BMA-ANGD-A2 Linguistic Theory

Morphology and morphophonology — (phonological) relations between word forms (inflection, derivation)

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(1) Meanings of the term "word": phonological word, grammatical word, lexeme
(i) phonological representation   (ii) morphosyntactic value (word form), (iii) lexical identity

		(i) phon. word	(ii) grammatical word	(iii) abstract word
a.	I will put the book away.		base	
b.	When I leave, I put the book away.	1 /pʊt/	present	1 abstract word
c.	When I left, I put the book away.		past	
d.	I have put the book away.		part participle	
a.	I will be on vacation.	4 /bɪj/	4 gr. words	1 abstract word
b.	Next week, I am on vacation.	/am/		
c.	Last week, I was on vacation.	/wɔz/		
d.	I have been on vacation.	/bɪjn/		

abstract word = LEXEME   abstract word underlying its *inflectional* variants: it has all the properties that the words realising it share and abstracts away from the differences that distinguish them

BE

be being am is   are   was   were   been
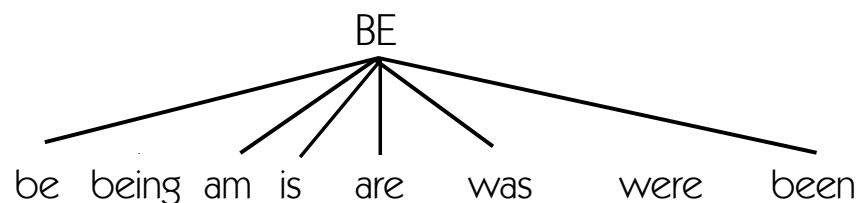
(2) Morphological relationship between words

i.   between word-forms realising the same lexeme: **inflection**

inflectional morphology   deducing the phonological and grammatical properties of the words realizing a lexeme:

DO → do, does, did

paradigm = the full system of words realising a lexeme

ii.   between different, morphologically related lexemes : **derivation**

word-formation   deducing the properties of one lexeme from those of one or more other lexemes

derivational morphology   DO → UNDO

(3) Morphology & phonology: morphological relationships may or may not have phonological consequences

		yes		no
i.	inflection	DO → do_{Base}, $done_{PastPart}$		CUT → cut_{Base}, cut_{Pas} $cut_{PastPart}$
ii.	derivation	DEEP → DEEPEN		$DRINK_N$ → $DRINK_V$

(4) Morphological analysis: morphs, morphemes & morphological analysis

Morphological analysis means the analysis of words. There are various ways of doing this. One approach is the "Item-and-Arrangement" model (IA), which analyses words into recurrent basic meaningful units (morphemes) and describes their arrangement into words.

STEP I. Identify "recurrent partials with constant meaning"   Those recurrent partials that are not composed of smaller meaningful forms are classified as *morphs* or *morpheme alternants*

words	morphs (morpheme alternants)		
kind-ness-es	$kɑjnd_a$		
weak-ness-es	$wɪjk_b$	$-nəs_h$	$-ɪz_i$
rack-s	rak_c	$-s_j$	
cat-s	kat_d	$-s_j$	
dog-s	$dɔg_e$	$-z_k$	
leaf, leav-es	$lɪːjf_f$ $lɪːjv_g$	$-z_k$	

STEP II Assign *morphs* to a common *morpheme* if (i) they have the same meaning and (ii) they are in complementary distribution

morphemes	allomorphs
KIND	$\{k\alpha jnd_a\}$,
WEAK	$\{w\text{ɪ}jk_b\}$
RACK	$\{rak_c\}$
CAT	$\{kat_d\}$
DOG	$\{d\text{ɔ}g_e\}$
LEAF	$\{l\text{ɪː}jf_f, \ l\text{ɪː}jv_g\}$
-NESS	$\{n\text{ə}s_h\}$
PLURAL	$\{\text{ɪ}z_i \ \ s_j \ \ z_k\}$

The morpheme is an abstract unit or a class: it is the smallest meaningful unit which does not contain another meaningful unit. Allomorphs are morphs that realise the same morpheme

STEP III. Formulate *morphophonemic rules of realisation* that regulate the selection and shape of the allomorphs that realize a given morpheme in a particular context and state which allomorph occurs in what context.

KIND → /kɑjnd/   WEAK →/wɪjk/   RACK→/rak/   CAT→/kat/   DOG→/dɔg/   -NESS→nəs

LEAF → /lɪːjv/   / ___ PLURAL

/lɪːjf/   / elsewhere

PLURAL   →   /ɪz/ / [sibilant] ___

/s/   / [nonsibilant, –voice] ___

/z/   / [nonsibilant, +voice] ___

STEP IV. Formulate *morphotactic rules* that state how morphemes can be combined into words

e.g. -NESS is a suffix that can be added to adjectives, forms nouns and may be followed another suffixes such as the plural

PLURAL is a suffix that can be added to nouns and cannot be followed by another suffix

(5) Morphological complexity

simple (monomorphemic) words: look, make, write, beat, keep, come

complex (polymorphemic) words: looked, made, written, beat$_{past}$, kept, came

look : looked = make : made = write : written = beat : beat = keep : kept = come : came

(a) agglutination: one-to-one correspondence between meaning and form

look-ed   meaning: "look" + Past

                   | |

           form   lɵk   t

(b) non-agglutinative patterns   made, written, beat, kept, came

made   meaning: "make" + Past

           form   mɛjd

Non-agglutinative patterns are difficult to analyse in the "Item-and-Arrangement" model.

(6) How to distinguish inflection from derivation?

(6.1) Derivation may be category-changing, inflection may not.

a.   book → books (N→N)   but black → blacken (Adj→V)

b.   derivation does not necessarily change category: do → undo (V→V)

c.   ambiguity   -ing   They are discouraging everyone.   present participle (inflection: V→V)

                              the most discouraging news   adjective (derivation: V→Adj)

(6.2) Productivity: inflection tends to be complete, derivation tends not to be.

a.   verb→verb$_{PAST}$ (almost) for all verbs   but   -ness   vs.   -ity

awkwardness	*awkwardity
distinctness	*distinctity
weirdness	*weirdity
?*vainness	vanity
*confidentialness	confidentiality

c. problem: missing inflectional forms (defective paradigms/paradigm gaps)

AmE   He **drove** there yesterday and he has **driven** everywhere in the States.

He **dove** there yesterday and he has *?**dived/dove/diven** everywhere in the States.

He told us to **think** of the dog.   Yesterday, he **thought** of the dog.

He told us to beware of the dog.   Yesterday, he __?__ of the dog.   <PAST>

Hung: Itt **ugrott** le, pedig külön mondtam neki, hogy máshol **ugorjon**. le.

Itt **siklott** le, pedig külön mondtam neki, hogy máshol __?__ le.   <IMPERATIVE>

(6.3)   Inflection tends to be semantically regular, derivation is often not semantically regular.

a.   go   - went   vs.   Barnum   -   barnumize

sit   - sat   dollar   -   dollarize

look   - looked   poster   -   posterize

b.   problem: semantically regular derivation: X_{ADJ}-ly 'in an X manner'

c.   problem: semantically irregular inflection: brother - brethren vs.   N - N_{PLURAL}

(6.4) Inflection is syntactically determined, derivation is not.

a. [every ____] $N_{SINGULAR}$

[both ____] NP_{LURAL}

[hasn't ____] $V_{PAST\ PARTICIPLE}$

[____ than ever] $Adj_{COMPARATIVE}$

b. [____] can cause unhappiness.   simple or complex N: love

kindness

vanity

censorship

adulthood

[...]

(6.5) Inflectional affixes are peripheral to derivational ones.

a. *kind-s-ness, *magnet-ed-ize

b. problem: wors-en, better-ment

(7) Morphological operations expressing inflection/derivation

(a)   affixation (pre-, suf-, in-)   book → books   do → undo   (absolutely → absofuckinglutely)

        mutation   louse → lice

        reduplication   fancy → fancy-schmancy   bagel → bagel-schmagel

        conversion (zero affixation)   drink$_V$ → drink$_N$

        truncation/clipping   Albert → Al

        combinations of processes

            truncation+affixation   Patricia → Pattie

            mutation + affixation   child → children

(b) Other morphological operations (not discussed in this lecture)

        cliticisation (proclitic, enclitic)   I am → I'm

        compounding   black+bird → blackbird

        blending   boat+hotel → boatel

(8) Phonological consequences of morphological operations: alternation

alternating vs. non-alternating morphemes   seem /sɪjm/   vs.   mean /mɪjn/~/mɛn/

                                                         seem - seem-ed   mean - mean-t

productivity (frequency of phonological change):   suppletive vs. non-suppletive   go ~ went   vs.   pu[l]~pu[ɫ]ed

location of alternation   base vs. affix   vain~van-ity   seem-s~look-s~miss-es

                                                         both   knife~kniv-es   füröd-ni~fürd-eni

conditioning of alternation   phonological   seem-**s**~look-**s**~miss-**es**

                                     morphological   H: **fa** 'tree'~**fá**-k 'tree$_{PL}$'

                                     lexical   **wife**~**wive**s   (compare roof – roofs)

                                     lexical&morphological   **wife**~**wive**s   (compare wife~wife's)

(9) Inflection: paradigms, inflectional categories/morphosyntactic dimensions, morphosyntactic properties/values

PARADIGM: the full system of words realising a lexeme

INFLECTIONAL CATEGORIES =

MORPHOSYNTACTIC DIMENSIONS   groups of grammatical properties/values expressed by a language's inflectional

morphology

MORPHOSYNTACTIC PROPERTIES   grammatical properties/values expressed by a language's inflectional morphology

English nouns   paradigm   dog, dogs (?dog's)

inflectional categories   NUMBER   (?CASE)

morphosyntactic properties   singular, plural; (general, genitive)

EXPONENT   morphological marking in a word expressing a given morphosyntactic property

plural: books: /s/, oxen: /ən/, geese: /ʉw → ɪj/, sheep: ∅

Inflectional categories and morphosyntactic properties determine paradigmatic "space"

The Hungarian verbal paradigm (52 cells)

	Present indicative		Past indicative		Present subjunctive-imperative		Present conditional	
	indefinite	definite	indefinite	definite	indefinite	definite	indefinite	definite
1Sg								
2Sg								
3Sg								
1Pl								
2Pl								
3Pl								
1Sg2$_{obj}$								

inflectional categories	morphosyntactic properties/values
TENSE	present, past
MOOD	indicative, subjunctive-imperative, conditional
PERSON/NUMBER	1sg, 2sg, 3sg, 1pl, 2pl, 3pl, 1sg/2
DEFINITENESS	definite, indefinite

Complex example: The Hungarian verbal paradigm (52 cells; syncretism, paradigm gap, variation)

	Present indicative		Past indicative		Present subjunctive-imperative		Present conditional	
	indefinite	definite	indefinite	definite	indefinite	definite	indefinite	definite
1Sg	akarok	akarom	akartam	akartam	akarjak	akarjam	akarnék	akarnám
2Sg	akarsz	akarod	akartál	akartad	akarjál / akarj	akarjad / akard	akarnál	akarnád
3Sg	akar	akarja	akart	akarta	akarjon	akarja	akarna	akarná
1Pl	akarunk	akarjuk	akartunk	akartuk	akarjunk	akarjuk	akarnánk	akarnánk
2Pl	akartok	akarjátok	akartatok	akartátok	akarjatok	akarjátok	akarnátok	akarnátok
3Pl	akarnak	akarják	akartak	akarták	akarjanak	akarják	akarnának	akarnák
1Sg2$_{obj}$	akarlak		akartalak		akarjalak		akarnálak	

inflectional categories	morphosyntactic properties/values
TENSE	present, past
MOOD	indicative, subjunctive-imperative, conditional
PERSON/NUMBER	1sg, 2sg, 3sg, 1pl, 2pl, 3pl, 1sg/2
DEFINITENESS	definite, indefinite

General constraints on the structure of paradigms:

Inflectional categories and morphosyntactic properties determine paradigmatic "space," which is subject to these violable constraints

Paradigmatic UNIFORMITY: Forms within the paradigm should be partially similar.

(no suppletivism: but   go - wen-t)

Paradigmatic CONTRAST: Forms in different cells should be non-identical.

(no syncretism: but cut_{BASE} - cut_{PAST} . $cut_{PAST\ PART.}$)

COMPLETENESS   All the cells should have at least one form.

(no paradigm gaps: but   *$beware_{PAST.}$)

(10)   **English inflectional morphology**: isolating type

- small regular exponent inventory   →   lots of syncretism

   periphrastic constructions

- irregular inflectional morphology   verbs: past & past participle

   nouns: plural

   (adj: comparative & superlative)

- inflectional affix = all are suffixes

- restriction: max 1 inflectional affix in a word

(10.1) Forms: the *regular* subsystem of inflectional exponents (Blevins 2006)

Word Class	Form	Exponent	Examples
Noun	plural	-s (/z/)	mugs, spas, books, buses
Verb	'3sg present'		sells, walks, sees, pushes
	preterite	-ed (/d/)	quelled, talked, skied, swatted
	'past' participle		
	'present' participle	-ing (/ɪŋ/)	eating, being, squealing, walking
	gerund		
Adjective	comparative	-er (/əɹ/)	faster, older, milder, yellower
	superlative	-est (/əst/)	fastest, oldest, mildest, yellowest

pronouns also have case (*me, him her*, etc)

(11) Inflection: nouns (declension)

(11.1) The Genitive: case or no case: morphology or syntax?

John's cat   [$_{NP}$ John]'s cat

the attorney general's hat   [$_{NP}$ the attorney general]'s hat

the director of personnel's office   [$_{NP}$ the director of personnel]'s office

the guy next door's voice   [$_{NP}$ the guy next door]'s voice

that man you met yesterday's bicycle   [$_{NP}$ that man you met yesterday]'s bicycle

(11.2) Number: singular vs. plural

Type	Exponent	examples
Regular	-s	cat[s], dog[z], bus[ɪz] …
Irregular (suppletive)	base-final C-change + -s ('voicing plural')	knives, wives [vz] … (vs. proofs [fs]) paths, mouths [ðz] … (vs. myths [θs]) houses [zɪz] (vs. choices [sɪz])
	vowel change	man – men woman – women tooth – teeth, goose – geese foot – feet louse – lice, mouse – mice
	-en	child – children, brother – brethren, ox – oxen
	zero ('zero plural')	sheep, grouse, salmon, deer … barracks, headquarters, species, series, dice, … Chinese, Japanese, Vietnamese … Apache, Bedouin, Navajo, Roma …

Foreign	-on – -a	criterion – criteria, phenomenon – phenomena,
	-is – -es	analysis – analyses, thesis – theses, ...
	-a – -ae	larva – larvae, ...
	-us – -i	syllabus – syllabi, stimulus – stimuli ...
	-i/ex – -ices	matrix – matrices, index – indices, ...

a. non-count Ns: furniture ....

b. variable count Ns: cat ...

c. invariable plural only count Ns ('pluralia tantum'): syntactically plural, but

inflectional plural & no singular: scissors , archives, clothes, remains, troops, wits, ...

no inflectional plural & no singular: cattle, people, police, vermin ...

(11.3)   Genitive+Plural: regular plural and genitive are fused 'bare genitive':

the children's dog   but   the boys' dog

(12) Inflection: grade of adjectives: comparative and superlative

i.   regular

	<2syll	2syll	>2syll
X_{ADJ}-er, X_{ADJ}-est	old-er	clever-er	–

ii.   irregular: good/well   better   best

        bad/badly   worse   worst

(13) Inflection: verbs (conjugation)

(13.1) Paradigm: inflectional forms

	Regular	Irregular		
Base (=stem)	walk	cut	eat	be
Present Participle	walking	cutting	eating	being
3sg Present	walks	cuts	eats	is
Past	walked	cut	ate	was
				were
Past Participle	walked	cut	eaten	been
				am
				are

i. Regular verbs   have 5 forms (grammatical words), all of which are based on the stem, realised by 4 different

phonological words

(some authors split the Base cell into 2: Plain Present and Plain Form ('Bare Infinitive'), according to them

there are 6 forms)

all forms are based on the stem

ii. Irregular verbs   some forms are not based on the stem: typically Past and Past Participle while all other forms are based

on the stem – one extreme: *be* (3 extra forms + 3sg Present is not based on the stem)

iii. auxiliaries   are defective (e.g. must)

(13.2) Irregular verb patterns

	stem	Preterite	Past Participle
Regular	walk	walked	walked
No syncretism	sing	sang	sung
	lie	lay	lain
	take	took	taken
	go	went	gone
no variation	cut	cut	cut
Past = Past Participle	meet	met	met
	seek	sought	sought
	sell	sold	sold
	hang	hung	hung
	build	built	built
Past = stem	beat	beat	beaten
Stem = Past Participle	come	came	come
	run	ran	run

(13.3) Irregular verb paradigms

Irregular verb paradigms all have irregular ED1 and/or ED2 forms

notation: ED1= Past; ED2= Past Participle

1=same as another form in the paradigm, 0=not identical with another form

R(egural)=B+ed;   I(rregular)=not B+ed

<Base ED1 ED2>   regular verbs: <0 1 1, B R R>

(13.3.1) Syncretism: all licit combinations exist

3 combinationms are illicit: *1 0 0, *0 1 0, *0 0 1 $2^3 - 3 = 5$ paradigm types

0 0 0

1 1 1

1 1 0

1 0 1

0 1 1

(13.4) *Regular* forms in *irregular* paradigms

Generally: they DON'T MIX

i.   Irregular verb paradigms have irregular ED1 and ED2 forms: ED1=I and ED2=I

ii.   Irregular verb paradigms don't have regular ED1 or ED2 forms

iii.   ED1=R ⟹ ED2=R   ED2=R ⟹ ED1=R

        ED1=I ⟹ ED2=I   ED2=I ⟹ ED1=I

iv.   exceptions:

        a. some verbs whose regular ED2 has an alternative irregular ED2 ending in *-n*:

                <0 1 1, B R R> & <0 0 0, B R I>

                mow   mowed   mowed/mow**n**

                show   showed   showed/show**n**

                saw   sawed   sawed/saw**n**

                shear   sheared sheared/shor**n**

                swell   swelled swelled/swolle**n**

b. parallel regular & irregular paradigms <0 1 1, B R R> & <0 1 1, B I I>

dream	dreamed	dreamed
dream	dreamt	dreamt
spoil	spoiled	spoiled
spoil	spoilt	spoilt

(13.5) Inflectional categories expressed by the verb

Person	(I) am, (she) sees
Number	(she) was, (they) were
Tense	walked, walks
Mood	(if she) was, (if she) were
Finiteness	(she) sees, (to) see
Participiality	seeing

(14) Derivational morphology

a.   LEXEME $\longrightarrow$ LEXEME

b.   Word Formation Rules (WFR)

$[[\text{think}]_V\text{er}]_N$ $[[\text{runn}]_V\text{er}]_N$ $[[\text{hunt}]_V\text{er}]_N$

rules: V + er → N

$$N$$
$$\overset{\displaystyle V \qquad er}{\diagdown}$$
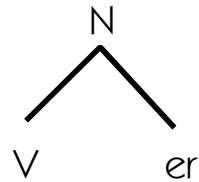
rule components: (conditions)	syntactic/morphological	input: V output: N
	phonological	base: no change + /ər/
	semantics	V+/ər/ = 'agent of V'

There may be (further) syntactic/morphological/phonological/semantic conditions on the input and/or output of the rule.

(15) English derivational morphology: general properties

(15.1) No consistent marking of any word class (category), or subclass. Individual affixes may indicate class membership.

(15.2) Complex derivational morphology: how many affixes?

productivity/compositionality   nice+ly   but   omit   or   o+mit ?

intervene   or   inter+vene ?

80 (54 suff. + 26 pref.) (Hay & Baayen 2002)

129 (Stockwell & Minkova 2001)

(15.3) prefixes, suffixes, infixes

prefixes: no phonological effect on base

       contextualize   decontextualize

       organize   reorganize

       modern   postmodern

       modify   premodify

       argument   counterargument

       typically non-category changing   except: de-   deflea, dethrone, debug

                                                                      be-   befriend, befoul

                                                                    en-   enrage, ennoble

infix: expletive infixation is the only example

suffixes: may have phonological effect on base (base alternations)

some suffixes that trigger alternations		some suffixes that do not trigger alternations	
-(at)ion	radiation	-ness	religiousness
-y	candidacy	-less	televisionless
-ic	parasitic	-ship	editorship
-ous	monstrous	-ly	headmasterly
-ese	Japanese	-dom	martyrdom

may change category

some suffixes that change category		some suffixes that do not change category	
-(at)ion	radiation	-ship	editorship
-ous	monstrous	-dom	martyrdom
-ic	parasitic	-ish	introvertish

(15.4) Two kinds morphologies:

Labels: **'Non-native'** (Latinate, Level1, root-level, primary, weak (+)-boundary)

                 'Native' (Level2 , word-level, secondary, strong (#)-boundary)

'non-native':   *in-, -ity, -ic, -ory, -ate, -ion, -ant, …*

'native':   *un-, -ness, -ly, -ful, -ship, -hood, -ment, …*

	'non-native' affixes		'native' affixes
phon.	tend to trigger alternations in the base		trigger no alternations in the base
	tend to be vowel-initial		tend to be consonant-initial
ex:	*van-ity, civíl-ity*	vs.	*crazi-ness, attentive-ness*
morph.	can attach to roots (bound forms)		tend to attach to words (free forms)
	tend not to occur outside 'native' affixes		tend not to occur inside 'Latinate' affixes
ex:	*in[ept], in[ert], [leg]al, [curi]ous*	but	**un[ept], *[leg]ship, *[curi]less*
	parent-al, parent-al-ness, nation-al-ity	but	**parent-hood-al*
semant.	meaning is often non-compositional		meaning tends to be compositional
ex:	*arrival, recital, referral, refusal*	vs.	*niceness, blindness, boldness, evenness*

(16) Derivation without affixation:

change in voicing of base-final consonant $proof_N$, $prove_V$

change of base vowel $song_N$, $sing_V$

change in base stress pattern $tórment_N$, $tormént_V$

conversion $bottle_N$, $bottle_V$

end