A Glue Semantics for Structurally Regular MWEs
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Doug Arnold
University of Essex

Introduction

- Wasowc and Savary (2015) (W&S) describe how the syntax of MWEs can be analysed using the descriptive apparatus of LFG.
- But they say nothing about the semantics.
- The goal of this poster is to extend W&S’s treatment by providing the semantics of idioms like kick the bucket, using the standard apparatus of LFG (so called ‘glue’ logic).

Syntax

- W&S’s approach to idioms like kick the bucket (‘die’) associates constraints with the head word, for kick the bucket these might be as in (1):

  (1) kick : V : (\(\sigma \circ \text{pair} \circ \nu \)) → ‘bucket’ (\(\tau \otimes \nu \sigma \)) = •
  \(\{ \tau \circ \text{spec} \} = \text{ag} \)

  This is a specialisation of the normal entry for kick, whose direct object is required to be (a) headed by bucket; (b) definite; (c) singular; and to have no specifier (d) – hence only the permitted, an answer would be (\(\tau \otimes \nu \sigma \)) = ‘the’.
- This captures the key syntactic constraints, explaining why the idiomatic interpretation disappears if any of these constraints is violated:

  (2) a. \#Sam kicked the pail:
  b. \#Sam kicked a bucket:
  c. \#Sam kicked the bucket:
  d. \#Sam kicked her bucket.
- But it gives no account of the semantics of the idiom, and leaves unexplained the impossibility of clefting, relative clause formation, or pronounialisation:

  (3) a. #It was the bucket that Sam kicked.
  b. #What Sam kicked was the bucket.
  c. #The bucket that Sam kicked (was unfortunate).
- This poster is intended to remedy this.

Literal Semantics

- In the standard version of LFG the syntax-semantics interface is handled by so-called ‘glue logic’ (e.g. Dalrymple, 2001).
- This involves associating pieces of syntactic structure with semantic ‘resources’.
- Resources consist of a left-hand-side, which is a conventional semantic representation, and a right-hand-side, which is an expression indicating the combinatory possibilities.
- For example, the literal semantics of kick:

  (4) Conventional Semantics: Combinatorial Possibilities
  \(\lambda y.x.:\text{kick}(y, x) : \{\\text{scan} \circ \text{pair} \circ \nu \} \rightarrow \text{bucket} \{\\text{pair} \circ \nu \sigma \} \rightarrow \text{ag} \)

  Abbreviation:
  \(k_y \rightarrow o_y \rightarrow \text{ag} \)

  Intuitively, the ‘glue’ expression here says: to produce the semantics associated with the s-structure where kick appears (i.e. the clause), consume the semantics of the subject and the object, in that order.
- The ‘resource sensitivity’ is a way of capturing the same intuition as compositionality in semantics, but without requiring a binary structure.
- The literal interpretation of Sam kicked the bucket can be derived as in (5) – ignoring the derivation of the bucket:

  (5) in (5) the resource associated with the bucket consumes that of the verb (this is standard, if the verb is associated with quantificational semantics. The \(\nu \) etc. means ‘for any \(H\)’, and will allow for scope interaction with other quantifiers, as in Everyone, kick the bucket she was filling vs. Everyone, kicked the bucket Sam was filling.

  To understand the mechanics of (5), note that \(o_y \rightarrow \text{ag} \) in the resource for the bucket matches the resource that results from combining Sam and kick, \(o_y \rightarrow \text{ag} \).

Idiomatic Semantics

- To obtain the idiomatic interpretation, we can associate the idiomatic reading of kick with a ‘manager’ resource which essentially discards the meaning associated with the bucket. This involves changing the glue type of kick so that it consumes the subject, and then consumes the resource associated with the object (rather than the other way around, as in literal).

  (6) \(\lambda y.x.:\text{kick}(y, x) : \{\\text{scan} \circ \text{pair} \circ \nu \} \rightarrow \text{bucket} \{\\text{pair} \circ \nu \sigma \} \rightarrow \text{ag} \)

- The idiomatic interpretation can be derived as in (7):

  (7) \(\lambda y.x.:\text{kick}(y, x) : \{\\text{scan} \circ \text{pair} \circ \nu \} \rightarrow \text{bucket} \{\\text{pair} \circ \nu \sigma \} \rightarrow \text{ag} \)
  \(\text{∀}(\\text{P}, \text{bundle}(\text{P})): \text{∀}(\\text{H}': \text{H} \rightarrow \text{H}) \rightarrow \text{H} \)
  \(\text{kick}(\text{P}, \text{bundle}(\text{P})): \text{∀}(\\text{H}': \text{H} \rightarrow \text{H}) \rightarrow \text{H} \)
  \(\text{∀}(\\text{H}': \text{H} \rightarrow \text{H}) \rightarrow \text{H} \)

- This explains why the examples in (3) lack an idiomatic interpretation – they all involve some kind of discourse referent associated with the bucket, which the idiomatic reading does not supply.

Further Issues

- It does not explain why the idiomatic sense of bucket resists modification – why, e.g. kick the unfortunate bucket or kick the bucket that awaits us all cannot be interpreted as meaning ‘die’. The idiomatic meaning is derived by simply discarding the interpretation of the object, and there is nothing to stop this being arbitrarily complex. W&S suggest adding the constraint in (8), which simply forbids the object of kick to have adjectival modifiers.

  (8) \(\sim (\text{\{\\text{ord} \\text{ad} \})} \) But this will not do, since certain modifiers of bucket are compatible with the idiomatic sense, notable ‘emotives’ like bloody and ‘metalinguistic’ manner of speech’ adjectives like idiomatic and proverbial.

  (9) So that’s that […] Another year or two and I’ll [kick the bloody bucket].

  (10) Think of all the things that you want to do before you [kick the proverbial bucket].
- However, it is reasonable to assume that emotive and ‘manner of speech’ adjectives do not have the same semantic type as normal attributive modifiers (which are \(\langle \text{f} \text{t} \text{u} \rangle \)). Following Potts (2015), emotives might have any type which ‘ends in e’ – the idea being that the emotional attitude they convey can be associated with, e.g. the whole proposition (type \(\text{f} \)), or the VP (type \(\text{e} \)). Thus, we can exclude normal modifiers and allow these special types by making specific reference to the semantic type:

  (11) \(\sim (\text{\{\\text{ord} \\text{ad}\} (\text{\text{\_\text{\_}}})}) \)

Remaining Questions

- It remains to explain why kick the bucket and similar idioms appear to resist passive, and why, despite meaning ‘die’ it does not accept modifiers like slowly and painfully.

  (12) a. #The bucket has been kicked (by Sam).
  b. #Sam kicked the bucket slowly and painfully (cf. ‘died slowly and painfully’)

- Intuitively, the second issue seems straightforward – both idiomatic and non-idiomatic senses of kick should have some indication of ‘instantaneousness’ as part of their semantics; the challenge is to capture this formally.
- The issue of passive is more problematic. Notice, for example, that non-referential objects, such as expletive ‘instants’ as part of their semantics; the challenge is to capture this formally;

  (13) a. People consider it polite to remove your shoes when inside.
  b. It is considered polite to remove your shoes when inside.

- However, it is reasonable to assume that emotive and ‘manner of speech’ adjectives do not have the same semantic type as normal attributive modifiers (which are \(\langle \text{f} \text{t} \text{u} \rangle \)). Following Potts (2015), emotives might have any type which ‘ends in e’ – the idea being that the emotional attitude they convey can be associated with, e.g. the whole proposition (type \(\text{f} \)), or the VP (type \(\text{e} \)). Thus, we can exclude normal modifiers and allow these special types by making specific reference to the semantic type:

  (11) \(\sim (\text{\{\\text{ord} \\text{ad}\} (\text{\text{\_\text{\_}}})}) \)

References


