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Introduction

- Waszczuk 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):

$$(1) \text{kick} : V : (\uparrow \text{OBJ PRED FN}) = c \text{'bucket'} (\uparrow \text{OBJ DEF}) = + \\ (\uparrow \text{OBJ NUM}) = sg \\ - (\uparrow \text{OBJ SPEC})$$
 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* is permitted, an alternative would be $(\uparrow \text{OBJ SPEC FN}) = \text{'the'}$.
- This captures the key syntactic constraints, explaining why the idiomatic interpretation disappears if any of these constraints is violated:
 - #Sam kicked the pail.
 - #Sam kicked a bucket.
 - #They kicked the buckets.
 - #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 nominalisation:
 - a. #It was the bucket that Sam kicked.
 - #What Sam kicked was the bucket.
 - The bucket that Sam kicked was unfortunate).
 - #Sam kicked the bucket, but Kim didn't kick it.
- 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. Dairymple, 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*.

$$(4) \text{Conventional Semantics} : \text{Combinatorial Possibilities} \\ \lambda y. \lambda x. \lambda e. \text{kick}(e, y, x) : (\uparrow \text{SUB})_o \rightarrow (\uparrow \text{OBJ})_o \rightarrow \uparrow_o \\ \text{Abbreviation} \\ s_o \rightarrow o_o \rightarrow \uparrow_o$$
- Intuitively, the 'glue' expression here says: to produce the semantics associated with the f-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*.
- In (5) the resource associated with *the bucket* consumes that of the verb (this is standard, if *the* is associated with quantificational semantics. The *VH* etc. means 'for any *H*', and will allow for scope interaction with other quantifiers, as in *Everyone_i kicked the bucket she_i was filling* vs. *Everyone_i kicked the bucket Sam was filling*).
- To understand the mechanics of (5), note that $o_o \rightarrow H$ in the resource for *the bucket* matches the resource that results from combining *Sam* and *kick*, $o_o \rightarrow \uparrow_o$. (It is not in any way essential that the verb should combine first with its subject in this way, but it makes for a shorter proof).

$$(5) \lambda y. \lambda x. \lambda e. \text{kick}(e, y, x) : s_o \rightarrow o_o \rightarrow \uparrow_o \quad \text{Sam} : s_o \\ \lambda x. \lambda e. \text{kick}(e, \text{Sam}, x) : o_o \rightarrow \uparrow_o \quad \lambda P. \text{the}(b, \text{bucket}(b), P(b)) : \forall H. [o_o \rightarrow H] \rightarrow H \\ \text{the}(b, \text{bucket}(b), \lambda e. \text{kick}(e, \text{Sam}, b)) : \uparrow_o$$

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 round, as in the literal case):

$$(6) \lambda y. \lambda Q. \lambda e. \text{die}(e, y) : s_o \rightarrow [[o_o \rightarrow \uparrow_o] \rightarrow \uparrow_o] \rightarrow \uparrow_o$$
- The idiomatic interpretation can be derived as in (7)

$$(7) \lambda y. \lambda Q. \lambda e. \text{die}(e, y) : s_o \rightarrow [[o_o \rightarrow \uparrow_o] \rightarrow \uparrow_o] \rightarrow \uparrow_o \quad \text{Sam} : s_o \\ \lambda Q. \lambda e. \text{die}(e, \text{Sam}) : [[o_o \rightarrow \uparrow_o] \rightarrow \uparrow_o] \rightarrow \uparrow_o \quad \lambda P. \text{the}(b, \text{bucket}(b), P(b)) : \forall H. [o_o \rightarrow H] \rightarrow H$$
- 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 adjuncts:

$$(8) - (\uparrow \text{OBJ ADJ})$$
 But this will not do, since certain modifiers of *bucket* are compatible with the idiomatic sense, notable 'emotive' like *bloody* and 'metalinguistic' 'manner of speech' adjectives like *idiomatic* and *proverbial*:
 - So that's that [...] Another year or two and I'll [kick the bloody bucket].
 - 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 *et, etf*). Following Potts (2005), emotives might have any type which 'ends in *t*' – the idea being that the emotional attitude they convey can be associated with, e.g. the whole proposition (type *t*) or the VP (type *et, t*). Thus, we can exclude normal modifiers and allow these special types by making specific reference to the semantic type:

$$(11) - (\uparrow \text{OBJ ADJ})_b (et, et)$$

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*:
 - 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 *it* in (13), can be passivised:
 - a. People consider it polite to remove your shoes when inside.
 - b. It is considered polite to remove your shoes when inside.
- W&S assume that actives and passives simply have separate lexical entries, but this is controversial, and potentially problematic.
- It also remains to be seen how far the approach can be extended to syntactically more flexible idioms (e.g. *spill the beans*), where the semantics of the object cannot be simply discarded, and other issues raised in (e.g.) Bargmann and Sailer (2015).

References

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