Conspiracy theories: the problem with lexical approaches to idioms

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DGfS AG4:
One-to-many relations in morphology, syntax, and semantics

8 March 2018

Outline

Multiword expressions

Lexical approaches to idioms

A suggestion

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Multiword expressions

Word or phrase?

(1) *take the biscuit* ‘be egregious/shocking’

Word-like	Phrase-like
▶ Non-compositional semantics	▶ Multiple, recognisable words
▶ Parts not separable	▶ Inflects internally

Theoretical approaches

- Since they are non-compositional, idioms need to be stored in the lexicon – or at least in ‘the list’ (Di Sciullo & Williams 1987).
- But the question of how to store them, and what exactly to store, is a theoretically fraught one.

Theoretical approaches

- **Wholly word-like**
  ('words-with-spaces' – Sag et al. 2002)
  - 'Flexibility problem' (*ibid.*).
- **Wholly phrase-like**
  - To be discussed.
- **Something in between**
  - To be discussed.
- (**Ordinary syntax, unusual something else**)
  - E.g. Pulman (1993), Kobele (2012).

Lexical approaches to idioms

Decomposability

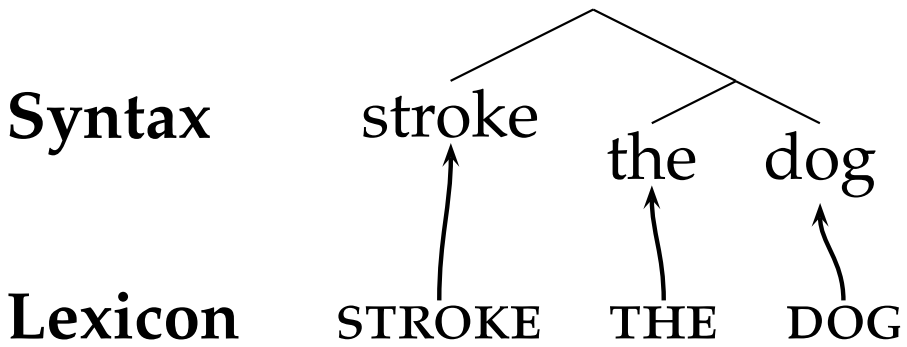
- Idioms differ along a number of axes. One of these is their ‘decomposability’.
- **Decomposable idiom**: the meaning can be distributed among the parts (what Nunberg et al. 1994 call ‘idiomatically combining expressions’).
- E.g. *spill the beans*: *spill* $\approx$ ‘divulge’ and *beans* $\approx$ ‘secrets’.
- Compare **non-decomposable** idioms:
  shoot the breeze ($\approx$ ‘chat’); *kick the bucket* ($\approx$ ‘die’).

Lexical ambiguity

- Take the decomposability facts seriously: treat idioms as phrases composed in the usual way, by using special versions of the words they contain.
	Literal	Idiomatic
pull	**pull**′	**exploit**′
strings	**strings**′	**connections**′
- See for instance Sailer (2000) in HPSG, Kay et al. (2015) in SBCG, Lichte & Kallmeyer (2016) in LTAG, and Arnold (2015) in LFG.

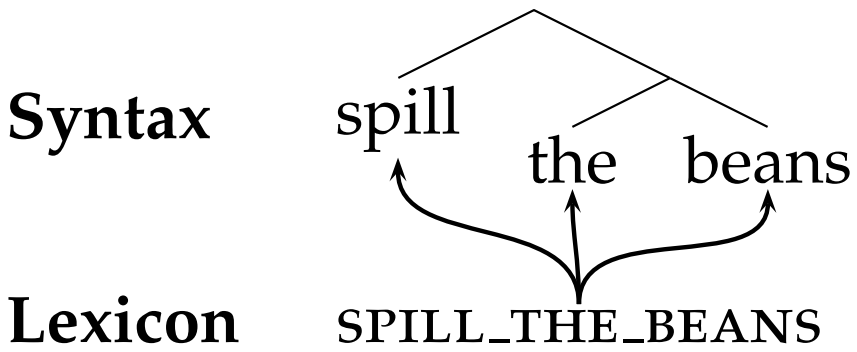
Lexical ambiguity – motivations

- Most of the time, the mapping from the lexicon to the grammar is one-to-one:



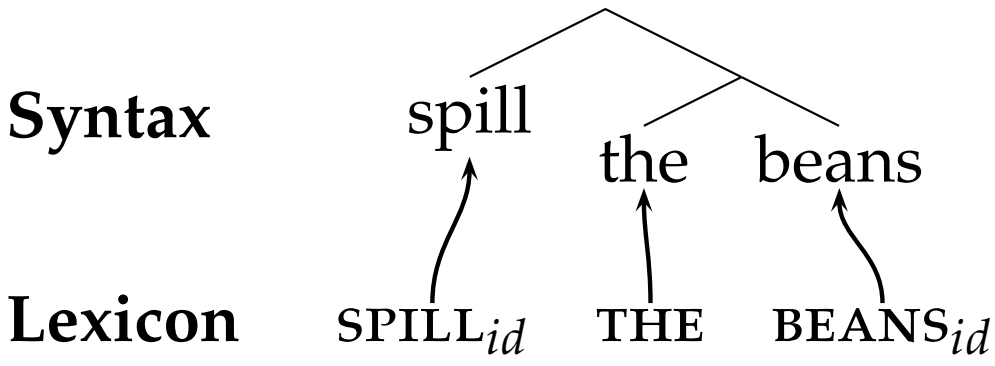
Lexical ambiguity – motivations

- But if idioms are stored as units in the lexicon, they disrupt this picture:



Lexical ambiguity – motivations

- The lexical ambiguity approach restores this one-to-one mapping:



Decomposable idioms – flexibility

- Decomposable idioms are generally more syntactically flexible than non-decomposable ones:

(2) a. Cantor duly ran to teacher and **the beans** got **spilled**.
b. Who's at the centre of the **strings** that were quietly **pulled**?
c. Wait until next month, and we'll see **which bandwagon** he **jumps on**.

Decomposable idioms – flexibility

- Decomposable idioms are generally more syntactically flexible than non-decomposable ones:

(3)
a. Old Man Mose **kicked the bucket**.
b. #The **bucket was kicked** (by Old Man Mose).
c. #**Which bucket** did Old Man Mose **kick**?
d. #**The bucket** that Old Man Mose **kicked** was {sudden/sad/. . .}.

Lexical ambiguity – strengths

- Lexical ambiguity approaches explain this flexibility very naturally: the parts really *are* separate words, so they can do what any other words can do.

Lexical ambiguity – weaknesses

- Nevertheless, there are a number of issues facing any lexical ambiguity theory.
- Here we will consider 5 arguments against taking this approach to idioms:

1. The ‘collocational challenge’.
2. Irregular syntax.
3. Non-decomposable idioms.
4. Processing.
5. Meta-theoretical questions.

The collocational challenge

- What Bargmann & Sailer (in prep.) call the ‘collocational challenge’ is to constrain the appearance of idiom words appropriately.

(4) a. #You shouldn’t pull his good nature.
(≠ . . . exploit his good nature.)
b. #Peter was impressed by Claudia’s many strings.
(≠ . . . Claudia’s many connections.)

The collocational challenge

- This is usually achieved by some kind of mutual selectional restriction:

(5) *pull* V (↑ PRED) = ‘pull_{id}’
(↑ OBJ PRED FN) =$_c$ strings_{id}

(6) *strings* N (↑ PRED) = ‘strings_{id}’
((OBJ ↑) PRED FN) =$_c$ pull_{id}

The collocational challenge

- The problem is to find a suitable level of generalisation for this description for the most flexible cases.
- *Pull strings* can passivise:

(7) Strings were pulled for you, my dear. Did you really think the Philharmonic would take on a beginner like you?

The collocational challenge

- So maybe we should constrain the semantic/argument-structure relationship instead:

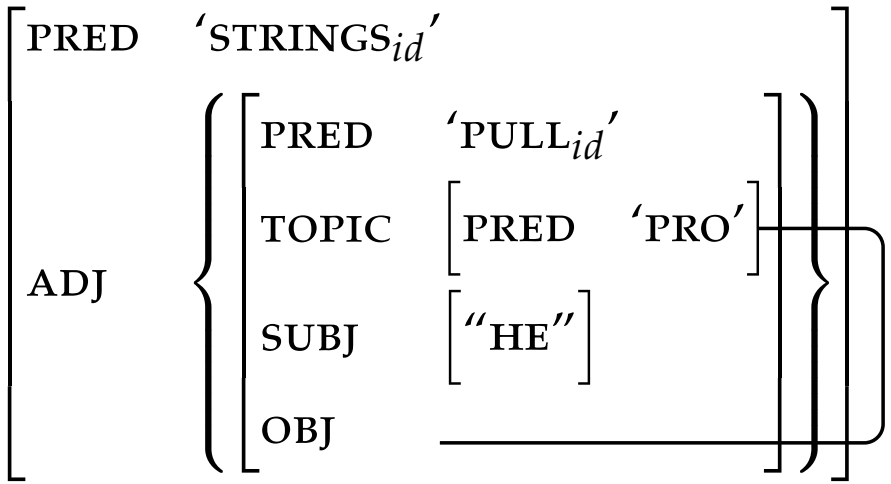
(8) *pull* V $(\uparrow \text{PRED}) = \text{`pull}_{id}\text{'}$
$((\uparrow_{\sigma} \text{ARG}_2)_{\sigma^{-1}} \text{ PRED FN}) =_c \text{strings}_{id}$

(9) *strings* N $(\uparrow \text{PRED}) = \text{`strings}_{id}\text{'}$
$((\text{ARG}_2 \uparrow_{\sigma})_{\sigma^{-1}} \text{ PRED FN}) =_c \text{pull}_{id}$

The collocational challenge

- But this doesn't help with relative clauses:

(10) *The strings (that) he pulled . . .*



- In the standard 'mediated' analysis of relative clauses (Falk 2010), there is *no* (direct) grammatically expressed relationship between the head noun and the gap.

The collocational challenge

- Instead, the head noun *strings* is merely coferential with the anaphoric element which is the internal argument of *pulled*.
- But this is too loose to serve as a general characterisation of the relationship:

(11) #Those are some impressive strings$_i$ – you should pull them$_i$ for me!

The collocational challenge – conclusions

- Hard to find the right generalisation.
- No doubt possible to give disjunctive descriptions of all the possible configurations, but is this satisfying?

Irregular syntax

- Some idioms have syntactic structures which are not part of the regular grammar of the language:

(12) We [$_{\text{VP}}$ tripped [$_{\text{NP}}$ the [$_{??}$ light fantastic]]] all night long.

- Etymologically, from ‘trip the light fantastic toe’, so ?? = AP.
- But NP $\rightarrow$ Det AP is not attested elsewhere in English.

Irregular syntax

- Other examples include

(13) a. by and large
b. all of a sudden

- Now we require not only special lexical entries, but also special phrase structure rules.

Non-decomposable idioms

- While lexical ambiguity might seem appealing for decomposable idioms, less clear how well it fares when it comes to non-decomposable ones.
- Since these do not have distributable meanings, we face a choice as to where to encode the idiomatic meaning.
- Our options are constrained by our conception of (the syntax-)semantics (interface).

Resource sensitivity – choosing a host

- If we assume some kind of resource sensitivity (as is standard in LFG+Glue; e.g. Asudeh 2012), then only one word can host the meaning.
- The others must be semantically empty.
- Which word in e.g. *kick the bucket* should mean ‘die’? Formally an arbitrary choice.

Resource sensitivity – distribution

- Once again, we have to constrain the idiom words so that they don't appear outside of the idiom itself.
- This applies to semantically empty words just as much as others: we want to avoid **The Kim is hungry*, for example.
- But this means that the *the* in *kick the bucket* can't be the same *the* as in *shoot the breeze*, since they have different selectional restrictions.
- So now we need a new lexical entry for *every word in every idiom*.

Unification-based semantics

- Instead of choosing one word to host the meaning, we say that *all* the words have the idiom meaning (Lichte & Kallmeyer 2016; Bargmann & Sailer in prep.).
- E.g. $kick_{id}$ means ‘die’, $bucket_{id}$ means ‘die’ (cf. *bucket list*), and the_{id} means ‘die’, too.
- During composition, the multiple instances get unified.

Unification-based semantics

- This avoids the problem of having to choose one host for the meaning.
- But it does not avoid the problem of the lexicon exploding in size.
- The *the* in *kick the bucket* is still different from the *the* in *shoot the breeze*, but this time because the first means ‘die’ and the second means ‘chat’.
- So once again we need a new lexical entry for *every word in every idiom*.

Processing

- Swinney & Cutler (1979): there is no special ‘idiom mode’ of comprehension which our minds switch into when confronted with idiomatic material.
- At the same time, idiomatic meanings are processed faster and in preference to literal ones (Estill & Kemper 1982; Gibbs 1986; Cronk 1992; i.a.).
- This might suggest there is a difference in their representation.
- In the lexical ambiguity approach, this difference is not apparent: syntactic and semantic composition of idioms is identical to non-idioms.
- In fact, since idioms involve ambiguity by definition, we might, if anything, expect idiom processing to be *slower*.

Meta-theoretical/aesthetic concerns

- More generally, any theory of idioms should satisfactorily explain our intuitions about them, *viz.* that they are partly word-like, partly phrase-like.
- The lexical ambiguity approach fails just like the 'words-with-spaces' approach in this respect, by coming down entirely on one side of this tension
  - idioms have no unity: they are merely conspiracies of multiple, separate lexical items.

A suggestion

Something in between

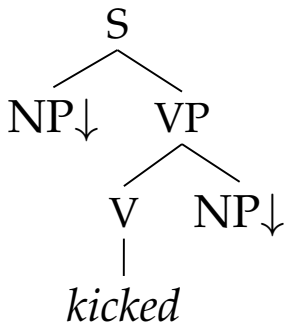
- Treating idioms as purely word-like or purely phrase-like misses the point.
- Rather, we need some way of representing them as
  (A) units with internal structure . . .
  (B) which can be manipulated.

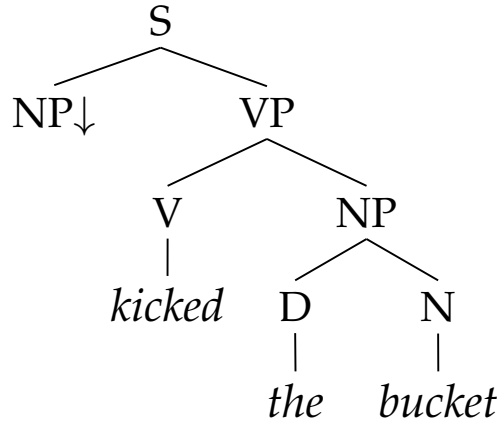
Something in between

- Abeillé (1995) gives a good example of this for LTAG.
- Findlay (2017a,b) argues, on this basis, for an integration of LTAG into LFG.

Something in between

- Lexical entries associated with trees (i.e. syntactic structure larger than the word).

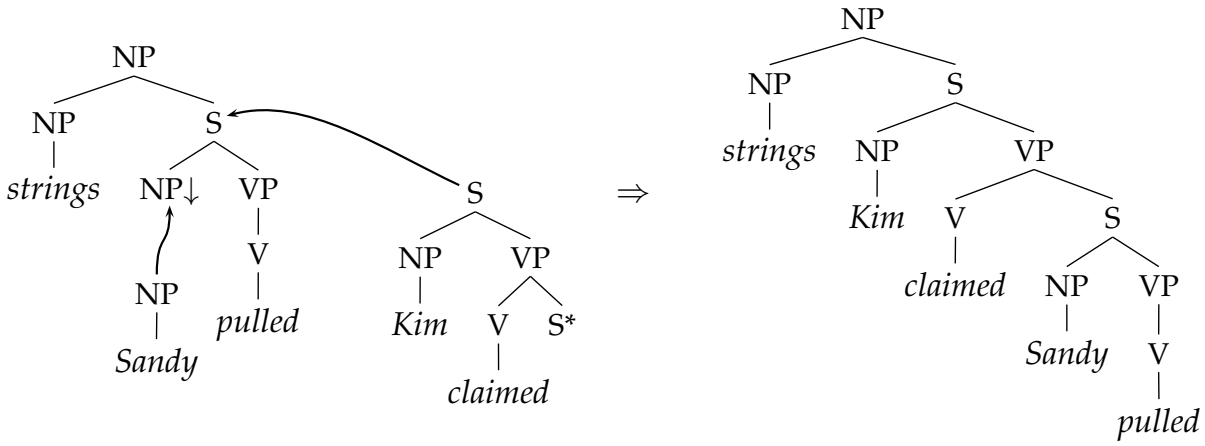




- $\Rightarrow$ Units with internal structure . . .

Something in between

- Adjunction allows modification of tree-internal nodes.



- $\Rightarrow$ which can be manipulated.

Conclusion

- Privileging one aspect of idioms over the other isn't satisfactory.
- Better is a theory which embraces this multiplicity.

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