Multiword Expressions

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Talk Outline

1. Introduction
2. Case Study 1: MWE or Construction?
3. Case Study 2: UD and MWEs
4. Summary

What are Multiword Expressions (MWEs)?

- *Definition:* A **multiword expression** (“MWE”) is:
  1. decomposable into multiple simplex words
  2. lexically, phonetically, phonologically, morphosyntactically, semantically, and/or pragmatically idiosyncratic

Adapted from Baldwin and Kim [2010]

Some Examples

- *ad hoc*, *by and large*, *The Chair*, *kick the bucket*, *part of speech*, *in step*, *trip the light fantastic*, *foundation model*, *call (someone) up*, *take a walk*, *do a number on (someone)*, *take advantage (of)*, *pull strings*, *kindle excitement*, *fresh air*, ...

Lexical Idiomaticity

- Lexical idiomaticity $=$ one or more of the elements of the MWE does not have a usage outside of MWEs
- Examples of lexical idiomaticity:

  ad hominem, bok choy, a la mode, to and fro
- Complications of lexical idiomaticity:
  - cross-linguistic effects, e.g. *ad* is unmarked in Latin
  - simple lexical occurrence outside of MWEs not sufficient, e.g. *a la mode*

Source(s): Bauer [1983], Trawiński et al. [2008]

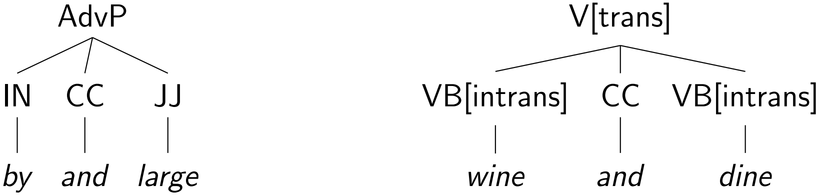
Phonetic and Phonological Idiomaticity

- Phonetic idiomaticity = one or more component elements of the MWE are pronounced in a manner specific to the MWE
- Examples of phonetic idiomaticity:

  bon voyage, 一期一会 *(ichi-go ichi-e)*

Morphosyntactic Idiomaticity

- Morphosyntactic idiomaticity = the morphosyntax of the MWE differs from that of its components
- Examples of morphosyntactic idiomaticity:
  cat's cradle, yin hry "evil eye"
- Examples of syntactic idiomaticity:



Source(s): Katz and Postal [2004], Chafe [1968], Bauer [1983], Sag et al. [2002], Al-Haj et al. [2014]

Semantic Idiomaticity

- Semantic idiomaticity = the meaning of the MWE is not the simple sum of its parts, in that:
  - there is a mismatch in simplex and MWE semantics for one or more of the components, e.g.

birds of a feather, blow hot and cold

OR

  - there is extra semantic content in the MWE not encoded in the parts, e.g.

designated driver vs. backseat driver vs. bus driver

Source(s): Katz and Postal [2004], Chafe [1968], Bauer [1983], Sag et al. [2002]

Pragmatic idiomaticity

- Pragmatic idiomaticity = the MWE is associated with a fixed set of situations or a particular context, or with real-world information or expectations about the MWE
- The contexts/real-word information/expectations vary a lot in their generality and also strength:
    - societal norms (e.g. *all aboard*, *gin and tonic*)
    - sub-community norms (e.g. the Monty Python effect)
    - idiolectal norms

Source(s): Kastovsky [1982], Jackendoff [1997], Sag et al. [2002]

MWE Markedness

MWE	**Markedness**				
	Lex	**PhonPhon**	**MorphoSyn**	**Sem**	**Prag**
ad hominem	☑	?	?	?	?
at first	☒	☒	☑	☑	☒
first aid	☒	☑	☒	☑	☑
salt and pepper	☒	☒	☒	☑	☑
good morning	☒	☒	☒	☑	☑
cat's cradle	☒	☒	☑	☑	☑

Challenges in Pinning down MWEs

- What is a “word”?
  - complications with non-segmenting languages (Japanese, Thai, ...) and languages without a pre-existing writing system (Walpiri, Mohawk, ...)
  - even in English: *houseboat* vs. *house boat*, *trade off* vs. *trade-off* vs. *tradeoff*
- What is (lexical|phonetic|phonological|morphosyntactic|semantic|pragmatic) idiosyncrasy?
- What is an MWE and what is (purely) constructional?
- How should MWEs be represented to capture their (cross-linguistic) idiosyncrasies (but also their compositionality)?

Source(s): Bond and Baldwin [2016], Mansfield [to appear]

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Definition

- Determinerless PPs (PP−Ds) are MWEs comprising a preposition (P) and a singular noun (N_{Sing}) without a determiner:

  in gaol, off screen, on ice, in town, by train, per student

- Most languages with articles have PP−Ds ... interesting to consider what the equivalent of a PP−D is for languages without articles (but does have rich morphology)
- Same basic semantic types attested in English, Albanian, Tagalog, German, et al. [Himmelmann, 1998]

Source(s): Baldwin et al. [2006], Stvan [1998]

The Syntax of PP−Ds

- Variability in syntactic markedness, productivity and nominal modifiability for different PP−D constructions
- Non-productive, non-modifiable PP−Ds: *ex cathedra*, *ad hominem*, *ad nauseum*
- Fully-productive, highly-modifiable PP−Ds: *per recruited student that finishes the project*
- Most PP−Ds lie between these two extremes

Source(s): Ross [1995]

Syntactic Markedness

- Syntactically-unmarked PP−Ds: N_{Sing} is uncountable

  *E.g. Institutions: in school, in gaol, but *in library (cf. school finished vs. *library finished)*

- Syntactically-marked PP−Ds: N_{Sing} is strictly countable

  *E.g. PPs headed by per: per person, but *per information (c.f. by bus/public transport)*

Nominal Modifiability

- No modification: _in *mental/*small hospital_
- Idiosyncratic modification: _at long/*lengthy/*short last_
- Relatively free modification: _at great/considerable/tedious length_
- Modification can be:
  - impossible, optional, or obligatory
  - nominal, adjectival, or both (or none)

	Obligatory	Optional	Impossible
Noun	_at *(eye) level_	_on (summer) vacation_	_on (*very) top_
Adjective	_at *(long) range_	_in (sharp) contrast_	
Either	_at *(company) expense_ _at *(considerable) expense_	_in (family) court_ _in (open) court_	

The Semantics of PP−Ds

- All PP−Ds show a certain degree of (generally systematic) semantic markedness on the noun:
  - institutional: *in hospital*, *at school*
  - metaphoric: *on ice*
  - generic uses: *by car*
- Some semantic systematicity with particular prepositions

Source(s): Stvan [1998]

PP–D: MWE or Construction?

- “Words with spaces” PP–Ds (*ad hominen*, *on top*) are clearly MWEs, fully-productive PP–Ds (*by* MEANS, *per* N_{+count}) are purely constructional
- Examples that lie between these extremes:

	Markedness				**MWE?**
	Lex	**MorphoSyn**	**Sem**	**Prag**	
on ice	☒	☒	☑	☒	☑
at large	☒	☑	☑	☒	☑
up front	☒	☑	☒	☒	☑
in winter	☒	☒	☒	☒	☒
at X level	☒	☒	☒	☒	☒
in gaol	☒	☒	?	☒	?

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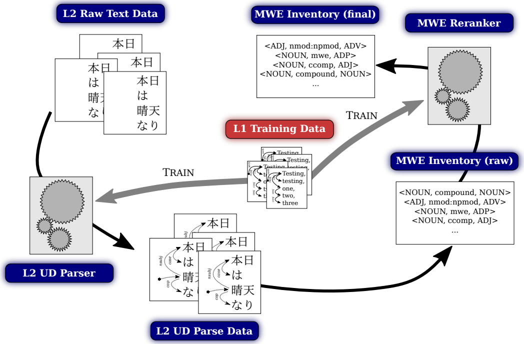
Determining a Language’s MWE Inventory

- **Question:** given a raw text corpus in a given language and a Universal Dependency (“UD”) parser, can we automatically learn the inventory of MWE constructions?



<NOUN, compound, NOUN>
<ADJ, nmod:npmod, ADV>
<NOUN, mwe, ADP>
<NOUN, ccomp, ADJ>
...

<ADJ, nmod:npmod, ADV>
<NOUN, mwe, ADP>
<NOUN, ccomp, ADJ>
<NOUN, compound, NOUN>
...

Source(s): Salehi et al. [2016]

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  1. decomposable into multiple simplex words
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- BUT:
  - what is a word?
  - what is idiomaticity?
  - how to represent both idiomaticity and systematicity (e.g. in UD)?
  - what can we learn about MWEs based on a systematic typological investigation?

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