

Paradigmatic relations as a trigger for morphological change

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This talk examines the correlation between derivational paradigms and morphological doublet formation. Various studies have examined the factors responsible for doublet formation (see for example, Aronoff 1976, 2016, Kroch 1994, Dal & Namer 2010, Thornton 2011, 2012 among many others). I will examine two specific case studies and argue that morphological change is highly motivated in cases where the forms that undergo a change are part of a derivational paradigm. This is demonstrated in Palestinian Arabic (PA) and Hebrew. Semitic morphology relies highly on non-concatenative morphology, where words are formed in patterns (Berman 1978, Bolozky 1978, Bat-El 1994a, Benmamoun 1999, 2003, Ussishkin 1999). I examine two cases where words receive an additional form in another pattern, with no change of meaning.

Doublet formation of Hebrew location nouns

There are several strategies of forming location nouns (LNs) in Hebrew. This study examines LNs that are formed in patterns. Most of them are formed in the *miCCaCa* pattern, e.g. *mispara* 'hairdresser shop'. Such nouns receive an additional form in the *maCCeCa* pattern (1).

(1) Alternating location nouns

<i>mispara</i> ~ <i>maspera</i>	'barber shop'
<i>mixbasa</i> ~ <i>maxbesa</i>	'laundromat'
<i>mišxata</i> ~ <i>mašxeta</i>	'slaughterhouse'

The change is always from *miCCaCa* into *maCCeCa* and never the other way around. *maCCeCa* is used mainly for the formation of instrument nouns, which do not change into *miCCaCa* (e.g. *maclema* ~ **miclama* 'camera'). The reasons for this change have been addressed in previous studies by Bolozky (1999, 2003). It has to do mainly with the fact that the vowel *a* is less marked in comparison to *i* and hence it is preferred as a prefix. The question that this study addresses is different. While the LNs in (1) undergo such variation, others do not (2).

(2) Non-alternating location nouns

<i>midšaʔa</i> ~ * <i>madšeʔa</i>	'lawn'
<i>mixlala</i> ~ * <i>maxlela</i>	'college'
<i>mifkada</i> ~ * <i>mafkada</i>	'headquarter'

Why do only some LNs undergo variation? If the motivation for such change were only phonological, we would expect to occur in all LNs. In addition, there is no difference in the frequency of the LNs that do and do not undergo variation. I argue that the existence of variation is based on to the semantic relation between a LN and a corresponding verb. Specifically, only LNs that are part of a verb-LN derivational paradigm undergo such a change. All the LNs in (3) are related to a verbal counterpart in the sense that they denote the location where the action that the verb denotes is performed.

(3) Morphological change of LNs

Location noun		Corresponding verb	
<i>mispara</i> ~ <i>maspera</i>	'barber shop'	<i>siper</i>	'cut hair'
<i>mixbasa</i> ~ <i>maxbesa</i>	'laundromat'	<i>kibes</i>	'launder'
<i>mitpara</i> ~ <i>matpera</i>	'sewing workshop'	<i>tafar</i>	'sew'

The change into *maCCeCa*, and specifically, the change into a pattern that begins with *a*, marks the LN as part of a derivational paradigm. The tendency to select a pattern that begins with *a* is not surprising. In general, *a* has a morpho-lexical status in Hebrew. It is the most frequent vowel in word formation processes (Plada 1959, Bolozky & Becker 2006) and it is part of various word formation processes. Bolozky (1999, 2003), Schwarzwald (2002, 2012) and Schwarzwald & Cohen-Gross (2000) show that *a* is the most common vowel in Hebrew patterns, and Bat-El (1994) and Bolozky (1999) show that it is the default vowel in acronym formation. Assuming that derivation of LNs applies in the lexicon, the morphological mechanism marks LNs as derivationally related to verbs.

In contrast, LNs that are not related to any verb do not undergo variation. The LN *midšaʔa* 'lawn', for example, is not related to any verb. There is no need to mark the location noun as part of a derivational paradigm. In addition, there are cases where the LN and the verb share the same consonantal root, but there is no semantic relation between them, or the semantic relation between them is not transparent. *mixlala* 'college', for example, could be historically related to the verb *kalal* 'include', but there is no synchronic relation between them. *mifkada* 'headquarters' is semantically related to the verbs *piked* 'command' and *pakad* 'order', but the semantic relation is not transparent; headquarters is not necessarily the place where one commands/orders. This suggests that in order for LNs to undergo a morphological change, they need to be a part of a verb-to-noun paradigm and the semantic relation has to be transparent and systematic. Semantic transparency in general has been shown to play an important role in morphology (Aronoff 1976, Spencer 1991, Anderson 1992, Baayen 1993, Libben et al. 2003, Plag et al. 2008, among others).

Doublet formation in the verbal system of Palestinian Arabic

There are ten verbal patterns in Palestinian Arabic, where every verb that enters the language must conform to one of these patterns and their inflectional paradigms. There are cases where the same consonantal root occurs in two patterns with the same meaning (4).

- (4) a. rijli **wirmat** wu-alam šadi:d tʻabʕan, ma ruħt la-l-mustašfa
 'My leg became swollen, and great pain of course, I didn't go to the hospital'
<http://www.alhilalclub.com/vb/archive/index.php/t-223078.html>
- b. wu-lyo:m **twarramat** rijli wu-ruħt la-l-mustašfa
 'today my leg became swollen and I went to the hospital'
<http://www.66n.com/forums/showthread.php?p=2801899>

The examples in (4) consist of the 3rd person fem. form of the verbs *wirem* (4a) and *twarram* (4b). Both verbs share the w-r-m root and denote 'become swollen'. However, they are formed in different patterns: *CiCeC* and *tCaCCaC*. Why does this change take place? The *CiCeC* pattern is considered more marked than other patterns because its prosodic structure alternates within its inflectional paradigm (see Schwarzwald 1996 and Bat-El 2001 for Hebrew). Because of the lack of uniformity of the inflectional paradigm of *CiCeC* patterns many of them change into other patterns. Specifically, I examine cases of intransitive *CiCeC* verbs that change into *tCaCCaC*. While this change reflects a strong tendency, it does not apply to all *CiCeC* verbs (Yousef 2015). For example, *riʕeb* 'become frightened' does not alternate with **traʕʕab*. This suggests that there is something beyond avoiding alternation in the inflectional paradigms. I claim that morphological change is also related to the derivational relations between the verbal patterns. The relation between PA patterns is manifested in terms of transitivity alternations, e.g. *wassax* 'make dirty' (*CaCCaC*) and *twassax* 'become dirty' (*tCaCCaC*). Examining cases of variation of *CiCeC* into *tCaCCaC* reveals that verbs that undergo this change are only intransitive verbs that have a transitive alternate in *CaCCaC*. The *CaCCaC-tCaCCaC* paradigm is the most productive transitive-to-intransitive paradigm in PA, and it is used almost exclusively in new verb formation. *CiCeC* intransitive verbs that are related to *CaCCaC* transitive verbs, change their form in order to adhere to the most common paradigm. In contrast, *CiCeC* intransitive verbs with no *CaCCaC* transitive alternates do not change their form, as there is no motivation for it in terms of derivational paradigms.

Both cases studies show that in addition to phonological factors that trigger morphological variation, derivational relations also play an important role. In both cases, doublet formation is primarily motivated by morpho-phonological criteria. However, examining the scope of variation reveals that these are not the only criteria. Words demonstrate greater tendency to undergo variation when they are part of a derivational paradigm. The morphological change establishes more uniform and steady paradigms, in which there is a clear morphological association between their members.