Phrasal and Sentential Semantics

- **Sense and reference**
  - Sense – a prototypical category, e.g. the typical cat
  - Reference – a particular instance of this category

- **Anaphora**
  - **Identity of reference**
    1. There was a unicorn in the garden, so I took a picture of it.
    2. The referent of a personal-pronoun is the referent of its antecedent.
    3. The referent of a definite-pronoun is the referent of its antecedent.
  - **Identity of sense**
    4. I like roses, so I planted some.
    5. Jane bought Colin a new shirt and bought one for me, too.
    6. The sense of an indefinite-pronoun is the sense of its antecedent.

- **Words without sense**
  - Proper nouns
(7) If you introduce me to Fred, I’ll introduce you to a nice one.

- **Deictic pronouns**

(8) If you want this apple, I’ll get you a nice one.

### Verbs

- **Verbs have a sense**

- VP anaphora is a type of identity-of-sense anaphora

(9) She may not like maple syrup, but he certainly will.

- The sense of a verb is the sense of its lexeme as modified by whatever dependents it has

- **Verbs have referents** as shown by identity-of-reference anaphora

(10) Martha arrived late, but we complained about it so he explained why it had happened.

(11) Martha arrived late, which upset all our plans.

- The referent of a noun is a mental model of some instance of the noun’s sense, and the referent of a verb is a situation which is some instance of the verb’s sense.
Other parts of speech

• Prepositions
  – In *the book is on the table*, reference is made to a location which is somewhere on the table; this is the referent. The sense is ‘place on the table’.
  – In *depend on friends*, the preposition is empty and only serves to link friends and depend. In this case we could say that it takes its reference and sense from its complement.

• Adverbs and adjectives
  – By the VP anaphora test, both adjectives and adverbs have sense:
    (12) Martha is happy and so is Jane.
    (13) Jane is well and so is Martha.

Sub-senses

• The sense of a word can be modified by the sense of its dependents, so the sense referred to by some in c below is not just ‘maple syrup’ but ‘maple syrup which is real and which is from Quebec’:
(14)  a. Fred likes maple syrup, so Mary gave him some for Christmas.
    b. Fred likes real maple syrup, so Mary gave him some for Christmas.
    c. Fred likes real maple syrup from Quebec, so Mary gave him some for Christmas.

- The sense of a word can be made up of a hierarchy of sense and subsenses. E.g. ‘maple syrup’ is a subsense and ‘maple syrup from Quebec’ is a sense in the sentences below:

(15)  a. Fred likes maple syrup from Quebec, so Mary gave him some from Northern Ontario (which is very similar)
    b. Fred likes maple syrup from Quebec, so Mary gave him some that she had brought back herself from holiday.

■ Syntax-semantics relations

- A word’s meaning is affected by its dependents
- This happens in 4 ways:
  1. **Default**: the dependent’s referent combines with the word’s sense
(16) Fido barked.
- *Fido* modifies the meaning that *barked* inherits from BARK
- ‘barking’ is the sense of BARK, but the sense of *barked* is a particular barking, that done by Fido: ‘Fido barking’.

(17) Fido barked, which had only happened once before.
- what had happened once before was a different instance of F. barking.
- If we change *some dogs* into *some big dogs* the dependent *big* changes the sense into ‘big dog’.
- It doesn’t change the referent set into a big set but rather into a set of big dogs (a subset of the set of all dogs), i.e its own sense functions to identify a class of referents.

2. **Coreference**: the dependent’s referent merges with the word’s referent
   - I.e. syntactic dependency can correspond to identity of reference in the semantics:
     (18) *this book* (a determiner shares its reference with its complement)
     (19) Susan, who is a linguist, ... (with appositional relative clauses, the relative-pronoun has the same referent as its antecedent)
(20) *my son Colin* – in apposition referents are shared, too
(21) *will bark* – there is one referent here, an event of barking with the
time set by *will*
– Words not related by dependency can share a referent:
  (22) I shaved myself.

3. **Sharers**: the dependent’s sense combines with the word’s sense
   (23) She is happy.
   – The meaning of *is*, ‘isA’, modified by the meaning of ‘linguist’, not its
     referent (in fact *linguist* here may not even have a referent)

4. **Idioms**: the dependent changes the word’s sense in an irregular way that
   has little to do with its own meaning
   – *kick the bucket* – the literal meaning follows the default (1. above), but
     the idiom doesn’t at all

■ **Semantic phrases**

(24) Sharon certainly ate an apple, and Margaret may have, too.
• This sentence provides evidence for the existence of a complex unit of
meaning ‘ate an apple’ of which ‘an apple’ is a sub-sense.

- **Head-sense** (i.e. sense of head) – remembering that the sense of a verb is the sense of its lexeme plus the senses of its dependents, we can use the notion of head-sense to define a hierarchy of sense relations: each dependent has a head-sense which is the sense of its head when combined with that dependent.
  - The head-sense of the object of *saw* in *Fred saw Mary* is ‘saw Mary’.
  - The head-sense of the subject of *saw* in *Fred saw Mary* is ‘Fred saw Mary’.

■ **Lexical decomposition**

- **Inchoatives**
  - Some verbs only allow punctual adjuncts
    (25) a. She immediately reached the summit.
    b. *She reached the summit for three hours.
  - Some verbs only allow durational adjuncts
    (26) a. She kept the book for three hours.
b. *She immediately kept the book.

- But some verbs allow both

(27) a. The submarine immediately sank.
    b. The submarine sank for three minutes.
    c. The submarine immediately sank for three minutes.

- SINK/i means ‘move so as to be under’. In this we can distinguish a punctual situation, ‘move’, more precisely, ‘move into a state’ (inchoative) and a durational one, ‘be under’, which is a kind of being in a state. We denote the lexeme SINK/i to identify it as intransitive and to distinguish it from its transitive mate, SINK/t, which we consider in the following section.

- In WG, one of these situations is the primary sense of the verb. Since SINK/i may be paraphrased by GO UNDER and since SINK/i is a kind of moving rather than a kind of being under, it it clear that this is the main meaning. However the other meaning is also present as a result of the movement. We now have two different semantic structures present.

- Causatives
In the following sentence **sank** has the meaning ‘caused to sink’:

(28) The destroyer sank the submarine.

- We have agreed to label the lexeme involved here SINK/t (for transitive) and the lexeme involved in the previous section SINK/i (for intransitive).

It is easy to see that the sense of SINK/i, or at least a portion/version of it, is present in the semantics associated with SINK/t: In this structure, the ee of SINK/t is the er of SINK/i.

### Semantic relations

- **Pattern 1**
  - In the analysis of inchoative SINK/i let us assume that a ‘move’ has a ‘move-er’ and a ‘be somewhere’ has ‘be-er’. These ‘first-arguments’ of a situation may be called er’s. We then have:
  - The er of ‘sink1’ is the er of ‘be-under’, i.e. of the result of sink. More generally,
  - The er of a process is the er of the result of that process. This pattern is exactly like that of one type of ‘sharer’ relation in syntax:
– The subject of a sharer of a verb is the subject of the verb.

• **Pattern 2**
  – Now consider causative SINK/t. The pattern here is that
  – The ee of ‘sink1’ is the er of ‘sink2’. More generally,
  – The ee of a process is the er of a result of that process. This pattern is
    the structurally the same as that of the other type of ‘sharer’ relation in
    syntax:
  – The subject of a sharer of a verb is the object of the verb.

■ **Conclusion**

• We have focussed on the existence of semantic structure which is ‘hidden’
  from the point of view of the syntax, but of course there are cases where
  the two match, as in the following example.

  (29) She made him laugh.

• There are also examples where the existence of a complex semantic
  structure is signalled morphologically. This is the case with the verbal
  derivational extensions of Swahili:
These two sentences are identical in their semantics to the inchoative and causative sentences with *sink*. The only difference is that in their words there are clues to the semantics.

What can we say about the relationship between syntax and semantics? Given that semantic patterns with counterparts in syntax are also found encapsulated in the senses of single words, both morphologically complex (Swahili) and morphologically simplex (English), it seems reasonable to conclude that syntax is providing a template for the organisation of thought. What do you think? Do you think it is the other way around? At
the very least, I’m sure you will agree that we have demonstrated that there is much that is shared between syntax and semantics.