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Written prepositional prefixes in Hebrew narratives: morpho-orthographic and semantic analyses

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Talk goals

- To characterize the forms, functions and distributions of **prefixal prepositions** in narratives written by Hebrew-speaking children, adolescents and adults
 - The basic building blocks of prepositional phrases (PPs) serving in a variety of roles
 - Complex prepositions, adverbials, quantifiers, conjunctions, connectives, discourse markers
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Prefixal prepositions

- Consonantal prefixes written as attached to the following word and interacting with it morpho-phonologically

- 'from Danny'

midani

מדני

- 'from the house'

mehabayit

מהבית



The context

- Written Hebrew words are constructed of a multi-layered stem-and-envelope structure
 - At the heart of which lies the root core
 - Surrounded by derivational and inflectional affixes respectively
 - With prefixal morpho-syntactic units attached to the very beginning of the word (Ravid, 2012)
 - Including prefixal prepositions
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Morpho-orthographic structure of written Hebrew words

ve-nacil-o

ונצילו

'and-we-will-save-him'

Prefixal units inflectional affix

1

2

WORD CORE

3

4

inflectional affixes

3

5



5a obl

5b opt

derivational affix **root** derivational affix

ve

na cil

o

Morpho-orthographic structure of written Hebrew words

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inflectional affixes

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derivational affix **root** derivational affix

ve

na cil

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Detailed illustration

- ***u-x-she-be-mahalaxan*** 'and-when-in-course-Poss.3rd Masc Pl'
'and when in their course'

• וכשבמהלכן

- Three (four) bound morpho-syntactic prefixes (bold) ***u-x-she-be-*** וכשב
- the inflected noun stem (underline) *mahalaxan* מהלכן
- Derivational prefix (bold and underline) ***ma-*** מ-
- Inflectional suffix (bold and underline) ***-an*** ך
- Root 'walk' (in blue, underline) *h-l-x* הלכ

Prefixal morpho-syntactic units in Hebrew morpho-orthography

- Seven short, clitic-like grammatical units which are attached directly to the following (written word), preceding all other morphological information
 - Despite its rich morphological structures and systems, Hebrew does not have a rich prefixal repository
 - all candidates are non-canonical prefixes

Hebrew prefixal morpho-syntactic units

- Four prefixal prepositions

- *b-* 'in, at' -ב

- *l-* 'to' -ל

- *m-* 'from' -מ

- *k-* 'like, as' -כ

And all of their combinations

me-ha-rexov 'from-the-street' מהרחוב

ve-li-xshe-higía 'and-to-when-(he/it) arrived' ולכשהגיע

- Two prefixal connectives

- Conjunction *ve-* -ו

- Subordinator *she-* -ש

- The prefixal definite article *ha-* -ה

Prefixal morpho-syntactic units in Hebrew morpho-phonology / orthography

- Attached **in writing** to the beginning of the inflected word
 - Stacking several of them is always possible
- Phonologically interface with the inflected word and with each other
- Part of mature spelling knowledge
 - Take until 3rd grade to be spelled correctly (prefixed to the word) by children

Prefixal morpho-syntactic units in Hebrew grammar

- Their status in morpho-syntax is always under debate
 - Words? Prefixes? Clitics?
 - Some of them have syntactic alternatives
 - Traditionally termed אותיות השימוש 'letters of usage'
- Some researchers regard them as morphemes
- Others regard them as separate words

- We prefer to use the term prefixal morpho-syntactic units

The current study focuses on prefixal prepositions

- Four prefixal prepositions

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The morpho-phonology / orthography of Hebrew prepositions

Category	Description	Examples
1. prefixal	Consonantal prefixes attached to next word	<i>b- k- l- m-</i>
2. Simplex	Mono-syllabic prepositions	<i>et</i> 'Acc', <i>al</i> 'on', <i>im</i> 'with', <i>el</i> 'towards'; <i>ad</i> 'till'
3. Bi-syllabic	Longer prepositions	<i>ecel</i> 'at', <i>lifney</i> 'before', <i>axarey</i> 'after', <i>biglal</i> 'because of', <i>kedey</i> 'in order to', <i>lefi</i> 'according to', <i>avur</i> 'for'
4. Complex	Composed of (1) + other prepositions / words	<i>bishvil</i> 'for', <i>le-axar</i> 'following', <i>be-ezrat</i> 'with the help of', <i>me-axorey</i> 'behind', <i>mi-tá'am</i> 'on behalf of'; <i>li-krat</i> 'towards'
5. Multi-lexemic	Composed mainly of word + (1)	<i>hodot le-</i> 'thanks to', <i>me-éver le-</i> 'beyond'

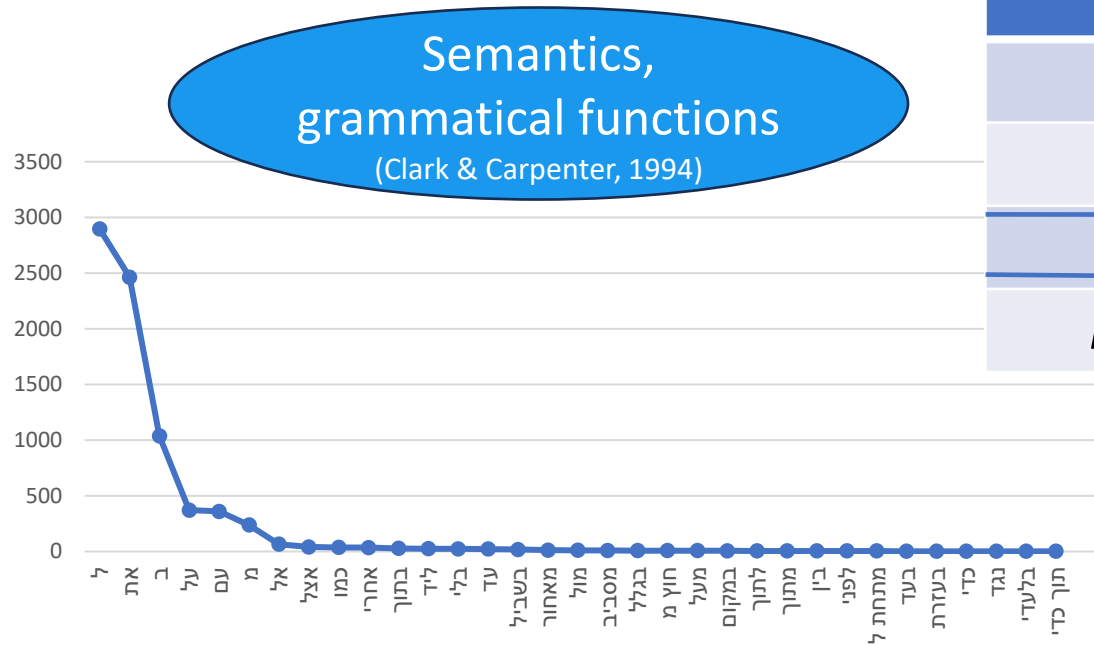
Prefixal prepositions

(Brandes & Ravid, 2019; Ravid, 2012; Ravid & Shlesinger, 1999)

- *b-* ‘in, at’ -ב ; *l-* ‘to’ -ל ; *m-* ‘from’ -מ ; *k-* ‘like’ -כ
 - Consonantal
 - Vocalized by Hebrew syllabic structure and morpho-phonological factors
 - Morpho-phonologically and orthographically bound to the next word
 - *be-váyit* בבית in (a) house
 - *ba-báyit* בבית in the house
-

Prefixal prepositions in early Hebrew acquisition

Salmon, 2019



Prep	Proportion tokens	First occurrence
<i>le-</i> 'to'	37.5%	2;6 – 3 years
<i>be</i> 'in, at'	13.4%	2;6 – 3 years
<i>mi-</i> 'from'	3.1%	2;6 – 3 years
<i>ke</i> 'like, as'	0%	Not in corpus

Salmon, Ravid & Dattner, submitted

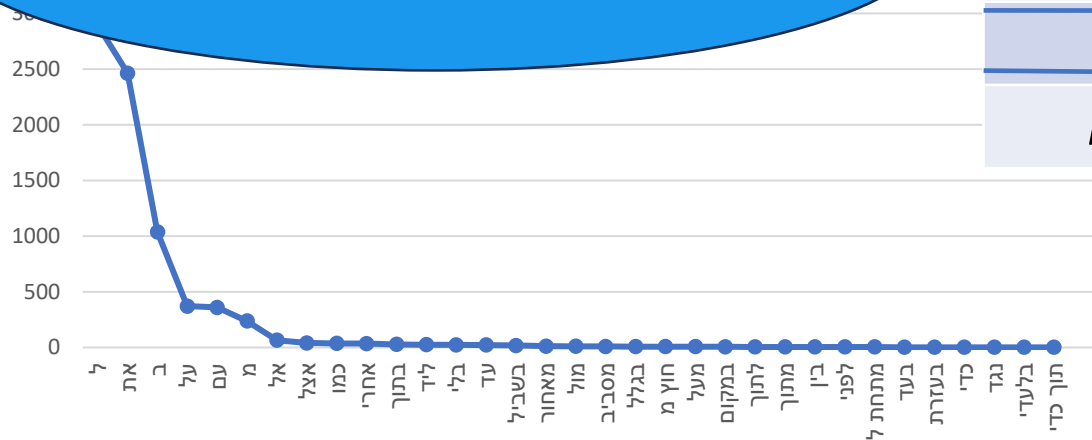
Peer talk corpus ages 2;6 – 6 years

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Major motion preposition *l-*
Multipurpose *b-*



Salmon, Ravid & Dattner, submitted

Peer talk corpus ages 2;6 – 6 years

Prefixal prepositions

b- 'in, at' -ב ; *l-* 'to' -ל ; *m-* 'from' -מ ; *k-* 'like' -כ

- The building blocks of complex prepositions
- Participate in the construction of non-bound compound, complex and multi-lexemic prepositions
- *betox* בתוך 'inside'; *letox* לתוך 'into'; *mitox* מתוך 'out of', *mitáxat le-* מתחת ל 'underneath'; *be'emca'ut* באמצעות 'by means of'; *mibá'ad le-* מבעד ל- 'through'; *miko'ax* מכוח 'by the means of'
- Mostly combining prepositions

Prefixal prepositions

b- 'in, at' -ב ; *l-* 'to' -ל ; *m-* 'from' -מ ; *k-* 'like' -כ

- Participate in the construction of a plethora of complex adverbials, complex conjunctions, quantifying expressions and discourse markers
- Prefixal preposition + word PP
- *be'emet* באמת 'really', *be'écem* בעצם 'in fact', *beséder* בסדר 'ok', *barégel* ברגל 'on foot', *bevaday* בוודאי 'of course'; *le-ma'ala me-* למעלה 'over', *le-ma'ase* למעשה 'actually', *li-cmitut* לצמיתות 'in perpetuity'; *le'umat* לעומת 'as against', *lemashal* 'for example'; *le'olam* לעולם 'never'; *me'olam* מעולם 'ever'; *me'az* מאז 'since then'; *mikódem* מקודם 'before'; *kamuvan* כמובן 'of course'; *ke'ilu* כאילו 'as if'; *kanir'é* כנראה 'apparently', *klomar* כלומר 'that is'



The current study

- Focuses on the distributions and properties of prefixal prepositions in the context of written text production in Hebrew
 - Doctoral dissertation by Ronit Naydiz Rosen, 2020
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Study population

- 293 typically developing, native Hebrew speaking participants in five age groups
 - 4th, 7th and 11th graders, young adults (ages 19-20), and older adults
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Data collection

- Each participant wrote two personal-experience narratives in the general theme of ‘a journey story’
 - The study corpus consisted of 586 narrative texts, containing 33, 876 words tokens
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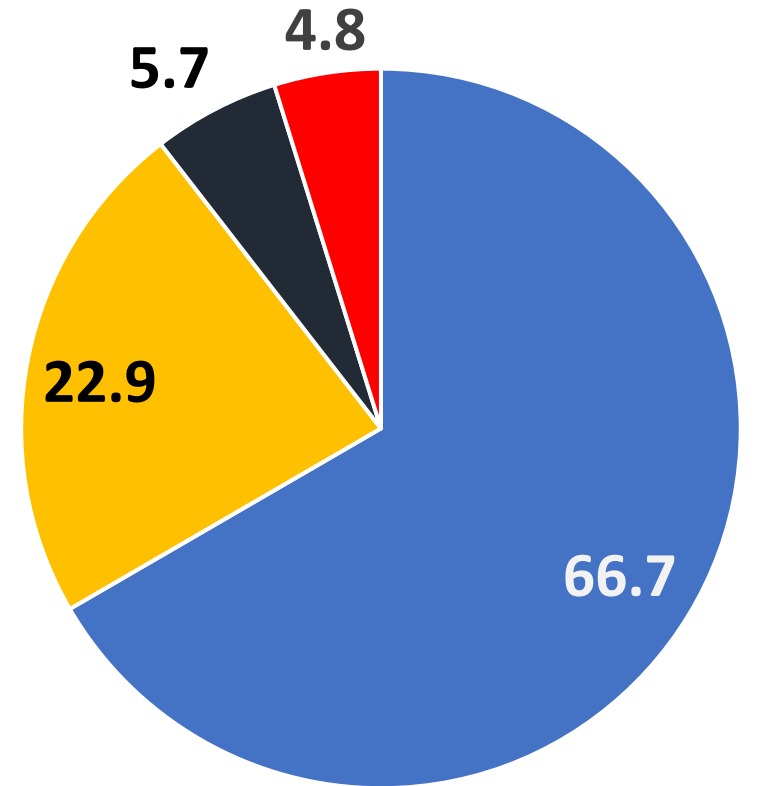


Coding and analyses

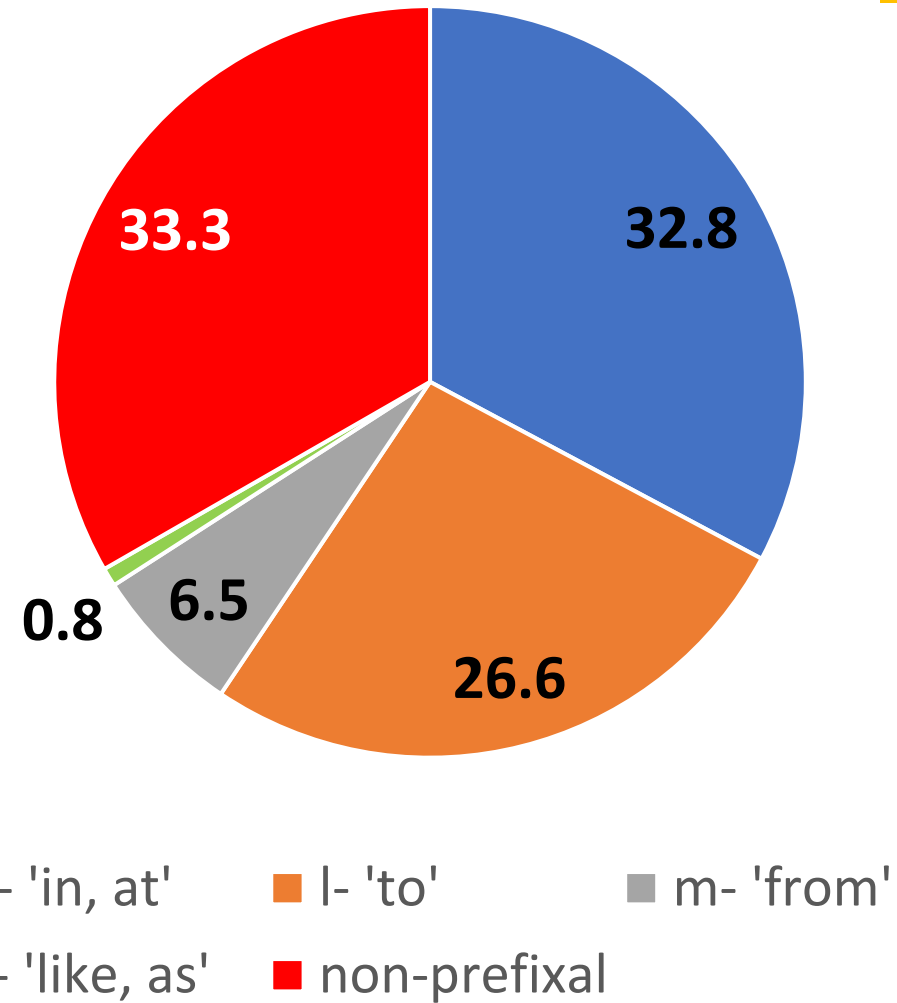
- All preposition tokens in the texts were identified
 - Preposition tokens were analyzed by morpho-phonological structure and semantic / discourse functions
 - across the five age groups
-

Percentage proportions of morpho-phonological preposition categories in the texts

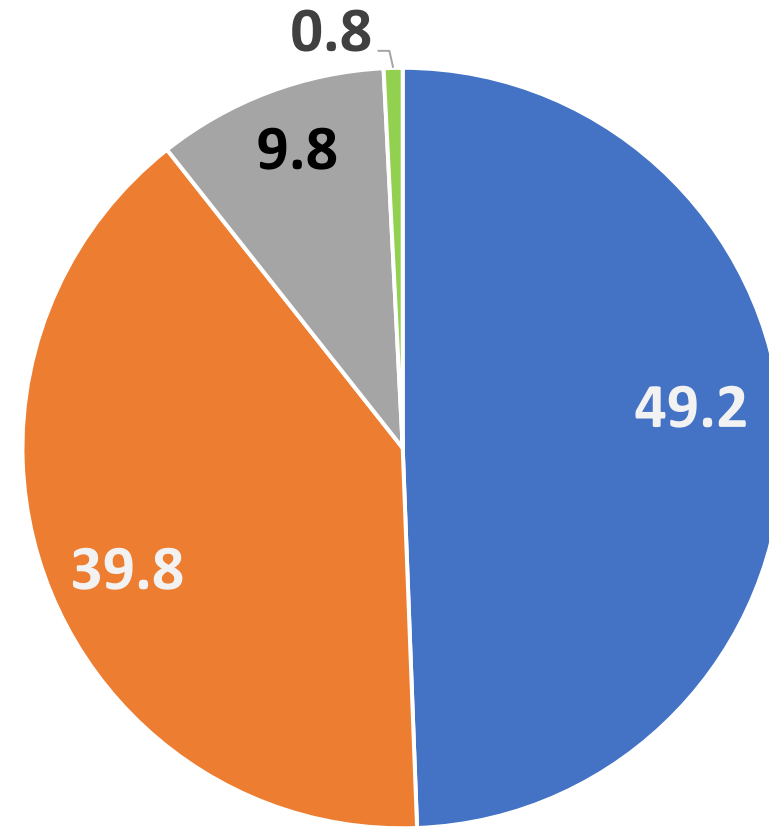
- Prefixal and complex prepositions:
Adults > all other groups



Percentage proportions of prefixal preposition tokens out of all preposition tokens in the texts

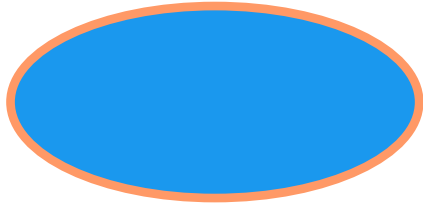


Percentage proportions
of prefixal preposition
tokens out of all
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tokens in the texts

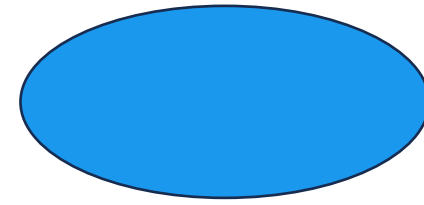


■ b- 'in, at' ■ l- 'to' ■ m- 'from' ■ k- 'like, as'

Co-occurrence of
prefixal prepositions
with other grammatical
components



Preposition



- Prefixal prepositions follow the full range of possible syntactic classes
 - Verbs *bikarti **ba**-Négev* ‘(I) visited in-the Negev’
 - Nouns *xaver **mi**-yaldut* ‘(a) friend from childhood’
 - Pronouns *hu **ba**-maxshava* ‘he (is) in the thought’
 - Adjectives *meyuxadim **be**-yofyam* ‘special in their beauty’
- Unlike other prepositions
 - *ecel* ‘at’ only follows nouns
 - *el* ‘towards’ only follows nouns and verbs

Co-occurrence
of prefixal
prepositions
with verb
morphology

Only *b-* 'in, at' and *l-* 'to' (and not other prepositions) follow verbs composed of the 12 most frequent roots in the corpus

Only *b-* 'in, at', *l-* 'to' and *m-* 'from' (and not other prepositions) follow verbs composed of all 7 *binyan* verb patterns

Frequency of prefixal prepositions associated with the fundamental frequencies in the Hebrew morpho-lexicon

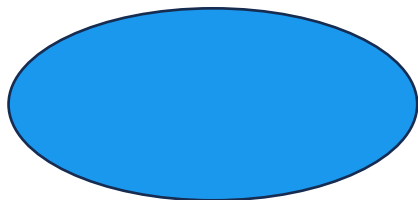
Preposition

Co-occurrence
of prefixal
prepositions
with verb
morphology

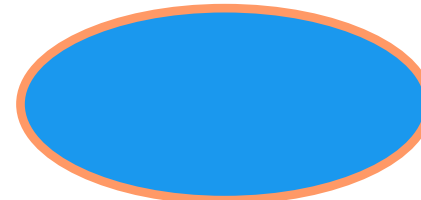
b- 'in, at', *l-* 'to' and *m-* 'from' most frequently precede concrete and place nouns
be-Eilat 'in Eilat'

k- 'like, as' most frequently precedes generic and abstract nouns
ke-xoxmato 'like his wisdom'

Frequency of prefixal prepositions associated with noun semantics



Preposition



Summary and conclusions

Prefixal prepositions in written Hebrew narratives

Prefixal prepositions
constitute the largest class
of prepositions in written
Hebrew journey-story
narratives

But not all four
prefixal prepositions
contribute equally
to this picture

The two most frequent prefixal prepositions *l-* and *b-*

- *l-* ‘to’ conveys motion and direction semantics
 - *higánu l-* ‘(we) arrived to’, *hadérex l-* ‘the road to’
- *b-* ‘in, at’ conveys place semantics and multi-purpose oblique object grammatical functions
 - *hitxabe ba-mamad* ‘hid in the safe room’; *tipel be-axoto* ‘took care of his sister’
- Both are associated with the fundamental frequencies of Hebrew syntax, morphology, and lexicon

The two least frequent prefixal prepositions *m-* and *k-*

- *m-* ‘from’ conveys *source* semantics (Clark & Carpenter, 1989)
- Referring to place of origin, agent or cause entity emanating physical sensation and designating original ownership; and comparative semantics
 - *bánu miprag* ‘(we) came from Prague’
 - *baxa mi-cá’ar* ‘wept because of grief’
 - *gadol yoter mikulam* ‘larger than all others’
 - Biblical *minesharim kálu, mearayot gavéru* ‘lighter than eagles, fiercer than lions’
- Semantically specific, restricting co-occurrence with other components

The two least frequent prefixal prepositions *m-* and *k-*

- *k-* 'like, as' conveys equal comparison between two entities, likening one entity to another, literally or figuratively, attributing similarity properties to entities
 - Most of these meanings expressed through the independent preposition *kmo* 'like'
 - Similes and metaphors with high-register vocabulary *az ka'ari* עז כארי '(as) bold as (the) lion'
 - Connectives and adverbials *kayadúa* כידוע 'as (is well) known'; *ka'amur* כאמור 'as was said (before)'
- *k-* hardly ever used in non-literary language

Finally

- The four prefixal prepositions constitute the basic building blocks of prepositional phrases with grammatical and discourse roles from complex prepositions to adverbials to connectives and discourse markers
- Therefore an important part of lexical knowledge in Hebrew, especially place, object, motion, origin and direction

Finally

- Prefixal prepositions are part and parcel of the seven 'letters of usage' viewed through the prism of the writing system
- They are learnt in the early years of school as one of the two Hebrew-specific features of the Hebrew orthography
 - The other feature is the lesser and ambiguous representation of vowels
- Historically they all interacted morpho-phonologically with the attached word and each other
- Modern Hebrew tightly preserves their written form
 - But not their morpho-phonological variations



Thank you

דורית ורונית
Dorit and-Ronit

