The semiotic triangle

linguistic sign  meaning  object in the world “referent”

Semantics

Componential Analysis

Words

optimistic  pessimistic  mad  schizophrenic  motorcycle

sane  horse  foal  fish

Lexical fields

optimistic  pessimistic  mad  schizophrenic  psychopathic  paranoid

bus  van  motorcycle

(Lexical) semantic relations

SUPERORDINATE TERM
mental states

optimistic  pessimistic  mad  sane

SUPERORDINATE

meronyms  antonyms

HYPONYM

psychopathic  paranoid

Componential Analysis

<table>
<thead>
<tr>
<th></th>
<th>Powered</th>
<th>Carries people</th>
<th>Four-wheeled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Car</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Van</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Bicycle</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Motorcycle</td>
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</tbody>
</table>
Language Change: semantics

Chaucer: (a) At mete wel ytaught was she with alle
She loet no morsel from hir lippes falle.
(b) Full semely after hir mete she raughte

Middle English  

<table>
<thead>
<tr>
<th>mete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modern English</td>
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</tbody>
</table>

A meal, occasionally dinner

- a. Any kind of food: the mete shall be mylk, honey and wyne
- b. Food in general, opposite to drink: it is mete and drinke

The lion chased the tourist lazily through the bush

SEMANTIC ‘EVENTUALITIES’

Mr Harvey, aged 25, was knifed to death in a savage attack after he and Tracie were pursued by another car in a ‘cat and mouse’ chase near Alvechurch, Worcestershire.

Packing ‘eventualities’ into grammar

Mr Harvey, aged 25, was knifed to death in a savage attack after he and Tracie were pursued by another car in a ‘cat and mouse’ chase near Alvechurch, Worcestershire.
Logic

Predicates

- **“one place”**
  - door (x)
  - accountant (x)
  - book (x)
  - run (x)

- **“two place”**
  - eat (x, y)
  - chase (x, y)
  - read (x, y)

Connectives

- ‘and’: ∧
- ‘or’: ∨
- ‘not’: ¬
- ‘implies’: →

Logical formulae

- “If someone chases someone else then both people run”

\[
\text{chase (x, y) } \rightarrow \text{ run (x) } \land \text{ run (y)}
\]

Logical formulae

- person (x) ∧ person (y) ∧ chase (x, y)
  \[\rightarrow \text{ run (x) } \land \text{ run (y)}\]

Componential Meanings for verbs...

- Dowty...
  - The door is open. open(x)
  - The door opens. become(open(x))
  - John opened the door. cause(John, become(open(x)))

  – Statives, inchoatives, causatives...

Logic

Quantifiers

- existence: ∃
- for all: ∀

All men are mortal.
Socrates is a man.
Therefore Socrates is mortal.
Logic: capturing ambiguity

1. Every person in this room speaks two languages.

2. Two languages are spoken by everyone in this room.

Semantics

Compositional Semantics

How to put meanings together from the parts...

(3 + 4) \times (5 - 2 \times 4) = ?

\[
\begin{align*}
(3 + 4) \times (5 - 2 \times 4) &= ? \\
&= (3 + 4) \times (5 - 8) \\
&= 7 \times (-3) \\
&= -21
\end{align*}
\]

\[
\begin{aligned}
S &\quad \times \\
\quad \times &\quad - \\
\quad + &\quad 3 \quad 4 \\
\quad 5 &\quad 2 \quad 4
\end{aligned}
\]

NP

VP

The dog

chased

the boy

The dog

chased

the boy

The dog

chased

the boy

The dog

chased

the boy
The dog chased the boy.
The dog chased the boy in the garden.

Using semantics to motivate grammatical structure

I saw my accountant repairing the toilet.
I saw my accountant repairing the toilet.

Metaphorical Structures
Lakoff and Johnson: “Metaphors we live by”

EMOTIONS:

HAPPY is UP; SAD is DOWN

I’m feeling up. I’m feeling down.
That boosted my spirits He fell into a depression
My spirits rose. Her spirits sank.
You’re in high spirits He’s feeling low.
The height of ecstasy The depths of misery.
That gave me a lift. That depressed me.

Metaphorical Structures
Lakoff and Johnson: “Metaphors we live by”

PHYSICAL HEALTH:

HEALTH & LIFE is UP;
SICKNESS & DEATH is DOWN

He’s at the peak of health. He’s sinking fast.
Lazarus rose from the dead. He fell ill.
She’s in top shape. She came down with the flu.
Her health is declining.
He is feeling under the weather.

Prototypicality:
concepts and radial categories

An internal structure for the concept “bird”