Inflection and derivation

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Language Catalogues

Haspelmath, M. & Sims, A. D. refer to many languages, some of which may be new to you. You can look these up on:

- **Ethnologue**
  - Catalogue of all of the world's known living languages (most comprehensive resource to date)
  - https://www.ethnologue.com
- **World Atlas of Language Structures (WALS)**
  - Database of structural (phonological, grammatical, lexical) properties of languages gathered from descriptive materials (e.g. reference grammars)
  - http://wals.info

Outline

Slides adapted from Weller and Haselbach (IMS Stuttgart)

Originally based on: Haspelmath, M. & Sims, A. D. (2010): *Understanding Morphology* [2nd ed.], chapter 5 'Inflection and Derivation', London: Hodder Education.

Outline

Inflection and derivation

A reminder

- **Inflection** (= inflectional morphology):
  The relationship between word-forms of a lexeme
- A lexeme inflects for (or: is inflected for) grammatical features,
  e.g. the Latin lexeme INSULA inflects for case and number
  nominative singular: *insula*
  nominative plural: *insulae*

- **Derivation** (= derivational morphology):
  The relationship between lexemes of a word family
- A lexeme can derive from (or: can be derived from) another lexeme,
  e.g. the lexeme READER is derived from the lexeme READ

Inflection and derivation

Dichotomy vs. continuum

There are two main ways to conceptualise the relation between inflection and derivation:

- **Dichotomy**: complex words can be neatly divided into two disjoint classes (inflectional / derivational)
- **Continuum**: morphological patterns lie on a continuum ranging from the most clearly inflectional patterns to the most clearly derivational patterns

Outline

Inflectional features and values

Introduction

- **Inflectional values** are grouped together into super-categories called **inflectional features**
- Two values belong to the same feature if they share the same semantic (or functional) property and are mutually exclusive
- E.g. *past*, *present* and *future* are inflectional values belonging to the inflectional feature *tense*, and they cannot occur together in the same verb (mutually exclusive)

Inflectional values

Nouns

Inflectional values on (pro)**nouns**, determiners, etc.:

- NUMBER: singular, plural, ...
  - indicates quantity
- GENDER: masculine, feminine, neuter, ...
  - can indicate natural gender
- PERSON: 1st, 2nd, 3rd
  - indicates person (speaker, addressee, third party)
- CASE: nominative, accusative, dative, ...
  - indicates semantic or syntactic role of a noun in a senctence
- DEFINITENESS: definite, indefinite, ...
  - indicates reference in discourse

Inflectional values

Nouns

- Case and number on a noun in Latin (feminine, *insula* 'island')

NUMBER → ↓ CASE	singular	plural
nominative	*insul-a*	*insul-ae*
accusative	*insul-am*	*insul-ās*
genitive	*insul-ae*	*insul-ārum*
dative	*insul-ae*	*insul-īs*
ablative	*insul-ā*	*insul-īs*

- Latin has 5 cases
- A few languages have more than 10 different cases: e.g. Finnish (15), Hungarian (18)
- Many languages have no cases at all: e.g. Vietnamese

Inflectional values

Nouns

- Number, gender and case on a determiner in German (definite, 'the')

NUMBER →	singular			plural		
GENDER →	feminine	masculine	neuter	feminine	masculine	neuter
↓ CASE						
nominative	*die*	*der*	*das*	*die*	*die*	*die*
accusative	*die*	*den*	*das*	*die*	*die*	*die*
dative	*der*	*dem*	*dem*	*den*	*den*	*den*
genitive	*der*	*des*	*des*	*der*	*der*	*der*

Inflectional values

Verbs

Inflectional values on **verbs**:

- TENSE: past, present, future, ...
  - exist to some extent in virtually all languages having inflection
  - indicates temporal location of the verb's action
- ASPECT: prefective (completed), imperfective (non-completed), habitual, ...
  - internal temporal constituency of an event
- MOOD: imperative (commands), indicative (event is an objective fact), subjunctive (non-realised event), ...
  - denotes conditionality, certainty, or desirability of an event
- VOICE: active, passive, ...
  - indicates association of semantic roles and syntactic functions
- NUMBER*: singular, plural, ...
- PERSON*: 1st, 2nd, 3rd

Inflectional values

Verbs

- Latin tense, aspect and mood forms
  (third person singular, *cantare* ‘to sing’)

MOOD →	indicative		subjunctive	
ASPECT →	infectum	perfectum	infectum	perfectum
↓ TENSE				
present	*canta-t*	*canta-v-it*	*cant-e-t*	*canta-v-eri-t*
past	*canta-ba-t*	*canta-v-era-t*	*canta-re-t*	*canta-v-isse-t*
future	*canta-bi-t*	*canta-v-eri-t*	–	–

Inflectional values

Verbs

- Swahili tense, aspect and mood forms (first person singular, *-fanya* ‘do’)

MOOD →	indicative			hypothetical		
TENSE →	present	past	future	present	past	future
↓ ASPECT						
normal	*n-a-fanya*	*ni-li-fanya*	*ni-ta-fanya*	*ni-n ge-fanya*	*ni-n gali-fanya*	–
progressive	*ni-na-fanya*	–	–	–	–	–
perfect	*ni-me-fanya*	–	–	–	–	–

Inflectional values

Adjectives

Inflectional values on **adjectives**:

- DEGREE: positive (base form), comparative, superlative, ...
  - less widespread (confined to languages in Europe and South-West Asia)
- NUMBER*: singular, plural, ...
- CASE*: nominative, accusative, dative, ...
- ...

DEGREE →	positive	comparative	superlative
	big	*bigg-er*	*bigg-est*

Outline

Derivational meanings

Introduction

- **Derivational meanings** are more diverse than inflectional values
- Some meanings are cross-linguistically widespread
  - E.g. **agent noun** (*drink*$_{\text{V}}$ $\rightarrow$ *drink-er*$_{\text{N}}$)
  - E.g. **quality noun** (*kind*$_{\text{A}}$ $\rightarrow$ *kind-ness*$_{\text{N}}$)
  - E.g. **facilitative adjective** (*read*$_{\text{V}}$ $\rightarrow$ *read-able*$_{\text{A}}$)
- Some highly specific meanings only exist in a few languages
  - E.g. the French suffix *-ier* derives **words for fruit trees** from their fruit nouns (*pomme* 'apple' $\rightarrow$ *pomm-ier* 'apple tree')
  - E.g. the *-et* suffix in Big Nambas derives **reverential terms** from ordinary nouns (*dui* 'man' $\rightarrow$ *dui-et* 'sacred man')

Derivational meanings

Introduction

- **Derivational patterns** commonly change the word-class of the base lexeme
- **Denominal**: derived from a noun
- **Deverbal**: derived from a verb
- **Deadjectival**: derived from an adjective

Derivational meanings

Derived nouns

Common derivational meanings of nouns:

- **Deverbal nouns** (V $\rightarrow$ N)
  - agent noun: English *drink* $\rightarrow$ *drink-er*
  - patient noun: English *invite* $\rightarrow$ *invit-ee*
  - instrument noun: Spanish *picar* ('mince') $\rightarrow$ *pica-dora* ('meat grinder')
  - action noun: Russian *otkry-t'* ('discover') $\rightarrow$ *otkry-tie* ('discovery')
- **Deadjectival nouns** (A $\rightarrow$ N)
  - quality noun: Japanese *atarasi-i* ('new') $\rightarrow$ *atarasi-sa* ('newness')
  - person noun: Russian *umn-yj* ('clever') $\rightarrow$ *umn-ik* ('clever guy')

Derivational meanings

Derived nouns

Common derivational meanings of nouns:

- **Denominal nouns** (N → N)
  - diminutive noun: Spanish *gat-o* ('cat') → *gat-it-o* ('little cat')
  - augmentative noun (expresses greater intensity):
    Russian *borod-a* ('beard') → *borod-išča* ('huge beard')
  - status noun: English *child* → *child-hood*
  - inhabitant noun: Arabic *Miṣr* ('Egypt') → *miṣr-iyyu* ('Egyptian')
  - female noun: *König* ('king') → *König-in* ('queen')

Derivational meanings

Derived verbs

Common derivational meanings of verbs:

- **Deverbal verbs** (V → V)
  - causative verb: Korean *cwuk-* ('die') → *cwuk-i-* ('kill')
  - applicative verb: German *laden* ('load') → *be-laden* ('load onto')
  - anticausative verb:
    Swedish *öppna* ('open', tr.) → *öppna-s* ('open', intr.)
  - desiderative verb:
    Greenlandic *sini-* ('sleep') → *sini-kkuma-* ('want to sleep')
  - repetitive verb: English *write* → *re-write*
  - reversive verb: Swahili *chom-a* ('stick in') → *chom-o-a* ('pull out')

Derivational meanings

Derived verbs

Common derivational meanings of verbs:

- **Denominal verbs** (N $\rightarrow$ V)
  - 'act like N': Spanish *pirat-a* ('pirate') $\rightarrow$ *pirat-ear* ('pirate')
  - 'put into N': English $bottlea_N \rightarrow bottlea_V$
  - 'cover with N': Russian *sol'* ('salt') $\rightarrow$ *sol-it'* ('salt')
- **Deadjectival verbs** (A $\rightarrow$ V)
  - factiitve: Russian *čern-yj* ('black') $\rightarrow$ *čern-it'* ('make black')
  - inchoative: Spanish *verde* ('green') $\rightarrow$ *verde-ar* ('become green')

Derivational meanings

Derived adjectives

Common derivational meanings of adjectives:

- **Deverbal adjectives** (V $\rightarrow$ A)
  - facilitative: Basque *jan* ('eat') $\rightarrow$ *jan-garri* ('edible')
  - agentive: Spanish *habla-r* ('talk') $\rightarrow$ *habla-dor* ('talkative')
- **Denominal adjectives** (N $\rightarrow$ A)
  - relational: Russian *korol'* ('king') $\rightarrow$ *korol-evskij* ('royal')
  - proprietive: Ponapean *pihl* ('water') $\rightarrow$ *pil-en* ('watery')
  - privative: Russian *vod-a* ('water') $\rightarrow$ *bez-vod-nyj* ('waterless')
  - material: German *Kupfer* ('copper') $\rightarrow$ *kupfer-n* ('made of copper')

Derivational meanings

Derived adjectives

Common derivational meanings of adjectives:

- **Deadjectival adjectives** (A $\rightarrow$ A)
  - attenuative: Tzutujil *kaq* ('red') $\rightarrow$ *kaq-koi* ('reddish')
  - intensive: Turkish *yeni* ('new') $\rightarrow$ *yep-yeni* ('brand new')
  - negative: German *schön* ('beautiful') $\rightarrow$ *un-schön* ('ugly')

Derivational meanings

Mini exercise

Consider the meanings of the following denominal and deadjectival verbs of English and **classify them using the categories on slide 22**.

For some of them you will need to **set up new categories** that are not listed in the slides.

butter, *flatten*, *categorise*, *peel*, *legalise*, *phone*, *blacken*, *cannibalise*, *unionise*, *skate*, *modernise*, *terrorise*, *ski*

Derivational meanings

Mini exercise: solutions

- **Denominal verbs**
  - act like N: cannibalise
  - put into N: categorise
  - cover with N: butter
  - use N: phone, skate, ski (new category)
  - create N: unionise, terrorise, peel (new category)
- **Deadjectival verbs**
  - factitive: flatten, legalise, blacken, modernise

Outline

Properties of inflection and derivation

Relevance to syntax

- Inflection is relevant to the syntax; derivation is not
- "Relevant to the syntax": grammatical function or meaning expressed by a morphological pattern is involved in either:
  - Syntactic goverment
  - Syntactic agreement

Syntactic Government:

- One word requires another word or phrase to have a particular value
- E.g. negated verbs in Polish often require a direct object in the genitive case (Case is inflectional in Polish):

Tomek	(*nie*)	*czytał*	*gazet-ę*/(*-y*)
Tomek.M.NOM.SG	(not)	read.3.SG.M.PST	newspaper-ACC.SG/(GEN.SG)

'Tomek was (not) reading a newspaper.'

Syntactic Agreement:

- Syntactic relation where the inflectional value of one word or phrase (target) must be the same as the inflectional value of another word or phrase (controller).
- E.g. Subject-verb agreement in English: verb (target) agrees with subject NP (controller) in number (*the boy walk-s, the girls walk*)

Properties of inflection and derivation

Obligatoriness

Inflectional features are obligatorily expressed on all applicable word-forms. Derivational meanings are not obligatorily expressed.

- The Latin lexeme INSULA ('island') has ten word-forms (cf. number and case inflection). One of these forms has to be chosen when using this lexeme. Omitting these features is impossible. Note that inflectional features need not be expressed via an overt suffix.
- By contrast, expression of a given derivational meaning is not obligatory. The English suffix *-er* applies to verbs to derive agentive nouns, e.g. *drink-er*. However, not all nouns must express agentive meaning.

Properties of inflection and derivation

Limitations on applications

Inflectional values can be applied to their base without arbitrary limitations; derivational formations may be limited in an arbitrary way.

- Generally, a lexeme's paradigm contains a full set of inflected forms
- This is because, a lexeme that does not have a full set of forms cannot function in every syntactic context
- Exceptions can usually be explained easily by the incompatibility of the inflectional meaning and the base meaning
- E.g. collective nouns may have only singular or plural forms (e.g. English *information*, **informations*)

Properties of inflection and derivation

Limitations on applications

- In comparison, arbitrary derivational gaps are quite common
- Conceivable derived lexical may be lacking without any obvious semantic explanation
- E.g. English has female nouns in *-ess* such as *authoress*, *heiress*, *priestess*,
  but it is not possible to say **professoress* 'female professor',
  **presidentess* 'female president', etc.,
  although these make perfect sense semantically

Properties of inflection and derivation

Same concept as base

Canonical (i.e. dictionary entry) inflected word-forms express the same concept as the base; canonical derived lexemes express a new concept.

- Both Latin word-forms *insula* ('island.NOM.SG') and *insulae* ('island.GEN.SG') express the concept 'island'. Similarly, both English word-forms *go* and *goes* express the concept 'go'.
- However, the verb *bake* expresses the concept of 'baking' while the noun *baker* expresses the (related) concept 'person who bakes'.
- Note that the boundaries might be blurred. Historically, *brethren* (concept: 'members of a Christian fellowship') evolved from an archaic plural form of *brother*. Today we use *brothers*.

Properties of inflection and derivation

Abstractness

Inflected values express a relatively abstract meaning;
derivational meanings are relatively concrete.

- For example, the meaning of (structural) case is highly abstract; if we can speak of meaning here at all. What does ‘nominative’ or ‘accusative’ mean?
- By contrast, the meaning of the French suffix *-ier* is quite concrete as is denotes a kind of tree (one that bears fruit):
  pomme (apple) $\rightarrow$ *pomm-ier* (apple tree)

Properties of inflection and derivation

Meaning compositionality

Canonical inflected word-forms have compositional meaning; canonical derived lexemes can have non-compositional (i.e. idiosyncratic) meaning.

- **Inflectional values** usually make a predictable semantic contribution (if any) to their base, e.g. plurality
- **Derived meaning** can be often semantically idiosyncratic
  - E.g. the Russian suffix *-nik* means 'thing associated with <base concept>'.
  - *noč-nik* ('night lamp, night worker'; *noč* 'night')
  - But, the meaning of *dnev-nik* ('diary', *dnev-* 'day') is not exhausted by that of its components
  - The additional meaning components 'notebook' and 'used for writing' cannot be predicted on the basis of the meaning of the two constituent morphemes (thing associated with day), but must be associated with the lexeme as a whole

Properties of inflection and derivation

Position relative to base

Canonical inflection is expressed at the periphery of words;
canonical derivation is expressed close to the root.

- Derivational affix (D) occurs between the root and the inflectional affix (I):

  English: *king-dom-s* root – status (D) – plural (I)
  English: *real-ize-d* root – factitive (D) – past tense (I)
  English: *luck-i-er* root – proprietive (D) – comparative (I)
  Turkish: *iç-ir-iyor* root – causative (D) – imperfective aspect (I)
  drink-CAUSE-IMPF.3.SG
  'makes (sb.) drink'
  Arabic: *na-ta-labbasa* 1st pl. subj. (I) – reflexive (D) – root
  1.PL-REFL-clothe.PRF
  'we clothed ourselves'

- However:

  German: *ver-schön-er-n* prefix – root – comparative (I) – causative (D)
  PRF-beautiful-COMP-CAUSE.INF
  'make more beautiful'

Properties of inflection and derivation

Base allomorphy

Inflection induces less base allomorphy;
derivation induces more base allomorphy.

- Normally, base allomorphy occurs in derived lexemes:

	ROOT	INFLECTED FROM	DERIVED LEXEME
English:	*destroy*	*destroy-ed*	*destruc-tion*
English:	*broad*	*broad-er*	*bread-th*
German:	*Erde*	*Erde-n*	*ird-isch*
	'earth'	'earths (PL)'	'earthly'
Latin	*honor*	*honor-is*	*hones-tus*
	'honour'	'honour-GEN'	'honest'

- However, the opposite pattern can also be found (allomorphy in inflected word forms):

	ROOT	INFLECTED FROM	DERIVED LEXEME
Serbian:	*junak*	*junac-i*	*junak-inja*
	'hero (M)'	'heroes'	'heroine'
Serbian:	*monah*	*monas-i*	*monah-inja*
	'monk'	'monks'	'nun'

Properties of inflection and derivation

Word-class change: Derivation

Canonical inflection does not change the word-class of the base; derivational affixes may change the word-class of the base.

- Typical consequence of word-class-changing operations: they block, e.g., a Russian nominal root from being the controller for agreement:
  - *otkryt-oe* *okno*
    open-N.SG.NOM window.N.SG.NOM
    'open window'
  - **otkryt-oe* *okon-naja* *rama*
    open-N.SG.NOM window-F.SG.NOM frame.F.SG.NOM
    'open window frame (i.e. frame of an open window)'

(The Russian adjective *otkrytoe* 'open' agrees for gender with the noun *okno* 'window'. BUT when the denominal adjective *okonnaja* is derived from *okno* the nominal stem can no longer act as the controller for agreement)

Properties of inflection and derivation

Word-class change: Inflection

Canonical inflection does not change the word-class of the base; derivational affixes may change the word-class of the base.

- In Upper Sorbian *mejeho* ('my') agrees for gender with the masculine noun *muž* ('husband'), despite this being the root of the denominal adjective *mužowa*.
  - *moj-eho* *muž-ow-a* *sotra*
    my-M.SG.GEN husband-POSS-F.SG.NOM sister
    'my husband's sister

(*-ow* appears to be word-class changing, but in a way that allows the properties of the base to still control agreement by a modifying adjective)

Properties of inflection and derivation

Cumulative expression

Inflectional values may be expressed cumulatively;
derivational meanings are not expressed cumulatively.

- Several inflectional values may be expressed by a single affix. For example in Latin *insul-ārum* ("of the islands"), the suffix expresses both 'genitive' and 'plural'
- Such cumulation seems to be very rare in derivational formations; however Dutch *-ster* expresses 'agent' and 'female'.

Properties of inflection and derivation

Iteration

Inflectional values cannot be iterated;
derivational meanings can sometimes be iterated.

- **Inflection** is more restricted in that inflectional affixes cannot be iterated
- Although it would make sense logically to have an iterated plural (e.g. **cat-s-es*, intended: 'sets of cats')
  or an iterated past tense (e.g. **didded*, intended: 'had done')
  such double affixation is not recorded.

Properties of inflection and derivation

Iteration

Inflectional values cannot be iterated;
derivational meanings can sometimes be iterated.

- With **derivational formation**, iteration is not common either, but it is sometimes possible:

Afrikaans:	*kind-jie-tjie*
	child-DIM-DIM
	'a little little child'
German:	*Ur-ur-ur-großvater*
	'great-great-great-grandfather'

Summary

- **Inflectional features and values**: nouns, verbs, adjectives
  - E.g. case and number inflection of Latin noun: *insul-a* (nom, sg.), *insul-ae* (nom. pl.)
- **Derived meanings**: noun, verbs, adjectives
  - E.g. deverbal noun: *drink* $\rightarrow$ *drinker*
- **Relevance to syntax**:
  - **Syntactic government**: One word requires another word or phrase to have a particular value
    E.g. negated verbs in Polish often require a direct object in the genitive case
  - **Syntactic agreement**: Inflectional value of one word or phrase (target) must be the same as the inflectional value of another word or phrase (controller)
    E.g. verb agrees with subject NP: the boy walk-s, the girls walk

Questions?

Thank you for your attention