University of Massachusetts Amherst

From the Selected Works of Shmuel Bolozky

2007

Israeli Hebrew morphology

Shmuel Bolozky, *University of Massachusetts - Amherst*

Available at: https://works.bepress.com/shmuel_bolozky/31/

Chapter 14

Israeli Hebrew Morphology

Shmuel Bolozky

University of Massachusetts, Amherst

1. The phonological word

Although Israeli Hebrew is not as highly inflected as Classical Hebrew, it is still sufficiently synthetic for clitics to play a role in the description of the Israeli Hebrew word. Beyond the lexeme¹ and inflected as well as derived morphemes, the Hebrew “phonological word” includes proclitics such as *ha* ‘the’, *ve/u* ‘and’, *še* ‘that, who, which’, *le* ‘to’, *be* ‘in’, *mi* ‘from’, and enclitics such as the possessive endings attached to prepositions and occurring in frequently used N+possessive pronoun configurations. Furthermore, although particles like the definite accusative marker *et* are represented orthographically as independent words, they are still part of the stress domain that can be characterized as a phonological word, if the criteria are “degree of boundedness,” and dependent stress status. Here are a few illustrations:

- (1) *ve- le- ke- še- ti+ t+ ragel +u > ulixšetitraglu*
and to as that you will reflexive marker (get) used pl.
‘when you (pl.) will get used’
- (2) *ve- mi- dod +a(t) o > umidodato*
and from uncle f. his
‘and from his aunt’
- (3) *ve- le- ha- xalon +ot > velaxalonot*
and to the window pl.
‘and to the windows’
- (4) *et ha- yéled +ut +i +ut > (e)tayaldutiyut*
acc. the child abst. N adj. abst. N
‘(acc.) the childishness’

2. Inflectional morphology

Verbs are inflected for number and gender in the present tense, and for number, gender and person in the past and future tense and the imperative:²

1. A lexeme is an uninflected form belonging to a major syntactic category that is an item of vocabulary, but not necessarily a free form and which may even be only potential.
2. The imperative, which appears to be derived from the future-used-imperatively, as shown in Bolozky (1979), is applicable to the second person only; the classical object pronoun enclitics are obsolete. Stress falls on the final vowel, unless marked otherwise.

(5) Inflectional affixes in the verb system

Present Tense

Prefix	Tense= <i>mV</i> +/0 (the realization of <i>V</i> determined by the stem) e.g., <i>medaber</i> 'speak', <i>maskim</i> 'agree', <i>mevin</i> 'understand', <i>kotev</i> 'write'		
Suffix	Singular:	Masc.=0	Fem.=+ <i>et</i> / <i>a</i>
	Plural:	Masc.=+ <i>im</i>	Fem.=+ <i>ot</i>
	e.g., <i>kotev</i> 'write' ~ <i>kotévet</i> ~ <i>kotvim</i> ~ <i>kotvot</i>		

Past Tense

Suffix	1st Person:	Sing.=+ <i>ti</i>	Plural=+ <i>nu</i>
	2nd Person:	Singular:	Masc.=+ <i>ta</i> Fem.=+ <i>t</i>
		Plural:	Masc.=+ <i>tem</i> Fem.=+ <i>ten</i>
	3rd Person:	Singular:	Masc.=0 Fem.=+ <i>a</i>
		Plural=+ <i>u</i>	
	e.g., <i>katavti</i> 'I wrote' ~ <i>katávta</i> ~ <i>katávt</i> ~ <i>k(a)tavtem</i> ~ <i>k(a)tavten</i> ~ <i>katav</i> ~ <i>katva</i> ~ <i>katvu</i>		

Future Tense

	1st Person:	Sg. Pref.= <i>V</i> +	Pl. Pref.= <i>nV</i> +
	2nd Person:	Singular:	Prefix= <i>tV</i> +
			Suffix (Fem. only)=+ <i>i</i>
		Plural:	Prefix= <i>tV</i> +
			Suffix=+ <i>u</i> (Fem. Lit.=+ <i>na</i>)
	3rd Person:	Singular:	Masc.= <i>yV</i> +
		Plural:	Fem.=+ <i>tV</i> +
			Prefix= <i>yV</i> +
			Suffix=+ <i>u</i> (Fem. Lit.=+ <i>na</i>)
	e.g., <i>extov</i> 'I'll write' ~ <i>nixtov</i> ~ <i>tixtov</i> ~ <i>tixtevi</i> ~ <i>tixtevu</i> (~ <i>tixtóna</i>) ~ <i>yixtov</i> ~ <i>tixtov</i> ~ <i>yixtevu</i> (~ <i>tixtóna</i>)		

Imperative

(only 2nd person)	Sg. Suffix:	Masc.=0	Fem.=+i
	Pl. Suffix=+u	(Fem. Lit.=+na)	
	e.g., štok 'shut up!' ~ šitki (coll. šteki) ~ šitku (coll. šteku) (~ štókna)		

Nouns and adjectives are inflected for gender and number:

(6) Inflectional affixes in nouns and adjectives

Suffix:	Singular:	Masc.=0	Fem.=+ <i>a</i> / <i>it</i> / + <i>et</i> / <i>at</i> / <i>t</i>
Plural:	Masc.=+ <i>im</i> , occasionally + <i>aim</i>	Fem.=+ <i>ot</i>	
e.g., <i>xaver</i> 'friend' ~ <i>xavera</i> ~ <i>xaverim</i> ~ <i>xaverot</i>			

However, while adjective inflection is quite regular, there are many exceptions to the marking of gender and number in nouns. In a fairly sizable group of nouns, *+ot* signals the plural of masculine ones (e.g., *šulxanot* 'tables', *xalonot* 'windows'), and in another *+im* marks the plural of feminine nouns (e.g., *milim* 'words', *našim* 'women'). In a third group, the feminine is not marked at all (e.g., *régel* 'foot', *cfardéa* 'frog'), etc. There is also a handful of masculine nouns ending with *a*: *láyla* 'night', *sulya* 'apprentice.' The dual *+aim* usually refers to instruments consisting of two component parts (e.g., *misparáim* 'scissors', *miškafáim* 'eyeglasses'), to dual time units (e.g., *yomáim* 'two days', *šnatáim* 'two years'), to the originally-dual and eventually plural of body parts (e.g., *ragláim* 'feet', *eynáim* 'eyes') and articles of clothing (e.g., *naaláim* 'shoes', *mixnasáim* 'pants').

In Israeli Hebrew, the possessive pronoun suffixes of Classical Hebrew have generally been replaced by free-standing possessive pronouns, except for commonly used items such as kinship terms (*išti* 'my wife', *axoto* 'his sister'). However, the sets of possessive pronoun suffixes, one for singular bases, the other for plural bases, are used as pronominal enclitics attached to prepositions, as in

- (7) Pronominal enclitics attached to prepositions
- a. based on possessive pronoun suffixes attached to singular stems

<i>bišvil</i> 'for'	1st Person	2nd Person	3rd Person	
'for me, for		Masculine	Feminine	Masculine Feminine
you . . .'				
Singular:	<i>bišvil+i</i>	<i>bišvil+xa</i>	<i>bišvil+ex</i>	<i>bišvil+o</i> <i>bišvil+a</i>
Plural:	<i>bišvil+énu</i>	<i>bišvil+xem</i>	<i>bišvil+xen</i>	<i>bišvil+am</i> <i>bišvil+an</i>
 - b. based on possessive pronoun suffixes attached to plural stems

<i>al</i> 'on'	1st Person	2nd Person	3rd Person	
'on me, on		Masculine	Feminine	Masculine Feminine
you . . .'				
Singular:	<i>al+ay</i>	<i>al+éxa</i>	<i>al+áix</i>	<i>al+av</i> <i>al+éa</i>
Plural:	<i>al+éynu</i>	<i>al+eyxem</i>	<i>al+eyxen</i>	<i>al+eyhem</i> <i>al+eyhen</i>

3. Derivational morphology

There are either five or seven verb patterns (*binyanim*) in Hebrew, depending on whether quasi-automatic passives associated with two of them count as independent *binyanim*. Each *binyan* is named by the third person singular masculine past tense form of a prototypical root; typically, the root *p'l* 'act, do' is used for this purpose. The seven *binyanim* (in whose names *p*, *ʿ*, and *l* stand for the first, second, and third elements of the root, respectively) are thus called: *pa'al* (sometimes referred to as *qal* 'light'), *nif'al*, *pi'el*, *pu'al*, *hitpa'el*, *hif'il*, and *huf'al*. The third person singular masculine past tense form is also used as a citation form to represent each *binyan* conjugation of a particular root (e.g., the root *gmr* is cited in *pa'al* as *gamar* 'finish', in *nif'al* as *nigmar* 'end [intr.]', etc.) There are roots whose conjugations are completely regular, but many involve deviations from

the norm. Deviations are caused by the presence in the root of a guttural, a glide (*w* or *y*) that has been weakened to a vowel, a syllable-final *n* that assimilates, identical second and third consonants that merge, etc. The verb system is thus, rigorously defined, limited to discontinuous derivation that can be effected by a small number of patterns, whose phonological structure is relatively fixed and therefore highly restrictive. Consequently, no foreign verbs can be borrowed directly. Consonants must be extracted out of existing foreign nouns, adjectives or verbs, then applied onto one of the seven patterns. But once that happens, such verbs behave essentially like native ones do.

The derivational system for nouns and adjectives is far less constrained than that of verbs. There exist a few hundred non-linear nominal and adjectival patterns, a number of linear ones, and a sizeable number of nouns and adjectives that do not fit into any pattern at all. The noun/adjective system is also more open to borrowing, and some of the patterns, be they continuous or linear, are quite productive. Linear patterns are particularly amenable to borrowing, since they leave the base essentially unaffected, and thus transparent. Many nouns are borrowed as they are, stress pattern included, regardless of whether they belong to an existing pattern or not.

3.1. The “mechanical” aspects of the derivational mechanism

It is very difficult to attribute psychological reality to any linguistic model, derivational morphology included. However, one can make reasonable assumptions regarding processes occurring at the point of innovation, when a word is coined for the first time. So even if no specific claims are made regarding the total lexicon, one can safely argue that when innovating, speakers of Hebrew have to make two simultaneous choices. One is “mechanical”: speakers need to determine whether the derivation should be discontinuous or linear, and in the case the former, what the actual phonological configuration would be. The other is the substantive choice of selecting a specific derivation pattern.

Since a new verb *must* be realized in a *binyan*, which is discontinuous by definition, new Hebrew verbs can only be formed non-linearly. In verb formation, discontinuous derivation is normally a mechanical process, in which consonant sequences are extracted out of existing words (see Rosén 1977; Ornan 1983; Bat-El 1989), then reapplied unto discontinuous patterns, regardless of whether they correspond to traditional roots:

(8) Illustrating extraction regardless of traditional root

Denom. Verb	Gloss	Source N/Adj	Gloss
misger	frame (V)	misgéret	frame (N)
mixzer	recycle	max(a)zor	cycle
timrec	give incentive	tamric	incentive
tikcev	apportion (in budget)	takciv	budget

In *misger* and *timrec*, for instance, the etymological roots of the source nouns are *s.g.r* ‘close (and related concepts)’ and *m.r.c* ‘energy (and related concepts)’, respectively, and the *m* and *t* are prefixal. Had the new form

been derived from historical root and pattern, only the root would have been extracted, without the prefix. One view is that the roots were restructured into *m.s.g.r* and *t.m.r.c*. In any case, we are no longer dealing here with the traditional root. Rather, speakers seem to extract whatever consonants they find in the source word while maintaining the original order, and if possible, the original consonant clustering as well. This also fits with the claim that speakers derive new words from existing words rather than from morphemes (Aronoff 1976; Bat-El 1986, 1989 for Hebrew).

The general tendency to preserve as much as possible of the structure of the derivation base, primarily by maintaining the original consonant clustering, may also be used as an argument for the word rather than a root being the base for derivation. For example, a borrowed noun like *faks* 'facsimile', whose expected realization as a verb is in *pi'el*, should have been transformed into the form **fikes*. Instead, the final *s* is reduplicated, resulting in *fiksés* 'faxed.' A similar argument can be made regarding the following (see Bolozky 1978):

(9) Original consonant clustering maintained by reduplication

Source Noun	Gloss	Possible Form	Actual Form	Gloss
flirt	flirt (N)	*filret	flirtet	flirt (V)
sifra	digit	siper/sifer	sifrer	assign digits
toxnit	plan (N)	tiken/tixen or (no redup.)	tixnen tixnet	plan (V) program (V)

Cluster preservation also suggests selection among potential realizations once the derivation pattern has been chosen (see also Bat-El 1994):

(10) Consonant cluster preservation through choice of syllable division

Base	Gloss	Possible	Actual	Gloss
špric	squirt (N)	*hišpirc	hišpric	squirt (V)
sandlar	shoemaker	*snidler	sindler	make shoes
praklit	lawyer	*pirklet	priklet	practice law
nostálgya	nostalgia	*nistleg	nistelg	be nostalgic

Since the derivation process must reference the base in order to form the denominative verb without breaking the base clusters, Bat-El (1994) concludes that it is necessary to derive new verb forms from existing words rather than from roots, and that there is no justification for an independent level at which an entity such as a consonantal root can be argued to exist.

Extraction encompasses derivational affixes but not inflectional ones. There are some cases in which derivational affixes may be disregarded by extraction as well. When a new verb form is derived from an existing verb, it affects the stem proper, ignoring *binyan* as well as tense marking affixes (like *hi+* or *mV+*.) Occasionally, affixes in nouns may be skipped over as well, as in *misgéret* 'frame (N)' > *misger* 'frame (V).' The explanation may lie in the bond between the stem and the affix, and that the more inflection-

like the affix is (as is the suffix *+et*, compared with the prefix *mi+*), the more likely it will be ignored by extraction (see also Bat-El 1986, 1989).

As noted above, derivation of nouns and adjectives is not as strictly constrained as verb formation is. New nouns and adjectives may be formed in numerous discontinuous patterns, as well as linearly. Some linear nominal/adjectival patterns will be discussed below: most adjectives ending with *+i*, some *+an* nouns/adjectives, some abstract *+ut* nouns, nouns ending with *+iya*, most diminutives ending with *+on* or *+it*, agent nouns ending with *+ay*, etc.

Modern Hebrew also makes increased use of linear derivation such as lexemic prefix compounding (Kutscher 1982; Nir 1984; Ravid 1990), as in:

(11) Illustrating lexemic prefix compounding

Prefix	Gloss	Form	Gloss
xad+	one, single	xad-mošavi	single-seat (e.g., plane)
rav+	multi-	rav-taxliti	multi-purpose
batar+	post-	batar-kongres	post-congress
al+	super-	al-koli	super-sonic

and through appending foreign suffixes to stems, as in:

(12) Illustrating appended foreign suffixes

Prefix	Gloss	Form	Gloss
napolyon	Napoleon	napolyónčik	one with a superiority complex
šamen	fat; fat man	šaménčik	roundish, fat (affectionate)
tank	tank	tankist	member of tank crew
balagan	disorder	balaganist	disorderly person

Compounds and blends, whose use in Modern Hebrew is also on the increase, are also derived linearly. Blends involve merging of two independent lexical items into a new blended word (see Berman 1989; Berman and Ravid 1986; Ravid 1990; Bat-El 1996). They are distinguished from compounds in that while blends tend to be regarded as a single unit for the purpose of inflection or cliticization, compounds usually are not. Thus, for instance, *kadur* 'ball' + *régel* 'foot' yields *kadurégel* 'soccer; soccer ball', whose definite alternant is *ha-kadurégel* 'the soccer(ball)', and rarely *??kadur ha-régel*, whereas *kadur zxuxit* 'crystal ball' becomes *kadur ha-zxuxit* 'the crystal ball' when definite. Some blends have been part of the lexicon for quite a while, as in:

(13) Illustrating well-established blends

Stem	Gloss	Stem	Gloss	Blend	Gloss
xay	alive, living	dak	small, thin	xaydak	germ
kat	small	nóa	movement	katnóa	motor scooter
pas	strip	kol	sound	paskol	sound track

Author: There is no Nir 1984 in your reference list. Do you mean one of Nir's other works listed there--1978, 1990, 1993?

Other blends are more recent, and many of them are 'clipped', i.e., with part of each (or part of only one) base being lost in the compounding process, as in:

(14) Illustrating well-established blends

Stem	Gloss	Stem	Gloss	Blend	Gloss
maxaze	play	zémer	song	maxazémer	musical (N)
buba	puppet, doll	teatron	theater	bubatron	puppet theater
arafel	fog	píax	soot	arpíax	smog

This tendency seems to have gained considerable popularity in the media, particularly in commercial brand names used in advertizing, as in:

(15) Illustrating commercial blends generated by the media

Stem	Gloss	Stem	Gloss	Blend	Gloss
késef	money	otomat	automat(on)	kaspomat	ATM machine
tapúax	apple/potato	metugan	fried	tapugan	fried potato

While compounding will continue to increase owing to its inherent transparency (Nir 1990), clipped blend formation is not as productive, since it is not structure-preserving (Ravid 1990), and consequently partially opaque. Clipped blends often arise through the ingenuity of linguists or clever advertisers, and thus are not always easily analyzable. The common pronunciation of normative *rakével* 'cable car' (< *rakévet* 'train' + *kével* 'cable') as *raxval* or *raxbal* is a case in point. Instead of combining morphemes, most speakers simply realize the consonant sequence *rkvl* in the discontinuous pattern *CaCCaC* . . .

Although linear derivation, compounding included, is clearly on the rise in Modern Hebrew, its expanded use does not affect the continued productivity of discontinuous derivation. To demonstrate that non-linear word-formation continues to be (very) productive, Bolozky (to appear) discusses three derivation patterns which at first glance appear to be predominantly linear, but which on methodological grounds may be argued to be at least 50% discontinuous in nature, possibly more. The first pattern comprises nouns ending with the agentive suffix *+an*, the second nouns with the nominalizing suffix *+ut*, and the third the so-called segolate nouns. The *+an* pattern allows both discontinuous (*CaCC+an*) and linear (*N+an*) derivation, e.g., *kablan* 'contractor' (cf. *kibel* 'receive') versus *alxut+an* 'wireless operator' (*alxut* 'wireless'+*an*), which are essentially identical (beyond the morphophonological difference). Both tend to be agentive, and the choice of device is not affected by semantic considerations:

Typically, the *CaCCan* form reflects a transparent verb base, while *N+an*, by virtue of the linear derivation process, transparently preserves the source noun or adjective. When *CaCCan* forms are related to verbs, the relationship is generally either to *pa'al* or to *pi'el*. Although one might be tempted to derive such *CaCCan* forms linearly from their related *pa'al* or *pi'el* bases, such derivation is not appropriate, for methodological reasons. A *CaCCan* form like *dabran* 'talkative, verbose' is clearly related, at least

(16) <i>CaCCan</i>	<i>N+an</i>
<i>batlan</i> 'idler, loafer' (< <i>batel</i> 'idle')	<i>alxutan</i> 'radio operator' (< <i>al</i> 'no'+ <i>xut</i> 'wire'+ <i>an</i>)
<i>kablan</i> 'contractor' (< <i>kibel</i> 'receive')	<i>mikcoan</i> 'professional' (< <i>mikcóa</i> 'profession'+ <i>an</i>)
<i>baxyan</i> 'weeper, cry-baby' (< <i>baxa</i> 'cry')	<i>rexušan</i> 'capitalist' (< <i>rexuš</i> 'property'+ <i>an</i>)
<i>xamcan</i> 'oxygen' (< <i>xamac</i> 'be sour')	<i>meyman</i> 'hydrogen' (< <i>máyim/meym</i> 'water'+ <i>an</i>)
<i>mazgan</i> 'air conditioner' (< <i>mazag</i> 'mix')	<i>potxan</i> 'opener' (< <i>potéax</i> 'open'+ <i>an</i>)
<i>lavyan</i> 'sattelite' (< <i>liva</i> 'accompany')	<i>roxsan</i> 'zipper' (< <i>roxes</i> 'zip'+ <i>an</i>)

synchronically, to *diber* 'talk' (a *pi'el* stem), and *axlan* 'glutton' to *axal* 'eat' (a *pa'al* stem), as indicated by the differences and similarities in stop/fricative realization. Though quite possible, this type of *linear* derivation of a *CaCCan* form from its related verb is not very probable, particularly not in MH. In general, agentive nouns formed from verbs are derived from (or are identical to) the *benoni*, the present tense or the present participle. In the *pa'al*-related and *pi'el*-related *CaCCan* cases, however, it would be difficult to argue for linear derivation from the respective *pa'al* or *pi'el benoni* bases. In *pa'al*-related forms, linear derivation would necessitate deriving from the *past* stem. In *pi'el*-related ones, the present/imperfect stem would be the correct one, but without the prefix *me+*, which is required for distinguishing the present/present participle *benoni* from the future/imperfect stem, and which can be shown to be essential by derivations like *histagel* ~ *mistagel* 'adapt' > *mistaglan* 'opportunist' or *hixxik* ~ *macxik* 'make laugh' > *macxikan* 'funny one.' In other words, since *CaCCan* forms cannot be claimed to be derived by linear affixation of *+an* to a *benoni* stem, as required for agents/agent attributes, they can only be generated discontinuously, in the *CaCCan miškal*.

From formation of nouns with the suffix *+ut*, discussed in Bolozky and Schwarzwald (1992), one can also learn of the interplay between discontinuous and linear derivation. In general, formation of abstract nouns with the *+ut* suffix has been viewed as linear derivation; Bolozky and Schwarzwald (1992) demonstrate that by lexical counts (based on Even-Shoshan 1970), there are strong methodological reasons to suggest that discontinuously-derived nouns with *+ut* outnumber linearly-derived ones by a ratio of almost 2:1. Their main argument is methodological. They show, for instance, that in order to derive all realizations of *CCiCut* linearly, one would require a *variety* of ad hoc processes, since a variety of bases is involved; see (17) on p. 287.

The stems that underlie *CCiCut* are quite varied (the *pakid*, *patúax*, and *arox* types, at least, as well as some other minor ones), and cannot all be derived by phonetically motivated processes. Nevertheless, in spite of the wide variation in stems underlying *CCiCut*, one would still want to capture the native speaker's intuition that all of these sub-groups are related by at-

(17) Bases required if linear derivation of *CCiCut* is assumed

CaCiC	<i>pakid</i> 'clerk' > <i>pkidut</i>	<i>šalíax</i> 'messenger' > <i>šlixut</i>
	<i>gamiš</i> 'flexible' > <i>gmišut</i>	<i>dalil</i> 'thin' > <i>dlilut</i>
CaCuC	<i>patúax</i> 'open' > <i>ptixut</i>	<i>racuf</i> 'successive' > <i>recifut</i>
	<i>xaruc</i> 'diligent' > <i>xaricut</i>	<i>kaful</i> 'double' > <i>kfilut</i>
CaCoC~CaCuC	<i>arox</i> (~ <i>aruk</i> +) 'long' >	<i>agol</i> (~ <i>agul</i> +) 'round' >
	<i>arixut</i>	<i>agilut</i>
	<i>matok</i> (~ <i>metuk</i> +) 'sweet' >	<i>ratov</i> (~ <i>ratuv</i> +) 'wet' > <i>retivut</i>
	> <i>metikut</i>	
CoCeC	<i>boded</i> 'lonely' > <i>bdidut</i>	
naCoC	<i>nafoc</i> 'widespread' > <i>nef-icut</i>	(but also <i>nafic</i> 'explosive' > <i>neficut</i>)
muCCaC	<i>mušxat</i> 'corrupt' > <i>šxitut</i>	
No clearly-identifiable base	<i>šrirut</i> 'arbitrariness' (<i>šarir</i> 'valid' is unrelated)	
	<i>kritut</i> 'divorce' (<i>karat</i> 'chop off' is only remotely related)	

tributing them to one canonical pattern. The obvious solution is to derive them all non-linearly in a discontinuous *CCiCut* pattern, rather than by appending *+ut* linearly to a variety of stems and arriving at the correct output by applying an array of ad hoc rules. Similarly, linear derivation of all *CaC-Cut* would also require a variety of underlying bases (including alternants of segolate nouns), and the same type of argument can be made regarding *CiCCut*, whose realizations will have to be derived from a variety of base-types if it is claimed that they are to be derived linearly.

Finally, in Bolozky (1995) it is argued that in Israeli Hebrew, the segolates and segolate derivatives should be described not on the basis of their historical underlying stems, but rather by the surface regularities that characterize them. For methodological reasons, regularities describing the majority of segolates and segolate derivatives must be stated not as linearly-derived forms, but in terms of canonical discontinuous noun formation patterns (*miškalim*). Deriving *mēlex* from /*malk*/, to account for related *malka* 'queen', *malxut* 'kingdom', or *séfer* from /*sipr*/, to capture the relationship to *sifrut* 'literature', *sifriya* 'library', and so on, is rather complex; it is very unlikely that a native speaker literally converts from base to output in this fashion. The processes required to do this would be ad hoc and without independent phonetic or phonological justification. What is most likely to capture speakers' intuitions is a pairing relationship between *surface* segolate patterns and alternating stem patterns involving suffixes, both expressed in discontinuous canonical form (the gutturals add some complexity to surface segolate sequences, which will not be dealt with here); see (18) on p. 288.

The argument against linear derivation of the segolate *plural* is even more compelling. Regular plural formation typically involves linear affixation of *+im* or *+ot*, with possible subsequent reduction. The plural of segolate nouns is different. While a basic *o* at the end of a stem followed by *+et* may be regarded as linear derivation (e.g., *tizmóret* 'orchestra', pl. *tiz-*

(18) Surface generalizations describing the segolates

- a. Nouns ending in . . . *CeCeC#* or . . . *CoCeC#* that are not derived directly from the verb are penultimately stressed
- b. They often have alternants in the form of . . . *CaCC* . . . (*malka*, *miflacti*), and sometimes *CiCC* . . . (*sifrut*), . . . *CoCC* . . . (*xodši*, *tizmorti*), . . . *CuCC* . . . (*kumco*, *maskurto*), or *CeCC* . . . (*nexda*; alternants with *e* are the rarest)
- c. If the word ends with *+et*, a *benoni* (present participle) form will also be penultimately stressed (i.e., not only *miktéret*, but *kotévet* as well)

morot), the majority of plurals in the huge segolate class is realized in a pattern resembling Arabic ‘broken plural’, i.e., constitutes a kind of discontinuous *miškal* of its own, *CCaCim/ot*, e.g., *mélex* ‘king’ ~ pl. *mlaxim*, *kélev* ‘dog’ ~ pl. *klavim*. A sub-pattern *CoCaCim* for a basic stem-initial *o* is also an option (*šóreš* ‘root’ ~ pl. *šorašim*), as well as . . . *aCim/ot*, when the unstressed *e* constituting part of the feminine suffix *+et*, in which case the plural *a* corresponds to the basic, stem-final *é* (*mazkéret* ‘souvenir’, pl. *mazkarot*). So the vast majority of segolate nouns have corresponding . . . *aCim/ot* plural form, and the relationship is not arrived at by derivation, but by associating between pairs of discontinuous patterns. The generalization involved could be something like:

(19) Surface generalizations regarding segolate plurals

- a. The plural of segolate forms is . . . *aCim/ot*
- b. The plural of the largest subgroup, *CéCeC*, is *CCaCim/ot*
- c. The plural of *CóCeC* is either *CCaCim/ot* or *CoCaCim/ot*
- d. When *ó* is stem-final, the plural is . . . *oCot* (which probably constitutes linear derivation)

Thus, the majority of segolate forms should be derived discontinuously, for methodological reasons. It can be shown, then, that discontinuous derivation continues to exist productively alongside linear formation in both *+an*-related and *+ut*-related forms, as well as in the large segolate class. Since there is no significant communicative distinction associated with choice of derivational device, there is little reason to believe that MH is gradually losing the Semitic (non-linear) character of its word-formation component. This is not to say that linear suffixation is unimportant. On the contrary, there is no doubt that a linear suffix increases the productivity of patterns like *+an* and *+ut*. Still, the *miškal* itself has not weakened. The preference for discontinuous *miškal* derivation is independently supported by Berman’s (1987) findings in productivity tests. Of all forms whose mechanical derivation strategy could be determined in open-ended productivity tests, 60% were discontinuous and 40% linear, i.e., a 3:2 ratio in favor of non-linear derivation.

3.2. Selecting a derivation pattern

3.2.1. Selecting a verb pattern

The typical Hebrew grammar textbook characterizes each of the *binyanim* as having some meaning (or meanings) associated with it. When the

total verb system is considered, it immediately becomes obvious that *bin-yan*-to-meaning correspondence is relevant only to a small minority of verbs. So why the common perception that *binyanim* have meanings? Schwarzwald (1981, 1982) attributes this to the fact that those verbs in which regular semantic relationships exist are high frequency ones, which makes them prominent beyond their proportion in the lexicon. Bolozky (1978, 1982, 1986) shows that one can actually characterize semantic regularities associated with the *binyanim*, except that they are not the “traditional” ones, and their scopes are different. In recent word-formation, as well as when productive innovation is induced by productivity tests, speakers first scan the newly formed component of the lexicon, looking for the broadest and most transparent generalizations observable in it. Based on those, their *binyan* choice is not arbitrary, and confirms that lexical formation is first and foremost concept driven (see Baayen and Renouf 1996; Clark 1993). This is an intuitive, *classificatory-global* strategy. Relatively recent neologisms suggest that the majority of speakers first make the most general dichotomy between ‘focus on the theme (or patient)’ and ‘focus on the agent.’ If the focus is on the theme, and the target meaning is a true passive, the default passive counterparts of the relevant active *binyanim* are selected, i.e., *pi’el* > *pu’al* and *hif’il* > *huf’al*, as in

- (20) *mimen* ‘finance (V)’ > *muman* ‘be financed’
tiyek ‘file (V)’ > *tuyak* ‘be filed’
hifnim ‘internalize’ > *hufnam* ‘be internalized’
hinciax ‘eternalize’ > *huncax* ‘be eternalized’

Based on dictionary comparison (new dictionaries with older ones, as well as supplements to dictionaries, see Bolozky, to appear), 78% of all new passive verbs recorded between the early ’70s and the early ’90 are in *pu’al*. So are 52%–53% of passive verbs in productivity tests, in which native speakers were asked to coin new verbs based on some target meaning in a given context, or to select from an array of invented forms what they believe best captures a target meaning in a given context. The tests were conducted in 1995–96, and are reported in Bolozky (to appear).³ By dictionary comparison, 13% of new passives are realized in *huf’al*, as were 23%–28% in the productivity tests. In all other theme-centered neologisms, be they inchoative (i.e., ‘become . . .’, or ‘begin a new state’), reflexive, or reciprocal, *hitpa’el* is chosen:

- (21) *hitazréax* ‘become citizen’ *hitpager* ‘die’ *hitgamed* ‘become tiny’
hitmameš ‘become real’ *hitrakez* ‘concentrate (int.)’ *hizdayen* ‘copulate’
hitpalmes ‘argue (about)’

In productivity tests, 69%–85% opted for *hitpa’el* for potential verb forms focusing on the theme (e.g., *šerif* ‘sheriff’ > *hištaref* ‘become sheriff’);

3. In each particular case of dictionary comparison or productivity tests, the percentages refer to the semantic category concerned.

Author: Has this work appeared yet? There is no entry for it in the reference list.

by dictionary comparison, 96%–100% of recent theme-centered verb forms were realized in *hitpa'el*. If the focus is on the agent (the 'instigator of the action'), speakers usually opt for *pi'el*:

(22) <i>biyel</i> 'stamp (an envelope)'	<i>siveg</i> 'assort'	<i>bilef</i> 'bluff'
<i>viset</i> 'regulate'	<i>nitev</i> 'mark route'	<i>xiyeg</i> 'dial'
<i>flirtet</i> 'flirt'	<i>fiksés</i> 'send by fax'	<i>divax</i> 'report'

This was the case 78%–79% in productivity tests (e.g., *šerif* 'sheriff' > *šeref* 'serve as sheriff'), and 75% of agentive verbs were realized in *pi'el* in dictionary comparison data.

The largest body of innovated verb forms is that of *pi'el* realizations. Phonetic considerations are responsible for this in part, since *pi'el*, which maintains bisyllabic stems throughout the paradigm, may incorporate the largest number of consonants (e.g., *torpédo* 'torpedo (N)' > *tirped*, since **hitripid* or **yitripod* are unpronounceable). This, however, is not the primary reason. *Pi'el* is the most productive *binyan* simply because semantically-agentive verbs constitute a huge class. Actually, a sub-class of agentive verbs, the causative ones, may also be realized in *hif'il*. In a sense, all agentive verbs are causative, since they cause new situations that affect the patient/theme, but for our purposes, a causative verb will mean causing the patient to *do* something (e.g., *hilbiš* 'dress [tr.]'), or causing an entity to *be* (or *become*) something (e.g., *yišer* 'straighten', *hirxiv* 'widen [tr.]', the so-called 'factitives'), or causing a change-of-state (e.g., *hirdim* 'cause to fall asleep.') In productivity tests conducted in the 1970s (Bolozky 1978) such causatives showed relative preference for *hif'il* (43%–45%, e.g., *šerif* 'sheriff' > *hišrif* 'make someone sheriff'), and the same was true of innovations observed at that time:

(23) <i>himxiš</i> 'make real'	<i>hitpil</i> 'desalinate'	<i>hincíax</i> 'eternalize'
<i>himxiz</i> 'make into a play'	<i>hifnim</i> 'internalize'	<i>hikvič</i> 'squeeze (child lang.)'

Most causatives of this kind were factitive, because the commonest base for new verbs is existing nouns and adjectives. However, more recent productivity tests from the 1990s, as well as tendencies emerging from innovations compiled through dictionary comparison (Bolozky, to appear), suggest a dichotomy in causative verb realization that is highly correlated with register. While *hif'il* is still the preferred causative pattern in literary Hebrew, *pi'el* is taking over for *all* agentive verbs, including causatives, in colloquial Hebrew. Thus, recent slang dictionaries contain a significant number of recent causatives in *pi'el* (79% of all new causatives based on dictionary comparison, compared with 20% only in *hif'il*):

Similar distribution emerges from the 1995–96 productivity tests (72%–74% of causatives realized in *pi'el*, 21%–25% in *hif'il*). To the extent that colloquial non-causative agentives are realized in *hif'il* rather than in the expected *pi'el*, it is usually to preserve the initial consonant cluster in the source stem, and in some cases the *whole* stem:

(24) Illustrating recent causative realization in *pi'el*

Form	Gloss	Source	Gloss
mistel	cause to be drunk	mastul	intoxicated, drugged (Ar.)
pindrek	spoil a lot (child, etc.)	mefunak+drek	spoilt+disgusting thing/person (Ger.)
fidéax	embarrass	fādiḥa	misfortune, calamity (Ar.)
šifcer	improve, strengthen	šiper+bicer	improve+fortify

(25)

Form	Gloss	Source	Gloss
hišpric	squirt	špric	squirt (N) (Yid.)
hišvic	brag; sweat	švic	bragging; sweat (Yid.)
hiknis	fine	knas	fine (N)
hisnif	snuffed in cocain	snaf	snuff (N) (Eng.)

Although *hitpa'el* focuses on the theme, it may occasionally also be agentive. New *hitpa'el* agentives are found mostly in the slang dictionaries. This is not unexpected. While *pi'el* is almost exclusively agentive, *hitpa'el*'s focus on the theme also incorporates reflexives and reciprocals, which involve the theme *as well as* an agentive element, though one that is not distinct from the patient/theme. Reflexives incorporate an agent that is one and the same as the patient/theme, and reciprocals involve two arguments with shifting agent and patient roles (or possibly even two agents, one of which is "more patient-like"). The development of *hitpa'el* agentives is thus natural: a verb like *hitfaléax* 'sneak in without paying', for instance, may be viewed as a basic reflexive, 'sneaking oneself in', which has developed from an agent=patient predicate to a fully agentive verb. *Hizdangef* 'walk around on Dizengoff St.' can be regarded as 'bringing oneself to be on Dizengoff St.', subsequently acquiring full agentive status. Most of these agentive *hitpa'el* verbs involve adopting some behavior, like *hitparper* 'shirk work; be unfaithful to wife', *hitbardek* 'be messy; shirk work', *hitagner* 'ignore', *hitgases* 'use foul language.' They may all have started with a reflexive-type verb, meaning something like 'causing oneself to behave in a certain way', whose agentive aspect took over (i.e., the focus is no longer on the patient). So while *hitpa'el* agentives are still a small minority, their number might be expected to increase.

3.2.2. Selecting adjectival patterns

Adjectives may be formed linearly as well as by discontinuous derivation. One common way is to linearly append the attributive suffix *+i*, often referred to by the Arabic term *nīsba*. The new form normally means 'having the characteristic of . . .' Adjectives ending with *+i* are generally derived from nominal bases (Ravid and Shlesinger 1987; Mor 1996), occasionally from adverbial bases (e.g., *miyadi* 'immediate' from *miyad* 'immediately'), and even from adjectives (e.g., *xiconi* 'external' from *xicon* 'external'), but derivations of the latter type are rare, since it would be tautological. Adjectives ending with *+i* and derived from borrowed bases may appear to be adjective-based from a speaker of English's point of view, but in Hebrew they

are actually derived from nominal bases; e.g., *normal* in *normal* > *normáli*, or *puritan* in *puritan* > *puritáni* are regarded as nouns. Derivation of +*i* adjectives is usually linear. Suppletion may be involved (e.g., *mikre* ‘event’ > *mikri* ‘accidental’), reduction (e.g., *šlila* ‘negation’ > *šlili* ‘negative’), or reduplication (e.g., *xag* ‘holiday, celebration’ > *xagigi* ‘festive’), but there are very few discontinuous *miškalim* ending with the adjectival +*i*. Also, the base stem may not always be a free-standing word (e.g., *cémax* ‘plant’ + *on* > **cimxon* > *cimxoni* ‘vegetarian’).

If the form is directly related to a particular verb, adjectives are likely to be realized in discontinuous patterns that are identical to the participial *benoni* forms. Active participial forms can function as adjectives, but since those tend to be *agentive* adjectives, and are sometimes indistinguishable from their agentive noun counterparts, they can be regarded as agents for the purpose of this discussion. More typically among verb-related adjectives, one encounters endstate “resultative” ones, like *closed*, *written*, etc. in English, which are identical to the passive participle: *CaCuC* (< *pa’al*), *niC-CaC* (< *nif’al*), *meCuCaC* (< *pu’al*) and *muCCaC* (< *huf’al*). Of the non-deverbal *miškalim*, one salient pattern is *CaCiC*, used primarily for ‘+able’-type adjectives.

According to productivity tests, when the suggested adjectival meaning includes a verb, the preferred choice is the resultative *meCuCaC* (75% of all occurrences, e.g., *xóken* ‘enema’ > *mexukan* ‘one to whom an enema has been administered’), since its verbal source, *pu’al*, is the automatic counterpart of the very productive *pi’el*. The other endstate resultatives, *muCCaC* and *CaCuC*, follow far behind (5%–7% each). It appears that if the target meaning involves a verb, the innovator first transforms the nominal base from which s/he is requested to form an adjective into an intermediate, unrealized passive verb stage, e.g., *xóken* ‘enema’ > *xukan* ‘be administered enema’, which is then transformed into the passive participial adjectival resultative form (*mexukan*). When the suggested gloss of the form to be derived does not involve a verb, the default attributive adjectival form ending with +*i* is the first choice, as predicted (65%–72%, e.g., *misada* ‘restaurant’ > *misadi/misadati* ‘of restaurant’), followed by +*ai* (4%–11%), but resultatives occur as well, again with *meCuCaC* as the preferred option (15%–19%), and *muCCaC* and *CaCuC* quite marginal (.4%–2%). One can look at this dichotomy of verb-based and non-verb based adjectives in two ways: semantically, as a choice between adjectives expressing the result of a process and mere attributive formation; or morphologically, between derivation from essentially verbal bases and truly nominal ones. Some recent illustrations arrived at by dictionary comparison; see (26) on p. 293.

3.2.3. Selecting nominal patterns

3.2.3.1. Selection of abstract nominalization patterns

The most common realization of abstract nominalization is the +*ut* pattern, and there are many more cases ending with +*ut* that involve a *miškal* than one might expect. Two of the *binyanim*, *hitpa’el* and *nif’al*, have +*ut* as

(26) Some recent adjectives, identified by dictionary comparison

	Form	Gloss	Source	Gloss
+i Adjectives				
	cahali	of the Israeli army	cáhal	I.D.F (Israel Defense Force) (acronym of <i>cva haganá le-yisrael</i>)
	davkai	stubborn	dávka	in spite of, on the contrary
	btixuti	of safety	b(e)tixut	safety
	mimsadi	of the establish-ment	mimsad	establishment
meCuCaC				
	memuna	mobile (with car)	manóa	motor, engine
	mevoas	depressed	bá(?)asa	misery, distress (Ar. <i>ba'sā</i>)
	mevurdak	disorganized	bardak	brothel (Trk.)
	mepluntar	entangled	plónter	a tangle
muCCaC				
	mutraf	exceptional, exciting	hitrif	drive crazy (< <i>metoraf</i> 'crazy')
	muštan	humiliated; of little value	šéten/hištin	urine/urinate
	mulhat	red hot	hilhit/lohet	make very hot/red hot
CaCuC				
	šavuz	devastated, dis- gusted	šavur+záyin	broken+penis
	dafuy	imperfect, flawed	dófi	fault, flaw
CaCiC				
	axif	enforceable	axaf	enforce
	hafix	reversible	hafax	turn over, reverse

part of their nominalization pattern, and there are also patterns involving the present participle followed by +ut:

(27) Nominalizations ending with +ut

<i>hitpa'el</i> :	<i>hitCaCCut</i> :	<i>hitparec</i> 'burst, int.' > <i>hitkparcut</i>	<i>hitganev</i> 'steal in' > <i>hitganvut</i>
<i>nif'al</i> :	<i>niCCaCCut</i> :	<i>nifkad</i> '(be) absent' > <i>nifkadut</i>	<i>nivdal</i> '(be) separate' > <i>nivdalut</i>
or	<i>hiCaCCut</i> :	<i>(le)himana</i> 'abstain' > <i>himanut</i>	<i>(le)hikašel</i> 'fail, int.' > <i>hikašlut</i>
<i>pa'al</i> :	<i>CoCCut</i> :	<i>šoter</i> 'policeman' > <i>šotrut</i>	<i>rokéax</i> 'pharmacist' > <i>roksut</i>
<i>pi'el</i> :	<i>meCaCCut</i> :	<i>meyaled</i> 'obstetrician' > <i>mevaldut</i>	<i>mefaked</i> 'commander' > <i>mefakdut</i>
<i>pu'al</i> :	<i>meCuCaCCut</i> :	<i>meyuxad</i> 'special' > <i>meyuxadut</i>	<i>meyuman</i> 'proficient' > <i>meyumanut</i>

<i>hif'il</i> :	<i>maCCiCut</i> :	<i>mazkir</i> 'secretary' > <i>mazkirut</i>	<i>manhig</i> 'leader' > <i>manhigut</i>
<i>huf'al</i> :	<i>muCCaCut</i> :	<i>murkav</i> 'complex' > <i>murkavut</i>	<i>mušlam</i> 'perfect' > <i>mušlamut</i>

The default nominalizations for *binyanim* that do not end with *+ut* are:

(28) Default nominalizations not ending with *+ut*

<i>pa'al</i> :	<i>CCiCa</i> :	<i>patax</i> 'open' > <i>ptixa</i>	<i>šavar</i> 'break' > <i>švira</i>
<i>pi'el</i> :	<i>CiCuC</i> :	<i>šiper</i> 'improve' > <i>šipur</i>	<i>bitel</i> 'cancel' > <i>bitul</i>
<i>hif'il</i> :	<i>haCCaCa</i> :	<i>hisbir</i> 'explain' > <i>hasbara</i>	<i>hirkiv</i> 'set up, compose' > <i>harkava</i>

[or less commonly

heCCeC: *hisbir* 'explain' > *hesber* 'explanation'

hirkiv 'set up, compose' > *herkev* 'composition']

As in the case of adjectives, data from productivity tests on abstract nominalization depends on whether an underlying verb is implied by the proposed base. When a verb is implied in the definition of the target meaning, preference is given to the default nominalization associated with that potential verb (or its related resultative adjective). Take, for instance, 'covering with panels.' The most likely verb form for 'cover with panels' would have been *pinel*, *pi'el* being the preferred realization for agentives. Therefore, the nominalization pattern opted for is *CiCuC*, the default nominalization of *pi'el*, i.e., *pinul*. And since *pi'el* is a productive verb pattern, so is the related nominalization pattern *CiCuC*. The same would apply to *hitCCaCut*, related to productive *hitpa'el*; to *meCuCaCut*, since the participial resultative adjective in the *meCuCaC* pattern is derived through *pu'al*, the somewhat automatic passive counterpart of the productive *pi'el*; and so on. When the target meaning does not involve a verb base, realizations ending with *+ut* prevail. Other options are *CiCuC* or *+izm*.

Below are some illustrations for the most productive nominalization patterns based on dictionary comparison: *+ut*, *meCuCaC*, and *+izm*; see (29) on p. 295.

3.2.3.2. Agent (and agent attribute) selection

Many agent nouns and agent attributes are identical to the active participle, and the popular consensus is that the pattern for professionals is *Ca-CaC* (historically *CaC_iC_iaC*). Occasionally, agents may also be realized in nominal patterns like *CaCiC* (e.g., *pakid* 'clerk'), and by (originally-borrowed) *+ist* and *+er* suffixation. In the colloquial, the normally-diminutive (see below) *+čik* may mark agents as well. But the most frequent realization for agents or agent attributes seems to be the *+an* pattern, followed by *N+ai* (normatively *N+ay* for agents, e.g., *xaklay* 'farmer', *N+ai* for attributes, e.g., *xaklai* 'agricultural').⁴ Unlike the other patterns, which mostly refer to agents/occupations, *+an* and *+ay/+ai* denote agent attributes just as often as they refer to agent nouns. When the borders be-

4. In the colloquial, *+ai* is often used for both agents and agent attributes. Occasionally, *+ay* may also be used for either an agent noun or an adjective.

(29) Some recent nominalizations, identified by dictionary comparison

	Form	Gloss	Source	Gloss
+ut	fáyteriyut	being a fighter	fáyter	fighter (Eng.)
	póciyut	arrogance	poc(i)	arrogant person, arrogant
	xelmaut	stupidity	xelmai	stupid (< <i>xelm</i> 'town notorious for fools')
	menumasut	being polite	menumas	polite
CiCuC	beus	disgust, despair	mevoas	in despair (< <i>básā</i> 'misery' (Ar.))
	fištun	urinating	fišten	urinate (< <i>hištin</i> 'urinate')
	fisfus	missing	fisfes	miss
	xirbun	shitting; ruin(ing)	xirben	shit (V)/mess up
+izm	bitxonízm	emphasis on security	bitaxon	security
	elitízm	elitism	elit/ilit	elite
	stalinízm	Stalinism	stálin	Stalin

tween the agent and the adjectival agent attribute are blurred (as in *šakran* 'liar'), the semantic scope is expanded to a broader and more coherent agentive field, and hence its increased openness to innovation. Because of their semantic transparency, *+an* and *+ay/+ai* have an advantage as agent markers over competing active participles, which 'hover' between the verb and the nominal agent. Thus, at the global level of the productive lexicon, *+an* is preferred to all alternatives by children as well as by adults.

The five most common agentive realizations in productivity tests were *+an* (21%–37%, e.g., *omlet* 'omelette' > *omletan/amletan* 'one making omelettes'), *+ay/+ai* (22%–31%, e.g., *básta* 'vendor stall' > *bastai/bastay* 'stall vendor'), *+ist* (8%–14%, e.g., *čarter* 'charter' > *čarterist* 'charter flights specialist'), *+er* (7%–10%, e.g., *gril* 'grill' > *gríler* 'one who grills'), *meCaCeC* (6%–10%, e.g., *omlet* 'omelette' > *meamlet* 'one making omelettes'). Some illustrations from dictionary comparison; see (30) on p. 296.

3.2.3.3. Selection of patterns for instruments

Hebrew textbooks identify *maCCeC* and *maCCeCa* as designating instrumentals, but the typically-agentive *meCaCeC* and *+an* can also be instrumental. Actually, most of the patterns denoting agent nouns may also have an instrumental reading. Speakers apparently feel that both agents and instruments constitute the same 'performer' category, and that whether the performer is animate or inanimate makes no difference (see Bolozky and Jiyad 1989, 1990; Schlesinger 1989; Berman and Sagi 1981; Clark 1993). Instruments can function syntactically as agents when attention is drawn to the instrument by means of which an action is performed

(30) Some recent agents and agent attributes identified by dictionary comparison

	Form	Gloss	Source	Gloss
+an	balyan	always having a good time	bila	have a good time
	barzelan	officer (army slang)	barzel	iron (here in insignia)
	maškian	one who invests great effort	maškía	invest (pr. part.)
+ay/ +ai	šeynkinai	Israeli yuppie (N/Adj)	šéynkin	name of a trendy Tel Aviv street
	dugrai	straightforward, very frank	dúgri	straight, frankly (< Ar. <i>dúyri</i>)
	mikvai	from Mikve Israel (N/Adj)	mikve yisrael	name of agricultural school
+ist	bitxonist	security-conscious person	bitaxon	security, safety
	šekemist	P.X. worker	šekem	Israel's P.X.
+er	širyoner	soldier in armor corps	širyon	armor
	bizyoner	one responsible for disgrace	bizayon	disgrace
meCaCeC	metamtem	wonderful	timtem	make stupid, stupefy (senses)
	megaméret	reaching orgasm (f.)	gimer	finish, conclude

and away from its animate instigator. In production tests reported in Berman (1987), there were more instrumentals realized in +an than in either *maCCeC*, *maCCeCa* or *meCaCeC* (25%–19%–15%–7%, respectively). This reflects the status of +an as the unmarked agentive pattern, or perhaps as the “performer” category, including both instruments and agents. Only in judgment tasks, where other options were available, did *maCCeC* emerge at the head in Berman’s tests (e.g., in *dugma* ‘sample’ > *madgem* ‘a sampling instrument’) with about a third of the realizations (32% versus 14% in *meCaCeC*, 11% in *maCCeCa*—e.g., in *rašam* ‘write, draw’ > *maršema* ‘a writing tool’—and 11% in +an). When subjects were requested to list any instruments that come to mind, *maCCeC* and *maCCeCa* together came up in 28.5% of the instances, and *meCaCeC* in 25.5%. Productivity tests reported in Bolozky (to appear) suggest that +iya is also productive for instruments, e.g., *kúskus* ‘couscous’ > *kuskusiya* ‘couscous-making instrument’, *kótej* ‘cottage cheese’ > *kotejiya* ‘instrument for producing cottage

cheese', and to a degree *+er* as well, e.g., *kúskus* 'couscous' > *kúskuser* 'couscous-making instrument.' Some recent data from dictionary comparison:

(31) Some recent instruments identified by dictionary comparison

	Form	Gloss	Source	Gloss
+an	xaygan	dialer	xiyeg	dial (V) (< <i>xug</i> 'circle')
	šadxan	stapler	šadxan	matchmaker (<i>šidex</i> 'make a match')
meCaCeC	mefalése t	grader; snow plough	piles	level (V), smooth flat
	mexacec	rock crusher (to gravel)	xacac	gravel
+er	kvéčer	stapler	kveč	squeeze (Yid.)
	špricer	water-spraying device	špric	squirt, spray (Yid.)
+on	mešivon	answering machine	mešiv	answer (Pres. Part.)

3.2.3.4. Selection of location patterns

It has been traditionally assumed that location nouns are realized in *miCCaC* and *miCCaCa*, but any survey of locatives would reveal that this generalization is overstated. In particular, the status of *miCCaC* as a locative pattern is made opaque by a huge number of abstract nouns, and the colloquial tendency to shift locatives from *miCCaCa* to *maCCeCa*. The use of *+iya* as a location marker is on the increase, particularly in the colloquial register. Another location marker is *+iyáda*. Productivity tests clearly establish *+iya* as the most productive locative pattern today (see Bolozky, to appear), e.g., *omlet* 'omelette' > *omletiya* 'place where they make omelettes.' Some relevant recent innovations:

(32) Some recent instruments identified by dictionary comparison

	Form	Gloss	Source	Gloss
+iya	kambaciya	operations officer's post	kambac	operations officer (acronym for <i>kcin</i> 'officer of' + <i>mivcaim</i> 'operations')
	maadaniya	delicatessen shop	maadan	delicacy
	steykiya	steak house	steyk	steak
+iyáda	steykiyáda	steakhouse	steyk	steak
	trem(p)i yáda	arranged hitch- hiking spot	trem(p)	a ride
miCCaCa	mizlala	small restaurant	zalal	devour

3.2.3.5. *Selecting a pattern for collection/group/system*

Productivity tests (Bolozky, to appear) suggest that there are currently three productive patterns for groups/collections: *+iya* (32%–38%, e.g., *xérek* ‘insect’ > *xarakiya* ‘insect collection’), *+iyáda* (17%–22%, e.g., *xatul* ‘cat’ > *xatuliyáda* ‘group of cats’), *+on* (10%, e.g., *matbéa* ‘coin’ > *matbeon* ‘coin collection’). Some relevant recent innovations:

- (33) Some recent groups/collections identified by dictionary comparison

	Form	Gloss	Source	Gloss
+iya	kačkiya	group of girls chattering	káčke	duck (Yid.)
	(or their location)			
	makabiya	convention of Makabi teams	makabi	Jewish sports orga- nization
+iyáda	čaxčaxiyáda	the underprivi- leged in Israel	čaxčax	north African Israeli Jew
	kačkiyáda	group of girls chattering	káčke	duck (Yid.)
	(or their location)			
+on	taarifon	price list	taarif	price
	eruon	list of events (in program)	eruá	event

3.2.3.6. *Selecting a diminutive pattern*

There are a number of ways of forming diminutives in Israeli Hebrew, such as reduplication:

- (34) Diminution of nouns through reduplication: illustrations from everyday usage

Noun	Gloss	Redupl.	Noun	Gloss	Redupl.
kélev	dog	klavlav	xatul	cat	<i>xataltul</i>
xazir	pig	xazarzir	dag	fish	<i>dagig</i>
géver	man	gvarbar (coll. gvar- var)	zakan	beard	<i>zkankan</i>
adom	red	adamdam	kaxol	blue	<i>kxalxal</i>

+it suffixation:

- (35) Diminution through *+it* suffixation

Noun	Gloss	Noun+ <i>it</i>	Gloss
kaf	table- spoon	kapit	teaspoon
kos	glass	kosit	wineglass
mapa	tablecloth	mapit	napkin, small tablecloth
kar	pillow	karit	small pillow
pax	can, tin	paxit	small can

+iya suffixation:

(36) Diminution through +iya suffixation

Noun	Gloss	Noun+iya	Gloss
naknik	sausage	naknikiya	frankfurter, hot dog
uga	cake	ugiya	cookie
maca	unleavened bread	maciya	cracker

+čik suffixation (borrowed from Russian/Yiddish):

(37) Diminution through +čik suffixation

Form	Gloss	Form+čik	Gloss
baxur	young man	baxúrčik	nice young man
katan	small	katánčik	very small
šamen	fat	šaménčik	affectionate/forgiving modification of 'fat'

or even +íko (borrowed from Judeo-Spanish):

(38) Diminution through +íko suffixation

Base	Gloss	Base+íko	Gloss
xaver	friend	xaveríko	friend (affectionate)
kof	monkey	kofíko	little monkey (affectionate)
xayal	soldier	xayalíko	young/little soldier (affectionate)

As shown in Bolozky (1994), however, the productivity of these devices is rather limited in current Israeli Hebrew (except, to some extent, for +čik at the colloquial register). As can be seen in productivity tests, +on suffixation is by far the most productive diminution device in the language (67%-76%, e.g., *mexdal* 'criminal negligence' > *mexdalon* 'minor act of negligence'). The strongest evidence for the productivity of the +on diminutive suffix is its distribution in forms that have already incorporated other diminutive morphemes. Even though the reduplicated forms below have alternants with +on appended directly to the base, it is also possible to add +on/+ónet to the reduplicated forms themselves, particularly in animate nouns, as in:

(39) Diminutive +on affixed to forms diminutivized by reduplication

Base	Gloss	Redup.	Base+on	Redup.+on	Redup.+ónet
kélev	dog	klavlav	kalbon	klavlavon	klavlavónet
xatul	cat	xataltul	xatulon	xataltulon	xataltulónet
xazir	pig	xazarzir	xaziron	xazarziron	xazarirónet

It is also possible to add +on to (inanimate) forms ending with the diminutive suffix +it. Since nouns ending with +it are all feminine, so are the further diminutions, which all end with +ón+et (see [40] on p. 300). The same applies to +iya diminution (see [41] on p. 300).

(40) Diminutive *+on* affixed to forms diminutivized by *+it*

Base	Gloss	Base+it	Base+i(t)+ón+et
pax	can	paxit	paxiyónet
kar	pillow	karit	kariyónet
kaf	tablespoon	kapit	kapiyónet
mapa	tablecloth	mapit	mapiyónet

(41) Diminutive *+on* affixed to forms diminutivized by *+iya*

Base	Gloss	Base+iya	Base+iy+ón+et
naknik	sausage	naknikiya	naknikiyónet
uga	cake	ugiya	ugiyónet
maca	unleavened bread	maciya	maciyónet
maase	deed, tale	maasiya	maasiyónet

Below are some recent diminutives identified by dictionary comparison:

(42)	Form	Gloss	Source	Gloss
<i>+on(+et)</i>				
	pargiyónet	young, inexperienced girl	pargit	young chicken
	tiptipónet	a very tiny bit	tiptipa	a tiny bit (< <i>tipa</i> 'drop')
	ekdaxon	small pistol	ekdax	pistol, handgun
	maklon	small stick	makel	staff, stick
	misadónet	little restaurant	misada	restaurant
<i>+čik</i>				
	napolyónčik	with superiority complex ('a little Napoleon')	napolyon	Napoleon
	pišalónčik	inexperienced novice; Yid. useless person		
<i>+ík:</i>				
	xayalíko	young soldier (affectionate)	xayal	soldier

3.3. Derivational morphology in Israeli Hebrew: conclusion

It can be shown that insofar as the actual mechanism of derivation is concerned, discontinuous derivation is still the mainstay of the word formation mechanism, in spite of the fact that linear derivation is on the increase. The typically-Semitic process of discontinuous derivation, based on the fusion of extracted consonants (or original consonant clusters) from an existing lexeme and a 'canonical' *miškal*, is as strong as ever. The two derivational strategies operate quite productively alongside each other, sometimes even within (essentially) the same morphological pattern.

Choice of derivation pattern is first and foremost semantically-based. Speakers tend to look for the most prominent and the most-readily-available pattern they observe in the everyday lexicon. A derivation pattern

may be used widely enough to function as the default pattern for some category, but even then is still associated with some broad semantic feature. Generally, the broader the semantic category, the more likely is the default pattern to be selected: *pu'al* for passive verbs, *hitpa'el* for all other non-agentive verbs, *pi'el* for agentive ones; *+i* for attributive adjectives, *meCuCaC* for verb-related ones; *CiCuC* for verb-related abstract nominalizations, *+ut* for other nominalizations; *+on* for diminutives, *+an* for agentives/instrumentals, *+iya* for locatives. There are other patterns, ranked below the default ones on the productivity scale, but nevertheless significantly productive: *+ay/+ai* for agents and agent attributes, *CaCiC* for *+able*-type adjectives, etc. Beyond these primary choices, a number of other general factors may also play a role, resulting in additional adjustments and shifts. Maintaining a degree of transparency for the base within the neologism is one such factor. It is often manifest in preservation of the original consonant clustering of the base. The prominence of a pattern in the new lexicon is determined not only by size, but also by semantic saliency and coherence, as well as by pattern transparency. Often, pattern transparency is enhanced by transparent suffixation. Other factors affecting pattern choice are pronounceability and preemption. Generally, however, such factors are subordinate to the primary semantic choice, and if they must cause a deviation from it (e.g., if the neologism will be unpronounceable in the semantically-predicted pattern, or an identical form already occupies the slot aimed at), the next-best, or nearest, semantically related pattern will be chosen.

Author: The following are not cited in your essay but are included in the reference list: Ariel 1972; Avineri 1976; Ephratt 1997; Glinert 1989; Goldenberg 1994; Goshen-Gottstein 1964; Greenberg 1950; Junger 1987; Nir 1978, 1993; Ornan 1971; Schwarzwald 1974.

References

- Ariel, Shlomo
1972 The Functions of the Conjugations in Colloquial Israeli Hebrew. *Bulletin of the School of the Oriental and African Studies* 35: 514–30.
- Aronoff, Mark
1976 *Word Formation in Generative Grammar*. Cambridge: MIT Press.
- Avineri, Yitzhak
1976 *Heyxal ha-miškalim* [The Temple of the Miškalim]. Tel Aviv: Yizreel.
- Baayen, R. Harald and Antoinette Renouf
1996 Chronicling the *Times*: Productive Lexical Innovations in an English Newspaper. *Language* 72: 69–96.
- Bat-El, Outi
1986 *Extraction in Modern Hebrew Morphology*. MA thesis, UCLA.
1989 *Phonology and Word Structure in Modern Hebrew*. PhD diss., UCLA.
1994 Stem Modification and Cluster Transfer in Modern Hebrew. *Natural Language and Linguistic Theory* 12: 571–96.
1996 Phonologically-Based Word Formation: Modern Hebrew Blends. Pp. 231–50 in *Interfaces in Phonology*, ed. U. Kleinhenz. *Studia Grammatica* 41. Berlin: Akademie.
- Berman, Ruth A.
1987 Productivity in The Lexicon: New-Word Formation in Modern Hebrew. *Folia Linguistica* 21: 425–61.

- 1989 The role of blends in Modern Hebrew word formation. Pp. 45–61 in *Studia Linguistica et Orientalia: Haim Blanc Memorial Volume*, ed. Paul Wexler, Alexander Borg, and Sason Somekh. Wiesbaden: Harrassowitz.
- Berman, Ruth A. and Dorit Ravid
- 1986 Al dargat ha-milun šel cerufey smixut [The Degree of Lexicalization of Structures with the Construct State]. *Hebrew Computational Linguistics* 24: 5–22.
- Berman, Ruth A. and Yisrael Sagi
- 1981 Al darxey tecurat ha-milim ve-xidušan be-gil cair [Word Formation and Neologisms at Young Age]. *Hebrew Computational Linguistics* 18: 31–62.
- Bolozky, Shmuel
- 1978 Word Formation Strategies in the Hebrew Verb System: Denominative Verbs. *Afroasiatic Linguistics* 5: 111–36.
- 1979 On the New Imperative in Colloquial Hebrew. *Hebrew Annual Review* 3: 17–24.
- 1982 Strategies of Modern Hebrew Verb Formation. *Hebrew Annual Review* 6: 69–79.
- 1986 Semantic Productivity and Word Frequency in Modern Hebrew Verb Formation. *Hebrew Studies* 27: 38–46.
- 1994 On The Formation of Diminutives in Modern Hebrew Morphology . *Hebrew Studies* 35: 47–63.
- 1995 *Hasegoliyim—gzira qavit o mesoréget?* [The Segolates—Linear or Discontinuous Derivation?] Pp. 17–26 in *Hadassah Kantor Jubilee Book*, ed. Ora R. Schwarzwald and Yitzhak Schlesinger. Ramat Gan: Bar-Ilan University.
- Bolozky, Shmuel. and Mohammed. Jiyad
- 1989 Partial Mergers of Morphological Patterns in Modern Hebrew and in Some Dialects of Arabic. Paper read at the North American Conference of Afro-Asiatic Linguistics, New York, March 15–16.
- 1990 More on Agentives, Instrumentals and Locatives in Modern Hebrew and in Southern Iraqi Arabic. Paper read at the North American Conference of Afro-Asiatic Linguistics, Atlanta, March 28–31.
- Bolozky, Shmuel and Ora R. Schwarzwald
- 1992 On the Derivation of Hebrew Forms with the +ut Suffix. *Hebrew Studies* 33: 51–69.
- Clark, Eve V.
- 1993 *The Lexicon in Acquisition*. Cambridge: Cambridge University Press.
- Ephratt, Michal
- 1997 The Psychological Status of the Root in Modern Hebrew. *Folia Linguistica* 31: 77–103.
- Even-Shoshan, Avraham
- 1970 *Ha-milon he-xadaš* [The New Dictionary]. Jerusalem: Kiryat Sefer.
- Glinert, Lewis
- 1989 *The Grammar of Modern Hebrew*. Cambridge: Cambridge University Press.
- Goldenberg, Gideon
- 1994 Principles of Semitic Word-Structure. Pp. 29–63 in *Semitic and Cushitic Studies*, ed. G. Goldenberg and S. Raz. Wiesbaden: Harrassowitz.

- Goshen-Gottstein, Moshe
 1964 Semitic morphological structures—the basic morphological structure of Biblical Hebrew. Pp. 104–16 in *Studies in Egyptology and Linguistics in Honor of H. J. Polotsky*, ed., H. B. Rosén. Jerusalem: Israel Exploration Society.
- Greenberg, Joseph H.
 1950 The Patterning of Root Morphemes in Semitic. *Word* 6: 162–81.
- Junger, Judith
 1987 *Predicate Formation in the Verbal System of Modern Hebrew*. Dordrecht: Foris.
- Kutscher, Eduard Yechezkel
 1982 *A History of the Hebrew Language*. Jerusalem: Magnes/ Leiden: Brill.
- Mor, Galila
 1996 *Ma metaer šem ha-toar gzur šem ecem +i* [What Do Adjectives Derived From Noun Plus *i* Describe]. Paper read at the meeting of the Israeli Branch of the European Linguistic Society, Tel Aviv.
- Nir, Raphael
 1978 New Trends of Word Formation in Hebrew. Pp. 447–50 in *Proceedings of the Twelfth International Congress of Linguists*, ed. W. U. Dressler and W. Meid. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.
 1990 *Ha-safa ha-ivrit likrat ha-mea ha-esrim ve-axat* [The Hebrew Language towards the Twentieth Century]. *Lašon ve-ivrit* 1.
 1993 *Darxey ha-yecira ha-milonit be-ivrit bat yameynu* [Lexical Formation Strategies in Modern Hebrew]. Tel Aviv: The Open University.
- Ornan, Uzzi
 1971 *Binyanim u-vsism, netiyot u-gzirot* [Binyanim and Bases, Inflections and Derivations]. *Ha-universita* 16: 15–22.
 1983 *Tecurat ha-mila ha-ivrit keycad?* [How Do We Build a Hebrew Word?] Pp.13–42 in *Hebrew Language Studies Presented to Zeev Ben-Hayyim*, ed. M. Bar-Asher et al. Jerusalem: Magnes Press.
- Ravid, Dorit
 1990 Internal Structure Constraints and New-Word Formation Devices in Modern Hebrew. *Folia Linguistica* 24: 289–347.
- Ravid, Dorit and Yitzhak Shlesinger
 1987 *Al miyunam ve-al darxey gziratam šel šmot toar baaley sofit i ba-ivrit ha-xadaša* [Regarding the classification and derivation of adjectives with the suffix *i* in Modern Hebrew]. *Hebrew Computational Linguistics* 25: 59–70.
- Rosén, Haiim B.
 1977 *Contemporary Hebrew*. The Hague: Mouton.
- Schlesinger, Izchak M.
 1989 Instrumentals as Agents: On the Nature of Semantic Relations. *Journal of Linguistics* 25: 189–210.
- Schwarzwald, Ora R.
 1974 *Šorašim, bsisim, u-mivne ha-morfémot* [Roots, Bases, and the Structure of Morphemes]. *Lešonenu* 38: 131–36.
 1981 Frequency Factors as Determinants in the *Binyanim* Meanings. *Hebrew Studies* 22: 131–37.

Author: Could
 you please
 provide page
 numbers for
 Nir 1990.

304 Shmuel Bolozky

- 1982 *Šxixut usdirut ba-lašon: iyunim ve-hašlaxot* [Frequency and Regularity in Language: Observations and Implications]. *Iyunim ba-xinux* 35: 163–74.