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Templatic Morphology (Clippings, Word-and-Pattern)

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Summary and Keywords

This article introduces two phenomena that are studied within the domain of templatic morphology—clippings and word-and-pattern morphology, where the latter is usually associated with Semitic morphology. In both cases, the words are of invariant shape, sharing a prosodic structure defined in terms of number of syllables. This prosodic template, being the core of the word structure, is often accompanied with one or more of the following properties: syllable structure, vocalic pattern, and an affix. The data in this article, drawn from different languages, display the various ways in which these structural properties are combined to determine the surface structure of the word. The invariant shape of Japanese clippings (e.g., *suto* ← *sutoraiki* 'strike') consists of a prosodic template alone, while that of English hypocoristics (e.g., *Trudy* ← *Gertrude*) consists of a prosodic template plus the suffix *-i*. The Arabic verb classes, such as class-I (e.g., *sakan* 'to live') and class-II (e.g., *misek* 'to hold'), display a prosodic template plus a vocalic pattern, and the Hebrew verb class-III (e.g., *hivdil* 'to distinguish') displays a prosodic template, a vocalic pattern and a prefix. Given these structural properties, the relation between a base and its derived form is expressed in terms of stem modification, which involves truncation (for the prosodic template) and melodic overwriting (for the vocalic pattern). The discussion in this article suggests that templatic morphology is not limited to a particular lexicon type – core or periphery, but it displays different degrees of restrictiveness.

Keywords: Prosodic templates, clippings, hypocoristics, word-and-pattern morphology, configurations, truncation, melodic overwriting

1. The Scope of Templatic Morphology

The notion of *templatic morphology* refers to morphology that imposes invariant shape on the word (McCarthy & Prince, 1990). A typical example comes from Semitic morphology (see [134: AFROASIATIC]), known for its word-and-pattern morphology, where words of a particular class have the same prosodic structure, vocalic pattern, and in some classes also an affix. The examples below, displaying two verb classes in Hebrew (traditionally

called *binyanim*; singular *binyan*), illustrate the invariant shape of the verbs in each class (where the citation form is the third person masculine singular past).

(1) Invariant shape in word -and-pattern morphology – Hebrew

a. *CaCaC*		b. *hiCCiC*	
gadal	'to grow'	hiχtiv	'to dictate'
pataʁ	'to solve'	hifsik	'to stop'
liket	'to collect'	hiklit	'to record'
χaʃev	'to think'	himʃiχ	'to continue'

In both classes, the verbs consist of two syllables, that is, a binary foot, which will be shown to be a dominant property in prosodic morphology. They differ, however, in the structure of the first syllable, the vocalic pattern, and the prefix. In (1a) the first syllable is CV and the vocalic pattern is *a-a*, while in (1b) the first syllable is CVC, where the first C is filled with the prefix *h-*, and the vocalic pattern is *i-i*.

Given the configuration imposed on words, related words in Semitic languages differ in their configuration, where their consonants remain intact. As shown below, the words in each row differ in their configuration but share the stem consonants and a basic meaning.

(2) Related words – Hebrew

gadal	'big'	higdil	'to enlarge'	godel	'size'	migdal	'tower'
kines	'to gather'	hitkanes	'to convene'	kenes	'conference'	kneset	'assembly'
hirgiʃ	'to feel'	hitrageʃ	'to be excited'	regeʃ	'feeling'	ragiʃ	'sensitive'

Such relation gave rise to the notion of the Semitic consonantal root, which is traditionally considered a morphological unit, and this is the source of the '*root*-and-pattern' approach (McCarthy, 1979, 1981). Here, however, we follow the view that these are stem consonants, that is, phonological elements (consonants) within a morphological unit (stem) and thus adhere to the '*word*-and-pattern approach' (see Bat-El, 2017 for a recent review).

Another phenomenon that falls within the domain of templatic morphology is clipping (also called 'stump words' or 'truncated forms').[1] The examples in (3) are from German (Ito & Mester, 1997; Wiese, 2001), where both names and common nouns are truncated to binary syllabic foot size, which includes the suffix *-i*.[2]

(3) Invariant shape in clippings – German

Names		*Common nouns*		
Gábi	← Gàbriéla	Réli	←Rèligión	'religion (school subject)'
Schláppi	← Schláppner	Próli	←Pòletárier	'proletarian'
Górbi	← Górbatschòw	Álki	←Àlkohóliker	'alcoholic'
Évi	← Éva	Chíppi	←Chíp	'computer fan'

Clippings and word-and-pattern morphology may seem unrelated, but they both fall within the domain of templatic morphology by sharing the size restriction—usually a binary foot. This common property is displayed in (4), which shows that the size of Catalan hypocoristics (Cabré & Kenstowicz, 1995; Artés, 2014) and Hebrew verbs (Bat-El, 1994, 2011; Ussishkin, 1999, 2000) is restricted by the same prosodic template—a disyllabic foot (Ft), and this prosodic template determines the minimal and maximal size of the word.

(4) Different phenomena – the same prosodic template

Hypocoristics – Catalan		*Word-and-pattern – Hebrew*	
[Tina]$_{Ft}$	(← Christina)	[sipeʁ]$_{Ft}$	'to tell'
[Mingo]$_{Ft}$	(← Domingo)	[tirgem]$_{Ft}$	'to translate'

While all the phenomena that fall within the domain of templatic morphology have a prosodic template defined in terms of number of syllables (or morae), they often differ with respect to the other properties. The two invariant shapes in (1) include not only syllabic structure (two syllables) but also syllable structure, vocalic pattern, and in *hiCCiC* also a prefix. The invariant shape in (3) includes only a syllabic structure (two syllables) and a suffix, where the first syllable can be of any shape.

The invariant shape thus consists of various properties, and any combination of these properties is referred to here as *configuration* (Bat-El, 2011); the term template is thus used for prosodic structure only, that is, *prosodic template*. For example, the configuration of the English hypocoristics below includes a binary syllabic foot that contains the suffix *-i*, and that of the Arabic hypocoristic (Abu-Mansour, 2010) includes the prosodic template CV:CV and the vocalic pattern *u-a*.

(5) Invariant shape in clippings

English	*Arabic*
Abby ← Abigail	ʈú:qa ← ʈá:riq
Tony ← Anthony	tú:na ← fá:tina
Vinny ← Vincent	nú:za ← najrú:z
Trudy ← Gertrude	sú:ma ← ibtisá:m

Configurations are often presented in a combined form within a CV structure (e.g. Hebrew *hiCCiC* in (1), Arabic *Cu:Ca* in (5)). Such representation, initially proposed for Semitic morphology (McCarthy, 1979, 1981), is sufficient for the Arabic hypocoristics, where *Cu:Ca* incorporates all the properties of the configuration. As for the English hypocoristics, this representation is too restrictive, because the structure of the first syllable varies segmentally and prosodically, according to the corresponding syllable in the base.

The alternative representation is given in terms of syllables and morae, as in (6).[3]

(6) Configurations (for the data in (5))

The theoretical shift from the CV representation to a syllabic representation, first advocated in McCarthy (1984) and McCarthy and Prince (1986), is supported by data from reduplication (see [52: REDUPLICATION]) and Hebrew verbs, where the CV representation is too restrictive. For example, the reduplicated plural prefix in Ilokano (Philippines) varies in terms of CV structure (e.g., *roː-roʔot* 'litters', *kal-kaldiŋ* 'goats', *traː-trak* 'trucks', *klas-klase* 'classes') and thus cannot receive a unified representation in terms of CV structure (CVː, CVC, CCVː, CCVC); however, in syllabic terms, the prefix is a bimoraic syllable ($\sigma_{\mu\mu}$). Similarly, the class-IV verbs in Hebrew differ in terms of CV structure (e.g., *χite* 'to sterilize', *kibel* 'to receive', *tiʁgem* 'to translate', *tʁinsfer* 'to transfer'), and thus cannot receive a unified representation in terms of CV structure (CVCV, CVCVC, CVCCVC, CCVCCCVC); however, in syllabic terms the size of the verbs is a disyllabic foot ($[\sigma\sigma]_{Ft}$). For ease of exposition, configurations will be specified here in term of CV structure, unless otherwise required.

This article introduces the different types of configuration, from the minimal one (just number of syllables) to the most restrictive ones (number of syllables, syllable structure, vocalic pattern, and affix). The data supporting these configurations are drawn from two phenomena—clippings and word-and-pattern morphology. The notion of the prosodic template is first reviewed in section 2, with reference to the foot as the minimal and maximal word-size restriction. The role of the prosodic template in clippings and in word-and-pattern morphology is then addressed in section 3, emphasizing its core position within a configuration; every configuration includes a prosodic template, which can be the sole property of the configuration, with or without specification for syllable structure (§3.1); it can also be accompanied with an affix (§3.2), with a vocalic pattern (§3.3), or with both (§3.4). The processes employed in the structural relation between words are discussed in section 4, touching in particular on the edges of the base and the output (§4.1) and the prosodic and segmental modification required (§4.2). Concluding remarks are given in section 5.

2. Prosodic Templates

Prosodic templates serve as a structural restriction on the size and shape of words, in terms of number of syllables and syllable structure. Following the theory of Prosodic Morphology (Selkirk, 1980; Nespor & Vogel, 1986, McCarthy & Prince, 1986, 1993A, 1995A, 1995B), templates are defined in terms of prosodic units – mora (μ), syllable (σ), foot (Ft), or prosodic word (PrWd).

Studies in Prosodic Morphology show that the most prominent prosodic template in languages is that of the binary foot, which often defines the minimal word size. Languages differ as to whether they employ moraic and/or syllabic feet, and thus the minimal word

size can be bimoraic or disyllabic.[4] The minimal word size is directly derived from the prosodic hierarchy, assuming that every prosodic word must dominate a foot, and the unmarked foot is binary (McCarthy & Prince 1994).

In some languages, the minimal word size is considered a tendency, as it has a few exceptions. In Hebrew for example, only 3% of the verb types are monosyllabic (based on Bolozky's 500 most frequent verbs), and the language has various strategies to derive new disyllabic verbs from monosyllabic forms (Bat-El, 1994), such as glide epenthesis (*kis* 'poket' → *kijes* 'to pickpocket') and reduplication (e.g., *ken* 'nest' *kinen* 'to nest'); see more on augmentation in (22). Similar tendency is found in Chinese (Duanmu, 2007), where monosyllabic roots may join into a compound to form a disyllabic word that does not differ in its meaning from the monosyllabic root (e.g., *mei* 'coal' + *tan* 'charcoal' → *mei-tan* 'coal'). In other languages, such as Cavineña (Guillaume, 2008), the minimal word restriction is always surface true, and therefore monosyllabic roots are augmented with a final /u/ (e.g., /k^{w}a/ → *k^{w}au* 'go', /he/ → *heu* 'come') to meet the minimal size restriction (adjacent vowels are heterosyllabic). The same is true for Swati (Swaziland, South Africa; Downing, 2006), where monosyllabic imperatives are augmented with */ni/* (e.g., *dlá-ni* 'eat!', *phá-ni* 'give!'), while polysyllabic imperatives are not (e.g., *bóna* 'see!', *valá* 'close!').

The binary foot is known not only for its *minimal* size bound but also for its *maximal* size bound. The maximal size bound is found in the two phenomena discussed in this article—clipping and word-and-pattern morphology. It is also found in the course of language development, during the period where most children's productions are limited to a maximal size of two syllables (Demuth, 1996; Fikkert, 1994; Ben-David & Bat-El, 2016; Bat-El & Ben-David, 2017). This stage is called in the literature the 'minimal word stage' but it is actually the 'maximal word stage' because children truncate long words (e.g., Hebrew *klemantina* → *tina* 'clementine') but less often augment short ones (e.g., Hebrew *sus* → *su/sus* 'horse').

In most cases, the prosodic units provided by the prosodic hierarchy (i.e., mora, syllable, foot and prosodic word) are sufficient, since they provide a variety of ways to define a prosodic template: syllabic foot (Ft$^{\sigma}$), moraic foot (Ft$^{\mu}$), and unspecified foot (Ft), where the latter is any foot type; heavy syllable ($\sigma^{\mu\mu}$), light syllable (σ^{μ}), and unspecified syllable (σ), where the latter is any syllable type.

However, there are cases where the CV structure is also required. In Arabic, for example, both class-II and class-III verbs consist of the template {$\sigma^{\mu\mu}\sigma^{\mu\mu}$}, that is, a binary syllabic foot where both syllables are bimoraic. The contrast between these two classes is in the content of the second mora of the first syllable. While in class-II verbs this mora is linked to a consonant (e.g., *ká**s**sar* 'to break', *ʃá**m**ʕal* 'to scatter'), in class-III verbs it is linked to a vowel (e.g., *sá**a**naq* 'to run a race', *sáafar* 'to travel'). That is, the first syllable is CVC in class-II but CVV in class-III. This contrast cannot be captured with syllables and morae alone, and therefore a CV specification is also required.

The final property of prosodic templates that has to be addressed is the foot prominence —whether it is trochaic (left-headed) or iambic (right-headed). As will be shown, hypocoristics often employ the trochaic foot, giving rise to forms with penultimate stress (e.g., Greek *Strátos*, *Fróso*, *Léna*; Topintzi, 2002); this stress pattern is most prominent in hypocoristics with a suffix (e.g., Hebrew *ʁívi*, *ʃlómi*, *bén͡tsi*; Bat-El, 2005). However, forms with final stress are also available, in particular suffixless (e.g., English *celéb*, *legít*, *admín*; Lappe, 2007).

3. Configurations

The prosodic template is the core structure in a configuration, which defines the phonological shape of a word. In addition to the configurations consisting of a prosodic template only, there are others that combine the prosodic template with an affix and/or and vocalic pattern. The four types of configuration are exemplified here with data from hypocoristics, but as shown in the ensuing discussion, they are not limited to this type of words.

(7) Types of configurations

a. Prosodic template (Catalan; Cabre and Kenstowicz 1995, Artés 2014)
   Tína ← Agustína
   Míngo ← Domíngo
b. Prosodic template & affix (German; Itô and Mester 1997, Wiese 2001)
   Stéff-i ← Stéfanie
   Úll-i ← Úlrich
c. Prosodic template & vocalic pattern (Arabic Amal Nazur p.c.)
   nú:za ← najrú:z
   ʈú:qa ← ʈá:riq
d. Prosodic template, vocalic pattern & suffix (Nootka; Stonham 1994)
   ʕé:mtʃ-ʔis ← ʕímtʃiʔat
   mé:ks-ʔis ← má:ksisanap

Before proceeding with the various configurations, it is important to draw attention to *truncation*, the process employed when the size imposed by the template is smaller than that of the base. As shown, truncation is a byproduct of the imposition of a prosodic template, as there is “no unified class of deletees” (Stonham, 1994, p. 81); rather, it involves “mapping of the base melody segments to a prosodically defined template” (Mester, 1990, p. 478), and whatever does not fit into the template is truncated (see, however, §4.2.1 for “loose fit”). This type of truncation is thus called prosodic or templatic truncation.[5]

(8) Templatic truncation

administration → admin *Patricia → Pat*

As words are often longer than the size imposed by the template, truncation is a common emerging process in prosodic morphology. However, augmentation is found as well, as in the cases mentioned in section 2 with reference to the minimal word. Another case of augmentation is found in Siak Malay ludlings (Gil, 2002), where the sequence */war/* is attached to a disyllabic template, with */wa/* staying outside the template and */r/* within the template (e.g., ***m****akan* → ***wa****[****r****akan]* 'to eat', ***set****eson* → ***wa****[****r****eson]* 'station'); that is, the output is always a disyllabic template preceded by a syllable. This is true also for monosyllabic bases, which are augmented with the vowel */e/* in order to fit into the foot-size template (e.g., *jam* → *wa[r****e****jam]* 'hour', *bos* → *wa[r****e****bos]* 'boss').[6] That is, as words in templatic morphology have an invariant size, their formation involves truncation and in a few cases also augmentation.

3.1 Configuration = Prosodic Template

Configurations consisting of just a prosodic template are found mostly in clippings, which are commonly used for hypocoristics (e.g., English *Pat* ← *Patricia*), and to a lesser extent for other word types (e.g., English *legit* ← *legitimate*). This section considers the prosodic template as the sole structure in a configuration, with reference to the foot (§3.1.1) and the syllable (§3.1.2).

3.1.1 Foot

When a configuration consists of just a prosodic template, the size of the derived word is often minimally and maximally a binary foot (see 'the minimal word' in §2). Such a restriction is found in Japanese clippings (Hoffer, 1980; Itô, 1990; Nishihara, van de Weijer, & Nanjo, 2001; Itô & Mester, 2003), many of which are loanwords from English. As shown, the template is a bimoraic foot (9a), and two bimoraic feet in case of a clipped compound (9b).

(9) Japanese clippings

a. $[\mu\mu]_{Ft}$

suto	← sutoraiki	'strike'
nega	← negatibu	'negatives'
rabo	← raboratorii	'laboratory'

b. $[\mu\mu]_{Ft}[\mu\mu]_{Ft}$

suke boo	← sukeeto boodo	'skateboard'
hebi meta	← hebii metaru	'heavy metal'
paN suto	← paNtii sutokkiNgu	'panty stockings'

There is an intra- and inter-language variation, as well as intra-base variation with respect to the type of foot imposed, whether it is syllabic or moraic. As shown in (10), the size of clippings in English and Central Catalan varies between a moraic and a syllabic foot, and sometimes the same base can serve for both types of structures (e.g., *Lin* / *Linda* ← *Melinda*). In Valencian Catalan, however, only syllabic templates are allowed (Artés, 2014), and in Indonesian (Cohn, 2005) only moraic templates.

(10) Foot type

	Syllabic – $\{[\sigma\sigma]_{Ft}\}_{PrWd}$	Moraic – $\{[\mu\mu]_{Ft}\}_{PrWd}$
a. English	admin ← administration	add ← advertisement
b. Central Catalan	Tina ← Agustina	Nel ← Manel
c. Valencian Catalan	Tina ← Agustina	— —
	Nelo ← Manel	— —
d. Indonesian	— —	Son ← Glison

In many clippings, the prosodic template corresponds to a trochaic foot. This is true mostly for suffixed clippings (see §3.2), but it is found also in suffixless clippings (e.g., Greek *Mélpo* ← *Melpoméni*, *Lóxas* ← *Loxías*; Topintzi, 2002). The penultimate stress pattern common in clippings and its correspondence to the trochaic foot is considered the emergence of the unmarked. This is particularly sound in Hebrew (Bat-El, 2005), where stress is predominantly final but the hypocoristics bear penultimate stress (e.g., *isʁaéla* → *ʁéli, daniéla* → *dáni*).

However, in quite a few languages there are forms that deviate from this pattern, either in terms of stress pattern and/or number of syllables. The first type of deviation include sub-minimal clippings (cf. the Hebrew monosyllabic verbs noted in §2), like the monosyllabic clippings in Portuguese (*Be* ← *Barnabé*, *Ni* ← *Ajváwni*; Grau Sempere, 2006) and Italian (*Fra* ← *Francésca*, *Lu* ← *Luísa*; Thornton, 1996). The second type includes the trisyllabic clippings found in Spanish (e.g., *Bartólo* ← *Bartolomé*, *anféta* ← *anfetamína* 'amphetamine'; Martínez-Paricio & Torres-Tamarit, 2018) and Greek (*Aristotélis* ← *Arístos*, *Panaθinaikós* ← *Panáθas*; Topintzi, 2002). For both languages, the proposed analysis for the trisyllabic forms is a nested structure, that is, $\{\sigma[\acute{}\sigma\sigma]_{Ft}\}_{PrWd}$, where the foot is still a binary trochee.

Deviations from the penultimate stress pattern are found in English (*congráts* ← *congratulations*; *legít* ← *legitimate*; Lappe, 2007) as well as Italian, where clippings with final stress can be disyllabic (e.g., *Carmé* ← *Carmérla*) or trisyllabic (e.g., *Salvató* ← *Salvatóre*). Alber (2010) suggests that these clippings are atemplatic, consisting of all the syllables from the left edge to the base to the stressed syllable, and if the base is stress-initial, the clip is monosyllabic (e.g., *Ba* ← *Bárbara*). Other atemplatic clippings would be monosyllabics (e.g., Italian *Fra* ← *Francésca*), where the first unstressed syllable is selected.

While these deviations usually exist alongside the common pattern, cases where the clip is consistently smaller than a foot are reported for Indonesian (Cohn, 2005), where all clippings are monosyllabic (e.g., *Kas* ← *Kasan* →, *Luk* ← *Lucktor*). One could, however, view these clippings as bimoraic, because they always have a coda; potential codaless clippings undergo epenthesis (e.g., *Eka* → *Ka*[ʔ]; according to Cohn 2005 but not David Gil p.c.). This cannot be a constraint on minimal number of consonants because onsetless clippings do not undergo epenthesis (e.g., *Ul* ← *Ulfah*). It is often the case that words that reside at the lexical periphery, like clippings, acronym words, and blends, allow for the emergence of the unmarked (Bat-El, 2000; Cohen, 2013).[7] Therefore, it is possible that

CVC in Indonesian is [$\sigma_{\mu\mu}$] in clippings but [σ] in the core lexicon. If this is the case, then Indonesian clippings are not sub-minimal.

3.1.2 Syllable

Clippings often preserve all the segments of the corresponding portion in the base, what may sometimes result in complex syllable structure (e.g., complex onset in Italian *Francésca → France*). However, in quite a few cases the syllable is simplified.

(11) Syllable simplification

a.	A complex onset is simplified via epenthesis	díma ← dʲmʲítrʲij	(Russian)
b.	A complex onset is simplified via deletion	Dina ← Alejandrina	(Spanish)
c.	Vowel hiatus is eliminated	ʃuli ←ʃaul	(Hebrew)
d.	Onset simplification and hiatus resolution	muli ← ʃmuel	(Hebrew)

There is also variation with regard to the final segment in the clip, whether it is a vowel or a consonant. While some clippings end in a consonant (e.g., English *legitimate → legit*), in particular monosyllabic ones (e.g., English *sister → sis*), others end in a vowel, due to the suffix (e.g., English *kindergarten → kindie*), or even without a suffix (e.g., English *limousine → limo*). These add to the variability in the prosodic templates, and thus in addition to the variation in the foot type (moraic or syllabic) there is also variation in syllable structure.

Other strategies to improve the markedness of the syllable involve segmental modification and doubling. In Spanish, for example, a fricative may become a stop in onset position (e.g., *Josefa → Chepa, Delfina → Pina*) in order to reduce the sonority of the onset (Lipski, 1995; Piñeros, 2000), because the lower the sonority of the onset the less marked the syllable (Clements, 1990). The syllable structure can be segmentally improved also via doubling (e.g., Spanish *Carlóta → Tota*, Arabic *há:la → lú:la*), where a copy of a base consonant replaces a more sonorous consonant in onset position (see §4.1). The function of doubling in improving the syllable structure is further supported by its being bidirectional, as in Hebrew, where it can apply left-to-right (*miʁjam → mimi / *ʁiʁi*) or right-to-left (*ʃlomo → mómo / *lolo*), depending on the relative markedness of the onsets. Doubling in Hebrew does not only replace a more sonorous onset (*ajala → lali*), but also a missing onset (*adi → didi*), and a complex onset (*ʃlomo → mómo*).

3.2 Configuration = Prosodic Template and Affix

Clippings often adopt configurations consisting of a prosodic template plus a suffix. Taking into consideration the two parameters—foot type (moraic / syllabic) and suffix (yes / no), we get four logical combinations, out of which only three are attested in English.

(12) Foot type and suffixation

a. *Syllabic template without a suffix*		b. *Syllabic template with a suffix*	
Minda	Arminda	Patty	Patricia
info	information	ciggy	cigarette
c. *Moraic template without a suffix*		d. *Moraic template with a suffix*	
Pat	Patricia		—
cig	cigarette		

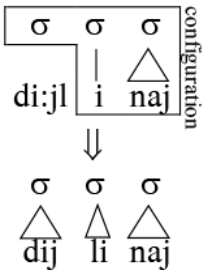
The forth logical combination (12d), a moraic template with a suffix, is unattested probably due to a restriction requiring at least one vowel from the base to survive in the derived form (see Bat-El, 1996 for a similar requirement in Hebrew blends). Otherwise, something like *breakfast* → **brie* would have been attested. Such forms (e.g., *pável* → *p-úʃa*) are reported for Russian (Stankiewicz, 1957), but they are certainly rare.

While English allows the three varieties in (12), sometimes with two options for the same base (see *Patricia* and *cigarette*), other languages are more restrictive. There is no such variation in Hebrew (Bat-El, 2005), for example, where almost all hypocoristics fit into a trochaic syllabic foot with a suffix (e.g., *smadaʁ* → *smádi*, *tikva* → *tíki*).[8]

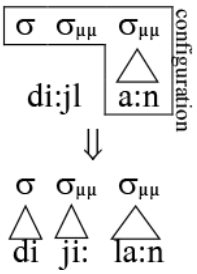
A configuration including a prosodic template plus a suffix is not restricted to clippings, as it is found also in Yawelmani core lexicon. In addition to conventional concatenative suffixes, Yawelmani employs templatic suffixes, which impose a specific prosodic structure on their base (Kisseberth, 1969; Archangeli, 1983). For example, the stem *di:jl* 'guard' preserves its prosodic shape with the dubitative suffix *-al* (*di:jl-al*), but not with the gerundial (11a) and durative (11b) suffixes, *-inaj* and *-ʔa:-n*, respectively. The latter two are templatic suffixes, which impose a specific prosodic shape on the stem – σ and $\sigma\sigma_{\mu\mu}$, respectively. Thus, the entire configuration consists of the suffix plus the prosodic structure it imposes.

(13) Templatic suffixes in Yawelmani

a. Gerundial – *dijl-inaj*



b. Durative – *diji:l-ʔa:-n*



Configurations with affixes vary with respect to the position of the affix relative to the prosodic template, that is, whether it is cohesive or adhesive (Raffelsiefen, 2015); a cohesive affix resides within the template (assuming here a disyllabic template) and an adhesive affix is appended to the template.

(14) Adhesive and cohesive affixes

Adhesive affix		*Cohesive affix*	
$[mido]_{Ft}$-tʲan	(Japanese hypocoristics)	$[tik\text{-}i]_{Ft}$	(Hebrew hypocoristics)
$[diji{:}l]_{Ft}$-ʔa:n	(Yawelmani durative)	$[ʔo{:}k\text{-}ʔis]_{Ft}$	(Nootka hypocoristics)
hit-$[labeʃ]_{Ft}$	(Hebrew verb class V)	$[h\text{-}igdil]_{Ft}$	(Hebrew verb class III)

In some cases, the affix is not exclusively associated with a template, as is the case with Hebrew *-i* (Bat-El, 2005) and Japanese *-tʲan* (Davis & Tsujimura, 2014), which attach also to non-truncated bases (e.g., Hebrew *miχal-i*, Japansese *masao-tʲan*). The same freedom is found with Hebrew derivational suffixes, where the verbal class prefix *hit-* is exclusively associated with its template *hitCaCeC*, while the nominal agentive suffix *-an* can reside within the configuration *CaCCan* (e.g., *ʁakdan* 'dancer') or freely attach to a base (e.g., *taklit-an* 'DJ').

3.3 Configuration = Prosodic Template and Vocalic Pattern

Configurations consisting of a prosodic template and a vocalic pattern are found mostly, but not exclusively, in Semitic morphology. Examples are presented from verbs and nouns in Semitic languages, and from hypocorestics in Arabic (Amal Nasur, p.c., Davis & Zaway-deh, 2001; Farwaneh, 2007) and Bernese Swiss German (Grüter, 2003).

(15) Prosodic template and a vocalic pattern

a. Semitic verbs and nouns

CiCeC – Arabic		*CeCeC – Hebrew*		*CəCaC – Tigre*	
misek	'to grasp'	deʁeχ	'road'	ləban	'incense'
fihem	'to understand'	χedeʁ	'room'	ʔəwan	'time'
nizel	'to go down'	nezek	'damage'	gəran	'bracelet'

b. Hypocoristics

CiCCo – Arabic		*CaCCu:C – Arabic*		*$CV_{[-back]}Cu$ – Bernese Swiss German*	
Base	*Hypo*	*Base*	*Hypo*	*Base*	*Hypo*
hana:ʔ	hinno	xa:lid	xallu:d	Lukas	Lüku
ʕifa:f	ʕiffo	hasan	hassu:n	Daniel	Dänu
li:na	linno	sami:ra	sammu:r	Michael	Michu

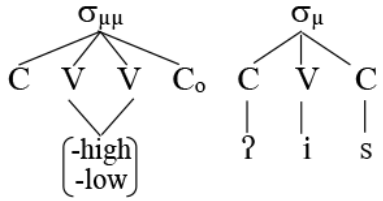
Semitic morphology is known for such configurations, which characterize word classes (see also §3.4); the Bernese Swiss German configuration is relatively unique among non-Semitic languages (though ablaut is common in Germanic languages). Crucially, regardless of the language, the vocalic pattern in the configuration is not phonologically conditioned, but rather morphologically assigned for a particular class of words (see §4.2 for stem modification).

3.4 Configuration = Prosodic Template, Affix, and Vocalic Pattern

Rich configurations, which impose a prosodic structure, an affix, and a vocalic pattern, are found in Nookta hypocoristics (Stonham, 1994) and in Semitic morphology (Bat-El, 2002A, 2011).

The configuration of Nootka's hypocoristics (16) consists of a disyllabic template, where the first syllable hosts a long vowel and the second a short vowel. Assuming that codas are not moraic in Nootka, the first syllable is bimoraic and the second is monomoraic. This template hosts the cohesive suffix *-ʔis*, associated with the second syllable, and the features [-high -low], associated with the long vowel of the first syllable (further restrictions on segmental sequences are ignored).

(16) Hypocoristics configuration in Nootka



Given the partially specified vocalic pattern in the first syllable of the configuration, the vowel is always mid, preserving the value of [round] from its corresponding vowel in the base. Thus, a base /u/ corresponds to /o/ in the hypocoristic (17a) and base /i/ or /a/ corresponds to /e/ in the hypocoristic (17b). Given the prosodic properties of the configuration, the vowel in the first syllable of the hypocoristics is always long, regardless of the length of its correspondent in the base. Following general restrictions on syllable structure in Nootka (Stonham, 1994, p. 76), the onset is an obligatory singleton and the coda can be complex, with a variety of segmental restrictions.

(17) Nootka hypocoristics

a.	ho:ħʔis	← hu:ħink^{w}ap	b.	tˀe:myˀis	← tˀimjˀa:ʔa
	ʔu:kʔis	← ʔu:k^{w}i:nuʔa		me:ksʔis	← ma:ksisanap
	mo:wʔis	← muwa͡ʃatħ		se:pʔis	← sapir

The same type of configuration is found in Semitic languages, which are known for their word-and-pattern morphology (in addition to conventional affixation). The shape of the word in Hebrew, Arabic, and their genetic affiliates is restricted by configurations consisting of a prosodic template, a vocalic pattern, and in some cases also an affix. What is not restricted in the word is the stem consonants, which can be in any order (e.g., Hebrew *déʁeχ* 'road' vs. *χédeʁ* 'room'; *balʃan* 'linguist' vs. *baʃlan* 'one who likes to cook').

(18) Semitic configurations: Prosodic structure, vocalic pattern, and an affix

a. Verb in Palestinian Arabic

CtaCaC		*tCaCCaC*		*staCCaC*	
ħtaram	'to respect'	tʕallam	'to study'	staʕmal	'to use'
ʃtarak	'to take part'	tdarraʕ	'to burp'	staqbal	'to welcome'
mtanaʕ	'to abstain'	tbaddal	'to be replaced'	stawʕab	'to take in'

b. Nouns in Hebrew

CaCeCet		*CaCCan*		*maCCaCa*	
ʁakévet	'train'	ʁakdan	'dancer'	maχlaka	'department'
t͡sahévet	'jaundice'	χamt͡san	'oxygen'	mamlaχa	'kingdom'
kalévet	'rabies'	ʃamʁan	'conservative'	maskana	'conclusion'

In the verb system, the configuration defines an inflectional class (see [5: INFLECTION]), such that verbs belonging to the same class have the same inflectional paradigm. The verb paradigms in (19), from Amharic (Bender & Fulass, 1978) and Neo-Aramaic (Khan, 1999), provide a typical example of class-specific configurations for the various inflectional categories. Amharic class-II verbs, for example, take the configuration CəCCɨC- in the imperfective and jussive (where a dash indicates an obligatory affix) and -CəCCəC in the perfective and infinitive.

(19) Semitic inflectional paradigms (partial)

a. Neo-Aramaic

	I	*II*
Present	patəx-	basəm-
Past	ptix-	busəm-
Resultive participle	ptixa	busma
Imperative	ptux	basəm
	'open'	'heal'

b. Amharic

	I	*II*
Imperfective	səbr-	fəllɨg-
Perfect	səbbər-	fəlləg-
Infinitive	-sbər	-fəlləg
Jussive	-sbər	-fəllɨg
	'break'	'seek

Thus, the most restrictive configuration, where all structural properties are specified, is common in Semitic morphology but rare elsewhere. While nouns in Hebrew can be atemplatic, in particular loan nouns (e.g., *televizja* 'television', *telefon* 'phone', *anekdota* 'anecdote'), a verb must fit into one of the five classes. In Maltese, however, some verbs, mostly from Semitic origin, fit into the Semitic-type morphology, and are thus subject to word-shape restrictions imposed by the configurations (e.g., *kiser* 'to break', *kisser* 'to smash', *tkisser* 'to be smashed', *nkiser* 'to be broken'). Other verbs, mostly from Romance origin, employ atemplatic concatenative morphology (Hoberman & Aronoff, 2002). However, unlike in Hebrew and Arabic, Maltese shows a tendency for preserving the vowels of the base, which suggests that the configurations are not specified for vocalic pattern. As exemplified in (20), the derived verbs share a prosodic structure CVCCVC but not a vocalic pattern; the vowels are drawn from the base.

(20) Maltese paradigms

nizel	‘to descend’	nizzel	‘to descend’
kiser	‘to break’	kisser	‘to smash’
xemx	‘sun’	xemmex	‘to expose to sun’
bahar	‘sea’	bahhar	‘to navigate’
serp	‘snake’	serrep	‘to zigzag’
fitt	‘persistent’	fittet	‘to pester’

That is, also within Semitic languages there is a variety of configuration types.

4. Structural Relations

The discussion so far has focused on the surface structure of words with invariant shape, where the shape is determined by a configuration—a combination of several structural elements. The present section addresses the structural relations between the words mapped onto configurations and their bases. Special attention is given here to the position in the base to which the edges of the derived word correspond (§4.1) and the processes involved in modifying the base to meet the restrictions by the configuration, mostly in Semitic word-and-pattern morphology (§4.2).

4.1 Anchoring

Edges play an important role in languages. In the course of language development, children attend to the final (right edge) and stressed syllables (Echols & Newport, 1992; Gerken, 1996), which are perceptually prominent. Thus, during the minimal stage period (see §2), target words with three or more syllables correspond to disyllabic words in children’s productions, which preserve these perceptually prominent syllables (e.g., Arabic *bərtəqálə* → *qálə* ‘orange’, Hebrew *télefon* → *téfon* ‘phone’, Greek *obréla* → *béla* ‘umbrella’). Adults, however, attend to the beginning (left edge) of the word (Steriade, 1994; Beckman, 1998) because it facilitates word recognition and lexical segmentation (Gow, Melvold, & Manuel, 1996; Marslen-Wilson & Zwitserlood, 1989).[9] Both adults and children attend to the stressed syllable, due to their high pitch and thus high level of accessibility (Laver, 1994), though there is evidence suggesting that children attend more to the final than to the stressed syllable (Ben-David & Bat-El, 2017).

Due to the importance of the initial and stressed syllables in adults’ languages, the left edge of a clip often anchors to the left edge of the base (left anchored) or the stressed syllable of the base (peak anchored), though these two position may converge (e.g., Russian *vʲíktor* → *víka*, *klávdja* → *kláva*). These two options are often available for the same base:

(21) Anchoring

	Base	*Left anchored*	*Peak anchored*
English (Lappe 2007):	Patrícia	Pat	Trísh
Hebrew (Bat-El 2005):	ʁevitál	ʁévi	táli
Italian (Thornton 1996, Alber 2010):	Salvatóre	Sálva	Tóre
Spanish Lipski 1995, Piñeros 2000:	Cristína	Crísti	Tína
Russian (Stankiewicz 1957):	vadʲím	vádʲa	dʲíma

In most cases, clippings are either left anchored or peak anchored, where peak refers to the stressed syllable. When the base is stress-initial, the clip is both left anchored and peak anchored (e.g., Spanish *Mónica* → *Móni*, *Méla Mélida* → *Méla*; Piñeros, 2000), though there are a few cases where segmental material is skipped in order to get both the left-edge and the peak (e.g., Spanish *Federíco* → *Fíco*, *Santiágo* → *Ságo*, *Florínda* → *Finda*).

There are, however, some cases of misanchoring, where the left edge of the clip is neither left anchored or peak anchored.

(22) Anchored and misanchored

	Left anchored		*Peak anchored*		*Misanchored*	
	Base	*Clip*	*Base*	*Clip*	*Base*	*Clip*
Arabic:	taħíjji	tú:ħa	ʔibtisá:m	sú:ma	fá:tina	tú:na
Hebrew:	matitjáu	máti	alóna	lóni	eliézeʁ	zóʁi
English:	Gabriél	Gábi	Melinda	Línda	Isabélla	Sábbe
Russian:	borʲís	bórʲa	alʲeksándr	sánʲa	nʲikołáj	kólʲa

Misanchoring is most common when the base is vowel-initial (e.g., Hebrew *edít* → *díti*, Hungarian *ambruʃ* → *brúʃi*), because it eliminates the marked onsetless syllable (Nelson, 1998; Lappe, 2007). However, the emergence of the unmarked (McCarthy & Prince, 1994) goes even further with a preference for the least sonorous consonant at the edge of the truncated form. This has been shown for Hebrew (Bat-El, 2014), where the degree of misanchoring is the highest with vowel initial bases, and gradually decreases on the sonority scale toward stop-initial bases, which exhibit the least misanchoring (e.g., *aliza* → *lízi*, *hadas* → *dási*, *josef* → *séfi*, *jekutiél* → *kúti*). Thus, misanchoring improves the syllable structure of the output, as do cluster simplification (e.g., Russian *dʲmʲítrʲij* → *dʲíma*) and other syllable simplification processes (see §3.1.2).

4.2 Stem Modification

The derivation of words restricted by a configuration involves stem modification (Steriade, 1988; McCarthy & Prince, 1990; Bat-El, 1994), that is, adjustment of the base up to the required output structure. Thus, in addition to the affix that is often part of the configuration, the size of the word is fitted into the prosodic template (§4.2.1) and the vowels are altered (§4.2.2).

4.2.1 Templatic Fit

The role of the prosodic template in the structural relations between words is either tied or loose. In a *tied fit*, whatever does not fit into the template is truncated, such that there is no extra-templatic segmental material in the output. In a *loose fit*, segmental material that does not fit into the prosodic template survives and is appended to the template.

Tied fit has been exemplified with clippings, where truncation is employed (see (8)). Both vowels and consonants are truncated, such that the output fits the size of the template; in some cases, further truncation is employed to reach an unmarked syllable structure (§3.1). This can be illustrated with German hypocoristics (Itô & Mester, 1997; Wiese, 2001), which fit into a disyllabic template where consonant sequences can be preserved (e.g., *Spontaner* → *Sponti*) or simplified (*Transformator* → *Trafo*).

Tied fit is also found in Semitic morphology, where truncation is usually limited to vowels (23). The preservation of consonants is due to their significant role in carrying lexical semantic information, in Semitic (Berrebi 2016) as well as non-Semitic languages (Nespor, Peña, &Mehler,2003; Bonatti, Peña, Nespor, & Mehler, 2005; Delle Luche et al., 2014).[10] The relatively free truncation in clippings, in particular in hypocoristics, is partially attributed to the low semantic load of names and the weak role of semantics in the derivation (see also §5).

(23) Tied fit: Vowel truncation in Hebrew denominative verbs

	Base noun		*Denominative verb*		
a.	tel**e**fon	'phone'	tilfen	'to phone'	(*ti.lefn)
b.	fo**ʁ**mul**a**	'formula'	fi**ʁ**mel	'to design a formula'	(*fi**ʁ**.mle)
c.	**a**la**χ**son	'slant'	li**χ**sen	'to slant'	(*il**χ**.sen)

In the process of mapping the base onto the configuration, two of the base vowels are replaced with the vocalic pattern of the configuration (*i-e*), and any vowel beyond these two is truncated. The direction of mapping has been argued to be edge-in (Yip, 1988; Bat-El, 1994), but as shown in (24), it is not the direction that counts but rather the syllable structure of the output (shaded).

(24) Mapping directionality and syllable markedness

	Base	*Edge-in*	*L-to-R*	*R-to-L*
a.	tel**e**fon	tilfen	*ti.lefn	*tlifen
c.	fo**ʁ**mul**a**	*fi**ʁ**mle	fi**ʁ**mel	*f**ʁ**mile
b.	**a**la**χ**son	*il**χ**sen	*ile**χ**sn	li**χ**sen

Complex onsets and codas are possible in Hebrew denominative verbs (e.g., *t**ʁ**ansfer* → *t**ʁ**insfer* 'to transfer'), and thus **tli.fen* (R-to-L) and **il**χ*.sen* (edge-in) are possible outputs. However, the syllable structure in *tilfen* is less marked than in **tli.fen*, and the syllable structure in *li**χ**sen* is less marked than in **il**χ*.sen*.

Tied fit may also trigger augmentation, in cases where the base is smaller than the prosodic template. This is found in Semitic morphology, where a glide is inserted (often historically motivated) or a consonant is doubled, as in the examples in (25) from Hebrew denominative verbs and (Bat-El, 1994; Ussishkin, 1999) and Tigre broken plurals (Palmer, 1962).

(25) Augmentation

	Hebrew denominative verbs				*Tigre broken plurals*		
	Base		*Verb*		*Sg.*	*Pl.*	
Glide insertion:	bama	'stage'	bijem	'direct'	kis	ʔäkjas	'pocket'
	kis	'pocket'	kijes	'pickpocket'	ħol	ħawal	'year'
Doubling:	ot	'sign'	otet	'signal'	gəd	ʔägdad	'cotton thread'
	χad	'sharp'	χided	'sharpen'	ʃər	ʔäʃrar	'half'

Augmentation in clippings is relatively rare because the size of the bases is rarely sub-minimal. In suffixed clippings, the suffix renders augmentation redundant (e.g., Hebrew *gad → gad-i*; Australian English *smoke → smok-o* 'a smoke or coffee break'), and in the case of Indonesian (Cohn, 2005), a glottal stop is inserted to fill the bimoraic template (see §3.1.1). Doubling in clippings (see §3.1.2) serves to maximize the syllable unmarkedness, in particular in replacing weak consonants (e.g., Hebrew *hila → lal-i*; Arabic *duʕa:ʔ → du:do*; Spanish *Carlota → Tóta*).

In addition to segmental augmentation, there is also prosodic augmentation. One such case is the duple template, consisting of two feet. Examples of a duple template are drawn from Japanese hypocoristics (see also §3.1.1) derived from long personal names (Poser, 1984) and compound university names (Milan, 2006).

(26) Duple template of hypocoristics in Japanese

a. Clippings derived from long personal names

Base	{[μμ]}	{[μμ][μμ]}
kenzaburoo	[ken]tʸan	[ken][zabu]tʸan
masanosuke	[masa]tʸan	[masa][noke]tʸan

b. Clipped compounds derived from compound university names

Base	{[μμ][μμ]}
tookʲoo daigaku	[too][dai]
kʲooto daigaku	[kʲoo][dai]

In the clipped personal names (26a), the duple template is optional, allowing the rescue of more segments from the long base. In the clipped compound of university names (26b) the duple template is obligatory, because, as is usually the case with clipped compounds (cf. English *situation comedy → sitcom*), the left edge of each word in the base must have a correspondent in the derived form.

Loose fit can also be considered a prosodic augmentation, where the prosodic template consists of a binary foot plus a syllable. Such a case is found Semitic broken plural (Hammond, 1988; McCarthy & Prince, 1990; Ratcliffe, 1997). When the segmental content of the base does not fit within the template, it is appended to the template (e.g., Yemeni Arabic *dárzan* 'dozen' → *{[dará:]zin}*). Note that this is not a trisyllabic template (*{[dará:zin]}), as evident by the structural transfer (Clements, 1985) from the singular base to the derived plural form. As shown in (27), the structure of the first two syllables in the plural form is fixed, due to the template consisting of an iambic syllabic foot (McCarthy & Prince, 1990). The final syllable, however, is external to the template and thus varies according to its correspondent in the base. In Yemeni Arabic (Qafisheh, 1992), the *quantity* of the vowel in the final syllable is transferred from the singular to the plural (27a), while in Tigre (Palmer, 1962), the *quality* of the vowel is transfered (27b).

(27) Loose fit in broken plurals (template = binary foot)

a. Yemeni Arabic – quantity transfer (template: $\sigma_{\mu}\sigma_{\mu\mu}$)

	Singular	*Plural*	
Short V	dárzan	dará:zin	'dozen'
	máktab	maká:tib	'office'
Long V	finʤá:n	faná:ʤi:n	'cup'
	maktú:b	maká:ti:b	'letter'

b. Tigre – quality transfer (template: $\sigma_{\mu}\sigma_{\mu}$)

	Singular	*Plural*	
Central vowel	məsgəd	mäsagəd	'mosque'
	ʤändʒär	ʤänaʤər	'chain'
Front vowel	bärmil	bäramil	'barrel'
	bəsṭan	bäsaṭin	'garden'
Back vowel	kətkut	kätakut	'young bird'
	mäskot	mäsakut	'window'

Another example of loose fit is found in Filomeno Mata Totonac (Mexico) idiophonic adjectives (McFarland, 2010), which consist of three syllables—{σ[$\sigma_i\sigma_i$]}; the first syllable is appended to a disyllabic template in which the two syllables are identical (note that $\sigma\sigma_i\sigma_i$ is not related to a $\sigma\sigma_i$ base and there is no reduplication in the language). This template holds for some descriptive adjectives (e.g., *slamáma* 'shiny', *sqawíwi* 'cool') and most color terms (e.g., *saqáqa* 'white', *smukúku* 'yellow').

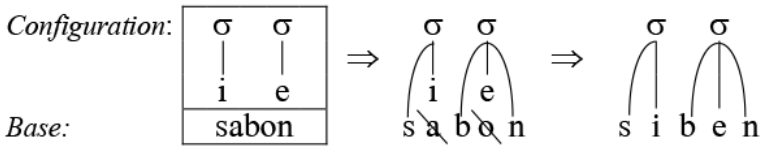
4.2.2 Melodic Overwriting

When the configuration includes a vocalic pattern, either fully or partially specified, the relation between the base and the derived form involves melodic overwriting (Steriade, 1988; McCarthy & Prince, 1990; Bat-El, 1994), that is, a morphologically conditioned replacement of the base vowels with the vocalic pattern assigned by the configuration (aka apophony). This is shown for Hebrew denominative verbs (Bat-El, 1994; Ussishkin, 1999, 2000), where stem modification involves the following: (i) mapping of the base onto the

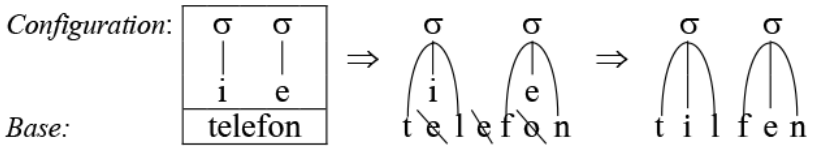
prosodic template, (ii) truncation of vowels that are not syllabified, and (iii) replacement of the syllabified vowels.

(28) Stem modification: Hebrew denominative verbs

a. *sabon* 'soap' → *siben* 'to soap'



b. *telefon* 'phone' → *tilfen* 'to phone'



Of course, melodic overwriting is employed only when the configuration is specified for a vocalic pattern. It is thus used in Nootka hypocoristics and Hebrew verbs, but not in English hypocoristics and Maltese verbs.

5. Concluding Remarks

Although the notion of word-and-pattern morphology is often used for Semitic morphology, the typology of configurations provided in this article has shown that word-and-pattern morphology comes in various shades, ranging from the minimal type of configuration, where the only shape restriction is the prosodic template, up to a Semitic-type word, where in addition to the prosodic template there are restrictions on the vocalic pattern and the affixes. The combination of these structural properties, as shown in (29), are found in various languages and in both the core and the periphery of the lexicon, with the periphery of the lexicon, where clippings reside, being less restrictive than the core lexicon (see §3.1.1).

(29) The structural properties of the configurations (with representative languages)

	Configuration			*Data source*	
	PTemplate	*affix*	*VPattern*	*Peripheral lexicon (clippings)*	*Core lexicon*
a.	√			English, Spanish, Russian etc.	Maltese
b.	√	√		English, German, Hebrew, etc.	Yawelmani
c.	√		√	Swiss German, Arabic	Semitic
d.	√	√	√	Nootka	Semitic

The various configurations are on a continuum, from the less to the more specified one, and thus from the less to the more restrictive. In correlation with the notion of core-periphery, the less restrictive configurations (a) and (b) are typical of clippings (periphery), while the more restrictive (c) and (d) are typical of the core Semitic morphology. That is,

templatic morphology is everywhere (in terms of languages and lexica), though to different degrees of restrictiveness.

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Notes:

(1.) The status of clippings in the lexicon, as of acronym words, differs from that of other types of word formation, because the base and the derived form are usually synonymous, with possible difference in style or register (Bauer, 1994; Plag, 2003). This is true for hypocoristics, where the same person can be addressed with her/his full name or nickname, and also for other clippings (e.g., Australian/British English *television* → *teli*, *expensive* → *exy*). There are, however, a few clippings that get a specific meaning, as in any type of derivation. For example, *demo* is not any *demonstration* but specifically a pre-marketing demonstration (of a recorded song or a computer program), and *exam* is an *examination* in school but not by the doctor.

(2.) This article is limited to clipping and word-and-pattern morphology, arbitrarily excluding other phenomena associated with templatic morphology, such as reduplication (see [52: REDUPLICATION]) and to a lesser extent blending (see [57: BLENDING]).

(3.) The final /i/ in the English configuration is considered a suffix because the language does not have hypocoristics with a vocalic pattern. In Arabic, the final /a/ could be a suffix as well, had it been attached only to feminine names, as *-a* is a feminine suffix in Arabic. However, because this configuration is not restricted to feminine names, and because Arabic hypocoristics and morphology in general employ vocalic patterns, I assume that in Arabic, unlike in English, the final vowel is part of the vocalic pattern.

(4.) The minimal word restriction holds for content words; function words usually do not constitute independent prosodic words, unless under emphasis. English [ðə] ‘the’, for example, is hosted by a prosodic word (e.g., $\{$ðəbɔj$\}_{\text{PrWd}}$ ‘the boy’) and its size is thus subminimal (monomoraic), but with emphasis its size is bimoraic, [ði:].

(5.) Templatic truncation differs from subtractive truncation [60: SUBTRACTION], where truncation is the targeted process (Bat-El, 2002b; Alber & Arndt-Lappe, 2012; Davis & Tsujimura, 2014). Crucially, in subtractive truncation the truncated material is defined, while in templatic truncation the truncated material is the residue that does not fit into the template.

(6.) Note that the consonant sequence that would have surfaced without the augmentive /e/ is permissible (e.g., *ber-juaŋ* ‘struggle’, *ber-batu* ‘stony’), and therefore it must be a case of templatic augmentation.

(7.) The contrast between the core and the periphery of the lexicon is known from studies on Japanese phonology (Itô & Mester, 1995, 1999) and loanword adaptation (Paradis, 1996; Paradis & LaCharité, 1997; LaCharité & Paradis, 2005). In general, the core lexicon is more restricted than the periphery.

(8.) Some languages employ a large variety of suffixes for the truncated forms, sometimes in free variation (e.g., Hungarian *-u*, *-ɑ*, *-oː*, *-os*, *-uʃ*, *-koː*, *-t͡soː*, etc.; Rebrus & Szigetvári, 2016). The variation could be between generations, as is the case with the Hebrew suffix-

es *-i* and *-uʃ* (e.g., *smadár → smádi / smáduʃ)*, where the latter is used mostly by the young generation (Avidan, 2017).

(9.) The apparent discrepancy between adults and children with regard to the edge is discussed in Dinnsen and Farris-Trimble (2008) and Ben-David and Bat-El (2017).

(10.) There are, however, a few cases in Arabic broken plural where a consonant is deleted due to templatic constraints, including constraints on syllable structure (Hammond, 1988; McCarthy & Prince, 1990); e.g., *ʔustˤu**w**aːna – ʔasaːtˤiːn* ‘pillar(s)’, *bar**n**aːmiʒ – baraːmiʒ* ‘program(s)’, *zanba**r**ak – zanaːbik* ‘spiral spring(s)’.

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