

# Inflection and derivation

LING 481/581

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# Organization

- Differences between inflection and derivation
  - Additional examples from Sahaptin
- Issues in inflection vs. derivation
- Applying the criteria

# Summaries of differences between inflection and derivation

HS table

Aronoff and  
Fudeman

Inflection	Derivation
→ (i) relevant to the syntax	not relevant to the syntax
(ii) obligatory expression of feature	not obligatory expression
→ (iii) unlimited applicability	possibly limited applicability
→ (iv) same concept as base	new concept
(v) relatively abstract meaning	relatively concrete meaning
(vi) compositional meaning	possibly non-compositional meaning
(vii) expression at word periphery	expression close to the base
(viii) less base allomorphy	more base allomorphy
→ (ix) no change of word-class	sometimes changes word-class
(x) cumulative expression possible	no cumulative expression
(xi) not iterable	possibly iterable

**Table 5.5** A list of properties of inflection and derivation

# Relevance to syntax

- HS: “For the most part, the grammatical function or meaning expressed by a morphological pattern is involved in syntactic agreement or syntactic government”
- Aronoff and Fudeman: inflection is “determined by syntax”
- HS examples
  - Polish government
    - negative verbs: direct object in genitive case
    - affirmative: direct object in accusative case
  - Nahuatl agreement
    - prepositions agree in person and number with NP
- Category-changing morphology (e.g.  $V \rightarrow N$ ) also seems “relevant to the syntax”

# Some Sahaptin bound morphemes

- shaláwi- ‘be tired’
- 1s shaláwishaash
- 2s shaláwishaam
- 3sS ishaláwisha
- 1p.incl shaláwishana
- 1p.excl shaláwishatash, shaláwishanataash
- 2p shaláwishapam
- 3pS pashaláwisha

# Relevance to syntax

- Involved in agreement
  - Pínk ishaláwisha ‘He/she is tired’
  - Pmák pashaláwisha ‘They are tired’
  - Ínknash shaláwisha ‘I’m tired’
    - =nash in complementary distribution with –ash

- HS: how is tense/aspect/mood relevant to syntax?
  - “certain syntactic rules seem to require reference to tense and aspect”
  - Adverbial frames?
    - ‘yesterday’: \_\_\_\_
      - past: Yesterday I was riding the bus...
      - Yesterday I rode the bus...
      - present: Yesterday I’m riding the bus and...
      - habitual: Yesterday I ride the bus and look what happens...
      - present perfect: \*Yesterday I’ve ridden the bus.../
      - past perfect: yesterday I had ridden the bus so ...

# Obligatoriness of expression

- “Inflectional features are obligatorily expressed on all applicable word forms. Derivational meanings are not obligatorily expressed.”
  - *-er*: “The English suffix *-er* applies to verbs to derive nouns with the meaning of ‘agent’; e.g. DRINKER. But it is not the case that all nouns [verbs?] must express an agentive meaning.”



# Sahaptin

- Person/number morphemes cannot be omitted
  - \*Pínk shaláwisha ‘He/she is tired’
  - \*Pmák shaláwisha ‘They are tired’
  - \*Ínk shaláwisha ‘I’m tired’

# Obligatoriness of expression

- Zero-marked members of inflectional paradigms

(4.5) Coptic

<i>čō-i</i>	'my head'
<i>čō-k</i>	'your (M) head'
<i>čō</i>	'your (F) head'
<i>čō-f</i>	'his head'
<i>čō-s</i>	'her head'

- If possessor is inflection, how is 'your (f)' obligatorily expressed?

# Unlimited applicability

- HS: no paradigmatic gaps for inflection: “inflectional values can be applied to their base without arbitrary limitations” “exceptions...can usually be explained easily by the incompatibility of the inflectional meaning and the base meaning”
  - “derivational formations may be limited in an arbitrary way”
- Aronoff and Fudeman: inflection “more productive” than derivation

# Sahaptin

- No “defective verbs” (that I’m aware of) (not markable for all persons/numbers of subject)

# Position relative to base

- canonical inflection: at word periphery
- canonical derivation: “expressed close to the root”
- HS: usually but not always
  - *schön* ‘beautiful’
  - *schöner* ‘more beautiful’
  - *verschönern* ‘make more beautiful’
- Aronoff and Fudeman: “not a reliable diagnostic for distinguishing between inflection and derivation”

# Sahaptin

- Rigsby and Rude 1996: ‘Three major positions [in the Sahaptin verb] may be recognized in its internal structure: 1, the pronominal prefix; 2, the theme; and 3, the auxiliary suffix complex. Position 1 may or may not be occupied, depending upon aspects of sentence structure external to the verb, for example, the pronominal prefixes cross-reference the clause for third-person subject (and object) arguments.’

**Table 7. Agreement in Intransitive Clauses**

<i>Subject Nominal</i>	<i>Enclitic</i>	<i>Verb Prefix</i>	<i>Case-marking on Subject Nominal</i>
1 sg.	= <i>naš</i>	—	—
1 pl. inc.	= <i>na</i>	—	—
1 pl. exc.	= <i>nataš</i>	—	—
2 sg.	= <i>nam</i>	—	—
2 pl.	= <i>pam</i>	—	—
3 sg.	—	<i>i-</i>	—
3 pl.	—	<i>pa-</i>	—
Reflexives			
1 sg.	= <i>naš</i>	<i>piná-</i>	—
1 pl. inc.	= <i>na</i>	<i>pamá-</i>	—
1 pl. exc.	= <i>nataš</i>	<i>pamá-</i>	—
2 sg.	= <i>nam</i>	<i>piná-</i>	—
2 pl.	= <i>pam</i>	<i>pamá-</i>	—
3 sg.	—	<i>piná-</i>	—
3 pl.	—	<i>pamá-</i>	—
Reciprocals			
1 pl. inc.	= <i>na</i>	<i>pápa-</i>	—
1 pl. exc.	= <i>nataš</i>	<i>pápa-</i>	—
2 pl.	= <i>pam</i>	<i>pápa-</i>	—
3 pl.	—	<i>pápa-</i>	—

Some position 1 prefixes

Table 8. Agreement in Transitive Clauses

<i>Subject</i>	<i>Object</i>	<i>Verb</i>		<i>Noun case-marking</i>	
<i>Nominal</i>	<i>Nominal</i>	<i>Enclitic</i>	<i>Prefix</i>	<i>Subject</i>	<i>Object</i>
1 sg.	2 sg.	=maš	—	—	obj. sg.
1 sg.	2 pl.	=mataš	—	—	obj. pl.
1 pl. exc.	2 sg.	=mataš	—	—	obj. sg.
1 pl. exc.	2 pl.	=mataš	—	—	obj. pl.
1 sg.	3 sg.	=naš	á-	—	obj. sg.
1 sg.	3 pl.	=naš	á-	—	obj. pl.
1 pl. inc.	3 sg.	=na	á-	—	obj. sg.
1 pl. inc.	3 pl.	=na	á-	—	obj. pl.
1 pl. exc.	3 sg.	=nataš	á-	—	obj. sg.
1 pl. exc.	3 pl.	=nataš	á-	—	obj. pl.
2' sg.	1 sg.	=nam	pá-	—	obj. sg.
2 sg.	1 pl.	=nam	—	—	obj. pl.
2 pl.	1 sg.	=pam	—	—	obj. sg.
2 pl.	1 pl.	=pam	—	—	obj. pl.
2 sg.	3 sg.	=nam	á-	—	obj. sg.
2 sg.	3 pl.	=nam	á-	—	obj. pl.
2 pl.	3 sg.	=pam	á-	—	obj. sg.
2 pl.	3 pl.	=pam	á-	—	obj. pl.
3 sg.	1 sg.	=naš	i-	inv. erg.	obj. sg.
3 sg.	1 pl. inc.	=na	i-	inv. erg.	obj. pl.
3 sg.	1 pl. exc.	=nataš	i-	inv. erg.	obj. pl.
3 pl.	1 sg.	=naš	pa-	—	obj. sg.
3 pl.	1 pl. inc.	=na	pa-	—	obj. pl.
3 pl.	1 pl. exc.	=nataš	pa-	—	obj. pl.
3 sg.	2 sg.	=nam	i-	inv. erg.	obj. sg.
3 sg.	2 pl.	=pam	i-	inv. erg.	obj. pl.
3 pl.	2 sg.	=nam	pa-	—	obj. sg.
3 pl.	2 pl.	=pam	pa-	—	obj. pl.
3 sg. top.	3 sg.	—	i-	—	obj. sg.
3 sg.	3 sg. top.	—	pá-	obj. erg.	obj. sg.
3 sg.	3 pl.	—	i-	—	obj. pl.
3 pl. top.	3 sg.	—	pa-	—	obj. sg.
3 pl.	3 sg. top.	—	patá-	—	obj. sg.
3 pl.	3 pl.	—	pa-	—	obj. pl.

More position 1 prefixes



**Table 9. Agreement in Intransitive Clauses with Genitive Subjects**

<i>Genitive</i>	<i>Enclitic</i>	<i>Verbal prefix</i>	<i>Noun Case-marking</i>
1 sg.	= <i>naš</i>	—	genitive
1 pl. inc.	= <i>na</i>	—	genitive
1 pl. exc.	= <i>nataš</i>	—	genitive
2 sg.	= <i>maš</i>	—	genitive
2 pl.	= <i>mataš</i>	—	genitive
3 sg.	—	<i>á-</i>	genitive sg.
3 pl.	—	<i>á-</i>	genitive pl.

Another position 1 prefixes

Position 1 prefixes are leftmost in the word; nothing can precede.

**Table 20. Auxiliary Suffix Combinations**

	<i>No Directional</i>	<i>Cislocative</i>	<i>Translocative</i>	
			<i>Northwest and Columbia River Sahaptin</i>	<i>Northeast Sahaptin</i>
<i>Plain</i>				
Perfect	-∅, -in, -š <sup>a</sup>	-imš	-kikš	-čiš
Past	-a <sup>a</sup>	-ima	-kika	-čiča
Future	-ta	-imta	-kikta	-čita
<i>Imperfect</i>				
Present	-ša	-šamš	-šaykš	-šančiš
Past	-šana	-šama	-šayka	-šančiča
Future	-šata	-šamta	-šaykta	-šančita
<i>Habitual</i>				
Present	-xa	-xamš	-xaykš	-xančiš
Past	-xana	-xama	-xayka	-xančiča
Future	-xata	-xamta	-xaykta	-xančita
<i>Conditional</i>				
	-taɣna	-imtaɣna		
<i>Imperatives</i>				
Singular	-k	-im		
Plural	-tk	-imtk		
Warm Springs plurals				
	-ti	-imti		

Position 3 suffixes are rightmost in the word; nothing can follow. (Are cislocative –m and translocative –k inflectional or derivational?)

<sup>a</sup>In certain phonetic environments in at least some dialects of Northwest and Northeast Sahaptin, -a has been generalized as the present perfect, and -na as the past.

# Cumulative expression

- portmanteaux, fusion
  - HS: “inflectional values may be expressed cumulatively”
  - HS: “derivational meanings are not expressed cumulatively”
- Sahaptin cislocative/translocative + tense/aspect markers: fusion

Table 21. Some Auxiliary Inflections of *wína-* 'go'

<i>i-</i>	<i>wína</i>	-∅	-∅.	'He has (just) gone.' (present perfect)
<i>i-</i>	<i>wínán</i>	-∅	-a.	'He went.' (past perfective)
<i>i-</i>	<i>wíná</i>	-∅	-m -a.	'He came.'
<i>i-</i>	<i>wína</i>	-∅	-kik -a.	'He went away.'
<i>i-</i>	<i>wína</i>	-šan	-a.	'He was going.' (past imperfective)
<i>i-</i>	<i>wína</i>	-ša	-m -a.	'He was coming.'
<i>i-</i>	<i>wína</i>	-ḡan	-a.	'He used to go.' (past habitual)
<i>i-</i>	<i>wína</i>	-ḡa	-m -a.	'He used to come.'
<i>i-</i>	<i>wíná</i>	-∅	-m -š.	'He has just come, is coming.' (present perfective)
<i>i-</i>	<i>wína</i>	-∅	-kik -š.	'He has just gone away, is going away.'
<i>i-</i>	<i>wína</i>	-ša	-∅.	'He is going.' (present imperfective)
<i>i-</i>	<i>wína</i>	-ša	-m -š.	'He is coming.'
<i>i-</i>	<i>wína</i>	-ḡa	-∅.	'He goes.' (present habitual)
<i>i-</i>	<i>wína</i>	-ḡa	-m -š.	'He comes.'
<i>i-</i>	<i>wíná</i>	-∅	-ta.	'He will go.' (future perfective)
<i>i-</i>	<i>wíná</i>	-∅	-m -ta.	'He will come.'
<i>i-</i>	<i>wína</i>	-∅	-kik -ta.	'He will go away.'
<i>i-</i>	<i>wína</i>	-ša	-ta.	'He will be going.' (future imperfective)
<i>i-</i>	<i>wína</i>	-ša	-m -ta.	'He will be coming.'
<i>i-</i>	<i>wína</i>	-ḡa	-ta.	'He will go.' (future habitual)
<i>i-</i>	<i>wína</i>	-ḡa	-m -ta.	'He will come.'
<i>i-</i>	<i>wína</i>		-taḡna.	'He would have gone, would go.' (conditional)
<i>i-</i>	<i>wína</i>		-m -taḡna.	'He would have come, would come.'
	<i>wína</i>		-k.	'Go.' (imperative singular)
	<i>wína</i>		-m -∅.	'Come!'
	<i>wína</i>		-tk.	'Go!' (imperative plural)
	<i>wína</i>		-m -tk.	'Come!'

iwámsh

Fusion or  
base  
allomorphy?

NOTE: Five positions are indicated here: 1, the third-person pronominal prefix *i-*; 2, the verb stem; 3, the aspectual suffixes; 4, the directionals; and 5, the tenses of the indicative mood and the conditional and imperative suffixes.

# Same concept as base

- “Canonical inflected word-forms express the same concept as the base; canonical derived lexemes express a new concept.”
- HS “new concept” = Aronoff and Fudeman “core lexical meaning”
- HS examples
  - *brother, brothers* (vs. *brother, brethren*)
  - vs.
  - *read, reader*
- But “derivation does not always lead to an obviously new concept”
  - *kind, kindness*

# Sahaptin

- inflected forms express ‘same concept’/‘core lexical meaning’ as base?
- base: shaláwi- ‘be tired’
- inflected form: ishaláwisha ‘he/she is tired’
- (probably) shalawiṭá ‘the tired one’
- compare ]<sub>V</sub>-ṭá] <sub>N</sub> ‘agentive’: new concept?
  - sínwi- ‘speak’
  - sínwiṭá ‘speaker’
  - ]<sub>N</sub>-ṭá] <sub>N</sub>
  - wána ‘river’, Nch’i Wána ‘Columbia R.’
  - wanaṭá ‘Sahaptin person from Celilo, Goldendale and neighboring area’ (post-contact name for people who refused to move to the Reservations, continuing to live on the Columbia R., Boyd 1996)

# Word class change

- “canonical inflection does not change the word-class of the base”
  - Sahaptin ishaláwisha ‘he/she is tired’
- “derivational affixes may change the word-class of the base”
  - sinwiłá ‘speaker’ (yes)
  - wanałá (no)

# Abstractness of meaning

- inflection: “relatively abstract meaning”
  - “works quite well for inflectional meanings, because all of them are highly abstract (in some intuitive sense)”
  - ishaláwisha ‘he/she is tired’: is ‘third person singular’ highly abstract?
- derivation: “relatively concrete” meaning
  - HS point out *kindness, childhood*



# Compositionality

- inflected word forms: if canonical inflection, “compositional meaning”
- canonical derived lexemes: “[may] have non-compositional meaning”
  - *ignore, ignorance*
  - vs. more compositional *friend, friendly*

# Completely compositional

- shaláwi- ‘be tired’
- 1s shaláwishaash
- 2s shaláwishaam
- 3sS ishaláwisha
- 1p.incl shaláwishana
- 1p.excl shaláwishatash, shaláwishanatah
- 2p shaláwishapam
- 3pS pashaláwisha

# Another position 1 prefix

- pina- reflexive
- compositional
  - tamátʰ'umχ- 'cover, drape fabric'
  - Pinátamatʰ'umχsha. 'She's covering herself.' (piná-reflexive)
- non-compositional
  - ánakw- 'abandon, discard, desert, divorce, separate from'
    - piná'anakw- 'throw one's life away, feel unwanted, feel sorry for oneself'
  - kw'aʦá(n)- 'be happy'
    - pinákw'aʦa- 'be grateful'
  - ní- 'give'
    - pináni- 'join religion' (< 'give oneself to')

# Base allomorphy

- inflection induces less base allomorphy
  - *destroy, destroyed*
- derivation induces more base allomorphy
  - *destroy, destruction*

# Sahaptin

- Person/number marking induces no base allomorphy except stress shift (for stressed affixes)
- Derivation
  - tkwáta- ‘eat’
  - máytkwata- ‘eat breakfast’ (máy- ‘morning’, cf. máytski ‘morning’)
- Inflection
  - tamátt'umx- ‘cover, drape fabric’
  - Pinátamattt'umxsha. ‘She's covering herself.’ (piná-reflexive)

# Iteration

- “inflectional affixes cannot be iterated”
  - dogs, \*dogses
- “with derivational formations, iteration is not common...but it is possible”
  - great-great-...grandmother
- = reduplication? if so, relatively common
  - but strict limits on reduplicative doubling?

# Issues in inflection vs. derivation

- How well do these criteria work?
  - “there is...more disagreement about the importance of some facts” (HS 98)
- Ignore certain facts → infl/der dichotomy
- Give all facts equal weight → infl/der continuum

Language	Formation	Example	cum	obl	new	unl	cm
English	3rd singular	<i>walk/walks</i>	I	I	I	I	I
English	noun plural	<i>song/songs</i>	D	I	I	I	I
Spanish	diminutive	<i>gato/gatito</i>	D	D	I	I	I
English	repetitive	<i>write/rewrite</i>	D	D	D	I	I
English	female noun	<i>poet/poetess</i>	D	D	D	D	I
English	action noun	<i>resent/resentment</i>	D	D	D	D	D

Note: cum= cumulative expression; obl = obligatory; new = new concept; unl = unlimited applicability; cm = compositional meaning.

Table 5.6 A continuum from inflection to derivation

- Differences between inflection and derivation involve function, but not form (< Aronoff and Fudeman)
  - non-concatenative derivation
    - tone change (Chalcotongo Mixtec denominal adj, HS 37; Mbay repetitive forms of verbs, HS 55)
    - reduplication (Malagasy less intense forms of adj, HS 38)
  - non-concatenative inflection
    - ablaut (German noun plurals, HS 34, Coptic passive forms of verbs, HS 55)
    - C feature change (Albanian noun plurals, HS 35; Sc Gaelic gen pl nouns, HS 36)
    - V feature change (Quechua 1sS, HS 37)
    - C subtraction (Murle pl, HS 37; French masc forms of adj, HS 56)
    - reduplication (Ponapean progressive forms of verbs, HS 38)



# Sahaptin reduplication

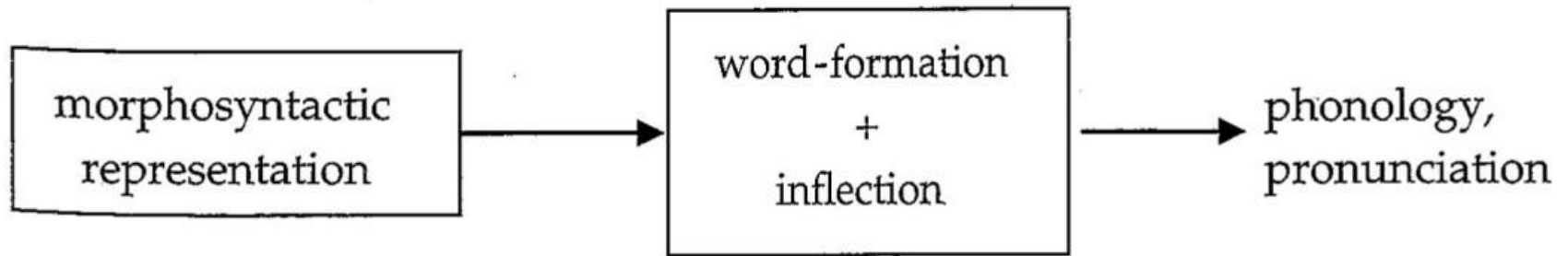
- Both inflectional and derivational functions?
  - nouns: inanimate plural. inflection?
    - pshwá ‘rock’, pshwápshwa ‘rocks’
  - verbs: repetitive. derivation?
    - tłúp- ‘jump’
    - tłúptłup- ‘jump repeatedly’
  - unpredictable aspects of reduplication
    - p<sub>x</sub>wí- ‘think’, p<sub>x</sub>wíp<sub>x</sub>wi- ‘worry’
    - pshwápshwa (also) ‘rocky’

# What follows from inflection vs. derivation distinction?

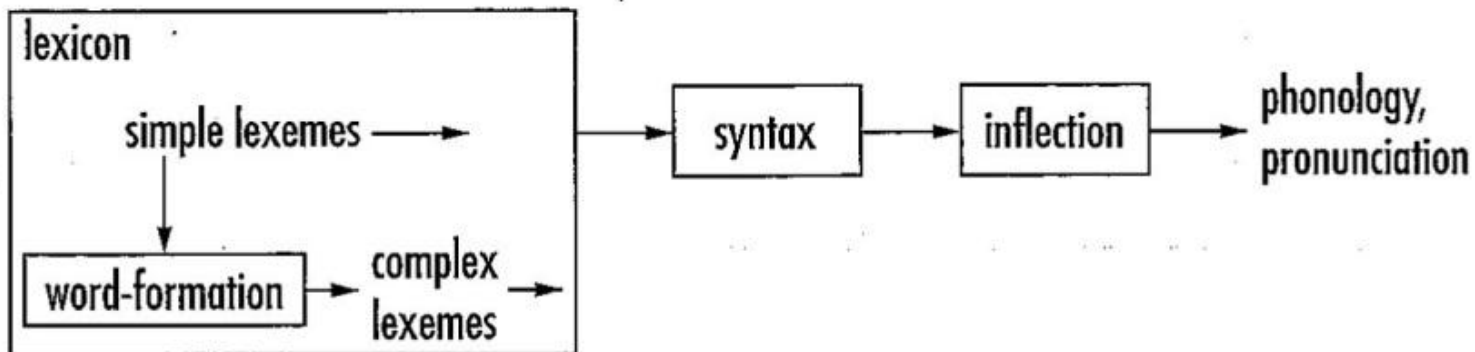
- relates to different senses of “word”. from ch. 2:
  - “word-forms”: ‘word in a concrete sense...expresses the combination of a lexeme...and a set of grammatical meanings or grammatical functions appropriate to that lexeme...the set of word-forms that belong to a lexeme is often called a paradigm’
    - ‘inflection (= inflectional morphology): the relationship between word-forms of a lexeme’
  - “lexemes”: ‘abstract entities that have no phonological form of their own’ ‘LIVE is a verb lexeme. It represents the core meaning shared by forms such as *live*, *lives*, *lived* and *living*.’ ‘a set of related lexemes is sometimes called a word family’
    - ‘derivation (= derivational morphology): the relationship between lexemes of a word family’

# Implications for models of grammar

- Standard model of grammar



- Split Morphology Hypothesis



# “Arguments” for Split Morphology

- “intuitive plausibility”
  - a non-argument
- inflection “outside of” derivation
  - but must ignore counter-examples

# from *Language Files*

## (3) Inflectional affixes of English

Function	Affix(es)	Attaches to	Example
3rd per. sing. present	-s	verbs	She waits <b>there</b> at noon.
past tense	-ed	verbs	She waited <b>there</b> yesterday.
progressive aspect	-ing	verbs	She is waiting <b>there</b> now.
past participle	-en, -ed	verbs	Jack has eaten <b>the</b> cookies. Jack has tasted <b>the</b> cookies.
plural	-s	nouns	The chairs <b>are</b> in the room.
possessive	-'s, -s'	nouns	The chair's <b>leg</b> is broken. The chairs' <b>legs</b> are broken.
comparative	-er	adjectives, adverbs	Jill is taller <b>than</b> Joe. Joe runs faster <b>than</b> Jill.
superlative	-est	adjectives, adverbs	Ted is the tallest <b>in</b> his class. Michael runs fastest <b>of</b> all.

By which of HS's criteria are these inflection?

a.	take	took
b.	atom	atomize
c.	scribe	scribes
d.	megabyte	meg
e.	jostle	jostling
f.	go	went
g.	logic	logical
h.	shake	shaken
i.	ice	de-ice
j.	child	children

Is the difference a matter of inflection or derivation?