radical A Journal of Phonology
ISSN 2592-656X

volume 4, 2022

Laks, Lior

Adjective-derived verbs and verb-derived adjectives in Hebrew

Laks, Lior. 2022. “Adjective-derived verbs and verb-derived adjectives in Hebrew”. *Radical: A Journal of Phonology*, 4, 249-291.

Editor: Noam Faust
Reviewers: *Itamar Kastner, Shmuel Bolozky, Noam Faust*

PAPER

ADJECTIVE-DERIVED VERBS AND VERB-DERIVED ADJECTIVES IN HEBREW

LAKS, LIOR (BAR-ILAN UNIVERSITY)

The debate regarding the nature of non-concatenative formation has been going on for decades and revolves around the status of the consonantal root. Bat-El (1994, 2017, 2019), among others, has advocated an analysis that relies on direct modification of the base rather than separate reference to the consonantal root. This study will shed more light on this debate by examining the formation of verbs from adjectives and adjectives from verbs. The study demonstrates the importance of preserving structural properties of the base in addition to the consonantal root. This is manifested in both doublet formation and blocking the formation of potential forms.

Blocking, Doublets, Gaps, Hebrew, Non-concatenative Morphology

INTRODUCTION

This study examines adjective-derived verbs and verb-derived adjectives in Hebrew, with focus on doublet formation and gaps in word formation. Such cases

are demonstrated in (1) and (2) below.

The examples in (1) demonstrate doublet formation. For the purposes of this study, doublets are defined as two or more words that share the same meaning and that are phonologically related but formed in different patterns. Both verbal doublets *hitbayašti* (1a) and *hitbayšanti* (1b) denote 'I was ashamed' and are semantically related to the adjective *bayšan* 'shy'. While *hitbayašti* is documented in dictionaries, *hitbayšanti* is a relatively new form that is not found in dictionaries, but only in online examples.

(1) a. **hitbayašti** ledaber ita panim mul panim
'I was ashamed to speak to her face to face'
https://www.askpeople.co.il/question/32679
b. be-xol-ofen **hitbayšanti** ledaber ita
'In any event I was ashamed to speak to her'
https://www.fxp.co.il/showthread.php?t=12544723

The examples in (2) demonstrate blocking of word formation (and lack thereof) with respect to verb-derived *-able* adjectives. The adjective denoting 'manageable' and related to the verb *nihel* 'manage, run (a company)' in the *CiCeC* pattern, can be expressed either by non-concatenative formation, yielding *nahil* (2a), or analytically, by attaching the prefix *bar-* to the action noun *nihul* 'managing', yielding *bar-nihul* (2b). In contrast, the adjective denoting 'definable' and related to the verb *higdir* 'define', is only formed analytically with the prefix *bar-* attached to the action noun *hagdara* 'defining/definition' (2c). Non-concatenative formation in the *CaCiC* pattern would yield **gadir*, but such examples were not found. There seems to be no semantic, syntactic or pragmatic factors that would block such word formation.

(2) a. rašut ha-šidur hi beecem guf bilti **nahil**
‘The broadcasting authority is actually not a manageable body’
https://www.globes.co.il/news/article.aspx?did=941125
b. ha-davar lo **bar-nihul** mi-bxinat ha-mefakxim
‘The thing is not manageable with respect to the inspectors’
https://www.themarker.com/markets/1.387174
c. ha-musag eyxut eyno **bar-hagdara/ *gadir**
‘The term quality is not definable’
http://new.tzura.co.il/T/Artist/3750

This study accounts for doublet formation as in (1) and for blocking of word formation as in (2). I will show that both cases can be explained by the degree of structural transparency between the derived word and the base form. Word formation in both cases requires faithfulness between the base and the derived form, and the process should involve as minimal changes as possible. The study will provide further support to a word-based approach to word formation, and to the claim that non-concatentaive morphology cannot rely on separate reference to the consonantal root, but has to apply directly to words. Specifically, I will show that direct modification of the base, rather than the extraction of a consonantal root, provides a better account to why certain words are formed, while others are not, or are highly rare.

The paper is organized as follows. Section 1 presents some background on Semitic word formation and the ongoing debate with respect to the nature of non-concatenative morphology and whether the morphological mechanism has separate reference to the consonantal root. In sections 2 and 3, I present two case studies that examine the relation between the verbal and adjectival systems. Section 2 examines the formation of adjective-derived verbs that denote ‘act/be/become like’ with respect to the relevant adjective, and section 3 examines the formation of *-able* adjectives that are derived from verbs. In both cases I show that the verb/adjective formation, or the impossibility of such a formation of a verb/adjective, cannot rely solely on the consonantal root of the adjectival/verbal base. Section 4 offers general conclusions.

1 HEBREW WORD FORMATION AND THE ROOT/WORD-BASED APPROACH DEBATE

1.1 HEBREW PATTERNS

Word formation in Hebrew relies highly on non-concatenative morphology (Berman 1978, 1987; Bolozky 1978; Schwarzwald 1981, 2002; Ornan 1983; Goldenberg 1985; among others). Hebrew verbs are formed exclusively via non-concatenative morphology. The Hebrew system consists of configurations called patterns. The pattern indicates the prosodic structure of verbs, their vocalic patterns and their affixes (if any) (Bat-El 1989, 2011). Every new verb that enters the language must conform to one of the existing patterns. The phonological shape of a verb (unlike that of a noun) is essential for determining the shape of other forms in the inflectional paradigm (Schwarzwald 1981, 1996; Berman 1978; Bolozky 1978; Bat-El 1989; Ravid 1990; Aronoff 1994).

The verbal patterns differ from one another with respect to the types of verbs that they host (Berman 1978, 2003; Bolozky 1978; Schwarzwald 1981, 2002; Ravid 2004; Doron 2003; Arad 2005; among others). For example, *CiCeC* and *hiCCiC* are used mostly for active verbs, most of which are transitive (e.g., *limed* ‘teach’, *hidpis* ‘print’). *hitCaCeC* and *niCCaC* are typically selected for intransitive verbs (e.g. *hitrageš* (*hitCaCeC*) ‘become excited’). *CaCaC* is used for both types of forms, since it is neutral with respect to transitivity (see Berman 1978, 2003). It can host both transitive verbs (e.g. *katav* ‘write’) and intransitive verbs (e.g. *gadal* ‘grow’).[1]

Adjective formation in Hebrew is generally more varied in its formation strategies. Adjectives can be formed in patterns, but are also formed by affixation and other word formation strategies. This study examines only non-concatenative formation of

1 These features of the patterns represent tendencies rather than dichotomies in the division of labor between them. For example, there are also instances of active verbs in *hitCaCeC* (e.g. *hitpalel* 'pray').

adjectives. Some typical adjectival patterns are presented in (3). Some patterns are more typical for adjective formation than others. For example, the *CaCoC* pattern (3d), is used mostly for colors. However, the majority of patterns are not used exclusively for adjective formation. The *CaCCan* pattern (3b), is also used for agent noun formation (e.g. *rakdan* 'dancer').

(3) TEMPLATIC ADJECTIVE FORMATION [2]

	TEMPLATE	EXAMPLES	
a	CaCiC	šavir	'breakable'
b	CaCCan	šaxcan	'arrogant'
c	CaCaC	xazak	'strong'
d	CaCoC	katom	'orange'

There are different possible relations between adjectives in verbs. Verbs can be derived from adjectives, for example, in case they denote 'be/become/act like' the property that the adjective denotes, e.g. *sakran* 'curious' - *histakren* 'became curious'. Adjectives can be derived from verbs in case they denote the result of the action of the verb, e.g. *tirgem* 'translate' - *meturgam* 'translated', or in case they denote possibility with respect to the action that the verb denotes, e.g. *kara* 'read' - *kari* 'readable' (see Berman 1978; Bolozky 1999; Doron 1999, 2013; Bat-El 2008; Ravid & Levie 2010; Meltzer-Asscher 2011). In this paper, I examine two cases of relations between adjectives and verbs, where I assume two different directions of derivation.

1.2 WORD-BASED APPROACH

The word-based approach, originally proposed in Aronoff (1976), is the notion that the lexicon consists of words rather than of morphemes, roots or coded concepts. Aronoff's main thesis states that a word is formed by applying Word Formation Rules (WFRs) to

2 This does not include participle patterns, which are also highly productive in adjective formation. However, they are irrelevant for the current study.

an existing word or stem. Both the derived and the base words are members of a major lexical category. Aronoff refers to these rules as once-only rules that do not apply every time a native speaker speaks. They serve for producing and understanding new words which may be added to the speaker's lexicon, and as redundancy rules defining morphological relations. Such a view assumes a phonological representation of words in the lexicon. The distinction between a root/morpheme-based morphology and a word-based morphology corresponds to the traditional distinction between 'item and arrangement' models and 'item and process' models respectively (Hocket 1954; Matthews 1972, 1974; Anderson 1992). The former is a model in which morphemes are the basic units of meaning, and they are arranged linearly. The latter is a model in which the structure of a word is specified by a series of processes affecting its base. Various studies have shown that there is access to an entire paradigm during the course of word formation and the application of morpho-phonological processes (Steriade 2000; McCarthy 2005). A paradigm expresses the ways in which linguistic entities may be connected. As a result of these connections, there are various cases where a phonologically motivated alternation is suppressed in favor of paradigm uniformity. Thus, relationships among existing words are taken into account during the formation of words. This study provides further support for the claim that the mechanism of word formation takes into account not only the word itself but also its relationships to other words in a paradigm (van Marle 1985; Spencer 1988, 1991; Corbin 1989; Stump 1991, 2016, Anderson 1992, Bochner 1993; Booij 1997, 2008; Steriade 2000; Blevins 2006; Corbett 2007; and references therein). The morphological component in the grammar is required to examine all forms in the paradigm, and aims at uniformity. Such uniformity also establishes greater predictability with a paradigm, such that the shape of one member of a paradigm could be predicted based on another member and the relations between them (see Ackerman & Malouf 2013; Stump & Finkel 2013; Bonami & Beniamine 2016). The paradigmatic approach has been gaining a growing interest in

derivational morphology, in addition to its well-known role in inflection. Many studies demonstrate the importance of paradigms in word formation (see Bauer 1997; Pounder 2000; Booij 1997, 2008; Beecher 2004; Booij & Lieber 2004; Hathouth & Namer 2014; Štekauer 2014; Blevins 2016; Bonami & Strnadová 2019; among others). The current study provides further evidence to the importance of derivational paradigms in word formation, and specifically doublet formation and morphological blocking.

Semitic morphology raises questions about the exact processes that take place in word formation. I adopt the theory of Stem Modification (Steriade 1988; McCarthy & Prince 1990; Bat-El 1994, 2017, 2019), which accounts for generalizations about morpho-phonological alternations, by allowing for stem-internal adjustments rather than positing the extraction of a consonantal root (Ornan 1983; Bat-El 1986; McCarthy 1981; McCarthy & Prince 1986; Yip 1988; Hoberman 1992; Farwaneh 1990; Goldenberg 1994; Davis & Zawaydeh 2001; Idrissi & Kehayia 2004; among others). This theory accounts for the transfer of information, such as vowel quality, consonant adjacency and prosodic structure, from a base form to a derived form. It also supplies a uniform account for cases of non-Semitic languages exhibiting phenomena similar to those found in Semitic languages (Bat-El 2002). Various studies have highlighted the absence of motivation for assuming an independent mechanism of root extraction (Bolozky 1978, 1999, 2012, Heath 1987; Hammond 1988; McCarthy & Prince 1990; Bat-El 1994, 2002, 2017, Ratcliffe 1997; Gafos 1998; Rose 1998; Ussishkin 1999, 2005; Benmamoun 2003; Kihm 2011; among others). The current study adds to earlier studies by providing further evidence that the stem modification approach allows a better account than the root extraction approach, with regard to Hebrew verb and adjective formation. The status of the consonantal root is under an ongoing debate, and there are different approaches with regard to its necessity and the actual mechanism that applies in word formation (see Nevins 2005; Faust & Hever 2010; Faust 2019). It is important to emphasize that root-based approaches do not assume that Semitic word

formation relies only on the consonantal root, namely that words are derived only from roots. Under such approaches, some words are derived directly from roots, while other words are derived directly from words (see Arad 2003, 2005; Doron 2003; Faust & Hever 2010; Faust, 2015; Kastner 2019, 2020, Rasin at al., to appear). Words that are derived from words via non-concatenative morphology have to conform to one of the existing patterns in the language. If we examine Hebrew verb formation, where non-concatenative morphology is obligatory, every verb must look like a Hebrew verb, namely to have a pattern. This is executed by what is termed by Faust & Hever (2010) "template imposition", where the pattern is imposed on the derived verb based on the word from which it is derived. The question under debate is about the exact process that template/pattern imposition involves. The study will advance the claim that this is done by stem modification and not by root extraction. There are, in addition, studies that examine the question of root-based or word-based storage in Semitic languages from a psycholinguistic point of view (see for example Berent & Shimron 1997; Frost, Forster & Deutsch 1997; Deutsch et al. 1998, 2016; Boudelaa & Marslen-Wilson 2000, 2004; Frost, Deutsch & Forster 2000; Prunet, Beland & Idrissi 2000; Sumner 2003; Sumron & Berent 2003; Berent, Vaknin & Marcus 2006; Twist 2006; Ussishkin 2006; Idrissi, Prunet & Beland 2008; Ussishkin & LaCross 2008; Frost 2012; Dotan & Friedmann 2015; Brice 2016; Yablonski & Ben-Shachar 2016; Berrebi 2017; Yablonski et al. 2017; Geary & Ussishkin 2018; Gafni et al. 2019; Lopes-Toledano & Friedmann 2020; Katz & Friedmann 2021). The psycholinguistic aspect is not addressed in this study. Nonetheless, the proposals made in this paper would allow designing various other psycholinguistic experiments that would test the hypotheses advanced.

2 DOUBLET FORMATION OF ADJECTIVE-RELATED VERBS

The *hitCaCeC* verbal pattern is used for the formation of verbs based on adjectives and nouns, and these verbs typically denote ‘become/be/act like the adjective/noun’. The

bases for such derivations can be of various types, e.g. *biryon* 'bully' - *hitbaryen* 'act like a bully' (4a). *CaCCan* adjectives also function as the base for such formation of such verbs, e.g. *baxyan* 'whiner' - *hitbaxyen* 'whine' (Bolozky 1999, 2012; Bolozky & Alon 2015; Schwarzwald 2002, 2016). More examples are presented in (4b). These verbs consist of four consonants that are transferred from the adjectives: three root consonants and *n*, which is a derivational suffix in this pattern. Such formations are not new and have been documented in previous studies (see for example, Bolozky 1999; Bolozky & Alon 2015; Schwarzwald 2002, 2009; Meirovits 2013; among others). These formations by themselves provide evidence for the problem of transfer and the inadequacy of the consonant root. All four consonants of the stem are transferred to the verb and represented in it, thus making it more faithful to the adjective. Relying only on the consonantal root of the adjective would not include *n* in the derivation and would yield verbs like **histaker* instead of *histakren* 'become curious', which is derived from the adjective *sakran* 'curious'. Note that while no theory, to the best of my knowledge, assumes that *histakren* is derived from the *s-k-r* root and not from *sakran*, this is theoretically possible, if we assume the existence of a consonantal root. As I will show in the paper, a theory that does not assume the existence of a consonantal root and the mechanism of root extraction, provides a more uniform and economic account for word formation. [3]

3 Table (4) does not include participle patterns, which are also highly productive in adjective formation. However, they are irrelevant for the current study.

(4) ADJECTIVE-DERIVED HITCACECC VERBS

	BASE			DERIVED HITCACECC VERB	
a	Various bases	šafan	'coward' (metaphor, lit. 'hyrax')	hištafen	'chicken out'
		kiconi	'exterenist'	hitkacen	'become extremist'
		biryon	'bully'	hirbaryen	'act like a bully'
		laflaf	'wimp'	hitlaflef	'become wimpy'
		behema	'beast'	hitbahem	'behave like a beast'
b	CaCCan bases	baxyan	'whiner'	hitbaxyen	'whine'
		gaxman	'capricious'	hitgaxmen	'act capriciously
		kabcan	'beggar'	hitkabcen	'act like a beggar'
		balyan	'party goer'	hitbalyen	'go out and have fun'
		sakran	'curious'	histakren	'become curious'
		šaxcan	'arrogant'	hištaxcen	'behave arrogantly'

Here I present a relatively new type of verb formation, where *hitCaCeC* verbs are formed based on *CaCCan* adjectives (see also Meirovitz 2013), despite the fact that verbs with the same meaning already exist. Such cases are presented in (5)-(6).

(5) a. hexlateti **lehitʔacel** ve-pašut lecatet mi-wikipedya
'I decided to be lazy and simply quote from Wikipedia'
(https://hwzone.co.il/community/topic/275566-%D7%9C%D7%9E%D7%94-%D7%91%D7%97%D7%95%D7%A8%D7%A3-%D7%A7%D7%A8/)

b. hexlateti **lehitʔaclen** ve-lehišaʔer ba-taxana ha-krova
'I decided to be lazy and stay in the next station'
(http://israblog.nana10.co.il/blogread.asp?blog=64230&blogcode=12711065)

(6) a. ʔim ʔata **mitʔakeš** še-ze šave
'If you insist that it is worth'
http://www.archijob.co.il/archijob_forums/PrintMessage.asp?id=78366&Fnumber=4&SunId=78311

b. ʔim ʔata bexol-zot **mitʔakšen** ve-ʔomer še-ze spam
'If you still insist and say that it is spam'
http://www.anime-il.com/index.php?showtopic=96245&st=0&p=1680989&

The verbs *lehitʔacel* (5a) and *lehitʔaclen* (5b) are the infinitive forms of the verbs *hitʔacel* and *hitʔaclen*. Both verbs share the meaning 'be lazy', and can be used in similar contexts.[4] The verbs are also phonologically related; they are both formed in *hitCaCeC* and share the root consonants *ʔ-c-l*. However, *hitʔaclen* has a quadriliteral root *ʔ-c-l-n*, as it is derived directly from the adjective *ʔaclan* 'lazy', which is formed in the *CaCCan* pattern. Similarly, the verbs *mitʔakeš* (6a) and *mitʔakšen* (6b) are masculine singular present tense forms of the verbs *hitʔakeš* and *hitʔakšen* respectively. Both verbs denote 'insist', and are semantically related to the adjective *ʔakšen* 'stubborn'. *hitʔakšen* is formed directly based on *ʔakšan* and consists of the quadriliteral root *ʔ-k-š-n*, while *hitʔakeš* consists of the root *ʔ-k-š*. Verbs like *hitʔaclen* and *hitʔakšen* are not accepted by all Hebrew speakers, and most of them are not documented in dictionaries. However, web searches reveal that their formation is becoming more productive. More such verbs are presented in (7), where each *CaCCan* adjective has two verbal counterparts. One is labeled 'original', as it is documented in dictionaries and more frequent on web searches, while the other is a more recent formation and consists of the *n* consonant of the *CaCCan* pattern.

4 It is possible that one of the doublets can have an additional meaning that is not shared by the other, or that such meaning is developed in the future, in order to create some differentiation between the two verbs. *Hitbatel*, for example, has the more common meaning of 'be cancelled', which is not shared with *hitbatlen*. I have not encountered such cases with respect to other verbs the data, and future studies might shed light on this matter. I thank Itamar Kasnter for his comment on this issue.

(7) HITCACECC DOUBLETS FORMATION

ADJECTIVE		HITCACECC 'ORIGINAL' VERB	HITCACECC DOUBLET	
ʔaclan	'lazy'	hitʔacel	hitʔaclen	'be lazy'
bayšan	'shy'	hitbayeš	hitbayšen	'be embarrassed'
ʔakšan	'stubborn'	hitʔakeš	hitʔakšen	'be stubborn about X'
fadxan	'embarrassing failure'	hitfadeax	hitfadxen	'make/feel an embarrassing failure'
paršan	'commentator'	hitpareš	hitparšen	'be interpreted'
rašlan	'negligent'	hitrašel	hitrašlen	'be negligent'
ragšan	'emotional	hitrageš	hitragšen	'be excited'
xanfan	'flatterer'	hitxanef	hitxanfen	'flatter (in an exaggerated way)'
batlan	'idle'	hitbatel	hitbatlen	'be idle'
kamcan	'miserly'	hitkamec	hitkamcen	'be/act miserly'
paxdan	'coward'	hitpaxed	hitpaxden	'fear, act like a coward'[5]

Why are such doublets formed? I argue that this is motivated by structural transparency between items that are part of a derivational paradigm. Let us demonstrate it with the doublets *hitbayeš* and *hitbayšen* 'become embarrassed', both semantically related to the adjective *bayšan* 'shy'. The transition from *hitbayeš* to *hitbayšen* results in more structurally transparent relation between the verb and the adjective *bayšan*. A paradigm like *bayšan-hitbayšen* is structurally more transparent than a paradigm like *bayšan-hitbayeš* for two reasons. First, the transition between the two words in the former paradigm maintains all the consonants of the adjective, regardless of whether they are part of the original root. Second, the formation of such doublets allows preserving the syllabic structure of the adjectival base. The syllabic structure of *hitCaCeC* forms

5 In this case, both *hitpaxed* and *hitpaxden* are relatively new doublets of the *CaCaC* verb *paxad*.

without *n* is different from the one of the base, as the former consists of a medial cluster, while the latter does not. The medial cluster is mapped onto the medial C slot of *hitCaCeC*, and therefore it is preserved in the verb as well. The transition from *bayšan* to *hitbayšen* involves only the prefixation of *hit-* and the modification of the second vowel of the stem form *a* to *e*. In contrast, the transition from *bayšan* to *hitbayeš* involves breaking the medial cluster *yš* by inserting *e* between them, and deleting the suffix *-an*.[6] Such formation is more intrusive to the stem, and is therefore less faithful to it. Accordingly, the paradigm *bayšan-hitbayeš* is less structurally transparent. The morphological mechanism aims at maintaining as many elements as possible and perform as minimal changes as possible, and as a result the related forms are more faithful to each other.

Such cases of doublet formation also lend support to a word-based approach of word formation (Aronoff 1976, 2007; Blevins 2006, 2016), according to which, the lexicon consists only of existing words, and word formation relies on the relation between words. It supports Correspondence Theory (McCarthy & Prince 1995), which accounts for relations between base and derived forms, and specifically the concept of output-output correspondence (see Bat-El 1994; Benua 1995, 1997; Burzio 1998; Ussishkin 1999, 2005; Blevins 2006), according to which there is a strict correlation between the two output forms. The morphological mechanism is required to examine both the output of the base form, i.e. *CaCCan* adjective in this case, and the derived form, i.e. the *hitCaCeC* verbal counterpart. This ensures that the derived form is faithful to the base, and that the relation between them is transparent. Relying only on a separate reference to the consonantal root cannot explain why *hitCaCeC* verbs with *n* like *hitbayšen* are preferred over *hitCaCeC* without *n* like *hitbayeš*.

6 I assume that there is transition between two forms that are phonologically and semantically related (without committing to the direction of derivation in all cases).

3 VERB-DERIVED ADJECTIVES: THE CASE OF *CACIC -ABLE* ADJECTIVES

Various studies have addressed the formation of *-able* adjectives in different languages, especially with respect to their semantic and syntactic properties (see for example Chapin 1967; Aronoff 1976; Marchand 1969; Lyons 1977; Bauer 1983; Chierchia & McConnell-Ginet 1990; Krifka et al. 1995; Lekakou 2005; McGinnis 2010; Oltra-Massuet 2013; Bauer, Lieber & Plag 2015; Alexiadou 2018; among many others). *-able* adjectives that are derived from transitive verbs usually refer to someone or something that is affected by the action or process that the verb denotes, e.g. *compare-comparable*, *read-readable*. Such adjectives typically denote modality and can express possibility, obligation or necessity, based on the properties of the source verb from which they are derived.[7]

There are several ways of denoting the property of possibility with respect to Hebrew verbs. Let us demonstrate it with respect to the verb *ʔaxal* 'eat'. *-able* adjectives can be derived in the *CaCiC* pattern, e.g. *ʔaxil* 'edible' (8a). The same adjective can be derived via the prefix *bar-*, which is attached to the action noun of the verb *ʔaxila* 'eating' yielding *bar-ʔaxila* (8b). Alternatively, the same concept of possibility can be expressed periphrastically using the modal verb *nitan* 'possible to', followed by the preposition *le-* and an action noun, yielding *nitan le-ʔaxila*, literally 'possible to eating' (8c).

(8) a. ha-dag ha-ze **ʔaxil**
'This fish is edible'
https://theflyingpork.wordpress.com/2016/08/21/indianflathead/

b. xaci me-ha-mazon še-nizrak hu **bar-ʔaxila**
'Half of the food that was thrown away is edible'
https://www.calcalist.co.il/consumer/articles/0,7340,L-3886896,00.html

c. haim hapri **nitan le-ʔaxila?**
'Is the fruit edible'?
http://www.yagurgan.co.il/forum/viewtopic.php?f=10&t=8884

7 There are also *-able* adjectives that are derived from other parts of speech, e.g. nouns. Such adjectives are not addressed in this study.

As shown in (8), these three ways of denoting 'edible' can be used in similar contexts. This study examines the non-concatenative formation of *-able* adjectives, namely the *CaCiC* pattern. Dictionaries and grammar books reveal a closed set of adjectives that are formed in this pattern. However, online web searches reveal that this pattern is quite productive in new formation of adjectives (Gadish 2007; Laks 2015; Faust, to appear). Such adjectives are formed mainly based on *CaCaC* and *CiCeC* transitive verbs. For example, the adjective *haris* 'destructible' (9) is derived from the *CaCaC* verb *haras* 'destroy', and the adjective *gahic* 'ironable' (10) is derived from the *CiCeC* verb *gihec* 'iron'. These adjectives are not documented in most dictionaries, but can be found online.

(9) ha-mucar hofex kimʔat bilti **haris**
'The product become almost indestructible'
https://roome.co.il/complete-children-rooms/

(10) bad **gahic** ve-noax
'Ironable and comfortable fabric'
http://www.bigandtallmen.co.il/?categoryId=129735&itemId=275586

More such examples are presented in (11).

(11) CACAC/CICEC DERIVED CACIC ADJECTIVE

	VERB			CACIC ADJECTIVE	
a.	CaCaC derived verbs	maxar	‘sell’	maxir	‘sellable’
		haras	‘destroy’	haris	‘destructible’
		ʔakar	‘extract’	ʔakir	‘extractable’
		baxan	‘exmine’	baxin	‘exminable’
		badak	‘check’	badik	‘checkable’
		ganav	‘steal’	ganiv	‘stealable’
		ʔarax	‘edit’	ʔarix	‘editable’
		parac	‘break (a lock)’	paric	‘breakable (lock)’
b.	CiCeC derived verbs	xiten	‘marry X and Y’	xatin	‘marriable’
		gihec	‘iron’	gahic	‘ironable’
		nigen	‘play (music)’	nagin	‘playable (music)’
		mimeš	‘realize’	mamiš	‘realizable’
		nicel	‘take advantage of’	nacil	‘that can be taken advantage of’
		nihel	‘manage, run X’	nahil	‘managable

In contrast, the formation of *CaCiC* adjectives based on *hiCCiC* transitive verbs is relatively rare. For example, *laxin* ‘composable’ (12) is derived from the *hiCCiC* verb *hilxin* ‘compose’, but such formations are less productive in comparison to adjectives derived from *CaCaC* and *CiCeC* verbs.

(12) ze šir bilti **laxin**
‘It’s an uncomposable song’
https://heitner.wordpress.com/2012/04/page/2/

Many *hiCCiC* verbs do not have related *CaCiC* adjectives. Some examples are presented in (13).

(13) NON-DERIVED CACIC ADJECTIVES

HICCIC VERB		NON-DERIVED CACIC ADJECTIVE	
higdir	'define'	*gadir	'definable'
hikxiš	'deny'	*kaxiš	'deniable'
hifkiʔa	'expropriate'	*pakiʔa	'expropriatable
hichir	'declare'	*cahir	'declarable'
hirxiv	'expand'	*raxiv	'expandable'
higril	'raffle'	*garil	'rafflable'
hexrim	'confiscate'	*xarim	'confiscatable'
hiklid	'type'	*kalid	'typable'
hišmic	'slander'	*šamic	'slanderable'

Why are *CaCiC* adjectives derived from *CaCaC* and *CiCeC* verbs more productively than from *hiCCiC* verbs? Examining the adjectives that are not derived in (13) and the adjectives that are derived in (11), does not reveal any semantic or syntactic constraints that could potentially block the formation of some adjectives but not others. All verbs that are candidates for *CaCiC* formation are transitive active verbs that can have derived *-able* adjectival counterparts. I argue that *CaCiC* verbs are rarely derived from *hiCCiC* because of morphological complexity and the lack of morphological transparency between verbs and adjectives, similarly to the case discussed in 3. The *CaCaC* and *CiCeC* verbal patterns do not consist of affixes but only a vocalic pattern, and the formation of *CaCiC* adjectives requires only changing one or two vowels of the verbal base. The syllabic structure of the base remains intact, and as a result the formation of *CaCiC* adjectives is faithful to it. In contrast, the formation of *CaCiC* adjectives based on *hiCCiC* verbs requires more changes: deletion of the prefix *hi-* and the insertion of a

vowel, and breaking the medial consonant cluster of the base. This amounts to a change of the syllabic structure of the base, and therefore the formation of a *CaCiC* adjective is less faithful to it, and the relation between the verb and the adjective is structurally less transparent. Such formation is not entirely blocked, but it is far less productive than the one based on *CaCaC* and *CiCeC* verbs.

Again, the difference between *hiCCiC* based derived adjectives and *CaCaC*/*CiCeC* derived adjectives can be better explained under the stem modification theory. If we assumed a mechanism of root extraction from the verb, we could equally extract the roots *h-r-s, g-h-c* and *k-x-š* from the verbs *haras* (*CaCaC*), *nigen* (*CiCeC*) and *hikxiš* (*hiCCiC*) respectively, and derive the adjectives *haris*, *nagin* and **kaxiš*. The fact that **kaxiš* is not formed cannot be predicted by root extraction, as there seems to be no reason not to extract this root. In contrast, under the stem modification theory, the morphological mechanism examines structural relations between the verbs and potentially derived adjectives, and requires faithfulness between them. Adjective formation that requires more changes of the base and modification of its syllabic structure tends to be blocked. This does not mean that theories that assume root extraction claim that structural relations between the base and the derived word are not taken into consideration, as will be explained in 5.

Gaps in the formation of *CaCiC* verbs are even more common with respect to weak transitive verbs. Weak verbs, which usually have one of the consonants *n, y* or *v* as a stem consonant, exhibit segmental alternation in their paradigms, making them morphologically defective (Schwarzwald 1980, 1984; Bat-El 2005; Sumner 2003; Zadok & Bat-El 2015). This weakness stems from historical phonological processes (e.g. diphthong contraction) that are no longer productive in verb innovation in Hebrew, and thus do not constitute an active part of the morpho-phonological knowledge of speakers.

Consider, for example, the three *CaCaC* verbs *lamad* ‘study’, *yarak* ‘spit’ and *šar* ‘sing’, and their inflectional paradigms in (14). *lamad* is a regular verb with the three stem consonants *l-m-d* that surface throughout the paradigm, while *yarak* is a weak verb, since its initial stem consonant *y* does not surface in the future and infinitive forms. *šar*, in contrast, has only two stem consonants.

(14) REGULAR AND WEAK CACAC PARADIGMS

TENSE	REGULAR PARADIGM	IRREGULAR PARADIGM 1	IRREGULAR PARADIGM 2
past	lamad	yarak	šar
present	lomed	yorek	šar
future	yilmad	yirak (*yiyrak)	yašir
infinitive	lilmod	lirok (*liyrok)	lašir
	‘study’	‘spit’	‘sing’

Weak verbs are highly common in *hiCCiC*. Compare the regular verb *hiklid* ‘type’, whose stem consonants surface in all inflectional forms, with the weak verb *hisig* ‘achieve’, which only has two surface consonants (15). In some cases, it is possible to assume what the missing stem consonant is, based on semantic relations with other words. For example, it is possible to assume that the stem consonants of the verb *hicig* ‘present’ are *y-c-g*, as the *y* surfaces in the *CiCeC* verb *yiceg* ‘represent’. In other cases, there is no synchronic information that reveals what the missing consonant could be. For example, the verb *hisig* ‘achieve’ is assumed to be related to the stem consonants *n-s-g* and not **y-s-g*, but this is only based on diachronic information. Regardless of the missing stem consonants of such verbs, they all have only two stem consonants that are accessible to word formation processes.

(15) REGULAR AND WEAK hiCCiC PARADIGMS

	REGULAR PARADIGM	IRREGULAR PARADIGM 1	
past	hiklid	hisig	šar
present	maklid	masig	šar
future	yaklid	yasig	yašir
infinitive	lehaklid	lehasig	lašir
	‘type’	‘achieve’	‘sing’

Weak verbs like *šar* ‘sing’ (14) and *hisig* ‘achieve’ (15) still exist in Hebrew, and their inflectional paradigms remain intact together with their defectiveness with regard to one or more of the stem consonants. However, few such new verbs enter the language, indicating that phonological alternations like these are no longer an active process in Hebrew. Such defective paradigms are frozen in the sense that they are stored as irregularities in the lexicon. Had they been an active part of the grammar, we would expect the morphological component of the grammar to form more such verbs productively (see Maiden 2004 and Baerman et al. 2010 for discussion of irregularity and defective paradigms).

Weak verbs hardly ever have *CaCiC* adjectival counterparts. Examine for example, the verb *hisig* ‘achieve’, which does not have an adjectival counterpart that would denote ‘achievable’. Why is it so? I argue that verbs like *hisig* can rarely have *CaCiC* derived adjectives, because they cannot accommodate to this pattern. This pattern has three available consonant slots, while weak verbs have only two consonants. This would leave one slot empty, and therefore such formation is blocked. If such verbs had an underlying stem consonant like *y* or *n*, it could be accessible to the morphological mechanism, and could be used for the formation of the adjectival form. This would yield forms like **nasig* ‘achievable’. The fact that there are hardly any such formations

supports the claim that weak verbs are represented in the lexicon as they surface, namely with only two stem consonants. In addition, the formation of such forms would result in derivational paradigms that are not structurally transparent, as one of the consonants would surface only in some forms. This too blocks the formation of such -*able* adjectives. In such cases, only the prefixed (16a) and the periphrastic forms are used (16b).

(16) a. ze **bar-hasaga**
'This is achievable'
https://dr-diamant.sem2u.com/blog/category/%D7%90%D7%A1%D7%AA%D7%98%D7%99%D7%A7%D7%94-%D7%93%D7%A0%D7%98%D7%9C%D7%99%D7%AA/

b. ze **nitan le-hasaga**
'This is achievable'
https://www.neaman.org.il/Energy-Forum-41-Hybrid-and-electric-vehicles

More examples of weak verbs withouit derived *CaCiC* adjectives are presented in (17). In all these cases, there seems to be no semantic, syntactic or pragmatic reasons for the absence of -*able* adjectives. The fact that gaps are found systematically with such weak verbs suggests that this is not random, but is triggered by the morpho-phonological criteria discussed above.[8]

8 The only counter example I found was *hamir* 'convertible', derived from *hemir* 'convert' (and not from *himer* 'gamble'), where the *h* of the prefix is transferred to the derived adjective.

(17) WEAK VERBS WITHOUT CACIC COUNTERPARTS

hisig	‘achieve’
heniax	‘assume/put’
hekim	‘establish’
herim	‘lift’
hemir	‘convert’
hefic	‘disseminate’
hefik	‘produce’
hefer	‘violate’
hevin	‘understand’
hevis	‘defeat’
hexil	‘contain’
šar	‘sing’
cad	‘hunt’
dag	‘fish’

Similarly to the case of doublet formation in 3, the analysis of the data demonstrates that a word-based derivation provides a better account for such cases, by allowing the grammar to be as efficient as possible. Root-based theories could account for the formation of weak verbs and their derived adjectives in two ways. One possibility would be to assume that a root is stored independently in the lexicon and is mapped into patterns, and, thus, results in morpho-phonological alternations. Postulating the existence of a root as an entity is subject to a great deal of debate. Setting this problem aside, such an approach would not explain why *-able* adjectives of such verbs are not formed. Assuming root extraction cannot predict why some roots are mapped to the *CaCiC* pattern, while other roots are not, or are rarely found in this pattern. A word-based account, and specifically stem modification, suggests an explanation to why some morphological processes are active and others are not, whereas a root-based derivation cannot predict such differences. Under a stem modification approach, the formation of -

able CaCiC adjectives is based on existing words and not abstract representations of stem consonants. If we assumed that weak verbs have underlying roots, such roots would be accessible to further formation processes. Similar gaps are also found in the formation of Hebrew inchoative verbs and infinitives of passive verbs (Laks 2018). The passive patterns *huCCaC* and *CuCaC* do not have independent infinitive forms. Some of them have infinitive forms in the *niCCaC* pattern, e.g. *hugral* 'raffled' - *hehigarel* 'to be raffled' (cf. niCCaC verbs, e.g. *nizhar* 'was careful' - *lehizaher* 'to be careful'). However, weak verbs do not have such infinitive counterparts, e.g. *husag* 'was achieved' - **lehinaseg* 'to be achieve'. Similarly to the above case of gaps in the formation of *-able CaCiC* adjectives, the existence of an underlying root like *n-s-g* could allow such infinitive formation, but such forms are not found.

4 WORD-BASED OR ALSO ROOT-BASED? STEM MODIFICATION OR ROOT EXTRACTION?

In order to clarify the distinction between root-based approaches and word-based approaches and the specific process that is responsible for non-concatenative word formation, we need to distinguish between two main types of words: (i) words that do not have any root; these include mainly loan words and acronyms, as well as some Hebrew native words that do not have any apparent root (e.g. *et* 'pen'); (ii) words that have apparent roots; these include most Hebrew native words.

To the best of my knowledge, all approaches agree that the formation of words from the words in (i) is a word-based derivation. The dispute is about the process is which such words are derived. Regarding the words in (ii), word-based approaches claim that the roots of such words are not stored independently, and words sharing the same root are derived from each other. Root-based approaches assume the independent existence of the root. Some words are derived directly from roots, but not necessarily all of them.

That is, both word-based and root-based approaches allow the formation of words directly from other words.

To better demonstrate what the dispute is about, let us examine two cases of word formation, where each of them relates to one of the groups of words. The current study does not examine words from group (i), so I will use the well-known case of denominative verb formation.

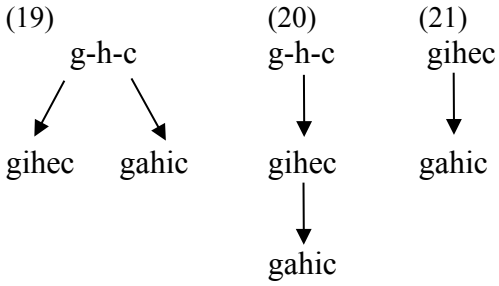
Examine the verbs in (18) which are derived from the loanwords debug and spam.

(18) a. dibag - dibeg / *hidbig 'debug'
b. spam - hispim / *sipem 'send a spam'

The verb *dibeg* is formed in CiCeC and not *hiCCiC* (**hidbig*), while the verb *hispim* is formed in *hiCCiC* and not *CiCeC* (**sipem*). The selection of *hiCCiC* based on spam allows preserving the consonant cluster, and therefore, such formation is more faithful to the base. As for *dibeg*, it is derived from a base with no cluster, and a formation of *hiCCiC* would result in an undesired cluster. As noted, all approaches agree that: (i) such verbs are derived directly from words; and (ii) the verbs need to "look like Hebrew verbs", namely to conform to one of the Hebrew verbal patterns. The formation of such verbs is based on template imposition, as termed by Faust & Hever (2010). The question under debate is how exactly such imposition is executed: by root extraction or by stem modification. The way I see it, template imposition does not compete with any of these approaches, but serves as an overarching principle for non-concatenative words formation. The stem modification approach argues that these verbs are derived directly from the bases, by modifying them in different ways that primarily include melodic overwriting, but also other processes like affixation, without separate reference to the root, and while trying to make as minimal changes as possible in the base. Under a root extraction approach, a root is first extracted, and then put in the relevant pattern. As noted in section 3, this does not mean that structural properties of the base are not taken

under consideration under a root extraction analysis. But how can they be taken into consideration under such an analysis? Let us examine the formation of *hispim*. One would have to assume that the morphological mechanism first examines the properties of spam, and accordingly selects *hiCCiC* and not *CiCeC* in order to preserve the *sp* cluster, and then extracts the root *s-p-m* and maps it onto *hiCCiC*. This could of course work, but I find it redundant. Under a stem modification analysis, there is one process in which a verb is derived from spam. The morphological mechanism adjusts it to a verb pattern that would be as faithful as possible to it, and the result is a *hiCCiC* verb and not a *CiCeC* verb (**sipem*). To sum up, both approaches derive such verbs from existing words, both try to keep the verb as faithful as possible to the base, and the dispute is about the exact process that does so.

Now let us examine the different approaches to the formation of words that have potentially existing roots, and specifically the case study of *CaCiC -able* adjectives. Examine the *CiCeC* transitive verb *gihec* 'iron', and the relatively new formed *CaCiC* adjective *gahic* 'ironable'. There are several options of assuming how these words are represented in the lexicon (or another component, this is theory depended). If we assume a representation of a consonantal root, at least two scenarios can be proposed. Either both *gihec and gahic* are formed directly from the *g-h-c* root (19), or only *gihec* is formed based on the root, and *gahic* is derived directly from *gihec* (20). While I do not know any analysis that assumes (19), it is a potentially possible representation that should be mentioned. In such a case, the consonants *g-h-c* are mapped onto the *CiCeC* pattern. Under a word-based analysis, *g-h-c* is not represented independently, as we have only independent words. *gihec* is stored independently, and *gahic* is derived from it, as in (21).



Both representations (20) and (21) assume that *gahic* is derived directly from *gihec*, whether an independent root exists or not. Under this assumption, one needs to determine how exactly it is derived, by root extraction or by stem modification, and this takes us back to the same dispute above, regarding verb formation based on words without roots like *dibeg* 'debug' and *hispim* 'send a spam'. To sum up, there are at least five possible scenarios for the formation of *gahic*, as summarized in (22).

(22) DERIVATION OF GAHIC 'IRONABLE'

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

The main claim of the current study is that if we assume that *gahic* is derived from *gihec*, a stem modification approach can provide a better explanation to why forms like *gahic* are derived, while potential forms like **kaxiš* 'deniable' are either blocked or

rarely surface, as discussed in 3. The study does not make direct claims against the representation of independent roots, but supports stem modification over root extraction in cases where words are derived from exiting words.

5 CONCLUSIONS

This study examined the relations between verb formation and adjective formation in Hebrew. The formation of verbs on the basis of adjectives and the formation of adjectives from verbs can be partially predicted based on morpho-phonological properties of the base. In both cases, word formation relies highly on faithfulness to the base, making the relations between the base and the derived form as structurally transparent as possible. This is manifested both in doublet formation and in blocking of formation of words that are conceptually possible. In the case of verbs that are derived from *CaCCan* adjectives, verb doublets are formed in order to preserve all consonants of the base adjectives including the *n*, which is not part of the original consonantal root, as well as the syllabic structure of the adjective. In the formation of -*able* adjectives in the *CaCiC* pattern, there is greater likelihood to derive such adjectives from *CaCaC* and *CiCeC* verbs, because they do not consist of a medial cluster, and the formation of *CaCiC* adjectives relies only on melodic overwriting of the base. *CaCiC* adjectives that are derived from *hiCCiC* verbs are rarer, because their formation requires more changes of the base, and it is therefore less faithful to it. This effect is even clearer in the case of weak verbs with only two surface consonants. In such cases, the formation of *CaCiC* adjectives is blocked in most cases, as there are not enough consonants to fill the consonantal slots of *CaCiC*. Both case studies lend support to the stem modification approach, in which word formation is based on modification of existing words and adjusting them to specific pattern without separate reference to the consonantal root.

ACKNOWLEDGEMENT

I am honored to dedicate this paper to Prof. Outi Bat-El, whose work on Semitic morphology, among other things, has been a great inspiration for my research and my academic development in general.

REFERENCES

Ackerman, F. & Malouf, R. (2013) 'Morphological organization: the low conditional entropy conjecture', *Language*, 89, pp. 429-464.

Alexiadou, A. (2018) 'Able adjectives and the syntax of psych verbs', *Glossa: a journal of general linguistics*, 3(1), 74, pp. 1–27.

Anderson, S.R. (1992) *A-Morphous Morphology*. Cambridge: Cambridge University Press.

Arad, M. (2003) 'Locality Constraints on the Interpretation of Roots: The Case of Hebrew Denominal Verbs', *NLLT*, p. 21.

Arad, M. (2005) *Roots and Patterns: Hebrew morpho-syntax*. Dordrecht: Springer.

Aronoff, M. (1976) *Word Formation in Generative Grammar*. Cambridge: MIT Press.

Aronoff, M. (1994) *Morphology by Itself*. Cambridg: MIT Press.

Aronoff, M. (2007) 'In the beginning was the word', *Language*, 83, pp. 803-830.

Baerman, M., Corbett G.G. & Brown D.P. (2010) *Defective Paradigms: Missing forms and what they tell us*. Oxford : Oxford University Press.

Bat-El, O. (1986) *Extraction in Modern Hebrew morphology*. MA Thesis. UCLA.

Bat-El, O. (1989) *Phonology and Word Structure in Modern Hebrew*. Doctoral Dissertation. UCLA.

Bat-El, O. (1994) 'Stem modification and cluster transfer in Modern Hebrew', *NLLT*, 12, pp. 572-596.

Bat-El, O. (2002) 'Semitic verb structure within a universal perspective', in Shimron, J. (ed) L*anguages Processing and Acquisition in Languages of Semitic, Root-based, Morphology*. Amsterdam: John Benjamins, pp. 29-59.

Bat-El, O. (2005) 'Competing principles in paradigm uniformity: evidence from Hebrew imperative paradigm', in Downing, L.J., Hall, T.A. & Raffelsiefe,n R. (eds) *Paradigms in phonological theory*. Oxford: Oxford University Press, pp. 44-64.

Bat-El, O. (2008) 'Morphologically conditioned V-O alternation in Hebrew: Distinction among nouns, adjectives and participles, and verbs', in Armon-Lotem, S. Danon, G. & Rothstein, S. (eds) *Current Issues in Generative Hebrew Linguistics*. Amsterdam: John Benjamins, pp. 27-60.

Bat-El, O. (2011) 'Semitic templates', in van Oostendrop, M., Ewen, C., Hume, E., & Rice, K. (eds) *Blackwell Companion to Phonology*. Malden, MA: Wiley-Blackwell, pp. 2586-2608.

Bat-El, O. (2017) 'Word-based items-and processes (WoBIP): Evidence from Hebrew morphology', in Bowern, C., Horn, L., & Zanuttini, R. (eds) On Looking into Words (and beyond), Berlin: Language Sciences Press, pp. 115-135.

Bat-El, O. (2019) 'Templatic morphology (clippings, root-and- pattern)', *Oxford Research Encyclopedia of Linguistics*. Oxford University Press.

Bauer, L. (1997) 'Derivational paradigms', in Booij G. & van Marle J. (eds) *Yearbook of Morphology 1996*. Dordrecht: Kluwer, pp. 243-56.

Bauer, L. (1983) *English Word-Formation*. Cambridge: Cambridge University Press. DOI: https://doi.org/10.1017/CBO9781139165846

Bauer, L., Lieber, R. & Plag, I. (2015), *The Oxford reference guide to English morphology*. Oxford: Oxford University Press.

Beecher, H. (2004) *Derivational Paradigm in Word Formation*.

http://pdfcast.org/pdf/research-paper-i-derivational-paradigm-in-word-formation

Benmamoun, E. (2003) 'The role of the imperfective template in Arabic morphology, in Shimron, J. (ed) *Language processing and acquisition in languages of Semitic, root-based, morphology*. Amsterdam: John Benjamins, pp. 99-114.

Benua, L. (1995) 'Identity effects in morphological truncation', in Beckman, J.N., Dickey, L.W. & Urbanczyk, S. (eds) U*niversity of Massachusetts Occasional Papers 18: Papers in Optimality Theory*, pp. 77-136.

Benua, L. (1997) *Transderivational Identity: Phonological Relations Between Words*. Doctoral dissertation. University of Massachusetts, Amherst.

Berman, R.A. (1978) *Modern Hebrew structure*. Tel-Aviv: University Publishing Projects.

Berman, R.A. (1987) 'Productivity in the lexicon: new-word formation in Modern Hebrew', *Floia Linguistica,* xxi(2-4), pp. 425-461.

Berman, R.A. (2003) 'Children's lexical innovations: developmental perspectives on Hebrew verb-structure', in Shimron, J. (ed) *Language processing and language acquisition in a root-based morphology*. Amsterdam: John Benjamins, pp. 243-291.

Berent, I. & and Shimron, J. (1997) The representation of Hebrew words: Evidence from the obligatory contour principle. *Cognition*, 64(1), pp. 39-72.

Berent, I., Vaknin, V. & Marcus, G.F. (2006) 'Roots, stems, and the universality of lexical representations: evidence from Hebrew', *Cognition,* 104(2), pp. 254-286.

Berrebi, S. (2017). *The roots of consonant bias: A psycholinguistic study of phonological facilitation in Hebrew*. Tel-Aviv University M.A. Thesis.

Blevins, J.P. (2006) 'Word-based morphology', *Journal of Linguistics,* 42(3), pp. 531-573.

Blevins, J.P. (2016) *Word and Paradigm Morphology*. Oxford: Oxford University Press.

Bochner, H. (1993) *Simplicity in generative morphology*. Berlin & New-York: Mouton de Gruyter.

Bolozky, S. (1978) 'Word formation strategies in MH verb system: Denominative verbs', *Afroasiatic Linguistics,* 5, pp. 1-26.

Bolozky, S. (1999) *Measuring productivity in word formation: The case of Israeli Hebrew.* Leiden: Brill.

Bolozky, S. & E., Alon. (2015) 'The n of the CaCCan pattern that is reinterpreted as part of the suffix'. *HaDor,* 2015, pp. 161-164.

Bolozky, S. (2012) 'More on linear vs. discontinuous derivation in Israeli Hebrew morphology', in Muchnik, M. & Sadan. (eds) *Studies in Modern Hebrew and Jewish Languages*, presented to Ora (Rodrigue) Schwarzwald. Jerusalem: Carmel, pp. 52-59.

Bonami, O. & Beniamine, S. (2016) 'Joint predictiveness in inflectional paradigms', *Word Structure*, 9, pp. 156–182.

Bonami, O. & Strnadová, J. (2019) 'Paradigm structure and predictability in derivational morphology'. *Morphology* 28(2), pp. 167-197.

Booij, G. (1997) 'Autonomous morphology and paradigmatic relations', *Yearbook of Morphology 1996*, pp. 35-53.

Booij, G.E. (2008) 'Paradigmatic morphology', in Fradin, B. (ed), *La Raison Morphologique*. Amsterdam/Philadelphia: John Benjamins. Hommage á la mémoire de Danielle Corbin, pp. 29-38.

Booij, G.E. & Lieber, R. (2004) 'On the paradigmatic nature of affixal semantics in English and Dutch'. *Linguistics,* 42(2), pp. 327-357.

Boudelaa, S. & Marslen-Wilson, W. (2000) 'Non-concatenative morphemes in language processing: evidence from Standard Arabic'. *Proceedings of the Workshop on Spoken Word Access Processes, 1*, Nijmegen, The Netherlands, pp. 23-26.

Boudelaa, S. & Marslen-Wilson, W. (2004) 'Abstract morphemes and lexical representation: the CV-Skeleton in Arabic'. *Cognition,* 92, pp. 271-303.

Brice, H. (2016) 'The root and word distinction: An experimental study of Hebrew denominal verbs', *Morphology,* p. 27.

Burzio, L. (1998) 'Multiple correspondence'. *Lingua,* 104, pp. 79-109.

Chapin, P. (1967) *On the syntax of word-formation in English*. Cambridge, MA. Massachusetts Institute of Technology dissertation.

Chierchia, G. & McConnell-Ginet S. (1990) *Meaning and Grammar. An Introduction to Semantics*. Cambridge: MIT Press.

Corbett, G. (2007) 'Canonical typology, suppletion, and possible words', *Language,* 83(1), pp. 8-41.

Corbin, D. (1989) 'Form, structure and meaning of constructed words in an associative and stratified lexical component', in Booij, G. & van Marle, J. (eds), *Yearbook of Morphology 1989*. Foris: Dordrecht, pp. 31-54.

Davis, S. & Zawaydeh, B.A. (2001) 'Arabic hypocoristics and the status of the consonantal Root', *Linguistic Inquiry,* 32(3), pp. 512–520.

Deutsch, A., Frost, R. & Forster, K. I. (1998) 'Verbs and nouns are organized and accessed differently in the mental lexicon: evidence from Hebrew', *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 24(5), p. 1238.

Deutsch, A., Velan, H. & Michaly, T. (2016)'Decomposition in a non-concatenated morphological structure involves more than just the roots: Evidence from fast priming'.*The Quarterly Journal of Experimental Psychology*. DOI: 10.1080/17470218.2016.1250788

Doron, E. (1999) 'The passive participle', *Balshanut Ivrit,* 47, pp. 39-62. [In Hebrew]

Doron, E. (2003) 'Agency and voice: The semantics of the Semitic templates', *Natural Language Semantics,* 11, pp. 1-67.

Doron, E. (2013) 'Participle', in Khan G. (ed) *The Encyclopedia of Hebrew Language and Linguistics*. Leiden: Brill.

Dotan, D. & Friedmann, N. (2015) 'Steps towards understanding the phonological output buffer and its role in the production of numbers, morphemes, and function words'. *Cortex*, 63, pp. 317-351.

Farwaneh, S. (1990) 'Well-formed associations in Arabic: Rule or condition', in Eid, M. & McCarthy, J. (ed) *Perspectives on Arabic Linguistics* II, Amsterdam/ Philadelphia: John Benjamins, pp. 120-142.

Faust, N. (2015) 'A novel, combined approach to Semitic word-formation', *Journal of Semitic Studies LX*.

Faust, N. (2019) 'New reasons to root for the Semitic root from Mehri and Neo-Aramaic', *The Linguistic Review*, 36(3), pp. 575-599.

Faust, N. (To appear) 'Avoidance of unintended repetition', iIn Ackema, P., Bendjaballah, S., Bonet, E. & Fábergas, A. (ed) *Wiley Blackwel companion to Morphonology*. Hoboken, New Jersey: Wiley-Blackwell.

Faust, N. & Hever Y. (2010) 'Empirical and Theoretical Arguments for the Discontinuous Root in Semitic Languages', *Brill's Annual for Afro-Asiatic Languages,* 2, pp. 80-118.

Frost, R. (2012). A universal approach to modeling visual word recognition and reading: Not only possible, but also inevitable. *Behavioral and Brain Sciences* 35, pp. 310–329.

Frost, R., Forster, K.I. & Deutsch, A. (1997) 'What can we learn from the morphology of Hebrew: a masked priming investigation of morphological representation', *Journal of Experimental Psychology: Learning, Memory, and Cognition,* 23, pp. 829-856.

Frost, R., Deutsch, A. & Forster, K.I. (2000) 'Decomposing morphologically complex words in a nonlinear morphology', *Journal of Experimental Psychology: Learning, Memory, and Cognition,* 26, pp. 751-765.

Gadish, R. (2007) 'The adjectival ways of expressing possibility: A study of the glossary of the Hebrew Academy and of Hebrew lexicography', in Maman, A., Fassberg, S.E. & Breuer, Y. (eds) *Sha'arei Lashon. Studies in Hebrew, Aramaic and Jewish Languages Presented to Moshe Bar-Asher, Vol. 3: Modern Hebrew and the Jewish Languages*. Bialik Institute: Jerusalem, pp. 71-85. [In Hebrew]

Gafni, C., Yablonski, M. & Ben-Shachar, M. (2019p) 'Morphological sensitivity generalizes across modalities', *The Mental Lexicon,* 14(1), pp. 37-67.

Gafos, A. (1998) 'A-templatic reduplication' *Linguistic Inquiry,* 29, pp. 515-527.

Geary, J., & Ussishkin, A. (2018). 'Root-letter priming in Maltese visual word recognition'. *The Mental Lexicon*, 13(1), pp. 1-29.

Goldenberg. G. (1985) On Verbal Structure and the Hebrew verb. In Bar-Asher, M. (ed), *Language Studies* 1. Jerusalem. Pp. 295-348.

Goldenberg, G. (1994) 'Principles of Semitic word-structure', in Goldenberg, G. & Raz, S. (eds) *Semitic and Cushitic Studies*. Wiesbaden: Harrassowitz.

Hammond, M. (1988) 'Templatic transfer in Arabic broken plurals', *Natural Language and Linguistic Theory,* 6, pp. 247-270.

Hathout, N. & Namer, F. (2014) 'Démonette, a French derivational morpho-semantic network', *Linguistic Issues in Language Technology,* 11, pp. 125–168.

Heath, J. (1987) *Ablaut and ambiguity: Phonology of a Moroccan Arabic dialect*. Albany: State University of New York Press.

Hoberman, R. (1992) 'Local spreading', *Journal of Afroasiatic Linguistics,* 3. pp. 226-254.

Hockett, C.F. (1954). 'Two models of grammatical description'. *Word* 10, pp. 210-234.

Idrissi, A. & Kehayia, E. (2004) 'Morphological units in the Arabic mental lexicon: Evidence from an individual with deep dyslexia', *Brain and Language,* 90, pp. 183-197.

Idrissi, A., Prunet, J. & Beland, R. (2008) 'On the mental representation of Arabic roots. *Linguistic Inquiry*', 39(2), 221-259.

Kastner, I. (2019) 'Templatic morphology as an emergent property: Roots and functional heads in Hebrew', *NLLT,* p. 37.

Kastner, I. (2020) *Voice at the interfaces: The syntax, semantics and morphology of the Hebrew verb*. Berlin: Language Science Press.

Katz, Y. & Friedmann, N. (2021) Impairments in verb retrieval in aphasia: A lexical-syntactic model. *EasyChair preprint*, 6490.

Kihm, A. (2011) 'Plural formation in Nubi and Arabic: A comparative study and a word-based approach', *Brill's Annual of Afroasiatic Languages and Linguistics,* 3, pp. 1-21.

Krifka, M., Pelletier, F.J., Carlson, G.N., ter Meulen, A., Link, G. & Chierchia, G. (1995) 'Genericity: An introduction', in Carlson, G.N. & Pelletier, F.J. (eds) *The generic book.* Chicago, IL: The University of Chicago Press, pp. 1–24.

Laks, L. (2015) 'Morphological choices and gaps: a word-based account', *Hebrew Linguistics,* 69, pp. 45-65. [In Hebrew]

Laks, L. (2018) 'Morphological compensation for empty paradigm cells', *Lingue e Linguaggio,* XVII(2), pp. 233-260.

Lyons, J. (1977) *Semantics*. Cambridge: Cambridge University Press.

Lekakou, M. (2005) *In the middle, somehow elevated*. London: University College London dissertation

Lopes-Toledano, L. & Friedmann, N. (2020). Letter migrations between words in reading: Different types and ways to distinguish betwen them. *Language and Brain*, 14, pp. 1-22. (in Hebrew)

Maiden, M. (2004) 'Irregularity as a determinant of morphological change', *Journal of Linguistics,* 28, pp. 285-312.

McCarthy, J. (1981) 'A prosodic theory of nonconcatenative morphology', *Linguistic Inquiry,* 12, pp. 373–418.

McCarthy, J. (2005) 'Optimal paradigms', in Downing, L., Hall, T.A. & Raffelsiefen, R. (eds) *Paradigms in phonological theory*. Oxford: Oxford University Press, pp. 295–371.

McCarthy, J. & Prince, A. (1986) *Prosodic morphology*. Ms University of Massachusetts, Amherst & Brandeis University.

McCarthy, J. & Prince, A. (1990) 'Foot and word in Prosodic Morphology: The Arabic broken plural', *Natural Language and Linguistic Theory,* 8, pp. 209-283.

McCarthy, J. & Prince, A. (1995) 'Faithfulness and reduplicative identity'. In Beckman, J.N., Dickey, L.W & Urbanczyk, S. (eds),*University of Massachusetts Occasional Papers 18: Papers in Optimality Theory*. Pp. 249-384.

McGinnis, M. (2010) *Evidence for the syntactic attachment of -able*. Paper presented at the CUNY Conference on the Word. CUNY, New York, 14–15 January 2010.

Meltzer-Asscher, A. (2011) 'Adjectival passives in Hebrew: Evidence for parallelism between the adjectival and verbal systems', *Natural Language and Linguistic Theory,* 29, pp. 815-855.

Marchand, H. (1969) *The categories and types of Present-Day English word-formation*. Munich: C. H. Beck.

van Marle, J. (1985). *On the paradigmatic dimension of morphological creativity*. Dordrecht: Foris.

Matthews, P.H. (1972) *Inflectional Morphology*. Cambridge: Cambridge University Press.

Matthews, P. (1974). *Morphology: An Introduction to the Theory of Word-structure*. Cambridge: Cambridge University Press.

Meirovits, S. (2013). *The derivation of hitCaCeC verb from CaCCan adjectives*. Final paper. Oranim Academic College.

Nevins, A. (2005) 'Overwriting does not optimize in nonconcatenative word formation', *Linguistic Inquiry,* 36(2), pp. 275-287.

Oltra-Massuet, I. (2013) *Deverbal adjectives at the interface*. Berlin: Mouton de Gruyter.

Ornan, U. (1983) 'How is the Hebrew word formed?', in Bar-Asher, M., Dotan, A., Tene, D. & Sarfatti, G.B. (eds) *Language Studies*. Jerusalem: Magnes, pp. 13-42 [In Hebrew]

Pounder, A. (2000) *Processes and Paradigms in Word-Formation Morphology*. Berlin: Gruyter.

Prunet, J., Beland, R. & Idrissi, A. (2000) '*The mental representation of Semitic Words*'. Linguistic Inquiry 31, 609-648.

Rasin, E., Preminger, O. & Pesetsky, D. (to appear). 'A re-evaluation of Arad's argument for roots'. In *Proceedings of the 39th West Coast Conference on Formal Linguistics (WCCFL 39)*. Somerville, MA: Cascadilla Press.

Ratcliffe, R.R. (1997) 'Prosodic templates in a word-based morphological analysis of Arabic', in Eid, M. & Ratcliffe, R. R. (eds) *Perspectives on Arabic Linguistics,* X. Amsterdam/ Philadelphia: John Benjamins, pp. 147-171.

Ravid, D. (1990) 'Internal structure constraints on new-word formation devices in Modern Hebrew', *Folia Linguistica*, 24, pp. 289-347.

Ravid, D. (2004) 'Later lexical development in Hebrew: derivational morphology revisited', in Berman, R.A. (ed) *Language development across childhood and adolescence: Psycholinguistic and crosslinguistic perspectives*. Amsterdam: Benjamins, pp. 53-82.

Ravid, D. & Levie, R. (2010) 'Adjectives in the Development of Text Production: Lexical, Morphological and Syntactic Analyses', *First Language,* 30, pp. 27-55.

Rose, S. (1998) 'Triple take: Tigre and the case of internal reduplication', in Hayward, D., Ouhalla, J. & Perrett, D. (eds) *Studies in Afroasiatic grammar.* Amsterdam: John Benjamins, Paper 5.

Schwarzwald, O.R. (1980) 'The perception of the weak verb', *Balshanut Shimushit,* 2, pp. 63-76 [In Hebrew]

Schwarzwald, O.R. (1981) *Grammar and Reality in the Hebrew Verb*. Ramat Gan: Bar Ilan University Press. [In Hebrew]

Schwarzwald, O.R. (1984) 'Analogy and regularization in morphophonemic change: The case of the weak verbs in Post-Biblical Hebrew and Colloquial Modern Hebrew', *AfroAsiatic Linguistics,* 9(2), pp. 87-100.

Schwarzwald, O.R. (1996) 'Syllable Structure, Alternations and Verb Complexity: The Modern Hebrew verb patterns reexamined', *Israel Oriental Studies,* 16, pp. 99-112.

Schwarzwald, O.R. (2002) *Hebrew Morphology. 12 Study units*. Tel Aviv: The Open University. [In Hebrew]

Schwarzwald, O.R. (2009) 'Hebrew morphological developments', in Cohen, C.E. (ed) M*odern Hebrew: Two hundred and fifty year*. Jerusalem: Hebrew Language Academy. pp. 177-209. [In Hebrew]

Schwarzwald, O.R. (2016) 'Innovative Elements in Newly Formed Hebrew Four-Consonantal Verbal Roots', in Körtvélyessy, L., Štekauer, P. & Valera, S. (eds) *Word-Formation across Languages*. Newcastle upon Tyne: Cambridge Scholars Publishing, pp. 311-336.

Shimron, J. & Berent, I. (2003) What is a Root?, in Shimron, J. (ed), *Language processing and acquisition in languages of Semitic, root-based, morphology*. Amsterdam: John Benjamins, pp. 201–222.

Spencer, A. (1988) 'Bracketing paradoxes and the English lexicon', *Language,* 64, pp. 663-682.

Spencer, A. (1991) *Morphological Theory. An introduction to word structure in Generative Grammar*. Oxford UK/Cambridge, Mass.: Blackwell.

Steriade, D. (1988) 'Reduplication and Transfer in Sanskrit and Elsewhere', *Phonology*, 5(1), pp. 73-155.

Steriade, D. (2000) 'Paradigm uniformity and the phonetic-phonology boundary', in Broe, M. & Pierrehumbert, J. (eds) *Paper in Laboratory Phonology V: Acquisition and the Lexicon*. Cambridge: Cambridge University Press, pp. 313-334.

Štekauer, P. (2014) 'Derivational paradigms', in Lieber, R. & Štekauer, P. (eds) *The Oxford Handbook of Derivational Morphology*. Oxford: Oxford University Press, 354–369.

Stump, G.T. (1991) 'Paradigm-based theory of morphosemantic mismatches', *Language,* 67, pp. 675-725.

Stump, G.T. (2016) *Inflectional Paradigms: Content and Form at the Syntax-Morphology Interface*. Cambridge University Press.

Stump, G. & Finkel R.A. (2013) *Morphological Typology: From Word to Paradigm*. Cambridge University Press.

Sumner, M.M. (2003) *Testing the abstractness of phonological representations in Modern Hebrew weak verbs*. SUNY Stony Brook doctoral dissertation.

Twist, A. (2006) *A Psycholinguistic Investigation of the Verbal Morphology of Maltese*. Doctoral dissertation. University of Arizona.

Ussishkin, A. (1999) 'The inadequacy of the consonantal root: Modern Hebrew denominal verbs and output-output correspondence', *Phonology,* 16, pp. 401-442.

Ussishkin, A. (2005) 'A fixed prosodic theory of nonconcatenative templatic morphology', *Natural Language and Linguistic Theory,* 23, pp. 169-218.

Ussishkin, A. (2006) 'Affix-favored contrast inequity and psycholinguistic grounding for nonconcatenative morphology', *Morphology,* 16, pp.107-125.

Ussishkin, A. & LaCross, A. (2008). *A hybrid model of the Semitic lexicon: psycholinguistic evidence from Hebrew*. Paper presented at the Linguistics Colloquium, Tel-Aviv University.

Yablonski, M. & Ben-Shachar, M. (2016) The Morpheme Interference Effect in Hebrew: a Generalization across the Verbal and Nominal Domains. *The Mental Lexicon* 11(2), pp. 277-307.

Yablonski, M, Polat, U., Bonneh, Y.S. & Ben-Shachar, M. (2017) Microsaccades are sensitive to word structure: A novel approach to study language processing. *Scientific Reports* 7 (1), 3999.

Yip, M. (1988) 'Template morphology and the direction of association', *Natural Language and Linguistic Theory,* 6, pp. 551-577.

Zadok, G. & Bat-El, O. (2015) 'Inte-rparadigm leveling in Hebrew verbal system'. *Morphology*, 25, pp. 271-297.

DISCUSSION WITH NOAM FAUST

(UNIVERSITÉ PARIS 8, CNRS SFL)

Faust, Noam. 2022. Discussion in: Laks, Lior (auth), Adjective-derived verbs and verb-derived adjective in Hebrew. *Radical: A journal of Phonology*, 4, 286-289.

COMMENTS

The preceding paper by Lior Laks uses new data from Modern Hebrew (MH) to make an old claim:

(1) Claim against root extraction
Because non-concatenative derivation exhibits transfer effects (the preservation of phonological aspects of the base), the derivation does not begin with an unsyllabified (extracted) root.[9]

I submit that this is only true if faithfulness to the base is *never* a principle of the analysis, but rather only its result. In such a scenario, once a root is extracted there is indeed no way to predict its arrangement in the target template such that it preserves that of the syllabified base. However, as I will show, all word-based analyses – including Laks's – in fact *do* assume such a principle. Therefore, the argument against root extraction is moot: the principle of cluster preservation – and more generally reference to the base – can guide the mapping of the putative set of extracted consonants to the relevant positions within the target template.[10]

9 Laks's claim is in fact slightly weaker than that one in (1): he does not present an argument against root extraction, but only claims that it is unnecessary. In this reaction I concentrate on the stronger version of the claim.
10 The argument in this reaction was first made – though quite differently – in the annex to Faust & Hever (2010).

While Laks admits that preservation is a principle of his analysis, Bat-El (1994), which Laks celebrates, does not do so. However, I will show that even the analysis in Bat-El (1994) requires preservation to be a principle rather than the result of the analysis. This is because she, like Laks after her, wrongly (in my opinion) conflates two distinct events of non-concatenative word formation: pattern selection and actual word formation. I will further show that once this conflation is undone, Laks's case from pontentiality adjectives does not argue against root extraction.

Consider the MH loans *tʁol* and *fokus*. The verbs derived from them are *hitʁil* 'to troll (on the internet)' and *fikes* 'to focus' respectively, in the patterns hiCCiC and CiCeC. Both could have ended up in the opposite pattern – unattested *tiʁel* and *hifkis*, but didn't. Why?

Bat-El (1994) proposed that such denominal verbs are formed through "Melodic Overwriting": the vowels of the target template replace those of the base. Thus, for, instance, in order to derive *fikes*, one replaces the vowels *o,u* of *fokus* by <i,e>. Importantly for the present purpose, Bat-El claimed that there is no principle of cluster preservation: clusters end up being preserved as a result of the process, not as a principle of it. An instructive example is *pʁiklet* 'act as an attorney', from *pʁaklit* 'attorney'. The hypothetical extracted sequence <p,ʁ,k,l,t> can be syllabified in more than one way: the attested *pʁiklet* or the possible but unattested *piʁklet* (e.g. *kimpres* 'to compress'). If reference to the arrangement of the consonants in the base is not a principle of the analysis, then once the consonants are extracted there is no way to know that *p* and *ʁ* should be part of an initial cluster, rather than the first onset and coda.

But crucially – as already pointed out in Faust & Hever (2010) – Bat El's account does *not* answer the question above, namely why *fikes* is preferred to *hifkis*; it only states how *fikes* is derived *after* <i,e> is selected. In order to explain the dispreferred status of *hifkis*, it must be assumed that *before* melodic overwriting, the CiCeC pattern

is selected and the hiCCiC is found problematic. In other words, two distinct processes exist: pattern selection and word formation.

Why is CiCeC preferred to hiCCiC? In fact, Bat-El does tacitly assume a principle of cluster preservation: deriving *hifkis* will not preserve the CVCVC syllabification of the base. Therefore, cluster preservation – and reference to the base word in general – *does* end up being an (unacknowledged) principle of Bat-El's account. And if one admits such reference, there is no reason to exclude it as a factor in the association of consonants to positions: the extracted <p,ʁ> will be mapped to to the same position in *pʁiklet*, as in the base noun *pʁaklit*.

Let us now extrapolate to one of the two cases in Laks's paper, namely potentiality adjectives. Laks notes that CaCiC is less likely to be used with bases in hiCCiC, such as *hiʃtik* 'silence (tr.)', than with bases in CiCeC like *giʁed 'scratch'*. This, he claims, is due to the initial open syllable of the target CaCiC: if the consonants of *hiʃtik* were mapped to CaCiC, we would expect *ʃatik,* which does not preserve the adjacency of *ʃ,t* in the base. Speakers therefore prefer alternative strategies, such as *baʁ*+action noun, e.g. *baʁ haʃtaka* 'amenable to silencing'. In contrast, CaCiC is a legitimate target for the base *giʁed*, because *gaʁid* 'scratchable' does not alter the syllabification of the base.

But as we saw for denominal verbs, pattern selection and word-formation are distinct events. The choice of expressing a potentialilty adjective in the template CaCiC or (for instance) in the construction *bar*+action noun – that choice is distinct from the derivation of the CaCiC adjective. It follows that even if reference to the base word is a principle in the coinage decision, this says nothing of the way speakers will go about coining the potentiality adjective *gaʁid*. One way of doing that is through melodic overwriting, as Laks seems to suggest. Another is "template imposition", as proposed in Faust & Hever (2010). A third one is the extraction of consonants from the base and their reassociation to positions in the template CaCiC. Laks claims that the data argue against this option, because the syllabification of the base is referenced. But if I have

been clear enough, this argument is moot – the cluster preservation effect already occurred in the prior stage of pattern selection, where it was decided to use CaCiC. Upon word formation, given *giʁed* and the template CaCiC, one can then extract the consonants /g,ʁ,d/, and by the standard left-to-right association derive the attested *gaʁid*. Therefore, the CaCiC case cannot be used as an argument against a possible extraction analysis.

The same can be shown for the case of *tʁol* => *hitʁil* above. Once hiCCiC has been selected, an extracted sequence <t,ʁ,l> will invariably result in *hitʁil*. Because pattern selection and word formation are not the same event, this case, too, cannot speak against root extraction.

In the end, opponents of root extraction can still claim that derivation from unsyllabified consonantal sets is an unnecessary tool in their approach. But that claim has been repeatedly challenged (see for instance, Faust & Hever 2010 and references therein; Faust 2019; Kastner & Tucker 2020 and referencnes therein). The arguments in those publications have never been countered by proponents of the word-based approach.

Bat-El, Outi. 1994. Stem Modification and Cluster Transfer in Modern Hebrew. *Natural Language & Linguistic Theory* 12 (4): 571–96. **Faust**, Noam and Yaar **Hever**. 2010. Empirical and Theoretical Arguments for the Discontinuous Root in Semitic. *Brill's Annual of Afroasiatic Languages and Linguistics* 2:80−118. **Faust**, Noam. 2019. New reasons to root for the Semitic root from Mehri and Neo-Aramaic. *The Linguistic Review* 36 (3), 575-599. **Kastner**, Itamar and Matthew A. **Tucker**. 2020. Non-concatenative Morphology. In *The Cambridge Handbook of Distributed Morphology*, edited by Artemis Alexiadou, Ruth Kramer, Alec Marantz and Isabel Oltra-Massue. Cambridge: CUP.

DISCUSSION WITH ITAMAR KASTNER

(UNIVERSITY OF EDINBURGH)

Kastner, Itamar. 2022. Discussion in: Laks, Lior (auth), Adjective-derived verbs and verb-derived adjective in Hebrew. *Radical: A journal of Phonology*, 4, 290-291.

COMMENTS

Laks' paper examines two case studies in contemporary Hebrew, showing that in each one a novel form is derived from an existing word, while outlining the phonological constraints governing these derivations. In a celebration of Outi Bat-El's contributions, the discussion is framed around competing views of derivation in Semitic, namely whether a "word" is derived from another word or from an abstract root.

The empirical part of the paper is full of modern-day examples which look like they're in common use (even if many of them aren't part of my own vocabulary); I agree that "their formation is becoming more productive", as Laks puts it (p. 259). The paper identifies a long list of doublets, many of which raise additional questions for future work. Section 3, for instance, shows that the novel form *hitbatlen* 'was idle' might be differentiated from *hitbatel* 'was idle', the latter also having the meaning 'was canceled'. Yet in other cases, I think a finer difference can be argued for: in a derivation from the adjective *atslan* 'lazy', *hitatsel* and *hitatslen* both mean 'was lazy'. I wonder whether there's some additional meaning that can be pinned down for the novel forms, perhaps an affective one: for me, novel *hitatslen* carries the meaning of being lazy beyond what would be expected, or maybe to spite someone. And if this intuition pans out, we might be witnessing /n/ reanalyzed as an affective morpheme historically derived from the adjectival marker, leading us to entirely different theoretical conclusions. Similarly for the second case study, Section 4 reviews doublets of '-able' adjectives. One potentially interesting question is whether the three 'edible' forms in (8)

correspond somehow to the difference which has been claimed to exist between *eatable* and *edible* in English (Oltra-Massuet 2014; Alexiadou 2018).

The formal possibilities laid out in Section 5 try to find the right cut between processes of template imposition, root extraction and stem modification, with the claim being that root extraction cannot be the first step before stem modification. The timing of these processes is examined in more depth in Faust's commentary; what I'd like to focus on here is that this claim could be extended to discussions of cross-categorial derivation in other languages, too (Grestenberger and Kastner 2022). For English examples like *hammer* (verb) and *hammer* (noun), or *tape* (verb) and *tape* (noun), do we derive the noun from the verb, the verb from the noun, or both from one root (as discussed in a range of works from Marchand 1964, through Clark and Clark 1979, to Arad 2003)? Ideally, the same principles that guide our analysis in Hebrew would be relevant in English, even if one language shows more morphological clues than the other. This means that if we transfer Laks' claim to English *glob-al-ize,* we wouldn't re-extract the roots √GLOBE and then √GLOBAL with each step of the derivation. That might be right, but we would need to think about how to test it.

Alexiadou, Artemis. 2018. -Able adjectives and the syntax of psych verbs. *Glossa* 3(1). **Arad**, Maya. 2003. Locality Constraints on the Interpretation of Roots: The Case of Hebrew Denominal Verbs. *Natural Language & Linguistic Theory* 21:737-778. **Clark**, Eve V. & **Clark**, Herbert H. 1979. When nouns surface as verbs. *Language* 55:767-811. **Grestenberger**, Laura & **Kastner**, Itamar. 2022. Directionality in cross-categorial derivations. *Glossa* 7(1). **Marchand**, Hans. 1964. A set of criteria for the establishing of derivational relationship between words unmarked by derivational morphemes. *Indogermanische Forschungen* 69. **Oltra-Massuet**, Isabel. 2014. *Deverbal Adjectives at the Interface: A Crosslinguistic Investigation into the Morphology, Syntax and Semantics of -ble.* Mouton de Gruyter.