Philosophische Semantik

SS 2009
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Vorlesung 6

Interne Semantik

Interne und externe Sprache

In der Generativen Grammatik wird zwischen I-Sprache und E-Sprache unterschieden.

I-Sprache ist der erreichte Zustand des Geistes (mind/brain) bzw. der Sprachfähigkeit.

Es handelt sich um ein Arsenal von Repräsentationen und Prozeduren (vgl. CTM).

Insofern können ihre Beziehungen zu einander als ‚Syntax' angesehen werden.

Syntaktische Semantik (Chomsky)

„T]he computational procedure maps an array of lexical choices into a pair of symbolic objects, phonetic form and LF…The elements of these symbolic objects can be called "phonetic" and "semantic" features, respectively, but we should bear in mind that all of this is pure syntax and completely internalist." (Chomsky 2005: 125)

Chomsky (1986) distinguishes between accounts of internal language ('I-language') and external language ('E-language'), and he himself considers only the first to be the proper objects of a science of the language faculty. Within the language faculty, on this account, we not only find the core computational system (in the sense of syntactical derivational machinery), but also semantics.
This semantics Chomsky (2005) calls 'internal' semantics or even 'syntax', now in a broader sense.

It is not semantic in the sense of E-language as it does not concern – at that level of representation – how lexical items are tied up to the world. It consists rather of representations expressing how lexical items are composed and linked. The knowledge thus represented and the derivations and computations flowing from it make up internal semantics:

„[M]uch of the very fruitful inquiry and debate over what is called "the semantics of natural language" will be understood as really about the properties of a certain level of syntactic representation – call it LF – which has the properties developed in model-theoretic semantics, or the theory of LF-movement, or something else, but which belongs to syntax broadly understood – that is, to the study of mental representations and computations – and however suggestive it may be, still leaves untouched the relations of language to some external reality or to other systems of the mind."
(Chomsky 1991: 38)

Es interessiert uns hier: Wie ist semantisches Wissen repräsentiert?

Wahrheitsbedingungensemantik

Ein Modell semantisches Wissen besteht darin, es zu fassen als *das Wissen um* eine Wahrheitstheorie der Sprache (die zugleich eine Bedeutungstheorie der Sprache ist). [sog. ‚Davidsonsche Semantik']

Das Wissen besteht (i) im Wissen um die Wahrheitsbedingungen/Referenz, wie sie in einem äquivalenten Satz repräsentiert werden, und (ii) im Kennen von *Koventionen/Regeln*, die Begriffe und Wahrheitsbedingungen mit Wörtern verbinden.

Erster (schwacher) Regelbegriff

This knowledge provides the language user with guidance, with *semantic rules*.

The (justificationist) idea that there are semantic rules is quite compatible with CA. Concepts are not constituted by (semantic) rules, but expressing some concept by a specific *word* within some linguistic community requires rules and possibly shared knowledge of them.

So, *identifying* the meaning of a word has to consider these rules, which by this are rules of meaning (semantic rules).

Even if usage does not determine meaning in as much meaning is tied to concepts, we have to establish which expression expresses which concept.

Radikale Interpretation

According to the model of radical translation (cf. Davidson 1984): We translate the statements of L_1 into statements of L_2 which give the truth conditions for L_1. To do this we look at the linguistic behaviour of the speakers of L_1. An interpreter proceeds by correlating the statements to be interpreted with the situational conditions he perceives (i.e. with his perceptions and not with his physiological states). He uses, according to the 'principle of charity' (that the speakers to be interpreted are willing and able to speak the truth) something like the following scheme:

(RI) (i) *a*'s utterance "p" in L_1 is true.
(ii) q.
(iii) *a*'s utterance "p" is true in $L_1 \equiv$ q.

By changing constellations and factors the interpreter will form hypotheses concerning which perceptions might be connected with which semantic content. The reference to situations of 'verification' or justified usage (where the truth conditions of some L_1 statement *are met*) enables the interpreter to formulate an interpretation axiom leading to (T)-equivalences in the truth/meaning theory for that language.

Normativität und Interpretation

To accomplish this the interpreter incorporates normative assumptions with regard to the L_1-speakers. To start with we transfer our logic to L_1. Secondly we have to assume awareness of propositional attitudes. For something to be a reason the reasoner must be aware of it, or at least he could bring it to his awareness. We interpret by assuming that the statements build a coherent system. Without these assumptions understanding would be impossible. Someone who would use expressions arbitrarily would make it impossible to establish a correlation between his manners of usage and situations in the world. If, on the other hand, the use of expressions builds a coherent system, then statements which are supposed to be true will be integrated in the belief system, and statements which turn out to be false will be taken out. To do this speakers have to have propositional (intensional) states. They believe that something is the case, and believe that there are connections between what they believe (inferential relations between statements). And they believe that there are rules determining how the expressions of L_1 should be employed. For example that some new circumstances no longer allow to speak of an object a being F, since under the new conditions “F” should not be employed.

Allgemeine Rechtfertigungsregel

To sum this up: To judge the coherence of speaking an interpreter has to know what should be said in L_1 under some circumstances. By this the radical interpreter has understood the assignment of truth conditions *as normative*. One has or formulates a theory of meaning for L_1 with the *maxim*:

(SR_1)
Use the expressions of L_1 under exactly those conditions which are specified in the (T)-equivalences (or meaning postulates).

Any theory of reading off the coding of concepts with words of some (natural) language by radical interpretation or some related method commits itself, therefore, to the existence and constitutive force of *semantic rules* in that language. Nothing in CA does exclude this. Even if we spell out an internal semantics corresponding to conceptual structures at some point the linkage to E-language and convention based articulation of these concepts has to come in. At this point normative considerations come into focus. Norms of usage point to speakers being criticisable when employing an expression wrongly.

Evidenz für Analytische Verbindungen

In as much as concepts are atomic in CA one does not have to have some other concept to have a concept in question. So you can have the concept DOG without having the concept ANIMATE, at least in principle. Once, however, you have both concepts there are ties between these concepts because of the *metaphysical* relations between the *properties* that these concepts refer to.

(1) Dogs are animate.

should have a privileged, more cognitively entrenched, status in comparison to

(2) There are more dogs in cartoons than there are elephants.

Sentence (1) expresses an analytic dependency between the words "dog" and "animate" because of the conceptual tie between DOG and ANIMATE, because of the metaphysical relation between DOG and ANIMATE. Possession of concepts in CA does not require the presence of analytic dependencies, but the possession of many concepts brings analytic dependencies around. In contrast to inferential role semantics these dependencies are *not constitutive* of the concepts, but supervene on the conceptual and ultimately metaphysical relations. They *express* some aspect of the metaphysical identity of the property referred to, and its metaphysical relations to other properties.

Was sind analytische Verbindungen? – *Bedeutungspostulate*

Even in CA some concepts (like BACHELOR) are explicitly defined (accordingly for some words in some language). In this case we have analytic bi-conditionals. For other concepts, even though they are atomic, there may be *meaning postulates* (in the form of conditionals) which express *irrefutable inferences that are allowed by these concepts*.

- These meaning postulates may be part of the lexical entry of a corresponding word or may be kept in a special semantic belief box. Such meaning postulates may also be called 'analytic dependencies'.
- They correspond to *conceptual dependencies* in the conceptual system.
- The conceptual dependencies depend on metaphysical relations between properties. Meaning postulates capture them in language.
- They single out some inference as *due to meaning*. Consequently some sentences are true due to meaning, i.e. *analytic*.

The presence of such conceptual and analytic relations is well-established in linguistics. One may view the attempts at semantic decomposition *and their failure* as really providing not definitions but analytic dependencies.

Wortbedeutung

A lexical item has as its *semantic content* some concept with *objective content*. Derivatively then the lexical item has the *objective* content of the concept. The lexical item has more parts than this core semantic content. It also has a part which contains its analytic dependencies. It is linked to its slot in a disquotational truth theory of the language in question. It carries its θ-roles. It also carries features relevant to the core computational system of sentence derivation.

Meaning is conventional in the sense that it is conventional which word is tied to which concept. There are conventions of usage (mostly sticking to uniformly express some concept with some specific word), but use does not constitute meaning. We recognize which word expresses which concept by interpreting usage, but the concept *is not constituted by that use*. The convention of tying some word to some concept is established as a regularity of usage in some population.

Wortbedeutung und Metaphysik

Concepts refer to natural or artificial properties/structures found in reality.

Objective relations between these properties (like inclusion, part-whole...) are *metaphysical* relations that are expressed in metaphysical truths.

In as much as language wants to capture reality, meaning postulates are incorporated into a language to mirror such metaphysical truths. Meaning postulates *of this kind* underwrite the *intuition* of analyticity in the sense of theoretical centrality. There are analytic sentences about matters of theoretical centrality, but analyticity does not come down to theoretical centrality.

Informative Wahrheitsbedingungen

"p" is true in $L_1 \Leftrightarrow$ q.

Informative (T)-equivalences lead to *intensions*:
We may understand the description of the truth conditions of "p" by another statement even as information about *the criteria* which justify a usage of "p". Since we want to know when we have to employ some expression we are interested in the explanatory power of informative (T)-equivalences.

Informative (T)-equivalences are the means of *explicit* teaching. The theory now says that "p" varies with some conditions q. If we know that q is the case, we, therefore, are *justified* in applying "p".

Non-informative (T)-equivalences say little to nothing about the criteria of application of "p". They give us extension. Informative (T)-equivalences can be read as giving us the criteria of justifying employment of "p", i.e. intension.

Analytische Aussagen

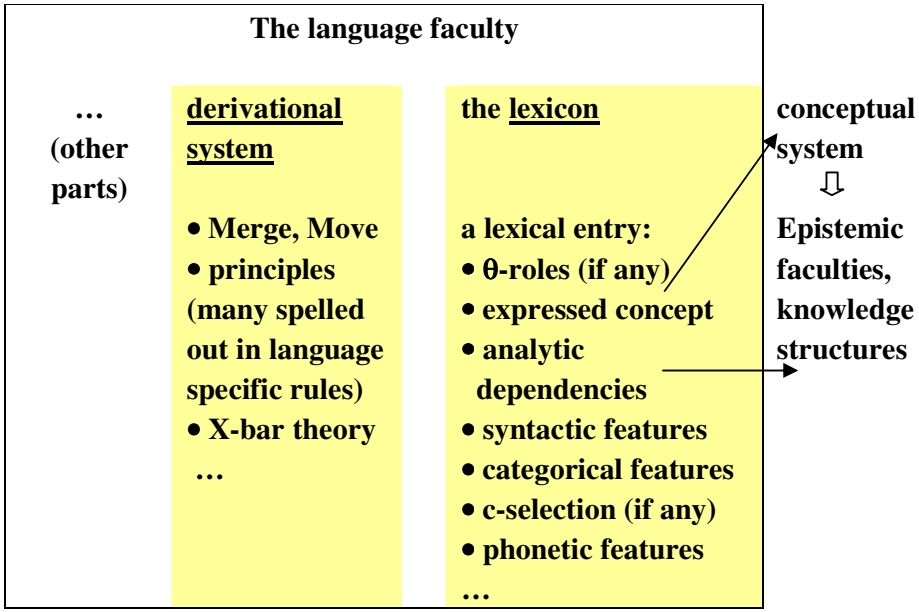
(AN_1) *There are analytic statements iff there are (constitutive) rules of semantic usage, and since there are rules of semantic usage, there are analytic statements.*

Our attribution of analyticity takes place in the meta-language. The analytic statements occur within the object language. A statement is analytic because of the semantic rules encoded on the (T)-equivalences or because of the stipulated analytic dependencies. If we use an expression mentioned on the left hand side of a (T)-equivalence *just in the way* laid down there or just as postulated in some analytic dependency, this use has to be evaluated as "correct" *according to these rules* of meaning.

As a paradigmatic case: If there is a homolingual theory of truth Θ of L_1:

(AN_2) If $\vdash_\Theta$["F(a)" is true in $L_1 \Leftrightarrow G(a)$], then it is *analytic in* L_1: $(\forall x)(F(x) \Leftrightarrow G(x))$.

Detaillierteres Bild vom Sprachvermögen



Beispiele für konkrete Rechtfertigungsprozeduren

Just as a toy example I present some such procedures in PSEUSO-CODE fashion (related to the programming language PASCAL):

```
function justify(statement): boolean;
var
    sT, gT: expression;
begin
    sT := parse(statement, singTerm);
    gT := parse(statement, genTerm);
    justify := apply(gT, identify(sT))
end.
function identify(singTerm): object;
function apply(genTerm, object): boolean;
function parse(statement, gramTyp): expression;
```

Thus the function `justify` should take us from a statement to a truth value. It does so by employing sub-functions to parse the statement for its constituent terms.
The parsing sub-function is merely syntactic and simple (as is well known from parsing natural languages).
The main step in `justify` is to apply the so-parsed general term to the result of the sub-function `identify`, which delivers the object referred to by the singular term.
For `apply` to work we need a more general function, which fetches the appropriate procedure for a general term from some lexical look-up table. This table might be thought of as our program's equivalent of a lexicon. So we need something like:

```
function lexlookup(expression): procedure;
```

`apply` has to get spelled out to a program of this type:

```
function apply(genTerm, object): boolean;
var
    p: procedure;
begin
    p := lexlookup(genTerm);
    apply := call p(object)
end.
```

PSEUDO-CODE

APPLYING A LEXICALIZED PROCEDURE

Correspondingly there has some such look-up procedure involved in `identify`.

Now, an example. Take the statement:

(α) The longest word of the hit list starts with a “b”.

`parse(`α`, singTerm)` will deliver: “the longest word of the hitlist”.

```
procedure longestWordHitList(list, OUT object);
var
    ob: object;
    int: integer;
begin
    ob := list[1];
    int := 2;
    while list < > [ ]    do
        begin
        if length(ob) < length(list[int]) then
            ob := list[int];
        int := int + 1;
        end;
    return ob
end.
```

PSEUDO-CODE

EXAMPLE OF IDENTIFICATION RULE LINKED TO A SINGULAR TERM

`parse(α, genTerm)` will deliver "( ) starts with a ‚b'".

The procedure linked to that could be:

```
procedure startsWithB(expression, OUT boolean);
var
    letter: char;
begin
    letter := expression[1];
    if  letter = 'b' then
        return true
    else
        return false
end.
```

PSEUDO-CODE

EXAMPLE OF CLASSIFICATION RULE LINKED TO A GENERAL TERM