The Behavior of Strong and Weak Verbs in Modern and Tiberian Hebrew: An OT Account

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"It's all Greek to me."
(American saying)
"Graecum est, non potest legi."
(Latin saying)
" 'Εβραικα μ' ομιλει"
(It's Hebrew to me — Greek saying)

0 In a Nutshell

0.1 The Problem

0.1.1 The Good News

Hebrew, like Arabic, appears to form base verbs by putting consonantal roots into C-V templates; conjugational affixes are added to these base verbs to form conjugated verbs. On a par with the Arabic *qatala* 'he killed' (roughly derived from q.t.l and CaCaCa) we find the Hebrew *qatal,* also derived from q.t.l and a template.

When a template has more than three consonantal slots, one of the root consonants "spreads," so that, still using the root q.t.l, from the Arabic template CaCCaCa we get *qattala* 'he massacred.' Hebrew has a similar form *qittal.*[1]

[1] More often, for unclear reasons, *qittel.*

To these base forms, affixes are added for conjugation. For example, the 2-m-pl ending in Arabic is *-tum* and in Hebrew *-tem.* So we find *qataltum* 'you killed' and *qattaltum* 'you massacred' in Arabic, and *qataltem* and *qittaltem* in Hebrew.

In Arabic, verbs with identical second and third radicals behave exactly as though they were biliteral, inasmuch as they follow the same sorts of patterns for spreading consonants seen when triliteral roots are put into templates with four consonantal positions. For example, from the root r.d.d in Arabic we find *radda* 'he replied.'

Based on these observations, McCarthy (1981) formulated his well-known **Obligatory Contour Principal** (OCP), according to which information on a single tier must not be repeated. His OCP does not allow a root such as r.d.d, and so the root must in fact be r.d, which explains why it patterns as though one radical were spreading. His OCP, a few spreading rules, and his templates account nicely for (almost)[2] all of the Arabic data. In particular, given a base form, the usual pronominal endings apply in the usual ways. So, for example, *radadtum* 'you replied.'

0.1.2 The Bad News

On a par with the Arabic *radda* we find the (somewhat obscure) Hebrew word *rad* 'he repelled/he subdued' and its variant form *radad.* However, in Tiberian Hebrew, when *-tem* is added, we find *radotem.* To make matters worse, Modern Hebrew has replaced *radotem* with *radadtem.*

It is these data that are to be explained. Specifically, why do these weak verbs pattern the way they do? And why have their forms changed?

But before explaining these problems, we have to backtrack, because the situation gets worse. While the simplest verbs in Hebrew appear to work according to C-V templates, there's lots of evidence that in general Hebrew verbs are not formed from templates. Forms such as *sovev* 'he spun' from the putative CiCCeC template and s.b, *nolad* from niCCaC and y.l.d, and *havinoti* from hiCCaCti and b.y.n demonstrate amply.

And speaking of bad news, the OCP doesn't work, either, as demonstrated by such roots as *m.m.š* and *'.r.b.b*.

[2]There are roots in Arabic that violate the OCP: *babGaa'* for example.

0.2 The Solution

While the technical details of the solution proposed here depend on Optimality Theory and some of its consequences, the point does not.

All languages strive toward the same sorts of things (syllables without codas, surface forms that resemble their underlying forms, non-complex onsets, etc.) However, they differ in the relative importance of these constraints.

Tiberian Hebrew valued syllables without codas more than surface forms that resemble their underlying forms, and Modern Hebrew is the opposite. This accounts for the difference in the patterning of biliteral roots.

The reason Modern Hebrew grew to value parity of surface and underlying forms more than Tiberian Hebrew did has to do with the influence of foreign words combined with the loss of certain surface phonemes. This combination destroyed what used to be a regular spirantization pattern, and so destroyed the simple way in which a learner learning the language could recover underlying forms. Therefore, the surface forms had to be closer to the underlying forms.

More technically, because of the the conspiracy of foreign words and the loss of certain surface phonemes, a child learning MH has insufficient evidence from common words to rank the constraint NoCoda over Parse, and that reverse ranking accounts for the radical shift in the behavior of biliteral roots.

1 Preliminary Issues

1.1 On "Hebrew"

(1) Tiberian Hebrew (TH) — data reconstructed from the work of Ben Asher and his family, concluded around the ninth century. TH purports to capture Biblical Hebrew (BH).

(2) Modern Hebrew (MH).

1.2 Data

(See attached handout.)

1.3 Previous Accounts

(3) McCarthy (1981): OCP, C-V templates, spreading, etc.

(4) Bat-El (1989): C-V is not enough, vowel patterns, syllable constraints, etc.

(5) Sharvit (1994): OT account, vowel tiers, root consonants, etc.

1.4 "Problems" with Previous Accounts

(6) OCP doesn't always work in Hebrew.

(7) Weak verbs should be predictable.

(8) Theory should account for paradigm shift.

1.5 Moraicity and Paradigms

(9) Kal = 1 bimoraic syllable in verbal base.

(10) Pi'el = 2 bimoraic syllables in verbal base.

(11) Niphal = n + 1 bimoraic syllable in verbal base.

(12) (Cf. also "tashlum dagesh," which preserves only moraicity.)

1.6 Spirantization

(13) TH(?): Non-geminate, non-back obstruant stops spirantize after a vowel. ("Beged Kefet.")

(14) MH: Some non-geminate, non-back obstruant stops sometimes spriantize after a vowel.

1.7 Phonemic Inventory

(15) TH: No underlying continuant non-back obstruants.

(16) MH: Some underlying continuant non-back obstruants.

1.8 Other Issues

(17) /aa/ ⇒ /o/ (cf. Russian etc.)

(18) CCC ⇒ CiCC (cf. monoconsonantal prefixes in Hebrew)

(19) Two stage process: first base forms, then final forms.

2 OT

(20) Constraints represent ideal conditions, but any given constraint, unlike a traditional filter, may be violated if there is no better form in which it is not violated.

(21) The fewer violations of a given constraint the better.

(22) Constraints are ranked, so that more highly ranked constraints always trump more lowly ranked constraints.

3 Notation

(23) OT: Constraints are printed in AllCaps

(24) OT: The winning form is indicated by a cute icon: ☞

(25) OT: Deleted material appears within <angular brackets>

(26) Hoffman: Base forms appear within [square brackets]

4 Constraints

(27) NoCoda — Coda-less syllables are preferred.

(28) Parse — Final forms that represent underlying material are preferred.

(29) $\text{Parse}_{R(andom)}$ — Parse violations must be of the right kind.

(30) Fill — Final forms without extra junk (e.g., epenthesis) are preferred.

(31) FILL$_{R(andom)}$ — FILL violations must be of the right kind.

(32) NOSTOP — Spirantization (BDGKPT in TH, BKP in MH).

(33) NOGEM — Surface geminates are dispreferred.

(34) NOAA — Long /a/ surfaces as /o/. (Cf. also kamatz katan.)

(35) ALIGN — Bases should be aligned with feet. (Cf. Sharvit)

(36) STRESS — Pseudoconstrant.

5 Full Roots

5.1 Qal

	PARSE$_R$	FILL$_R$	ALIGN	NOCODA
[<q>tal]	*			*
[qital]		*		*
[qatalaqatal]			*	*
[qatalal]			*	*
[qata.l]a		*		
[aqatal]			*	*
[aq<a>tal]	*		*	*
☞[qatal]				*

5.2 Niphal

	PARSE$_R$	FILL$_R$	ALIGN	NOCODA	FILL
na[q.tal]		*		**	
na[qa.tal]		*		*	
n[a.qa.tal]			*	*	
<n>[qatal]	*			*	
n[<q>atal]	*			*	
ni[qatal]		*			
☞ ni[q.tal]				**	*

5.3 Piel

	NOGEM	NOCODA	FILL	PARSE
[qit.lel]		**		
[qit.tel]	*	**		
☞ [qi<t>.tel]		*		*

6 Biliteral Roots in TH

6.1 Qal

	NOGEM	NOSTOP	NOCODA	FILL	PARSE
[sab'b]u		*	*		
[sav'v]u			*	*	
[sa.v]u				*	
☞ [sa<b>.b]u					*

	NoGem	NoStop	NoCoda	Fill	Parse
[savav]+ti			*	*	
[sav]+ti			*	*	
[sa<b>b]+ti			*		*
[savo]+ti				**	
☞[sa<b>bo]+ti				*	*

6.2 Niphal

	Fill_R	NoCoda	Fill
ni[s.bav]		**	*
ni[sav]	*		*
☞n[asav]		*	*

6.3 Piel

	NoCoda	Fill	Parse
[sivsev]	**	*	
[si<b>.bev]	*	**	*
☞[so.vev]	*	**	

7 Biliteral Roots in MH

7.1 Qal

	Fill	Parse	NoCoda
[savo]+ti	*		
[sa<b>b]+ti		*	*
[sa<b>bo]+ti	*	*	
☞[savav]+ti			*
☞[sav]+ti			*

7.2 Niphal

	Fill_R	NoCoda
ni[s.bav]		**
ni[s.vav]		**
ni[sav]	*	
☞n[asav]		*

7.3 Piel

8 How TH Became MH

8.1 That is, How Parse was Reranked

8.1.1 Constraint ranking in TH

1. Fill_R and Parse_R are unviolated.
2. NoAA is unviolated.
3. NoCoda$\gg$Parse
4. Fill$\gg$Parse

5. NoGem≫Parse
6. NoStop≫Parse

8.1.2 Constraint ranking in MH

1. Fill_R and Parse_R are unviolated.
2. NoAA is unviolated.
3. Parse≫NoCoda
4. Fill≫Parse
5. (From the above we deduce that Fill≫NoCoda.)
6. Parse≫NoStop

8.2 General Assumtions

(37) Constraints are universal.

(38) Constraints are initially inviolable.

(39) Constraints are ranked from common words.

(40) The underlying inventory is determined at an early age.

(41) Im/possible fidelity violations are learned at an early age

8.3 Other ways TH and MH Differ

(42) MH has more phonemic fricatives.

(43) MH has fewer stops

(44) MH has few fidelity violations

9 Other Issues

Selected References

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