebrew; second, across time, these forms change in frequency and function; and third, older forms tend to be confined to more formal registers of use, hence confined to later, more literate stages of language development. Here, we the implications of these findings from three points of view: Hebrew typology (Sect. 3.1), Developmental trends (Sect. 3.2), and the interplay between Diachrony and Linguistic Register (Sect. 3.3).

3.1 Hebrew Typology

The forms reviewed in this study were largely recorded as far back as Biblical Hebrew, although changed in both frequency and function in MH. This underlines the typologically ‘mixed’ or ‘fused’ character of MH as drawing concurrently on forms taken over from different periods in its history. The Hebrew scholar Ben-Hayyim (1953), argued that nothing in Modern Hebrew has died, but rather that different chronological layers exist and are used in the language alongside rather than on top of one another, unlike in languages with a historical continuity. This claim was subsequently illustrated in rich research on MH, in such domains as genitive relations and compounding in MH (reviewed in Berman, 2020b). That is, MH uses elements from earlier stages in the history of the language (here Biblical Hebrew), but it both expands and condenses the repertoire of forms available, as argued by Nir (2020) and Zeldes (2013) in discussing whether MH has retained its Semitic sources in syntax as well as in morphology. The present study, too, shows that Hebrew retains clear traces of its antecedents, with changes evident more in functions than in forms, analogously to changing form-function relations in child language development (Slobin, 2001).

Findings of this study underscore from a usage-based perspective features noted in structuralist research on the morpheme *še-*. (i) It is *multifunctional*, (ii) serves to mark syntactic dependency in all and only the three major types of *tensed* subordinate clauses: Complements, Adverbials, and Relatives; (iii) it alternates with two types of nonfinite subordination in Modern Hebrew, infinitives (Berman, 2018) and, more restrictedly, *benoni participles* (Berman, 2014; Dubnov, 2015); and (iv) has largely replaced Biblical *ʔašer* in all but formal contexts.

Multifunctionality, in the sense of one-to-many and many-to-one form/meaning relationships is not confined to *še-*. It is quite typical of grammatical markers in Hebrew (Berman, 1996, 2018) as in other languages. For example, Culicover and Jackendoff (1997) point out that “the English subordinator *that* serves to mark both complementation and relativization, while the coordinator *and* (like French *et*) may express both additive and conditional interpretations (e.g., *You drink another can of beer and I’m leaving*). And the same type of connection may be expressed by different connectives, such as *but* and *although*.” On the other hand, Hebrew *še-* differs from its counterparts in Germanic and Romance languages in that, first, it serves exclusively as a (multifunctional) subordinator, never as a question-word or demonstrative;²³ and, second, it combines with prepositional items to form the major class of complex adverbial conjunctions in the unique {PREP + *še-*} construction. These clause-combining constructions both differ from and share properties with Prepositional Phrases of the form {PREP + NP}: Compare the PP *ad ha-érev* ‘until the-evening’ with the clause *ad še yaxšix* ‘until that (it) will-get dark,’ *biglal maxalato* ‘because (of) his illness’ / *biglal še hu xole* ‘because that he (is) ill’, *lamrot ha-ráaš* ‘despite the-noise’ / *lamrot še haya roeš* ‘although (it) was noisy’.

The study also reiterates the interplay between morphology and syntax as a feature of MH typology, noted elsewhere for such areas as compounding and genitive constructions, for voice, valence and transitivity, nominalizations, and case-marking pronominals (Berman, 2020a). The present analysis combines considerations of syntax, discourse, and register to show, for example, that complex conjunctions are distributed differently by genre: The {PREP + *še-*} construction is widespread in personal experience narratives, compared with use of largely logically related atemporal commentary in expository texts. And analysis shows that selection of subordination markers reflects more general differences in MH usage between written and spoken language, and between more elevated and informal styles of usage.

²³Generative accounts of Hebrew syntax often refer to a non-existent class of *wh-* words in the language. True, as noted in Section 1.3, question words like *ma* ‘what,’ *mi* ‘who,’ *efo* ‘where,’ *ha-im* ‘if = whether’ can serve as non-referential heads of relative clauses, and they also introduce indirect question complements (e.g. *raca ladaat efo hayinu ve ma asinu* ‘He wanted to-know **where** we were and **what** we did’). But this by no means turns them into a coherent and phonologically related grammatical category.

3.2 *Developmental Trends*

Given the by now well-established domain of “later language development” as a recognized facet of psycholinguistic research—one to which Dorit Ravid has made a rich contribution—it should come as no surprise that development in use of *še-* demonstrates a lengthy developmental route from early childhood to adulthood. The study also provides evidence for Slobin’s (2001) ideas on changes in form-function relations across time: The same linguistic form (in this case *še-*) comes to serve new functions, and previously acquired functions are met by new forms (unmarked *še-* to explicit *kše-* ‘when’ on to more formal, classical *kaašer*, or marking of causal relations initially by *ki*, extended to *biglal še*, *mipney še*, *mekevan še*). Another developmental theme reinforced by this study is that grammatical elements do not develop in isolation: In the case in point, the morpheme *še-* plays a key role in clause-combining syntactic complexity, to express complementation, adverbial relations, and relative clause modification, while at the same time being elaborated to meet purposes of connectivity in discourse by packaging together several thematically segments of a text.

The study shows that *še-* as the prototypical marker of clause-combining complex syntax in Hebrew emerges at an early age, between 2 and 3 years, along with the coordinator *ve-*, at the time when, across languages, command of the native grammar flourishes. As in early grammar in other languages, subordination first emerges as non-autonomous, in adult-supported scaffolding contexts. Specific to Hebrew are two phenomena in this connection: There are almost no instances where, once clause-combining is autonomously produced, children fail to mark the dependent clause by ellipsis of *še-*. Rather, *še-* serves widely as an *underspecified* marker of subordination, ambiguous between different adverbial senses or as marking relative clauses.

By school-age, such ambiguities are restricted to the neutral temporal adverbial, corresponding to English ‘when.’ This takes the form of a shift from (i) Biblical *kaašer* ‘as that = when’ restricted to more formal, high-register contexts to (ii) the standard, reduced form of *kše*, and (iii) on to unmarked, nonspecific bare *še-*, which occurs widely not only among young children but also in the casual usage of older speakers. This trend may eventually take over in everyday Hebrew, so that bare *še-* will stand for marking relations of time as well as complement and relative clauses.

A noticeable change between Biblical and Modern Hebrew is use of the conjunction *ki* (Ariel, 1978). This formerly served to introduce complement clauses, today a function shown here to be restricted to occasional high-register contexts. Current use of *ki* to mean ‘because’ in adverbials of reason emerges very early in child language, even before age 3 years. And it shows an unusual developmental route: In toddlers around age 3 years, it occurs along with the coordinator *aval* ‘but,’ as a semantically more specific means of clause-combining than ubiquitous *ve-* ‘and’ *še-*. However, from school age, and increasingly in adolescence and among adults, it is again used occasionally to introduce complement clauses. Yet at these later developmental levels, *ki* is less favored as a reason conjunction. Rather, it is replaced by

complex conjunctions in the prototypical {PREP + *še-*} construction highlighted repeatedly in this paper. Toddlers prefer use of monomorphemic *ki* to mark reason, but by later preschool age around 4 or 5 years, *ki* gives way to the non-normative yet common combination of *biglal še*, which in older speaker-writers alternates with higher-register alternatives like *mipney še*, *mekevan še*, *mi šum še* meaning roughly ‘because, since, as.’ Increasing diversity in use of the {PREP + *še-*} construction is by way of being a litmus test for development of clause-combining in MH.

Understandably enough, adolescent and adult usages show greater variety and sophistication at all levels. Increased diversity in use of complex conjunctions reveals not only a larger lexical repertoire, but a grasp of differing semantic relations between situations and events and the temporal and logical circumstances with which they are associated. Older speaker-writers also make more sophisticated use of *še-* to mark relations of clause-combining, by means of longer and denser packages of syntactically and thematically related chunks of discourse, including use of embedded or “nested” subordinate clauses inserted into other dependent clauses. This latter ability is not only beyond the processing and preplanning capacities of younger children, it is one that distinguishes typically from non-typically developing language users—as shown for Hebrew middle-school students by Davidi (2014) and for English-speaking children and adolescents by Scott (2004). Taken together, these developments reveal the use of *še-* at different stages in the life history of speaker-writers of MH as deriving from a combination of factors: greater familiarity with and command of a larger and more varied range of lexico-semantic means of linguistic expression; greater cognitive capacities in embedding the target morpheme in complex chunks of syntactic clause combining and in segmenting extended pieces of discourse into thematically related blocks of information;²⁴ and, as shown in the next section, the impact of literacy on language development in this as in other areas.

3.3 *Diachrony and Register*

First addressed by Roman Jakobson’s (1968) visionary work on phonology, the issue of principles common to child language development, linguistic variation, and diachronic development is germane to the present study. As articulated in Stephen Jay Gould’s (1977) book “Ontogeny and Phylogeny”, the idea of recapitulation aims to explain the relationship between the development of individual organisms and the [evolution](#) of the species as a whole. The issue has been tackled from different perspectives by psycholinguists (e.g., Friederici, 2012; Slobin, 2004) in terms of

²⁴Tightly cohesive packaging of extensive chunks of syntactically and thematically related pieces of information demands advanced executive abilities such as extended working memory, advance planning, organization, and monitoring of the kind that Paus (2005) sees as marking “the shift from a caregiver dependent child to a fully autonomous adult ... anchored in an increase in higher-order cognitive capacities and greater executive control.”

the relationship between the development of language in the individual and in the history of human language, and by Nir (2020) for clause-combining strategies in MH in light of the history of the language since Biblical times. The findings of the present study combine with research by Nir (2015, 2020) and Zeldes (2013) to make a less extreme claim: The forms reviewed here for purposes of syntactic and discursive clause-combining in MH nearly all occur diachronically as far back as Biblical Hebrew.

Three features of the relationship between earlier and current Hebrew are noted in this connection. First, they manifest a marked change both in frequency and function, as in the alternation between use of *ki* in Biblical and MH, respectively, while the preferred subordinator, Biblical *ʔašer*, has fallen largely into disuse in everyday Hebrew. Second, there is greater diversity in *alternative* forms for marking particular syntactic constructions and semantic relations, as noted earlier for the three types of Relative Clauses analyzed from different perspectives by Nir (2015) and Reshef (2004). A third development across both child language and the history of Hebrew is the pervasiveness of the {PREP + *še-*} construction in Adverbials. Together, this variety of forms provides speaker-writers of MH with *expressive rhetorical options* not available at earlier stages in the history of the language or of individuals.

A major usage-based finding of the present study is that, while older Biblical means of expressing subordination remain in use, today they serve as indicators of higher, more formal *registers*. This is shown by three sets of comparisons: Biblical alternatives are largely if not exclusively confined in our samples to (i) written rather than spoken usage; (ii) expository more than interactional or narrative genres of discourse; and (iii) among older speaker-writers from adolescence, mainly among adults. Such elevated usages are illustrated in (27) and (28), excerpted from essays written by male university graduates. Use of Biblical *ʔašer* is bolded, while other high-register usages are indicated in the translated versions in small caps—[vs] stands for Verb-Initial clauses; [PASS] for Passive voice; [LX] for high-level Lexical usage; [LW] for Loan Word; [NOM] for Nominalizations— and angled brackets < ... > indicating nested dependencies.

(27)

*rešit, btoḥ bet séfer yeš hevdelim gdolim yoter be-GÓDEL u-ve-XÓZEK šel yeladim me-ašer
btoḥ ha-uxlusiya ha-bogéret.]]*

‘First, inside a school (there) are greater differences in size [NOM] and strength [NOM] **than**
in the adult population.’]]

*yeladim gam yeš lahem paḥot AKAVOT be-dérex klal be-NEKITAT alimut me-ašer le-mvugarim
‘Children generally have fewer inhibitions [LX] in undertaking [NOM] violence **than** adults.’]]*²⁵

²⁵The last clause package or “sentence” of the four very long stretches marked by]] in (25) are the same as the excerpt given earlier in example (6).

(28)

ba-šanim ha-axaronot HAFXA HA-SVIVA *liheyot* KOXANIT *yoter*, ALIMA *ve-bota* **meašer** *ba-avar*]]

‘In recent years, has-become the environment [VS] more power-driven [LX], violent and aggressive [LX] **than** in the past’]]

ba-zman ha-axaron afilu HUAC TAHALIX *ze*, *be-ikar* ÉKEV *xadirat* *ha-televízya*, *arucey* *ha-kvalim* *ve-misxakey+ha-maxšev* *be-xol báyit*]]

‘In recent times even has-been-accelerated [vs, PASS], this process, mainly due to [LX] the penetration [NOM] of television, the cable channels, and computer games in every home’ *ha-gornim ha-lálu makifim yeladim u-vney nóar* KIMAT *be-méšex kol šeot ha-yom ve-mešadrim* *kimat* LE-LO HÉREF *mesarim šel alimut*]]

‘Those factors surround children and young people during [SYN] nearly all the hours of the day and broadcast virtually without cease [LX] messages of violence.’]]

barur še yéled < ha-gadel mul masax ha-maxšev > *<ve-asuk be-HAŠMADAT dmuyot TOX KDEY misxak >* *yitkaše lehaciv et ha-gvul kaašer hu mesaxek im yeladim amitiyim ve-lo im dmuyot virtualiyot al ha-mirka*]]

‘Clearly a child **<who** grows up in front of the computer screen> <and is occupied with destroying [NOM] figures in the course of [LX] playing [NOM]> will find it difficult to establish a boundary **when** he plays with real children and not with virtual [LW] figures on the (electronic) screen [LX].’]]

We see, thus, that alternations in the use of the target morpheme *še* occur in tandem with a range of other morpho-syntactic and lexical usages characteristic of formal, elevated linguistic expression in MH – signaling a high point in the non-literary language use of educated, but non-expert speaker-writers of the language.²⁶ Many of these forms, like Relative Clause *ha-* and *(ka)ašer*, can be traced back to Biblical Hebrew. This is not true across the board. For example, verb-derived action nominals marked as NOM in the previous examples (e.g. *nekita* ‘undertaking’, *haašmada* ‘destruction’) were rare in the Bible, yet play an important role in elevated usage of MH.

Finally, to round off this discussion, some suggestions for *directions of future research* by younger generations of scholars of MH. One would be carefully controlled psycholinguistic investigation of speakers’ perception of *še-* along with other orthographically bound morphemes that take the form of separate “words” in SAE (see footnote 2). Another line of research would be to show how Biblical Hebrew to this day constitutes a major source of more elevated, literate if not necessarily literary styles of usage in MH. Also called for is a more carefully controlled analysis—across types of discourse, age groups, and populations—of the nature and distribution of *nested dependencies* in which coordinated and subordinated clauses are embedded in one another in a way that contrast markedly with accepted claims for the linear nature of clause-combining in Hebrew (like other Semitic languages) as compared with, say, Spanish or English.

Such analyses would benefit by adding other independent variables to the developmental criteria and the genre- and modality-based comparisons touched on in this study. The factor of *literacy* in general, and of linguistic literacy in particular (Ravid

²⁶In an earlier study, we defined “advanced” or sophisticated usages as those which occurred only, if not in all) adult texts (Berman & Slobin, 1994).

& Tolchinsky, 2002; Tolchinsky, this volume) seems critical here. This issue is importantly allied to variables such as level of education and socio-economic background addressed by Dorit Ravid in her doctoral research on Modern Hebrew and the book it engendered nearly three decades ago.

References

- Ariel, M. (1978). *That's a problem in Hebrew*. Master's thesis, University of Pennsylvania.
- Bar-Ilan, L., & Berman, R. A. (2007). Developing register differentiation: The Latinate-Germanic divide in English. *Linguistics*, 45(1), 1–35. <https://doi.org/10.1515/LING.2007.001>
- Ben-Hayyim, Z. (1953). *lašon Ŷatiqah bimci'ut ĥadašah* [An ancient language in a new reality]. *Leshonenu La'am*, 4, 36–85.
- Berman, R. A. (1973). *ħašemot ĥapošaliyim bašvrit ĥa ĥadašah* [Verbal nouns in Modern Hebrew]. Doctoral dissertation, The Hebrew University of Jerusalem.
- Berman, R. A. (1978). *Modern Hebrew structure*. University Publishing Projects.
- Berman, R. A. (1986). The acquisition of morphology/syntax: A crosslinguistic perspective. In P. Fletcher & M. Garman (Eds.), *Language Acquisition* (pp. 429–447). Cambridge University Press.
- Berman, R. A. (1988). On the ability to relate events in narrative. *Discourse Processes*, 11, 469–497.
- Berman, R. A. (1990). On acquiring an (S)VO language: Subjectless sentences in children's Hebrew. *Linguistics*, 28, 1135–1166.
- Berman, R. A. (1993). Marking of verb transitivity by Hebrew-speaking children. *Journal of Child Language*, 20, 641–669.
- Berman, R. A. (1996). Form and function in developing narrative abilities: The case of 'and.'. In D. Slobin, J. Gerhardt, A. Kyratzis, & J. Guo (Eds.), *Social interaction, context, and language: Essays in honor of Susan Ervin-Tripp* (pp. 343–367). Lawrence Erlbaum.
- Berman, R. A. (2004a). Between emergence and mastery: The long developmental route of language acquisition. In R. A. Berman (Ed.), *Language development across childhood and adolescence* (Trends in Language Acquisition Research, Vol 3) (pp. 9–34). John Benjamins.
- Berman, R. A. (2008). The psycholinguistics of developing text construction. *Journal of Child Language*, 35, 735–771.
- Berman, R. A. (2011). Revisiting impersonal constructions in Hebrew: Corpus-based perspectives. In A. Malchov & A. Sierwieska (Eds.), *The typology of impersonal constructions* (pp. 323–355). John Benjamins.
- Berman, R. (2014). Acquiring and expressing temporality in Hebrew: A T/ (M/A) Language. *SKASE Journal of Theoretical Linguistics*, 11(2), 2–29.
- Berman, R. (2016). Linguistic literacy and later language development. In J. Perera, M. Aparici, E. Rosado, & N. Salas (Eds.), *Written and spoken language development across the lifespan: Essays in honor of Liliana Tolchinsky* (pp. 181–200). Springer.
- Berman, R. (2018). From pre-grammaticality to proficiency in L1: Acquiring and developing Hebrew infinitives. *Psychology of Language and Communication*, 22(1), 557–580. <https://doi.org/10.2478/plc-2018-0025>
- Berman, R. (Ed.). (2020a). Usage-based studies in Modern Hebrew: Background, morpho-lexicon and syntax. John Benjamins.
- Berman, R. (2020b). Genitive *smixut* constructions in Modern Hebrew. In R. Berman (Ed.), *Usage-based studies in modern Hebrew: Morpho-lexicon and syntax*. John Benjamins.
- Berman, R., & Lustigman, L. (2014). Emergent clause-combining in adult-child interactional contexts. In I. Arnon, B. Estogarrat, C. Kurumada, & M. Tice (Eds.), *Language in interaction:*

- Studies in honor of Eve V. Clark (Trends in Language Acquisition Series)* (pp. 281–299). John Benjamins. <https://doi.org/10.1075/tilar.12.20ber>
- Berman, R., & Neeman, Y. (1994). Development of linguistic forms: Hebrew. In R. A. Berman & D. I. Slobin (Eds.), *Relating events in narrative: A crosslinguistic developmental study* (pp. 285–328). Psychology Press.
- Berman, R. A., & Nir-Sagiv, B. (2007). Comparing narrative and expository text construction across adolescence: A developmental paradox. *Discourse Processes*, 43(2), 79–120.
- Berman, R. A., & Nir-Sagiv, B. (2009). Clause-packaging in narratives: A crosslinguistic developmental study. In J. Guo, E. Lieven, N. Budwig, S. Ervin-Tripp, K. Nakamura, & S. Ozcaliskan (Eds.), *Crosslinguistic approaches to the psychology of language: Research in the tradition of Dan I. Slobin* (pp. 149–162). Taylor & Francis.
- Berman, R. A., & Ravid, D. (1999). *The oral/literate continuum: Developmental perspectives*. Final Report, Israel Science Foundation.
- Berman, R. A., & Ravid, D. (2009). Developing linguistic register across text types: The case of Modern Hebrew. *Pragmatics & Cognition*, 17(1), 108–145.
- Berman, R. A., & Slobin, D. I. (1994). *Relating events in narrative: A crosslinguistic developmental study*. Psychology Press.
- Bowerman, M. (1979). The acquisition of complex sentences. In P. Fletcher & M. Garman (Eds.), *Language Acquisition* (1st ed., pp. 285–306). Cambridge University Press.
- Clark, E. V. (2012). *First language acquisition*. Cambridge University Press.
- Clark, E. V., & de Marneffe, M. C. (2012). Constructing verb paradigms in French: Adult construals and emerging grammatical constructs. *Morphology*, 22, 89–120.
- Cristofaro, S. (2003). *Subordination*. Oxford University Press.
- Croft, W. (2001). *Radical construction grammar*. Oxford University Press.
- Culicover, P. W., & Jackendoff, R. (1997). Semantic subordination despite syntactic coordination. *Linguistic Inquiry*, 28(2), 195–217.
- Davidi, O. (2014). *Writing abilities of pre-adolescents with and without Language/Learning disabilities in reconstructing two types of texts*. Tel Aviv University doctoral dissertation.
- Diessel, H. (2004). *The acquisition of complex sentences*. Cambridge University Press.
- Dromi, E., & Berman, R. (1986). Language-specific and language-general in developing syntax. *Journal of Child Language*, 13(2), 371–387. <https://doi.org/10.1017/S0305000900008114>
- Dubnov, K. (2015). Circumstantial versus depictive secondary predicates in literary Hebrew—The influence of Yiddish and Russian. In E. Doron (Ed.), *Language contact and the development of Modern Hebrew* (pp. 77–86). Brill.
- Evans, N. (2007). Insubordination and its uses. In I. Nikolaeva (Ed.), *Finiteness: Theoretical and empirical foundations* (pp. 366–431). Oxford University Press.
- Evans, N., & Watanabe, H. (Eds.). (2016). *Insubordination*. John Benjamins.
- Friederici, A. (2012). Language development and the ontogeny of the dorsal pathway. *Frontiers in Evolutionary Neuroscience*. <https://doi.org/10.3389/fnevo.2012.00003>
- Glinert, L. (1989). *The grammar of Modern Hebrew*. Cambridge University Press.
- Glinert, L. (2004). *The grammar of Modern Hebrew*. Cambridge University Press.
- Givón, T. (1991). The evolution of dependent-clause syntax in Biblical Hebrew. In E. C. Traugott & B. Heine (Eds.), *Approaches to grammaticalization, Volume II* (pp. 257–310). : John Benjamins.
- Holy Bible Containing the Old and New Testaments*. (1974). The Gideons International
- Gould, S. J. (1977). *Ontogeny and phylogeny*. Harvard University Press.
- Jakobson, R. (1968). *Child language, aphasia, and phonological universals*. Mouton. [1st published in German in 1942].
- Kaplan, D. (1983). *séder rexišat yesodot morfo-taxbiriyim bekérev yeladim dovrey ivrit begil harax*. Order of acquisition of morpho-syntactic categories among Hebrew-speaking 2- to 3-year-olds. Master's thesis, Tel Aviv University.
- Karmiloff-Smith, A. (1986). From meta-processes to conscious access: Evidence from children's metalinguistic and repair data. *Cognition*, 23(2), 95–147. [https://doi.org/10.1016/0010-0277\(86\)90040-5](https://doi.org/10.1016/0010-0277(86)90040-5)
- Keenan, E. L. (1985). Relative clauses. In T. Shopen (Ed.), *Language typology and syntactic description: Complex constructions* (Vol. 2, pp. 141–170). Cambridge University Press.

- Klein, S. (2021). Like father, like son, like father: Investigating developmental stages in child-directed speech. Master's thesis, Tel Aviv University.
- Koriat, A., Greenberg, S. N., & Kreiner, H. (2002). The extraction of structure during reading: Evidence from reading prosody. *Memory & Cognition*, 30(2), 270–280.
- Limber, J. (1973). The genesis of complex sentences. In T. Moore (Ed.), *Cognitive development and the acquisition of language* (pp. 169–185). Academic Press.
- Lustigman, L. (2016a). From opacity to transparency: Transitional categories in early Hebrew grammar. In R. Berman (Ed.), *Acquisition and development of Hebrew: From infancy to adolescence. Trends in Language Acquisition Research*, 19, 225–258. <https://doi.org/10.1075/tilar.19.08lus>
- Lustigman, L. (2016b). Interfaces between linguistic systems: Evidence from child language. *Linguistics*, 54, 273–303.
- Lustigman, L. (2021). Early collaborations adult-child and child-adult co-construction of 'but'-clauses. *Interactional Linguistics*, 1(1), 1–25.
- Lustigman, L., & Berman, R. A. (2016). Form and function in early clause-combining. *Journal of child language*, 43(1), 157–185. <https://doi.org/10.1017/S0305000915000100>
- Lustigman, L., & Berman, R. (2020). Levels of integration in children's early clause combining in Hebrew. *Language Learning and Development*, 17, 1–18. <https://doi.org/10.1080/15475441.2020.1814781>
- Maschler, Y. (2020). The in subordinate – Subordinate continuum: Prosody, embodied action, and the emergence of Hebrew complex syntax. In Y. Maschler, S. Pekarek Doehler, J. Lindström, & L. Keevallik (Eds.), *Emergent syntax for conversation: Clausal patterns and the organization of action* (pp. 87–125). John Benjamins.
- Mor, U. (2020). Prescriptive activity in Modern Hebrew. In R. Berman (Ed.), *Usage-based studies in Modern Hebrew: Background, morpho-lexicon and syntax* (pp. 97–129). John Benjamins.
- Nir, B. (2015). Frames for clause-combining: Schematicity and formulaity in discourse patterns. *Constructions and Frames*, 7(2), 348–379.
- Nir, B. (2020). A usage-based typology of Modern Hebrew syntax: How Semitic? In R. Berman (Ed.), *Usage-based studies in Modern Hebrew: Background, Morpho-lexicon, and Syntax*. John Benjamins.
- Nir, B., & Berman, R. A. (2010). Parts of speech as constructions: The case of Hebrew adverbs. *Constructions and Frames*, 2(2), 242–274. <https://doi.org/10.1075/cf.2.2.05>
- Noonan, M. (1985). Complementation. In T. Shopen (Ed.), *Language typology and syntactic description: Complex constructions* (Vol. 2, pp. 42–140). Cambridge University Press.
- Paus, T. (2005). Mapping brain maturation and cognitive development during adolescence. *Trends in Cognitive Sciences*, 9(2), 60–68. <https://doi.org/10.1016/j.tics.2004.12.008139j>
- Ravid, D. (1995). *Language change in child and adult Hebrew: A psycholinguistic perspective*. Oxford University Press.
- Ravid, D., & Tolchinsky, L. (2002). Developing linguistic literacy: A comprehensive model. *Journal of Child Language*, 29, 413–459.
- Reshef, Y. (2004). The modern Hebrew asyndetic relative clause: The rise of a new syntactic mechanism. *Folia Linguistica Historica*, 25, 115–134. <https://doi.org/10.1515/flih.2004.25.1-2.115>
- Rubinstein, E. (1985). *hašivriyot šelanu wehašivrit haqdumah (Contemporary Hebrew and Ancient Hebrew)*. Ministry of Defence.
- Scollon, R. (1976). *Conversations with a one year old: A case study of the developmental foundation of syntax*. University Press of Hawaii.
- Scott, C. M. (2004). Syntactic ability in children and adolescents with language and learning disabilities. In R. Berman (Ed.), *Language development across childhood and adolescence: Psycholinguistic and crosslinguistic perspectives (Trends in Language Acquisition Research*, 3) (pp. 111–139). John Benjamins Publication. <https://doi.org/10.1075/tilar.3.09sco>
- Slobin, D. I. (2001). Form function relations: How do children find out what they are? In M. Bowerman & S. C. Levinson (Eds.), *Language acquisition and conceptual development* (pp. 406–449). Cambridge University Press.

- Slobin, D. I. (2004). From ontogenesis to phylogenesis: What can child language tell us about language evolution? In J. Langer, S. T. Parker, & C. Milbrath (Eds.), *Biology and Knowledge revisited: From neurogenesis to psychogenesis* (pp. 255–285). Lawrence Erlbaum.
- Tolchinsky, L. (2004). The nature and scope of later language development. *Trends in Language Acquisition Research*, 3, 233–248. <https://doi.org/10.1075/tilar.3.15tol>
- Thompson, S. A. & Longacre, R. E. (1985). Adverbial clauses. In T. Shopen (Ed.), *Language typology and syntactic description: Complex constructions*. Volume 2 (pp. 171–234). : Cambridge University Press.
- Veneziano, E. (1999). Early lexical, morphological and syntactic development in French: Some complex relations. *International Journal of Bilingualism*, 3, 183–217.
- Zeldes, A. (2013). Is modern Hebrew standard average European? The view from European. *Linguistic Typology*, 17(3), 439–470. <https://doi.org/10.1515/lingty-2013-0021>
- Zewi, T. (2008). *mišpetey toxen bešivrit*. [Content clauses in Hebrew]. *Lěšonénu*, 70, 627–657.