BMA-ANGD-A2 Linguistic Theory

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

(NB: these slides are *annotated* : after a series of slides you'll find yellow pages of explanations)

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(1) Words: phonological word, grammatical word, lexeme

phonological representation   morphosyntactic value (word form), lexical identity

			phon. word	grammatical word	abstract word
i.	a.	I will **put** the book away.		base	
	b.	When I leave, I **put** the book away.	1 /pɐt/	present	1 abstract word
	c.	When I left, I **put** the book away.		past	
	d.	I have **put** the book away.		part participle	
ii.	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/		

iii.   abstract word = LEXEME   abstract word underlying its the *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
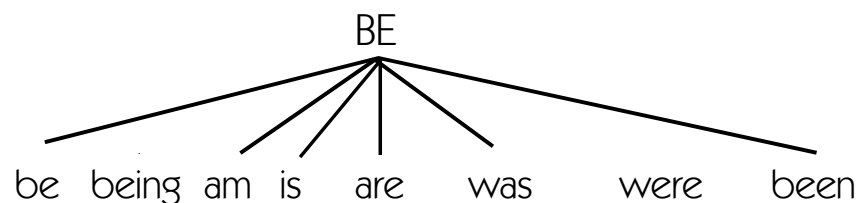
(2) Morphological relationship between words

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) Morphological relationships may or may not have phonological consequences

		yes	no
i.	inflection	DO → do$_{Base}$, done$_{PastPart}$	CUT → cut$_{Base}$, cut$_{PastPart}$
ii.	derivation	DEEP → DEEPEN	DRINK$_N$ → DRINK$_V$

THESE NOTES (*THE YELLOW PAGES*) ARE ANNOTATIONS EXPLAINING (LIKE THE ACTUAL LECTURE WOULD HAVE DONE VERBALLY) THE SLIDES THAT PRECEDE. THE NUMBERS IN BRACKETS ( ) REFER TO THE SECTION NUMBERS OF THE SLIDES.

This lecture is about morphology, i.e. *word structure*.

(1)   A word has a phonological representation (determining its pronunciation), a morphosyntactic value (which grammatical word form it is) and a lexical identity (which lexical item it is based on), e.g. the word *weeps* is phonologically /wɪjps/, its morphosyntactic value is 3rd person singular present and it is based on the lexical item *weep*.

The word "WORD" is typically used in three different meanings:

grammatical word: Definition: a minimal free form is a grammatical WORD.
     A word is thus a form which may be uttered alone *with meaning* but cannot be analysed into parts that may (all of them) be uttered alone (with meaning). (Bloomfield)
   Example: *vain* /vɛjn/, *vanity* /vanətɪj/ – /vɛjn/, /vanətɪj/ are grammatical words, but /van-/, /-ətɪj/ are not

phonological word   Definition: a minimal free form without a fixed meaning or function
     often demarcated by phonetic or phonological cues (e.g. stress, phonotactics)

l**exeme: 'word type'**
     Grammatical words are tokens of a common word 'type' called a lexeme. A lexeme is a *set* of grammatical words, an 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.

Example: *put* is one phonological word /pʊt/ but can be four different grammatical words (base, present, past, past participle) all of which (together with some other grammatical words, e.g. *puts*) realise the same lexeme PUT

(2)   If we want to determine which words belong to a lexeme, we need to distinguish between two types of word modification: *inflection* (e.g. *write → write-s*) vs. *derivation* (*write → writ-er*) because only inflected forms are part of the same lexeme. Accordingly, we distinguish between two kinds of morphological relationship between words: the relationship between word-forms realising the same lexeme: *inflectional morphology* and the relationship between different, morphologically related lexemes: *derivational morphology*

derivation: $\text{Lexeme}_1 \rightarrow \text{Lexeme}_2$

Derivational morphology means deducing the properties of one lexeme from those of one or more other lexemes: DO → UNDO

inflection: $\text{Lexeme}_1 \rightarrow$ grammatical word realising Lexeme_1

Inflectional morphology means deducing the phonological and grammatical properties of the words realizing a lexeme: DO → {*do, does, did*}

(3)   Derivation and inflection may have, but do not necessarily have phonological consequences, i.e. a change in form
☞You can see this in the table on p.3

(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	$\{kajnd_a\}$,
WEAK	$\{wɪjk_b\}$
RACK	$\{rak_c\}$
CAT	$\{kat_d\}$
DOG	$\{dɔg_e\}$
LEAF	$\{lɪːjf_f, lɪːjv_g\}$
-NESS	$\{nəs_h\}$
PLURAL	$\{ɪz_i \ s_j \ z_k\}$

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 (overt) suffix

(5) Morphological complexity

simple words: look, make, write, beat, keep, come

complex 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   lʊk   t

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

made   meaning: "make" + Past

               form   mɛjd

Non-agglutinative patterns are a problem for the "Item-and-Arrangement" model.

(4)   Morphological analysis in the "Item-and-Arrangement" model proceeds in the four steps shown in (4). Identical subscripts in STEP I indicate a "recurrent partial" (i.e. a substring than occurs in several words) with the same meaning and form, i.e. the same morph. Note that lɪjf and lɪjv are *different* morphs (similarly: ɪz, s, z, too) because – although they mean the same – they do not have the same form (they are pronounced differently). When you group morphs into morphemes (STEP II) you can think of a morpheme as an abstract unit that its allomorphs realise or a class (group) of morphs that the allomorphs are members of – practically, it makes no difference. Some of the rules in STEP III are context-free (when a morpheme is always realised in the same way: CAT→/kat/), some are context-dependent (when a morpheme is realised in by a certain allomorph in some context and by another in others:

E. g. LEAF → /lɪːjv/ / __ PLURAL;   LEAF → /lɪːjf/ / elsewhere.

In context-sensitive rules the context appears on the right, after the environment slash "/" and the symbol underscore "__" indicates the focus of the rule, i.e. the position of morpheme the rule refers to (A→B / C_D means A is realised as B between C and D).

(5)   Since the relationship between *look* and *looked* is the same as the relationship between *make* and *made* (*look* : *looked* = *make* : *made*) and we can analyse *looked* as *look*+PAST, it is reasonable to assume that *made* is *make*+PAST. However, while in *looked* /lɵkt/ it is easy to identify /t/ as the past tense morpheme corresponding to the past meaning, it is not possible to identify the past tense morpheme in *made* /mɛjd/ (and in the other non-agglutinative examples) although the words are clearly past tense forms. Since the "Item-and-Arrangement" model focusses on identifying morphemes, non-agglutinative patterns are a problem for the 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.   one way: 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.

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

Itt **siklott** le, pedig külön mondtam neki, hogy máshol ...?... le.

(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

                                                                   kind**ness**

                                                                   van**ity**

                                                                   censor**ship**

                                                                   adult**hood**

                                                                   [...]

(6.5) Inflectional affixes are peripheral to derivational ones.

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

b.   exceptions: 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. /pɵl/~/pɵɫ/

location of alternation   base vs. affix   vain~vanity   seems~looks~misses

both   knife~knives

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

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

vs.   lexical   **knife**~**knive**s   (compare roof – roofs)

If we want to determine which words belong to a lexeme (see the definition of the lexeme in (1)), we need to distinguish between two types of word modification: inflection (e.g. *write → write-s*) vs. derivation (*write → writ-er*) because only inflected forms are part of the same lexeme.

(6) Criteria for distinguishing inflection from derivation

(6.1) **Category (part of speech) change**

Derivation MAY be category-changing, inflection may not.

Example: *book → book-s* (N→N)   inflection
                      black → black-en (Adj→V)   derivation
problem   *do → un-do* (V→V)   derivation   (Why not inflection?)

The affix *-ing* is two-faced: there is a derivational *-ing,* which changes category and an inflectional one, which does not.

(6.1) Productivity

Derivational affixes are typically restricted to certain (groups of) lexical items but inflectional affixes are typically not restricted in this way (i.e. inflection is more "productive"): e.g. every verb has an inflectional past form, but derivational *-ness* or *-ity* can be added to adjectives, but not any adjective.

Problem: sometimes there are unexpectedly missing inflectional forms even though inflection is supposed to be complete. Look at the English and Hungarian examples in (6.1.c): **bewared* or **bewore* and **sikoljon* are expected to exist, but they do not: *beware* and *siklik* have defective paradigms

(6.3) Semantic regularity

The semantic relationship between the word and a given inflected word form is typically regular in the sense that it is the same no matter which base word we choose:

   go : went = sit : sat = look : looked

This tends to be not true of derived forms: the semantic relationship between a word and a derived form based on it is often not the same when we look at another word and its derived form with the same affix:

   Barnum : barnumize ≠ dollar : dollarize ≠ poster : posterize

This difference does not always apply: there are semantically irregular inflected forms and semantically regular derivational affixes

(6.4) syntactic determination

Inflection is syntactically determined, derivation is not. If there is an environment in the sentence that requires a particular grammatical word form (i.e. there is a syntactic rule requiring that a particular grammatical word form should appear in that environment), then that grammatical word (and the morphological mark on that grammatical word) is inflectional.

Example:

a.   [both ___] N_{PLURAL} e.g. *books*

        [hasn't ___] $V_{PAST\ PARTICIPLE}$ e.g. *written*

        [___ than ever] $Adj_{COMPARATIVE}$ e.g. *nicer*

The forms that you can insert into these contexts (e.g. *books*, *written*, *nicer*) are inflectional because they are required by these (and many other) syntactic environments.

b.   [___] can cause unhappiness.

A noun is required in this environment, but any simple or complex noun will do, it makes no difference: e.g. *love, kind-ness, van-ity, censor-ship, adult-hood*, etc. Since *-ness, -ship, -hood* are not specifically required by ANY environment in a sentence (any syntactic rule) in English, they are derivational.

(6.5) Position

Inflectional affixes are typically "outside" derivational ones. This is why **kind-s-ness* is ill-formed: inflectional plural precedes derivational *-ness*. This is only a tendency: *better* is an inflectional form and still derivational *-ment* can follow: *betterment*.

The crucial criteria distinguishing derivation from inflection are (6.1) and (6.4)

(7) Morphological operations expressing inflection/derivation

(7) illustrates the various morphological operations: affixation (when bound morphemes are added initially, medially or finally to a stem), mutation (when a stem vowel is modified), reduplication (when part of the stem is copied before or after the stem), conversion (when the stem is formally unchanged but there is category change), truncation (when part of the stem is deleted), cliticisation (when a syntactically independent word is phonologically dependent, i.e. it is an affix in form but a function word in distribution), compounding (when stems are combined to form another word), blending (when parts of stems are combined to form another word)

(8)   Morphological operations may (or may not) result in alternation. Alternation is the occurrence of more than one allomorph: allomorphs or the subparts of allomorphs that are non-identical are said to alternate (the symbol '~' denotes alternation).

Example: LEAF {*leaf, leav-es*}   /lɪjf/~/lɪjv/   /lɪjf/ alternates with /lɪjv/

/f/~/v/   /f/ alternates with /v/

An alternation is non-suppletive if it recurs (occurs in many examples, e.g. past t~d~ɪd) and suppletive it if is infrequent/isolated (e.g. the change in *go~went* only occurs in this single word)

An alteration may be phonologically, morphologically or lexically conditioned depending on what kind of information must be referred to when you identify the cause of the alternation.

(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: book**s** /s/, ox**en** /ən/, g**ee**se /ʉw → ɪj/

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

    TENSE

    MOOD

    PERSON/NUMBER

    DEFINITENESS

morphosyntactic properties/values

present, past

indicative, subjunctive-imperative, conditional

1sg, 2sg, 3sg, 1pl, 2pl, 3pl, 1sg/2

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: ☹   go - wen-t)

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

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

COMPLETENESS   All the cells should have at least one form.

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

(9) Paradigms

A paradigm is the full system of words realising a lexeme (the uninflected form + all the inflected forms that belong to a lexeme).

A paradigm is defined/determined by

inflectional categories   groups of grammatical properties/values expressed by a language's inflectional morphology

common inflectional categories:

Nouns: number, gender, definiteness, case

Verbs: tense, aspect, mood, person, number, gender

Adjectives: degree, number, gender, case, definiteness.

and

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

common morphosyntactic properties:

Nouns: singular, plural, dual; feminine, masculine, neuter; nominative, accusative, genitive, dative, ...; definite, indefinite

Verbs: present, past, future, ...; perfect, progressive, continuous...; 1sg, 2sg, 3sg, ...

Example: NUMBER is an inflectional category relevant to the English noun paradigm, the morphosyntactic properties distinguished are: 'singular' vs. 'plural'

TENSE is an inflectional category relevant to the English verb paradigm, the morphosyntactic properties distinguished are: 'present' vs. 'past'

exponents: an exponent of a morphosyntactic property in a given word is a morphological marking expressing that property in that word

Example: the exponents of the plural in English

books   oxen   geese

[s]   [ən]   [ʉw] → [ɪj]

Complex example: see the the Hungarian verbal paradigm in (9)

General constraints on the structure of paradigms

Typically, grammatical words within a paradigm are *uniform* (they are partially similar), each cell has a different form, i.e. they realise paradigmatic *contrast* (syncretism is when a form appears in more than one cell, see the red ones in the Hungarian example) and the paradigm is *complete*, i.e. there are no empty cells (paradigm gaps – if not, then the paradigm is defective, see the examples in (6.1)).

(10)   English inflectional morphology: isolating type

- small regular exponent inventory   →   syncretism

    periphrastic constructions

- irregular inflectional morphology   verbs: past & past participle

    nouns: plural

    (adj: comparative & superlative)

- inflectional affix = all suffixes

- max: 1 infl. affix/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)

(10)   English paradigms (inflectional morphology) are relatively simple, there are very few regular exponents (see 10.1). There are lots of syncretisms (e.g. in most verbs the past form is the same as the past participle), and many grammatical distinctions are expressed by periphrastic constructions (combinations of words) rather than single word forms (e.g. the future *will do*). There is some irregular morphology in nominal, verbal and adjectival paradigms. All inflectional affixes are suffixes and only one inflectional affix can occur in a word (compare Hungarian, where you can have more: *ház-a-i-t* 'house-GENITIVE-PLURAL-ACCUSATIVE').

(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	Exx
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

(11) Noun paradigms (declension)

(11.1)   Some linguists do not consider the English genitive a morphological phenomenon because – as the examples show – it is a property of a construction (e.g a phrase) rather than a word (e.g. the guy next door's voice is not the door's voice). If you accept this, then CASE is not an inflectional category (and the genitive is not a morphosyntactic property) of the nominal paradigm in English.

(11.2)   shows the inflectional category NUMBER (morphosyntactic properties: singular vs. plural) and its regular and irregular exponents in English

(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

(12) Adjective paradigms express the inflectional category GRADE/DEGREE (morphosyntactic properties: positive vs. comparative vs. superlative). In English only monosyllabic and some bisyllabic adjectives have paradigms with positive, comparative and superlative forms (e.g. *short, shorter, shortest*). Longer adjectives do not have comparative and superlative forms and express comparison periphrastically (e.g. *more beautiful*).

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(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
Preterite/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 Preterite and Past Participle while all other forms are

based on the stem – one extreme: be (3 extra froms + 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
Preterite = Past Participle	meet	met	met
	seek	sought	sought
	sell	sold	sold
	hang	hung	hung
	build	built	built
Preterite = stem	beat	beat	beaten
Stem = Past Participle	come	came	come
	run	ran	run

(13.3) 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

(13) Verb paradigms express the inflectional categories shown in (13.3) with the forms described in (13.1). Every main verb has 5 forms (Base (=stem), Present Participle, 3sg Present, Preterite/Past, Past Participle), some of which may be identical (syncretism). Auxiliaries have defective paradigms as some of the above forms are missing (e.g. *must* only has a base form). In regular verbs all the forms are predictable from the Base; in irregular ones either the Past or the Past Participle or both are not predictable. One classification of irregular verbs is shown in (13.2) This classification is based on where syncretism occurs (shown by red shading) – several other classifications are possible (and have been proposed in the literature).

(14) Derivational morphology

a.   LEXEME ⟶ LEXEME

b.   Word Formation Rules (WFR)

[[think]$_V$er]$_N$ [[runn]$_V$er]$_N$ [[hunt]$_V$er]$_N$

rules: V + er → N

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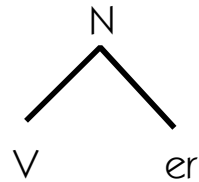
rule components: (conditions)	syntactic/morphological	input: V output: N
	phonological	base: no change + /ər/
	semantics	V+/ər/ = 'agent of V'

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

(14) Derivational morphology means deriving a lexeme from another lexeme (14a). This can be expressed by word formation rules WFRs, (14b).

Example: V + er → N (take a noun, add -er, you get a verb)

teach+er → teacher, read+er → reader, etc.

WFRs may be subject to syntactic/morphological, phonological, semantic and other conditions, e.g. the WFR for *-er*:

	syntactic/morphological:	derives nouns from verbs
	phonological:	no phonological change in base, just add /-ər/
	semantic:	V+/ər/ means 'agent (doer) of V'

(15) General properties of English derivational morphology

In English, there is no specific, consistent formal indication (marking) of word class (you cannot always tell which word class a given stem belongs to from its shape – although some suffixes indicate word class, e.g -er in *teacher* shows it is a noun). The number of derivational affixes (15.2) changes from author to author depending on whether they consider non-compositional (when the meaning of the ord cannot be derived from the meaning of the stem + the usual meaning of the affix) or less productive as affixes or part of the root. (15.3) shows examples of English derivational prefixes and suffixes and classifies them according to whether they trigger a phonological change in the base and whether they change category. The only example of what is often claimed to be infixation is the insertion expletives like *bloody* or *fucking* into words before the main stress (e.g. *absofuckinglutely*), but it is doubtful that this is really infixation.

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(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
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
sem.	meaning is often non-compositional	meaning tends to be compositional

examples: vanity, civility   vs.   craziness, attentiveness

              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

              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$_V$

(15.4)   English is often said to have two kinds derivational morphologies: 'native' and 'non-native' (there are various other names for the same distinction, given in parentheses in (15.4)). Although the labels 'native' and 'non-native' suggest that the distinction is based on historical origin, this is not true: it is based on phonological, morphological and semantic differences in affix behaviour or distribution; this is listed and exemplified in this section.

(16)   Although derivation in English is chiefly expressed by affixation, derivation without affixes also occurs. The different types are listed and exemplified in (16).

end