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**From competing patterns to competing
structures:**

**Verbal constructions based on
loanwords in Hebrew**

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Hebrew derived verbs based on loanwords

Base		Derived verb		Verbal Pattern
dibag	`debug'	dibeg	`debug'	CaCeC
spam	`spam'	hisvim	`send a spam'	hiCCiC
blok	`block'	balak	`block'	CaCaC
pijama	`pajamas'	hitpajem	`wear a pajamas'	hitCaCeC

Hebrew derived verbs based on loanwords

Base		Derived verb		Verbal Pattern
dibag	`debug'	dibeg *hidbig *dabag	`debug'	CiCeC *hiCCiC *CaCaC
spam	`spam'	hisvim *sipem *sapam	`send a spam'	hiCCiC *CiCeC *CaCaC
blok	`block'	balak	`block'	CaCaC
pijama	`pajamas'	hitpajem	`wear a pajamas'	hitCaCeC

- kol exad yaxol **letakbek**

'Everybody can write a talkback'

<https://www.dwh.co.il/226-dwhcoil/1411-%D7%A9%D7%93%D7%A8%D7%95%D7%92-%D7%94%D7%90%D7%AA%D7%A8-%D7%A9%D7%9C%D7%91-1-1>

- kol adam yaxol **lixtov tokbek**

'Every person can write a talkback'

<http://www.oritkamir.org/%D7%97%D7%95%D7%A4%D7%A9-%D7%94%D7%91%D7%99%D7%98%D7%95%D7%99-%D7%99%D7%95%D7%AA%D7%A8-%D7%9E%D7%93%D7%99-%D7%91%D7%99%98%D7%95%D7%99-%D7%A4%D7%97%D7%95%D7%AA-%D7%9E%D7%93%D7%99-%D7%97%D7%95/>

tokbek 'talkback' tikbek (CiCeC)

katav tokbek

'wrote a talkback'

- spam - hispim ~ šalax spam
'send a spam'
- pijama - hitpajem ~ lavaš pyjama
'wear pajamas'
- ristart - ristert ~ asa restart
'do restart'

The Current Study

Goal

- **Accounting for the criteria that play a role in the selection between morphological and periphrastic formation of verbal constructions**

Methodology

- Web-search on Google

- hebTenTen Corpus

https://app.sketchengine.eu/#dashboard?corpname=preloaded%2Fhetenten21_yap

- **Methodological problems**

1. Native/ Non-native speakers
2. Homonymy and homography
3. Quantification of the data

- Contrast between items that are found and items that are not found or are extremely rare.

- Competition between morphological and periphrastic structures from different points of view
- Haspelmath 2000, Kiparsky 2005, Booij 2010, Corbett 2013, Bonami 2015, Aronoff 2016, Rainer 2016, Štekauer 2016, Masini 2019, among many others)
- Few studies have addressed it with respect to Semitic morphology, especially in derivation.

Competition in Morphology

Rainer et al. (2020)

- One winner

Blocking?

Blocking and defectivity (Sims 2015,
Brown & Evan 2022)

- More than one winner

Variation

- **Overabundance**
- **Doublets**
- **'Cell-mates'** (Thornton 2011, 2012)

Malkiel 1977

Kroch 1989, 1994

Taylor 1994

Anttila 1997

Fehringer 2004

Corbett 2005, 2007

Dal & Namer 2006

Aronoff 2016, 2017

Stump 2016

Acquaviva 2008

Embick 2008

Parker 2022

- Economy vs. Expressivity (Kiparsky 2005)

Semitic word formation

- Non-concatenative / Non-linear morphology
- Root & Pattern Morphology
- Patterns - indicating the prosodic structure, vocalic patterns and affixes (if any).

(Berman 1978, Bolozky 1978, McCarthy 1981, Schwarzwald, 1981, Ravid 1990, 1995, Bat-El 1994, 2011 Aronoff 1994, Doron 1999, 2003, Borer 1991, 2013).

Morpho-phonological criteria

1. Number of syllables

Most studies have focused on the competition between patterns.

dibag - dibeg (CiCeC) / *hidbig 'debug'

VS.

spam - hispim (hiCCiC) / *sipem 'send a spam'

- Cluster preservation - faithfulness to the base

Morpho-phonological criteria

- Structural transparency - the importance of preserving properties of the base in Hebrew verb formation

(Bolozky 1978, 1999, Bat-El 1994, 2017, 2019, Ussishkin 1999, 2005, Faust 2015, among others).

Morpho-phonological criteria

- Low structural transparency can also block verb formation
- Preference for periphrastic constructions (see Halevy-Nemirovsky 1998).
- Most verbs are derived from bases that do not exceed **2 syllables**.
- In case of **3 or more** syllables, at least one vowel has to be deleted (and also consonants), making the derived verb less faithful to the stem.

Morpho-phonological criteria

tokbek `talkback` `write a tackback`

vs.

katalog `catalogue` -kitleg `put in a catalogue`

- Deletion of second vowel
- tokbek - tikbek > katalog - kitleg
- Such cases are possible, but less frequent .

fotošop `Photoshop` –

*fitšep /asa fotošop `do Photoshop`

Morpho-phonological criteria

- There seems to be no other reason for not deriving such verbs.
- This reflects tendencies rather than a dichotomy.

babysitter - (???) bister / asa babysitter

relocation – asa relocation

taekwondo

filibuster

paparazzi

- The more syllables there are the smaller the chances of verb formation.

Morpho-phonological criteria

- Implications for a word-based approach (Aronoff 1976, Blevins 2006)
- Stem Modification > Root extraction (Bat-El 1994, 2029, Ussishkin 1999, 2005)

Morpho-phonological criteria

2. Non-native suffixes

- Loanwords with typical non-native suffixes do not have derived verbal counterparts.
- The is mostly found in loanwords with the English suffix **-ing**.
- Hebrew speakers identify these words as typical loanwords.
- They are less likely to be integrated into the morphological system.

Morpho-phonological criteria

šoping `shopping' -

(??) šipeng < asa šoping `do shopping'.

gosting `ghosting' - *gisteng

mingling `mingling'

fišing `fishing (data)'

gazlayting `gaslighting'

deyting `dating'

striming `streaming'

- Items with high frequency in verbal periphrastic constructions, but no (or highly rare) derived verbs.

Morpho-phonological criteria

French

- Verbs derived from loanwords ending with **-ing** tend not to be integrated into the verbal system.

- **-ing** tends to be dropped

(Namer & Laks, in preparation)

shopping - shop-er > (??) shopping-er

quiet quitting - quietquit-er / * quietquitting-er

Morpho-phonological criteria

- Sensitivity of the morphological mechanism to the morphological structure of loanwords.
- In cases where it identifies **typical non-native morphological elements**, it tends not to integrate such words into the verbal system.

Lexical-semantic criteria

1. Semantic transparency

- Low semantic transparency blocks periphrastic formation.
- The meaning of the derived verb is not transparent in relation to the base.

format 'format' - firmet (CiCeC)

- The verb does not mean **formatting** in general but **formatting a computer**.

šina format 'change format'

sam be-format 'put X into a format'

Lexical-semantic criteria

- The noun **format** is borrowed into Hebrew but in a more general sense, not restricted to the domain of computers.
- Only the morphological construction is used.

torpedo 'torpedo' - tirped (CiCeC) 'ruin (plans)'

- The verb has a metaphorical meaning, which is not expressed via a periphrastic construction.

Lexical-semantic criteria

2. Lexical category

Verbs	>	Nouns	>	Adjectives
Morphological formation only		Variation		Mostly periphrastic formation

Lexical-semantic criteria

2. Lexical category

- Verb - obligatory morphological formation
- Verbs that are borrowed directly into Semitic languages must have a pattern.

hitfayed 'fade'

dilver 'deliver'

- No periphrastic alternative
- Words like **fade** are not used in Hebrew because they are verbs.

Lexical-semantic criteria

- Nouns - borrowed directly without morphological adaptation (only phonological, apart from rare cases)

lazanya

`lasagna`

deyt

`date`

beysbol

`baseball`

kroson~korason

`croissant`

Lexical-semantic criteria

- Noun can be the base for both morphological and periphrastic formation

kambek 'comeback'

hitkambek / asa kambek

'make a comeback'

Lexical-semantic criteria

- Adjectives - an intermediate category between nouns and verbs with respect to borrowing (Ravid 1990, Schwarzwald, 1998, 2002, 2013).

- Direct borrowing

No morphological adaptation

snob 'snob'

kul 'cool'

Lexical-semantic criteria

- 3 types of morphological adaptation

(i) affixation of -i

efektiv-i 'effective'

(ii) truncation of a final consonant, which results in an i ending adjective,

komi 'comic'

(iii) templatic formation

medupras 'depressed' (meCuCaC)

(Ravid 1992, Schwarzwald 1998, 2002)

Lexical-semantic criteria

- Most adjectives have periphrastic verbal constructions.

larj 'large (generous)' - nihya larj / *hitlarej
'become large'

targi 'tragic'

senili 'senile'

- Adjectives are perceived as derived entries and morphologically more complex and there is a tendency to avoid further derivations.

Lexical-semantic criteria

- Nouns - both constructions can be found.

ʔobsesya 'obsession' -

hiʔtabses (hitCaCeC) / *nihya be-ʔobsesya*

'become obsessed'

Lexical-semantic criteria

2. Lexical category

Verbs	>	Nouns	>	Adjectives
Morphological formation only		Variation		Mostly periphrastic formation
fayd 'fade' hitfayed		kambek 'comeback' hitkabek ~ asa kambek		komi nihya komi 'become comic'

- Nouns never undergo morphological adaptation, verbs are systematically integrated into the morphological system of root and pattern, and adjectives are in the middle.
- This intermediary status of borrowed adjectives is also manifested in the selection between morphological and periphrastic constructions to express a verbal meaning.

Basic vs. derived froms

- Nouns - perceived as basic entries (borrowed as is)
- Adjectives (partially) perceived as derived, typically undergo morphological adaptation
- Similar tendencies in Hebrew native adjectives

Basic vs. derived forms

- Basic adjectives

raxav 'wide'

hitraxev ~ nihtya raxav 'become wide'

VS.

Derived adjectives

axil 'edible' (cf. axal 'eat')

Conclusions

- The selection between morphological and periphrastic formation can be partially predicted based on systematic guidelines.
- **Morpho-phonological criteria block morphological formation** due to low structural transparency between the base and the derived verb and the existence of non-native suffixes.
- **Low semantic transparency tends to block periphrastic formation** - cases with no alternative periphrastic construction that would express the same meaning of the derived verb.

Conclusions

- The lexical category of the base provides partial prediction with respect to the possibility to employ wither construction.

Conclusions

- The study adds to previous studies that examine the competition between morphological and periphrastic formation in general.
- It offers criteria that play a role in selecting either pattern.
- The study also sheds light on the degree of integration of loanwords.
- This provides direct access to word formation and shows how different types of criteria are taken into consideration.

THANK YOU !

How are such novel Hebrew verbs formed?

- **Is there an independent representation of the consonantal root in the lexicon?**
- **Is there a mechanism of root extraction?**

At least 5 'scnerios' (Bat-El 2017)

Independent root representation ?	Root/word-based derivation	Method of derivation
YES	Root	Root-to-pattern association
YES	Word	Root extraction
YES	Word	Stem modification
NO	Word	Root extraction
NO	Word	Stem modification

Word-based approach

- The lexicon consists of words/stems
- Aronoff 1976, 2007
- Blevins 2005, 2006

Word-based approach

Root-extraction

McCarthy 1981

Ornan 1983

Bat-El 1986

Davis & Zawaydeh 2001

Stem modification

Steriade 1988

McCarthy & Prince 1990

Bat-El 1994, 2003, 2011

Ussishkin 1999, 2005

- Template satisfaction (McCarthy 1981, McCarthy & Prince 1986, among others)
- Template imposition (Faust & Hever 2010)

The Problem of Transfer

Bat-El 1994, 2017, 2019, Ussishkin 1999, 2000, 2005

- Which elements are transferred from the base to the derived form?
 1. Root consonants
 - a. order
 - b. number (a few exceptions)
 - c. features

The Problem of Transfer

2. Vowels
3. Derivational affixes
4. Consonant clusters
5. Stress pattern and stress location

If possible...

- **Initial cluster preservation**

- **dibag**

dibeg (CiCeC)/ ***hidbig** (hiCCiC)

'debug'

- **spam**

hi**spim** (hiCCiC) / ***sipem** (CiCeC)

'send a spam'

(Bolozky 1978, 1997, Bat-El 1994, 2001, 2017, 2019)

- **Vowel preservation (with variation)**

tof `drum' - tofef ~ tifev `play the drum'

kod `code' - koded ~ kided `code'

(Bat-El 1994, 2019, Usshishkin 1999m 2005, Faust 2019)

- Arabic broken plural forms (Hammond 1988, McCarthy & Prince 1990)
- Preservation of:
 1. derivational prefixes
 2. stress pattern
 3. vowel length

- Arabic broken plural forms

CaCa:CaC pattern

daftar - dafa:tir 'notebook'

maktab - maka:tib 'office'

filter - fala:tir 'filter'

CaCa:Ca:C pattern

maktub - maka:ti:b 'letter'

malyu:n - mala:yi:n 'million'

- All approaches agree that:
 - (i) **some** words are derived directly from words
 - (ii) the word need to "look like Semitic words", namely to conform to one of the patterns

- Root-based approaches do **not** assume that Semitic word formation relies **only** on the consonantal root.
- Some words are derived directly from roots, while other words are derived directly from words.

(Arad 2003, 2005; Doron 2003; Faust & Hever 2010; Faust, 2015; Kastner 2019, 2020, Rasin et al., to appear)

- This does not mean that root-based approaches do not consider such relations (Faust 2019, Kastner 2019)
- Assuming that the morphological mechanism both examines such relations and then performs extraction, would render redundancy.

- Such cases do not imply that root-based approaches do not consider relations between words (Faust 2019, Kastner 2019).
- However, assuming that the morphological mechanism both examines such relations and then performs extraction would render redundancy.
- The current study adds to the ongoing debate on the nature of Semitic morphology, demonstrating the importance structural transparency between words.

- The current study adds to the ongoing debate on the nature of Semitic morphology, demonstrating the importance structural transparency between words.
- Non-concatenative word formation and lack thereof can be partially predicted based on morpho-phonological properties of the base.
- Word formation relies highly on faithfulness to the base, making the relations between the base and the derived form as structurally transparent as possible.

Lexical-semantic criteria

- **The importance of semantic transparency**
- **Booker Johnson & Sims 2021**
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