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PAPER

CHALLENGES FOR THE SIZE-BASED PARALLEL ANALYSIS OF MODERN HEBREW VOWEL DELETION*

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This paper evaluates the size-based parallel analysis of vowel deletion in Modern Hebrew (Bat-El 2008). According to this analysis, vowels are deleted in suffixed words as a result of a trans-derivational faithfulness constraint that requires the suffixed word to have the same number of syllables as its base. To evaluate this analysis, the paper examines data from adjectives and participles that involve vowel epenthesis in addition to deletion. Epenthesis changes the number of syllables and interacts with deletion in non-trivial ways, allowing the predictions of the size-based parallel analysis to be compared with a traditional rule-based analysis of Modern Hebrew vowel deletion. The data pose several challenges to the size-based parallel analysis, suggesting that trans-derivational considerations of word size do not play a role in generating Modern Hebrew vowel deletion.

Keywords: Modern Hebrew, vowel deletion, vowel epenthesis, opacity, serialism

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1 INTRODUCTION

As shown by Bat-El (2008), the behavior of vowel deletion in Modern Hebrew (MH) varies across three categories: 1) nouns; 2) verbs; and 3) adjectives and participles. The differences between these categories in terms of the application of vowel deletion do not seem to be reducible to independent phonological properties, making MH vowel deletion category-specific. To exemplify the category-specific behavior of vowel deletion, consider first *a*-deletion in (1)–(3).[1]

(1) Adjectives & participles: obligatory *a*-deletion in the stem-penultimate syllable

a.	katán ∼ ktan-á	'small.M.SG' ∼ 'small.F.SG'
b.	katúv ∼ ktuv-á	'written.M.SG' ∼ 'written.F.SG'
c.	zakén ∼ zken-ót	'old.M.SG' ∼ 'old.F.PL'
d.	ʃavír ∼ ʃvir-ím	'breakable.M.SG' ∼ 'breakable.M.PL'

(2) Nouns: variable *a*-deletion in the stem-penultimate syllable

a.	davár ∼ dvar-ím	'thing.SG' ∼ 'thing.PL'
b.	davár ∼ davar-ím	'mailman.M.SG' ∼ 'mailman.M.PL'

(3) Verbs: obligatory *a*-deletion in the stem-final syllable

a.	katáv ∼ katv-á	'wrote.3.M.SG' ∼ 'wrote.3.F.SG'
b.	nosád ∼ nosd-ú	'was-founded.3.M.SG' ∼ 'was-founded.3.M.PL'

The examples in (1) illustrate the generalization that in suffixed adjectives and participles, the low vowel *a* is deleted in the penultimate syllable of the stem regardless of the vocalic template of the stem or the identity of the suffix. The evidence that this alternation in-

[1] All data in this paper are taken from the dialects of MH that do not distinguish pharyngeal from non-pharyngeal consonants (i.e., that merge historical x and ħ into x as well as historical ʔ and ʕ into ʔ or ∅). See Gafter (2016) for the social context of the different dialects.

volves deletion rather than epenthesis breaking a consonant cluster is that the clusters in question are permissible in MH (as shown in the suffixed words and elsewhere – for example, in [ktiva] 'a writing' and [ʃvira] 'a breaking'), and that the language typically inserts an *e* across categories to break impermissible clusters (e.g., [jeʃiva] 'a sitting', [mesira] 'a passing', both in the bisyllabic template CCiCa). In nouns, *a* is deleted in the same position, but this happens to a proper subset of nouns, as illustrated by the minimal pair in (2). Verbs differ from adjectives, participles, and nouns in that *a* is deleted in the final syllable of the stem rather than the penultimate syllable, as illustrated in (3).

Another deletion process in MH omits the vowel *e*. The deletion of *e* is more general than *a*-deletion as it applies productively in adjectives, participles, and verbs, deleting the stem-final vowel in suffixed forms. This process is illustrated by the data in (4).

(4) Adjectives, participles, & verbs: obligatory *e*-deletion in the stem-final syllable

a.	xivér ∼ xivr-ím	'pale.M.SG' ∼ 'pale.M.PL'
b.	kotév ∼ kotv-ím	'writing.M.SG' ∼ 'writing.M.PL'
c.	tipél ∼ tipl-ú	'cared-for.3.M.SG' ∼ 'cared-for.3.M.PL'

The evidence that this is a process of deletion rather than epenthesis is that *e* is stressed in these examples while the epenthetic *e* of MH is invisible to stress elsewhere. For example, in /sarad-ti/ → [sarádeti] 'I survived', where *e* is inserted to break the sequence [dt], stress is surprisingly antepenultimate (cf. [hitvadéti] 'I confessed'). Other deletion processes that will not be discussed in this paper are presented in Faust 2019b, which provides an overview of vowel alternations in MH.

There is a straightforward analysis of these processes that I will refer to as the *traditional analysis*, as it follows the spirit of the description and rule-based analyses of both Tiberian Hebrew (which had similar processes) and MH by Gesenius (1910), Chomsky (1951), Prince (1975), and Bolozky (1978). According to this analysis, MH has three category-specific deletion rules responsible for the data and generalizations stated above.

Two of these rules and their ordering are given in (5).

(5) A traditional analysis (ordered rules)

a. A-DELETION: Delete *a* in a word-initial ante-pretonic open syllable in adjectives, participles, nouns:

- A-DELETION: a $\rightarrow \emptyset$ / # C _ σ $\acute{\sigma}$ (A, PTCPL, N)

b. E-DELETION: Delete unstressed *e* in a two-sided open-syllable environment in adjectives, participles, and verbs:

- E-DELETION: ĕ $\rightarrow \emptyset$ / VC _ CV (A, PTCPL, V)

A-DELETION accounts for the deletion in (1) and (2) (assuming that nouns in which deletion does not apply are marked as exceptions to the rule), while E-DELETION accounts for (4). The ordering of A-DELETION before E-DELETION explains why *a* rather than *e* is deleted in words like (1-c) (/zaken-ot/ $\rightarrow$ [zkenot]) given that both rules can apply to the input. Deletion of *a* in verbs as in (3) will require an additional verb-specific rule that deletes *a* before a stressed syllable. I leave it out because my focus in the rest of this paper will be on adjectives and participles.

Departing from the traditional analysis, Bat-El (2008) proposed an analysis of vowel deletion in MH within Optimality Theory (OT: Prince & Smolensky 1993/2004) that has two main components, stated in (6).

(6) Two main components of Bat-El 2008's analysis:

1. Size: The trigger of vowel deletion is a faithfulness constraint that requires the size of the suffixed word to be identical to the size of its stem in terms of syllable count (rather than a markedness constraint penalizing certain vowels in a specified environment).
2. Output-to-Output Correspondence (see Benua 1997): The size of the suf-

fixed word is computed relative to the output of the stem in isolation (rather than to the underlying representation (UR) or an intermediate derivational form).

The size-identity requirement is enforced using the following transderivational faithfulness constraint that relies on a version of Output-to-Output Correspondence:

(7) DEPσ^{OO}: A derived form has the same number of syllables as its base.

Even though this constraint is labeled DEP, it differs from usual DEP constraints in that it does not penalize insertion but rather requires identity between a derivative and its base in terms syllable count. Differently from the constraints in Benua's version of Output-to-Output Correspondence, this is a transderivational constraint that is evaluated over the entire derived word, including the suffix, rather than over the portion of the derived word that corresponds to the base. The logic of the analysis is that a vowel is deleted in [ktana], the feminine form of [katan], in order to make the feminine form identical in terms of syllable count to its masculine base. Other markedness and faithfulness constraints determine which vowel is deleted to satisfy the size requirement. In tableau (8) below, there are two constraints in addition to DEPσ^{OO}: the transderivational faithfulness constraint MAX$\acute{V}^{OO}$, which penalizes the deletion of a vowel that is stressed in the base, and the markedness constraint *COMPLEX, which penalizes complex onsets and codas. Given the ranking of MAX$\acute{V}^{OO}$ above *COMPLEX, the first vowel is the one that gets deleted.

(8) Illustration of the size-based parallel analysis

	/katan-a/ Base: [katán]	DEPσ^{OO}	MAX$\acute{V}^{OO}$	*COMPLEX
a.	kataná	*!		
b. ☞	ktaná			*
c.	katná		*!	

On this analysis, different categories correspond to different constraint rankings. For example, verbs would have the opposite ranking of *COMPLEX over MAX$\acute{V}^{OO}$, causing deletion of the second rather than the first vowel of the stem.

The goal of this paper is to compare the size-based parallel analysis and the traditional analysis based on their empirical predictions. The two analyses are so starkly different in their logic and theoretical implementation that one would hope to find evidence pointing in favor of one theory over another. To compare the theories, I will examine data from adjectives and participles that involve vowel epenthesis in addition to deletion. MH has a number of epenthesis processes, primarily triggered by impermissible consonant clusters involving sonorants and glottal consonants. As we will see, epenthesis provides a good testing ground for the two analyses because it changes the number of syllables and interacts with deletion in non-trivial ways, allowing the predictions of the two analyses to be teased apart.

The paper is structured as follows. First, in Section 2, I present the epenthesis data from adjectives and participles that will be used to compare the size-based analysis with the traditional analysis. Then, in Section 3, I show that these data can be accounted for by the traditional analysis in a simple way. Notably, I show that the interaction between deletion and epenthesis involves a bleeding-Duke-of-York derivation (McCarthy 2003). In Section 4 I turn to the size-based analysis and point out three challenges that the interaction between epenthesis and deletion pose to it. I conclude in Section 5.

2 EPENTHESIS: DATA AND GENERALIZATIONS

2.1 RELEVANT EPENTHESIS PROCESSES

Epenthesis applies in MH across categories in a variety of environments, a subset of which will be presented here. First, the vowel *e* is inserted to break an impermissible complex onset consisting of either a sonorant consonant ([l, m, n, r, j]) followed by another consonant, or any consonant followed by one of the glottal consonants ʔ and *h*. The two glottal consonants are often omitted in casual speech, depending on factors that are not well understood, but they trigger epenthesis even when they are not pronounced (see Faust 2019a for an overview). Epenthesis is illustrated by the words in (9), all of which are nouns in the template CCiCa. Examples (9-a)-(9-e) show that *e* (underlined) is inserted after a sonorant or before an optionally pronounced glottal, while (9-f)-(9-j) show nouns in the same template with permissible onset clusters, where epenthesis does not apply.

(9) *e*-epenthesis into impermissible word-initial consonant clusters

a.	me̲sirá	‘passing’	f.	psiká	‘ruling’
b.	je̲niká	‘suckling’	g.	knijá	‘buying’
c.	pe̲(ʔ)imá	‘beat’	h.	blimá	‘braking’
d.	ʃe̲(ʔ)ilá	‘borrowing’	i.	ʃriká	‘whistle’
e.	ʃe̲(h)ijá	‘stay’	j.	ʃmirá	‘guarding’

In addition to *e*-epenthesis, the vowel *a* is inserted between a glottal consonant or x and another consonant. This is shown in (10), again using nouns in the template CCiCa. (This epenthesis also applies word-medially, but I will show relevant examples only later in this section, since they require more argumentation.)

(10) *a*-epenthesis between a glottal consonant or x and another consonant

a. (ʔ)afijá ‘baking’

b. (ʔ)akirá ‘uprooting’

c. (h)alixá ‘walking’

d. xasimá ‘blocking’

The third and last kind of *a*-epenthesis I will discuss in this paper was inherited from earlier phases of Hebrew but is not a productive process in MH, so the consonants that trigger it need to somehow be memorized as such. Here, an extraneous *a* that is not part of the template appears on the surface between a non-low vowel and some word-final x’s or unpronounced glottals. This is shown in (11), where all examples are from the template CiCuC.

(11) Unpredictable *a*-epenthesis between a non-low vowel and either a word-final x or an unpronounced word-final ʔ

a.	ʃimúa	‘hearing’	e.	kibúʃ	‘occupation’
b.	bikúa	‘cleaving’	f.	rigúʃ	‘excitement’
c.	pitúax	‘beat’	g.	vidú	‘confirmation’
d.	kipúax	‘discrimination’	h.	tivúx	‘mediation’

In (11-a)-(11-b), an additional *a* appears before an unpronounced ʔ (cf. ʃam(ʔ)u ‘they heard’ and bik(ʔ)u ‘they cleaved’, where ʔ is optionally pronounced). In (11-c)-(11-d), *a* appears before x. Examples (11-e)-(11-f) are of regular nouns in this template without the environment for epenthesis. Examples (11-g)-(11-h) show that the process is not regular because epenthesis does not apply before some unpronounced ʔ’s (cf. vid(ʔ)u ‘they confirmed’) and before some x’s, respectively. I will nevertheless refer to these instances of *a* as idiosyncratically epenthetic because they are not part of the template but occur on the surface. However, the claims I will make later on will not be affected by whether these *a*’s are epenthetic, underlying, or encoded in some other way (see Enguehard & Faust 2018

for a concrete alternative to epenthesis).

2.2 INTERACTIONS BETWEEN DELETION AND EPENTHESIS

Having established some epenthesis processes in MH, I now turn to discussing interactions between epenthesis and deletion. These interactions will form the basis for the evaluation of the size-based parallel analysis in Section 4. I will limit the discussion to adjectives and participles, where the interactions seem the most general and productive.

In adjectives and participles, *a*-deletion can result in configurations of consonants that trigger *e*- or *a*-epenthesis. Consider first the adjectives of the form CaCaC in (12).

(12) Interaction between deletion and epenthesis in CaCaC adjectives

a.	katán ∼ ktan-ím	'small.M.SG.' ∼ 'small.M.PL.'
b.	xadáʃ ∼ xadaʃ-ím	'new.M.SG.' ∼ 'new.M.PL.'
c.	jaʃán ∼ jeʃan-ím	'old.M.SG.' ∼ 'old.M.PL.'

Example (12-a) is a regular case of *a*-deletion resulting in a permissible [kt] complex onset that does not trigger epenthesis. In (12-b), deletion would result in a word-initial x followed by a another consonant, which is an environment for *a*-epenthesis, and an *a* is found on the surface. It is a priori possible either that both *a*-deletion and *a*-epenthesis apply here, or that *a*-deletion does not apply at all (I will later discuss evidence for the former option). In (12-c), the cluster is a [jʃ] cluster that triggers *e*-epenthesis, and an *e* is found on the surface instead of the underlying *a*. This suggests that both deletion and epenthesis applied.

Adjectives of the form CaCeC behave similarly, as shown in (13). Examples (13-a)–(13-c) are parallel to the examples in (12) in that they show a regular application of *a*-deletion, a mutual context for *a*-deletion and *a*-epenthesis, and a mutual context for *a*-deletion and *e*-epenthesis. Because the final vowel of these adjectives is the non-low vowel

e, a root-final x can create the context for *a*-epenthesis before a word-final x. As shown in (13-d), an *a* can then be inserted, resulting in a trisyllabic unsuffixed adjective.

(13) Interaction between deletion and epenthesis in CaCeC adjectives

a.	zakén ∼ zken-ím	'old.M.SG.' ∼ 'small.M.PL.'
b.	xasér ∼ xaser-ím	'lacking.M.SG.' ∼ 'lacking.M.PL.'
c.	javéʃ ∼ jeveʃ-ím	'dry.M.SG.' ∼ 'dry.M.PL.'
d.	saméax ∼ smex-ím	'happy.M.SG.' ∼ 'happy.M.PL.'

Two notable things about these data are relevant for the evaluation of the size-based parallel analysis. First, in the plural form in (13-d) the *a* is deleted even though the singular adjective is trisyllabic. Second, examples (13-b) and (13-c) exhibit a systematic class of exceptions to *e*-deletion: whenever *e* is in a two-sided open-syllable environment (in which it should delete) but the preceding vowel is epenthetic, *e*-deletion underapplies. The examples of participles in (14) show that there is no problem with deleting *e* in this environment when the preceding vowel is not epenthetic.

(14) *e* is deleted after an underlying *a* in participles

a.	me-ʃamér ∼ me-ʃamr-ím	'preserving.M.SG.' ∼ 'preserving.M.PL.'
b.	me-xasér ∼ me-xasr-ím	'subtracting.M.SG.' ∼ 'subtracting.M.PL.'
c.	me-fa(ʔ)ér ∼ mefa(ʔ)ar-ím	'glorifying.M.SG.' ∼ 'glorifying.M.PL.'
d.	me-fatéax ∼ me-fatx-ím	'developing.M.SG.' ∼ 'developing.M.PL.'

These data suggest the following generalization:

(15) *Generalization: underapplication of e-deletion*

A stressless *e* in the environment V_1C _ CV_2 does not delete if V_1 is epenthetic.

In (13-c) we saw that *a*-deletion can create the context for *e*-epenthesis when the right

conditions arise. Example (14-c) shows the mirror interaction: *e*-deletion triggers *a*-epenthesis between ʔ and a consonant, so the net effect is that an underlying *e* is replaced with *a* on the surface. Example (14-c) illustrates that *a*-epenthesis applies between a glottal consonant and another consonant even word-medially.

The interactions between deletion and epenthesis discussed so far can be shown to hold in a wide variety of adjectives and participles. Further examples are provided in (16)–(19).

(16) CaCoC/CaCuC/CaCiC

a.	gadól ∼ gdol-ím	'big.M.SG.' ∼ 'big.M.PL.'
b.	(ʔ)aʃír ∼ (ʔ)aʃir-ím	'rich.M.SG.' ∼ 'rich.M.PL.'
c.	marír ∼ merir-ím	'bitter.M.SG.' ∼ 'bitter.M.PL.'
d.	za(h)ir ∼ ze(h)ir-ím	'careful.M.SG.' ∼ 'careful.M.PL.'
e.	ka(ʔ)úr ∼ ke(ʔ)ur-ím	'concave.M.SG.' ∼ 'concave.M.PL.'
f.	patúax ∼ ptuxim-ím	'open.M.SG.' ∼ 'open.M.PL.'

(17) CiCeC

a.	tipéʃ ∼ tipʃ-ím	'stupid.M.SG.' ∼ 'stupid.M.PL.'
b.	pikéax ∼ pikx-ím	'wise.M.SG.' ∼ 'wise.M.PL.'

(18) CoCeC

a.	ʃomér ∼ ʃomr-ím	'saving.M.SG.' ∼ 'saving.M.PL.'
b.	po(ʔ)él ∼ po(ʔ)al-ím	'working.M.SG.' ∼ 'working.M.PL.'
c.	poréax ∼ porx-ím	'flourishing.M.SG.' ∼ 'flourishing.M.PL.'

(19) CaCuC

a.	ʃamúr ∼ ʃmur-ím	'kept.M.SG.' ∼ 'kept.M.PL.'
b.	(ʔ)atsúr ∼ (ʔ)atsur-ím	'arrested.M.SG.' ∼ 'arrested.M.PL.'
c.	lafút ∼ lefut-ím	'grasped.M.SG.' ∼ 'grasped.M.PL.'
d.	ʃa(ʔ)úl ∼ ʃe(ʔ)ul-ím	'borrowed.M.SG.' ∼ 'borrowed.M.PL.'

e. patúax ∼ ptux-ím ‘open.M.SG.’ ∼ ‘open.M.PL.’

3 A TRADITIONAL ANALYSIS

The traditional analysis discussed in the introduction can account for the behavior of deletion in the data in Section 1 using the two rules I have already stated in (5), which are repeated here:

(20) Vowel deletion rules (ordered)

a. A-DELETION: Delete *a* in a word-initial ante-pretonic open syllable in adjectives, participles, nouns:

- A-DELETION: a $\rightarrow \emptyset$ / # C _ σ $\acute{\sigma}$ (A, PTCPL, N)

b. E-DELETION: Delete unstressed *e* in a two-sided open-syllable environment in adjectives, participles, and verbs:

- E-DELETION: ĕ $\rightarrow \emptyset$ / VC _ CV (A, PTCPL, V)

To account for the epenthesis data in Section 2.1, we can assume the following rules:

(21) Vowel epenthesis rules

a. E-EPENTHESIS: Insert *e* between a word-initial sonorant and another consonant, and between a word-initial consonant and a glottal consonant.

- E-EPENTHESIS #1: $\emptyset \rightarrow$ e / # $C_{[+son]}$ _ C
- E-EPENTHESIS #2: $\emptyset \rightarrow$ e / # C _ $\left\{ \begin{matrix} \text{h} \\ \text{ʔ} \end{matrix} \right\}$

b. A-EPENTHESIS: Insert *a* between ʔ or *h* and another consonant, between a word-initial x and another consonant, and between a non-low vowel and a word-final glottal consonant or x.

- A-EPENTHESIS #1: $\emptyset \rightarrow$ a / $\left\{ \begin{matrix} \text{h} \\ \text{ʔ} \end{matrix} \right\}$ _ C
- A-EPENTHESIS #2: $\emptyset \rightarrow$ a / # x _ C
- A-EPENTHESIS #3: $\emptyset \rightarrow$ a / $\text{V}_{\text{[-low]}}$ _ $\left\{ \begin{matrix} \text{h} \\ \text{ʔ} \\ \text{x} \end{matrix} \right\}$ #

To account for the interactions between deletion and epenthesis from Section 2.2, the traditional analysis can simply order vowel deletion before vowel epenthesis. The ordering is given in (22). Two rules not shown here are stress, which will be assigned before deletion and epenthesis, and optional glottal deletion, which deletes ʔ and *h*, which will be ordered in the end, after epenthesis.

(22) Rule ordering

1. A-DELETION
2. E-DELETION
3. A-EPENTHESIS
4. E-EPENTHESIS

To see how this analysis works, consider the adjectives of the form CaCaC in (12), whose derivations are given in (23).[2] In the adjective [ktan-ím] only A-DELETION applies, but in [xadaʃ-ím] and [jeʃan-ím] A-DELETION creates the environment for A-EPENTHESIS and E-EPENTHESIS respectively, which then apply.

[2]To simplify the derivation tables, stress assignment does not receive a separate line.

(23) Interaction between deletion and epenthesis: a vacuous Duke-of-York derivation

UR	/katan-im/	/xadaʃ-im/	/jaʃan-im/
A-DELETION	ktan-ím	xdaʃ-ím	jʃan-ím
E-DELETION	-	-	-
A-EPENTHESIS	-	xadaʃ-ím	-
E-EPENTHESIS	-	-	jeʃan-ím
SR	[ktan-ím]	[xadaʃ-ím]	[jeʃan-ím]

The derivation of [xadaʃ-ím] has an example of a so-called Duke-of-York derivation (Pullum 1976), where a process applies but a later process completely undoes its application. Pariente (2017) has already observed that deletion and epenthesis can interact in this way in MH. However, using McCarthy's 2003 terminology, this Duke-of-York derivation in *vacuous*, in the sense that it is not supported by any independent evidence that the vowel *a* is deleted and then re-inserted.

Such independent evidence is provided by the adjectives of the form CaCeC in (13), and specifically adjectives like [xaser-ím] and [jeveʃ-ím]. As mentioned above, these adjectives have a surprising underapplication of *e*-deletion, and the generalization – stated in (15) – seems to be that *e*-epenthesis is blocked when the vowel that precedes *e* is epenthetic. The present analysis offers a simple account of this generalization in terms of a bleeding-Duke-of-York derivation: the underlying *a* in /xaser-im/ and /javeʃ-im/ is first deleted, removing the context for *e*-deletion. Epenthesis applies later, re-inserting the underlying vowel (or replacing it with an *e*), but since *e*-deletion is ordered in between *a*-deletion and epenthesis, it never gets the chance to apply.

The derivations of the relevant adjectives in (13), as well as the relevant participles in (14), are given in (24). The bleeding-Duke-of-York derivation is highlighted in boldface. Importantly, in this derivation, E-DELETION is ordered between A-DELETION and A-EPENTHESIS, and is correctly blocked because it applies in an intermediate derivational stage, sandwiched between those two processes.

(24) Interaction between deletion and epenthesis: a bleeding Duke-of-York derivation

UR	zaken-im	xiver-im	me-xaser-im	**xaser-im**	javeʃ-im
A-DELETION	zken-ím	-	-	**xser-ím**	jveʃ-ím
E-DELETION	-	xivrím	me-xasr-ím	**-**	-
A-EPENTHESIS	-	-	-	**xaser-ím**	-
E-EPENTHESIS	-	-	-	-	jeveʃ-ím
SR	[zken-ím]	[xivrím]	[me-xasr-ím]	[**xaser-ím**]	[jeveʃ-ím]

Finally, the derivation in (25) shows that A-EPENTHESIS after a non-low vowel in an unsuffixed form ([patúax]) is correctly (and trivially) predicted not to interact with vowel deletion in the suffixed form ([ptuxím]):

(25) Final *a*-epenthesis does not interact with deletion

UR	gadol	gadol-im	patux	patux-im
A-DELETION	-	gdol-ím	-	ptux-ím
E-DELETION	-	-	-	-
A-EPENTHESIS	-	-	patúax	-
E-EPENTHESIS	-	-	-	-
SR	[gadól]	[gdol-ím]	[patúax]	[ptux-ím]

The conclusion of this section is that the interaction of vowel deletion with vowel epenthesis does not pose a challenge to the traditional analysis of vowel deletion in MH, according to which deletion applies to certain vowels in designated contexts. In the next section, I turn to the size-based parallel analysis, and argue that the data pose several challenges to extending this analysis to account for the interaction of deletion with epenthesis.

4 CHALLENGES FOR THE SIZE-BASED ANALYSIS

4.1 FIRST CHALLENGE: EPENTHESIS IN THE BASE

The first challenge for the size-based parallel analysis is that epenthesis triggered in the base does not affect deletion in the suffixed form even though it changes the number of syllables in the base. This is true for *a*-epenthesis after a non-low vowel and before a word-final x or an unpronounced glottal. Consider, for example, (13-d), repeated here:

(26) *a*-epenthesis in the base

saméax ∼ smex-ím 'happy.M.SG.' ∼ 'happy.M.PL.'

According to the size-based parallel analysis, deletion in the suffixed form is triggered by the constraint DEPσ^{OO} (see (7)), which requires the suffixed form to have the same number of syllables as the unsuffixed form. Examples like (26) pose a problem for this analysis because *a*-epenthesis in the base means that syllable-number identity is satisfied even without applying deletion to the UR of the suffixed form, /samex-im/. The prediction is therefore that *a*-deletion should not apply in the suffixed form, contrary to fact. The incorrect prediction is shown in (27), where the optimal output is *[samexím].

(27) The size-based parallel analysis fails on (26)

	/samex-im/ Base: [saméax]	DEPσ^{OO}	MAX$\acute{V}^{OO}$	*COMPLEX
a. ☞	samexím			
b. ☹	smexím	*!		*
c.	samxím	*!	*	

It is possible to alleviate the problem by revising the definition of DEPσ^{OO} to say that the suffixed form cannot have fewer syllables than the base (rather than imposing the stronger

requirement that it should have an identical number of syllables). This would eliminate the violation of DEPσ^{OO} by candidate (b), but the incorrect candidate (a) would still win because candidate (b) violates *COMPLEX and candidate (a) does not.

This challenge for the size-based parallel analysis suggests that one of its two central components should be abandoned. As for the size-based component, the problem would be eliminated if deletion is triggered by a markedness constraint penalizing *a* in the right context rather than by a transderivational faithfulness constraint like DEPσ^{OO}. Alternatively, if the size-based component remains intact, the problem can be remedied by abandoning the Output-to-Output component of the analysis and calculating syllable-count identity relative to the number of syllables in a derivationally intermediate representation, before epenthesis has applied, using IO-faithfulness. This would be possible in a serial version of OT like Stratal OT (Kiparsky 2000, Bermúdez-Otero 2011), which posits such intermediate representations. To the extent that word-size faithfulness triggers vowel deletion, it cannot be faithfulness to a surface output form, but rather to an intermediate pre-epenthesis representation.

4.2 SECOND CHALLENGE: EPENTHESIS INTO DELETION SITES

The second challenge for the size-based parallel analysis presented by the data in Section 2.2 comes from examples where a vowel is inserted into a position of a deleted vowel of different quality (this challenge has already been identified in Pariente 2017, based on verbs). Two relevant examples are (18-b) and (19-c), repeated below as (28), where an underlying *a* is replaced with a surface *e* and vice versa.

(28) Insertion into a deletion site

a.	lafút ∼ lefut-ím	‘grasped.M.SG.’ ∼ ‘grasped.M.PL.’
b.	po(ʔ)él ∼ po(ʔ)al-ím	‘working.M.SG.’ ∼ ‘working.M.PL.’

On the traditional analysis, this behavior is expected given the ordering of A-DELETION and E-DELETION before A-EPENTHESIS and E-EPENTHESIS. For the size-based analysis, this interaction poses a problem. Since a vowel is inserted into the deletion site, the net effect is that the number of syllables remains unchanged, so there is no reason to delete a vowel in the first place to satisfy DEPσ^{OO}. The prediction is therefore that the quality of the vowel should not change between the input and the output, contrary to fact. The tableaux for the two problematic examples are given in (29). In these tableaux, FAITH$^{IO/OO}$ is a placeholder for IO-faithfulness and other OO-faithfulness constraints.[3]

(29) The size-based parallel analysis fails on (28)

A	/lafut-im/ Base: [lafút]	SSP	DEPσ^{OO}	MAXV́^{OO}	*COMPLEX	FAITH$^{IO/OO}$
a. ☞	lafutím		*			
b. ☹	lefut́im		*			*!
c.	lfutím	*!			*	

B	/poʔel-im/ Base: [poʔél]	*C$_{[low]}$C	DEPσ^{OO}	MAXV́^{OO}	*COMPLEX	FAITH$^{IO/OO}$
a. ☞	poʔelím		*			
b. ☹	poʔalím		*			*!
c.	poʔlím	*!				

As before, the problem for the size-based parallel analysis can be remedied by abandoning one of its main components, either by replacing DEPσ^{OO} with markedness constraints that trigger deletion, or by computing syllable size relative to a pre-epenthesis intermediate representation.

[3]The assumption that ʔ is directly represented both underlyingly and on the surface is a simplification that is meant to help the parallel analysis avoid the challenge of triggering epenthesis after a consonant that ends up not being pronounced. The tableau therefore shows that even if this challenge is successfully addressed in some way, the problem for the size-based analysis of deletion would remain.

4.3 THIRD CHALLENGE: OPAQUE UNDERAPPLICATION OF *E*-DELETION

The third and final challenge for the size-based parallel analysis comes from the generalization in (15) regarding the underapplication of *e*-deletion after an epenthetic vowel, repeated in (30).

(30) *Generalization: underapplication of e-deletion*
A stressless *e* in the environment V_1C _ CV_2 does not delete if V_1 is epenthetic.

This generalization was formulated based on examples such as (13-b) and (13-c), repeated in (31) (cf. (14)).

(31) Underapplication of *e*-deletion

a. xasér ∼ xaser-ím ‘lacking.M.SG.’ ∼ ‘lacking.M.PL.’
b. javéʃ ∼ jeveʃ-ím ‘dry.M.SG.’ ∼ ‘dry.M.PL.’

We have seen that these data suggest a bleeding-Duke-of-York derivation in a serial theory, because the generalization can be explained if *e*-deletion applies after *a*-deletion and before *a*-epenthesis and *e*-epenthesis – the only derivational stage in which its environment is not met. For the size-based parallel analysis, there is no such intermediate representation, and *e*-deletion is predicted to apply. The problematic prediction is demonstrated in the tableaux in (32).

(32) The size-based parallel analysis fails on (31)

A	/xaser-im/ Base: [xasér]	*$C_{[low]}C$	DEPσ^{OO}	MAX$\acute{V}^{OO}$	*COMPLEX
a. ☹	xaserím		*!		
b. ☞	xasrím			*	
c.	xserím	*!			*

B	/javeʃ-im/ Base: [javéʃ]	SSP	DEPσ^{OO}	MAX$\acute{V}^{OO}$	*COMPLEX	FAITH$^{IO/OO}$
a.	javeʃím		*!			
b. ☞	javʃím			*		*
c.	jveʃím	*!			*	*
d. ☹	jeveʃím		*!			*
e.	jevʃím			*		**!

A possible weakness of this argument is that adjectives of the form CaCeC are the only place where this interaction between deletion and epenthesis has been observed. Therefore, it is possible that speakers do not acquire a grammar that generates the generalization in (30) but instead mark the adjectival template CaCeC as an exception to *e*-deletion. As far as I can tell, such an account would only be possible in theories that accept the template as a primitive morphological category (i.e., theories that reject what McCarthy & Prince 1995 refer to as *Generalized Template Theory*). If this is the case, then the size-based parallel analysis could successfully account for the data using a similar marking. Otherwise, the bleeding-Duke-of-York pattern poses a challenge not only to the size-based parallel analysis of deletion, but to parallel theories more generally. This challenge can again be resolved by abandoning parallelism and adopting a serial architecture such as Stratal OT, which is capable of generating bleeding-Duke-of-York patterns.

5 CONCLUSION

Deletion environments in which epenthesis processes also apply pose several challenges to the size-based parallel analysis of MH vowel deletion. The first challenge is that epenthesis in the base does not affect deletion in the suffixed form even though it changes the number of syllables. The second challenge is that the size-based approach fails to trigger deletion whenever epenthesis targets the deletion site and re-inserts a vowel of different quality. The third challenge is a case of bleeding Duke of York, which poses a challenge to parallel analyses of vowel deletion in MH more generally. In all these cases, the size-based parallel analysis makes incorrect predictions regarding vowel deletion. Given the availability of alternative analyses that correctly account for the MH deletion pattern, these incorrect predictions suggest that transderivational considerations of word-size do not play a role in generating MH vowel deletion.

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DISCUSSION WITH CLÀUDIA PONS-MOLL
(UNIVERSITAT DE BARCELONA)

Pons-Moll, Clàudia. 2022. Discussion in: Rasin, Ezer (auth.) "Challenges for the sise-based parallel analysis of Modern Hebrew vowel deletion". *Radical: A journal of Phonology*, 4, 32-37.

COMMENTS

Rasin's paper discusses three empirical challenges for Bat-El's (2008) formal interpretation of the process of syncope in Modern Hebrew. Bat-El's proposal understands Modern Hebrew vowel deletion in inflected forms as a means to keep the number of syllables steady, uniform, across the paradigm constituents. Hence Rasin refers to it as a size-based analysis. To build up the proposal, Bat-El resorts to a particular application of the Transderivational Correspondence Theory (Benua 1997), which, as shown by Rasin's paper, is visibly challenged by three patterns related to the interaction between vowel deletion and vowel epenthesis in Modern Hebrew. These three challenging patterns include *a*) epenthesis in the base (which leads to syllable size discrepancies between the constituents under paradigmatic pressure, defying thus the constraint DEPσ-OO, nuclear to Bat-El's account); *b*) epenthesis after deletion (which leads to vowel quality changes, inexplicable under the size-based analysis), and *c*) a case of underapplication of *–e* deletion (which the size-based analysis overlooks, prompting the wrong deletion of the vowel).

Rasin shows that a traditional rule and derivational-based analysis is free of empirical challenges and thus preferable to the parallel and size-based interpretation pursued by Bat-El. Overall, I think Rasin's paper is a valuable contribution to the understanding of the process of syncope in Modern Hebrew, especially because it provides solid empirical arguments for which an interpretation based on paradigm uniformity is untenable, and because it also proves that a derivational account of the data under study is unavoidable.

However, whereas it is certainly true that Rasin's proposal is empirically-flaw-free (at least, as far as the interaction of vowel deletion and vowel epenthesis is concerned), I would have liked to see a "drive" behind the rules proposed and an explanation for their specificities. Why should a word-initial *a* delete when placed in an open syllable and in ante-pretonic position in adjectives, participles, and nouns (see the rule in 5a)? Why should an unstressed *e* delete when placed in a two-sided open-syllable environment in adjectives, participles, and verbs (see the rule in 5a)? I would also have liked to see some apparent generalizations about the data, like the fact that syncope seems to be systematically associated to stress shift, that it seems to be a strategy to avoid two contiguous unparsed syllables in order to obtain a trochaic foot (see Pariente 2017), that it never affects high and round vowels, that it is more regular in verbs, participles and adjectives than in nouns (supporting, thus, Smith's 2011 typological observations about category-specific phonology and the privileged status of nouns). Overall, while I foresee analytical alternatives for why the syncope process operates and about its specificities, after thinking carefully about it, I have not been able to find an alternative account of the data that does not include derivations. In fact, I think this is the most conspicuous facet of these data: the interaction of deletion and insertion processes is so intermittent that is difficult to explain without resorting to derivations.

That said, I will focus my reaction around some concerns about Bat-El's application of Transderivational Correspondence Theory, proposed by Benua (1997). In fact, in addition to the empirical counterexamples related to the interaction of syncope and epenthesis pointed out by Rasin, Bat-El's proposal also faces various issues of a technical nature. As I will argue, these technical issues call for a more constrained application of the Transderivational Correspondence Theory, and, by extension, of any formal device conceived to account for paradigmatic pressures among the members of an inflectional or a derivational paradigm.

The first issue affects the elements under correspondence and subject to output-output faithfulness. Bat-El's (2008) proposal assumes that the elements under

correspondence that are subject to the output-output faithfulness constraints go beyond the base. The author does indeed claim that the portion in correspondence includes not only the base, as illustrated in (1), but the base plus the affixes, as illustrated in (2). However, according to the traditional view, it is only the shared portion of the members of a paradigm, that is, the common base, that should be under correspondence and, therefore, subject to O-O faithfulness.

(1) Standard O-O correspondence

k a t á n	‘small.m.sg’
| | | | |	
k ø t a n – á	‘small.f.sg’

(2) Bat-El’s (2008) proposal

k a t á n	‘small.m.sg’
k ø t a n – á	‘small.f.sg’

An O-O faithfulness constraint that requires “the size of the suffixed word to be identical to the size of the stem in terms of syllable count”, as proposed by Bat-El (2008), is, at any rate, unconventional. Moreover, the possibility of having this constraint undominated, as estimated by the factorial typology, would lead to undesired consequences, the most extreme being the lack of affixation, in order to keep the members equal in terms of syllable number. To put it in other words, there is a limit on the scope of the output-to-output faithfulness pressures: the shared based in a derivational paradigm (which corresponds to the underlined portion in the examples of 1a). Under this standard perspective, what output-output faithfulness constraints can regulate is any kind of change from the *base* of the underived form to the *base* of the derivative form or from the *base* of the derivative form to the *base* of the derivative form, as the changes we find in the alternations V~Ø~V: the OO mapping [katán] → [ktan-á] involves a violation of MAX-OO and the OO mapping [ktan-á] → [katán]

involves a violation of DEP-OO. But, beyond that, not much more can be regulated through output-output faithfulness constraints.

The second issue affects the notions of overapplication and underapplication. Paradigmatic pressures have traditionally been invoked to account for exceptions to sound laws, or, in more current terms, to account for cases of phonological opacity. Two essential concepts when dealing with phonological opacity are overapplication and underapplication. Overapplication refers to situations where a phonological process applies even though the conditions that make it applicable are not visible. Underapplication occurs when a phonological process does not apply even though the conditions that make it applicable are met. Bat-El's proposal resorts to OO faithfulness to give an answer for what I would say is the *normal application* of the process of syncope in Modern Hebrew. Indeed, what I cannot see in the Modern Hebrew data is neither the overapplication nor the underapplication of a process driven by OO faithfulness. We would find overapplication, for instance, if the syncope process — motivated perhaps by the need to satisfy a specific markedness constraint M1 in the affixed forms— would also apply in the unaffixed forms, where there is no motivation for its application (3). On the other hand, we would find underapplication if the syncope process would not apply in the affixed forms (4), due to the influence of the base, in which syncope does not apply. In principle, because of BASE-PRIORITY, only underapplication (4) would be expected due to the influence of base on the derivative form. In sum, it appears to be another unusual application of the Transderivational Correspondence Theory.

(3) Overapplication of syncope (hypothetical example)

[ktan-á] (syncope motivated by markedness) 'small.f.sg'
→ [ktán] (syncope motivated by DEP-OO) 'small.m.sg'

(4) Underaaplication of syncope (hypothetical example)

[katán] (lack of syncope) ‘small.m.sg’
→ [katan-á] (lack of syncope motivated by MAX-OO) ‘small.f.sg’

Another point of concern in Bat-El’s proposal is that it assumes that the pressure among paradigm constituents in inflectional paradigms (i.e. verbal and nominal paradigms) is asymmetric, that is, that it is possible to identify a base, to which the rest of the members of the paradigm have to be faithful (in the specific case of her proposal, there must be uniformity regarding the number of syllables). However, this is not the most usual application of Benua’s (1997) model, primarily conceived to account for pressures among the members of a *derivational* paradigm and in which the identification of a base that has priority over the rest of the paradigm members is fully justified. In fact, a canonical analysis for these data in terms of paradigm uniformity would be to resort to the Optimal Paradigms model (McCarthy 2005), specifically conceived to account for paradigmatic pressures among the members of an inflectional paradigm. According to this model, it is not possible to aprioristically identify a base, unlike in the derivational paradigms, so the direction of the paradigmatic pressure is expected to be symmetrical and determined, not by the priority of the base, but by markedness. The paradigm constituent that satisfies a high-ranked markedness constraint is the one in condition to exert pressure over the rest, and thus only overapplication of a process is expected (unless an even higher-ranked markedness constraint blocks overapplication). Applied to the Modern Hebrew data, this constituent would be the affixed form, in which markedness (a constraint against two unparsed syllables) triggers syncope ([ktan-á]), but the effects of the OO faithfulness constraint OP-Dep-V on the unaffixed forms (potentially leading to *[ktán]) are inhibited by the IO faithfulness constraint MAX-IO, which blocks deletion in the unaffixed forms ([katán]) but not in the affixed forms (because of course MAX-IO is dominated by the markedness constraint). This leads to non-uniform inflectional paradigms ([ktan-á]~ [katán]), as far as the V~Ø is concerned.

The take-home message is that the more orthodox the application of a model, the better. Not radical at all.

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DISCUSSION WITH DAVID GIL
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COMMENTS

In his paper, Ezer Rasin offers a well-written and well-thought-out critique of Outi Bat-El's size-based parallel analysis, proposed to account for some facts about Modern Hebrew morphology which appear, on the surface, to involve processes of vowel deletion. I will leave it to the readers to decide for themselves who has "won" the argument. Instead, what I would like to do here is to call into question the terms of the debate, specifically, the presupposition, shared by Bat-El and Rasin, that the facts under consideration do indeed instantiate a process of "vowel deletion".

Consider, for example, Rasin's (3a), the alternation between *katáv* 'wrote.3.M.SG' and *katv-á* 'wrote.3.F.SG'. Represented in this way, it does seem as though the 3rd singular feminine form is derived from its masculine counterpart by suffixation of *-a* followed by deletion of the *a* vowel between the *t* and the *v*. However, as any scholar of Hebrew will be aware, the alternation in question is actually just a single fragment within a matryoshka-like embedded architecture of verbal paradigms. A partial representation of these paradigms, zooming out successively from the *katáv ~ katvá* alternation, is provided in Table 1:

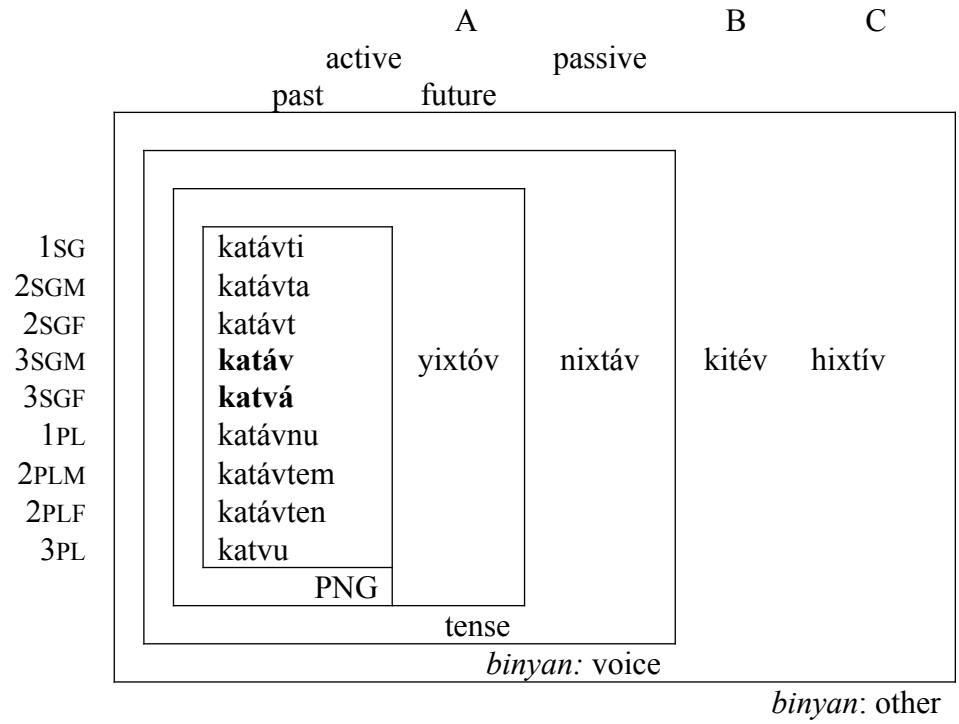

Table 1: Zooming out from *katáv ~ katvá* — Hebrew verbal morphology

To begin with, the *katáv ~ katvá* alternation is part of a larger paradigm of Person-Number-Gender- (PNG-) marked past-tense forms. In turn, this paradigm forms part of a larger tense paradigm contrasting past- and future-tense forms, in which, for example, *katáv* stands in opposition to *yixtóv.* Broadening the vista further, this paradigm forms part of a larger architecture, consisting of a number of *binyanim,* verbal conjugational patterns expressing an array of grammatical categories such as voice, transitivity and others. To begin with, the forms considered so far are all in an active *binyan* that contrasts with a passive *binyan* counterpart, in which, for example, active *katáv* stands in opposition to passive *nixtáv*. In turn, the resulting active/passive *binyan* pair contrasts with other sets of active/passive *binyan* pairs, resulting in a yet larger paradigm, represented in Table 1 with letters *A, B* and *C*, in which, for example, *katáv*, with basic meaning 'write', contrasts with *kitév* 'address' and *hixtív* 'dictate'.

The familiar and traditional way of describing facts such as these is to posit a purely consonantal root-morpheme bearing the lexical content, to which one or more grammatical (derivational and/or inflectional) morphemes are added by means of affixation, involving combinations of prefixes, suffixes, and infixes (or "intercalated vowels"). For example, all of the forms in Table 1 are derived from the root-morpheme *k-t-b* by the addition of a variety of grammatical morphemes. Some selected cases are indicated in (1) below:

(1) (a) katáv k-t-b + CaCáC
(b) katvá k-t-b + CaCCá
(c) katávti k-t-b + CaCáCti
(d) yixtóv k-t-b + yiCCóC
(e) nixtáv k-t-b + niCCáC
(f) kitév k-t-b + CiCéC

However, under the above non-concatenative analysis, the form *katvá* in (1b) no longer constitutes an instance of vowel deletion: in accordance with the CaCCá template, the putative "missing *a*" between the second and third consonants is not missing, as it was never there to begin with. Moreover, if we zoom out from the simple *katáv* ~ *katvá* alternation and examine the entire range of paradigms in Table 1, we see that the position between the second and third consonants of the root may be occupied by other vowels, such as, for example, *ó* in (1d) and *é* in (1f), thereby providing further reason to doubt that a form such as *katvá* comes from an underlying form with an additional *a* that is subsequently deleted. In general, under a non-concatenative approach, there is simply no need for rules of vowel deletion to account for the observed facts.

While the non-concatenative approach to Hebrew morphology is widely accepted, Bat-El (1994, 2008, 2017 and elsewhere) presents counterarguments, opting instead for a more linear, or concatenative analysis. However, within her concatenative approach,

recourse is required to rules of vowel deletion, which provide the underpinnings to her size-based parallel analysis. Although Rasin disputes her analysis, he appears to share her basic concatenative approach, including the need for rules of vowel deletion. Accordingly, in order to properly evaluate the alternative analyses of the facts under consideration, it is necessary to address the deeper question: is Hebrew morphology concatenative or non-concatenative?

Obviously, this cannot be adequately dealt with in just a few short paragraphs. Still, I would like to offer a couple of comments about potential ways of addressing the issue. First, it should be emphasized that the non-concatenative morphology approach is not an all or nothing proposition. It is commonly recognized that the non-concatenative approach works better in the verbal domain than in the nominal one: the verbal *binyanim* are much more regular and systematic than their nominal counterparts, the *mishkalim*. Accordingly, it should in principle be possible to reject Rasin's characterization of the *katáv* ~ *katvá* alternation as involving vowel deletion while at the same time accepting his analysis of the *davár* 'thing.SG' ~ *dvar-ím* 'thing.PL' alternation (in his (2a)) as instantiating vowel deletion. In other words, the non-concatenative approach may work in some domains of grammar but not in others.

A second point is of a comparative cross-dialectal nature. In related Arabic, several studies have shown how the similar non-concatenative morphology characteristic of the standard language and most colloquial varieties has, in some cases, undergone attrition, due generally to processes of radical language contact, for example in Maltese (Aquilina 1959, Borg 1978), Nubi (Heine 1982) and Juba Arabic (Tosco 1995). Such cases provide potential models for how a system of non-concatenative morphology may undergo restructuring into a usually simpler concatenative system.

Although dialectal variation in Hebrew is much more limited, it is possible that in certain specific contexts, contact varieties may be in the process of emerging. One such case is the Hebrew spoken in some of the southern neighborhoods of Tel Aviv by refugees, migrants and foreign workers, whose main native languages are Tagalog,

Mandarin, Tigrinya, and a variety of local languages of Sudan. While in some instances, their Hebrew clearly represents an imperfectly mastered second language, in others their fluency appears native or near-native, albeit with systematic deviations from the general colloquial Hebrew spoken by the indigenous population. Moreover, their children are now acquiring Hebrew as a first language, and, in some cases at least, retaining their parents' innovations, thereby suggesting that a new contact variety of Hebrew might currently be in the initial stages of coalescence.

One salient way in which this newly emerging variety of Hebrew differs from general colloquial Hebrew is precisely in the domain of would-be vowel deletion. Following are two examples from a naturalistic diary study that I am currently compiling.

(2)	(a)	kataním	[ktanim]	small.M.PL
	(b)	mitkaʃerím	[mitkaʃrím]	call.PRS.M.P

Both examples are from a speaker who came to Israel at the age of 18 and is now around 30 years old. His native language is Fur, a language of western Sudan alternatively classified as a (near-)isolate or as a member of the Nilo-Saharan family, though he is also fluent in Darfuri Arabic. In (2) above, the actual forms that he produced are followed by the general colloquial Hebrew forms in square brackets. As clearly evident, the attested forms contain a vowel that is absent from the general colloquial Hebrew forms. In fact, under Bat-El and Rasin's analyses, the attested forms, *kataním* and *mitkaʃerím*, are precisely the underlying forms that provide the input to their proposed vowel deletion rules. The most straightforward analysis of what is going on here is that the speaker is simply adding the suffix *-ím* on to the end of the stem, to change it from singular to plural, while retaining the original form of the stem, *katan* and *mitkaʃer*. Impressionistically, similar examples occur quite commonly in the speech of speakers of diverse origins in the southern neighborhoods of Tel Aviv, suggesting that

such forms might be in the process of becoming conventionalized as a feature of a new contact variety of Hebrew.

What to make of this? Under one possible analysis, the difference between the two varieties of Hebrew lies precisely in the nature of the morphology: concatenative or non-concatenative. Specifically, while the morphology of general colloquial Hebrew would be non-concatenative, that of the the newly emerging contact variety would have undergone at least partial restructuring as concatenative, in analogy to similar processes in the above-mentioned contact dialects of Arabic. But for such a conjectural analysis to be convincingly supported, some missing gaps must be filled in. To begin with, the reality of this dialect of Hebrew as a stable and conventionalized language variety must first be clearly established. Next, if and when its reality is successfully confirmed, complete paradigms of verbal, adjectival and nominal forms must be adequately documented. Only once these two preliminary tasks are accomplished is it possible to return to the more abstract question of whether such differences can be accounted for in terms of a shift from the original non-concatenative morphology of Hebrew towards a more concatenative morphology in a newly emergent contact variety.

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