

A resource grammar for Hebrew עברית

Dana Dannells

dana.dannells@svenska.gu.se

Department of Swedish Language
University of Gothenburg and
Graduate School of Language Technology (GSLT)



GSLT

Prologue

- Hebrew (*Ivrit*) is a Semitic language
- Based on a combination of roots and patterns
- Word order in Modern Hebrew SVO
- Spoken language since 1880

Orthography

- Phonology
 - 22 graphemes (18 consonants, 5 vowel sounds)
- Script
 - the alphabet is written from right to left
 - 5 consonants have special forms when they come at the end of the word
- Spelling
 - complete: שולחן šolhan (table)
 - incomplete: שלחן šolhan (table)

Morphology: Noun

- **Regular noun:**

M	sg: --	בן	pl: ים-	בנים
		ben (boy)	-im	ban- im (boys)
F	sg: ה- /ת-	ילדה	pl: ות-	ילדות
	ha-/-ot	yald- a (girl)	-ot	yelad- ot (girls)

- **Regular noun2:**

M	sg: --	קוף	pl: ים-	קופים
		kof (monkey)	-im	kof im (monkeys)
F	sg: --	כף	pl: ות-	כפות
		kaf (spoon)	-ot	kap ot (spoons)

- **Irregular noun:**

M	sg: ת-	(בית)	pl: ים	(בתים)
	-t	bayt- t (house)	-im	bat- im (houses)
F	sg: ה- /ת-	(בת)	pl: ות	(בנות)
	ha-/-t	bat- t (dotter)	-ot	ban- ot (dotters)

Morphology: Verb

	Binyan	Morphological form	Root	Verb
1	PA`AL	C1aC2aC3	k.t.v	katav (wrote)
2	NIF`AL	ni C1C2aC3	s.b.r	nišbar (broke -passive)
3	PI`EL	C1iC2eC3	s.b.r	šhiber (collapsed)
4	PU`AL	C1uC2aC3	s.p.r	šopar (tell-passive)
5	HITPA`EL	hit C1aC2eC3	l.b.s	hitlabešh (dress out)
6	HIF`IL	hi C1C2iC3	l.b.s	hilbišh (wear out)
7	HUF`AL	hu C1C2aC3	l.b.s	hulbaš (dressed -passive)

The verbal system

Example: katav

Per	Num	Perfect (wrote)	Participle (writes)	Imperfect (is wrtting/to write)	Imperative (write!)
1m	sg	כתבתי katavti	כותב kotev	אכתוב ektov	
1f	sg	”	כותבת kotevet	”	
2m	sg	כתבת katavta	כותב kotev	תכתוב tiktov	כתוב ktov
2f	sg	כתבת katavt	כותבת kotevet	תכתבי tiktevi	כתבי kitvi
3m	sg	כתב katav	כותב kotev	יכתבו yiktevo	
3f	sg	כתבה katava	כותבת kotevet	תכתוב tiktov	
1m	pl	כתבנו katavnu	כותבים kotvim	נכתוב niktov	
1f	pl	”	כותבות kotvot	”	
2m	pl	כתבתם katavtem	כותבים kotvim	תכתבו tiktevo	כתבו kitvo
2f	pl	כתבתן katavten	כותבות kotvot	”	”
3m	pl	כתבו katavo	כותבים kotvim	יכתבו yiktevo	
3f	pl	”	כותבות kotvot	”	

Inflection table for the root k.t.v, binyan Pa'al

Morphology feature design

cat	variable	inherent
N	Number	Gender
A	Number, Gender	-
V	Tense, Person, Number	-
V2	As V	Case

param

Number = Sg | Pl | DI ;

Gender = Masc | Fem ;

Tense = Perf | Part | Impf | Imp | infin;

Person = Per1 | Per2 | Per3 ;

Case = Acc | Nom | Dat;

Current work

- A miniature resource grammar for Hebrew
 - abstract Grammar
 - abstract Test = Grammar ** ..
 - resource ResHeb
 - concrete GrammarHeb of Grammar = open ResHeb in ..
 - concrete TestHeb of Test = GrammarHeb ** open ResHeb in ..

Thank you