

Logical Semantics: an Overview from a Textological Point of View

Jaros S. Petöfi (Macerata)

0. Introductory remarks.

In the last three or four decades research in logical semantics has produced so many approaches to natural languages that it is not possible to treat all of them in a 45-minute lecture in a sufficiently informative way. However, while the aim of this overview is to analyse the logical semantics from the point of view of its applicability in the semantic interpretation of a (limited) corpus of verbal texts, this aim can help to decide which aspects of these approaches should be chosen for presentation and how they should be presented.

Taking into account the fact that the approaches of logical semantics are dealing with different *natural language fragments* – almost always motivated by the history of logical research – and that they do it by using *such sophisticated formal systems* the mastery of which presupposes *very special competence*, I will myself focus on the treatment of the general methodological principles of logical semantics.

In order to minimize the terminological problems, I will present these methodological principles from a linguistic point of view, and in the form of an „anthology of quotations“ which can help the reader find further information in the quoted sources in an easy manner. After the presentation of a short (critical) analysis of these principles, I will try to find out in which form they can be applied, not only for the interpretation of constructed natural language fragments, but also for the interpretation of given texts.

According to this strategy, my paper contains the following sections: (1) explication of the factors playing a central role in the (linguistic) semantic interpretation of an utterance (this explication will be used as point of departure for the treatment of the chosen aspects of logical semantics); (2) analysis of the basic methodological principles of logical semantics, and the classification of some of its directions which are relevant for natural languages; (3) remarks on the further elaborations of logical semantics and its application in the interpretation of natural languages; (4) outline of the theoretical framework of the so-called semiotic textology, in order to elucidate the possible form of application of logical semantics as presented here, as well as the needs of text interpretation (in this section the examples will be taken from the „Canticum Canticorum“); (5) conclusions. In addition the paper also contains an Appendix.¹

¹ This paper is published here in a radically abbreviated version. From the second and third sections there remains only the initial programmatic paragraph in each case, and the bibliography and Appendix are reduced, too.

1. The central factors in the semantic interpretation of an utterance.

For the demonstration of these factors I have chosen an article of Bierwisch² because, on the one hand, he defines these factors in a very plausible way and, on the other hand, on the basis of these definitions, he also analyses the methodological principles of logical semantics.

An utterance and the interpretations assignable to it are defined by Bierwisch as follows:

Eine Äusserung ist zunächst ein physikalisches Ereignis oder Gebilde, mit einem Terminus von Kasher (1972)³ eine Inskription *ins*, das von einem Sprecher (oder Schreiber) produziert wird und von einem Hörer (oder Leser) perzipiert werden kann. Zu einer sprachlichen Äusserung wird ein solches akustisches oder optisches Signal dadurch, dass ihm eine sprachliche Struktur *l* zugeordnet wird, kurz:

(D 1) Eine sprachliche Äusserung *u* ist ein geordnetes Paar (*ins*, *l*), wobei *ins* ein physikalisches Signal und *l* die Repräsentation der sprachlichen Struktur von *u* ist. [33]

(D 2) Die sprachliche Struktur *l* einer Äusserung *u* ist eine Tripel (*phon*, *syn*, *sem*), wobei *phon* die phonetische, *syn* die morphosyntaktische und *sem* die semantische Struktur von *u* ist. [34]

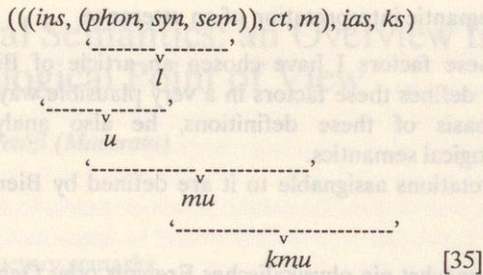
(D 3) Eine kontextuell interpretierte Äusserung *mu* ist ein Tripel (*u*, *ct*, *m*), wobei *u* eine sprachlich interpretierte Äusserung gemäss (D 1) und (D 2) ist, *ct* der Kontext, auf den *u* bezogen wird, und *m* die Bedeutung, die *u* in bezug auf *ct* annimmt. [35]

(D 4) Eine kommunikativ interpretierte Äusserung *kmu* ist eine Tripel (*mu*, *ias*, *ks*), wobei *mu* eine kontextuell interpretierte Äusserung gemäss (D 3) ist, *ias* die Struktur der Interaktionssituation, in der die Äusserung interpretiert wird, und *ks* der kommunikativer Sinn, den sie in bezug auf diese Bedingungen annimmt. [35]

Fügt man die in (D 1) bis (D 4) festgelegten Bestimmungen ineinander, so erhält man für die Komponenten einer kommunikativ verwendeten sprachlichen Äusserung folgendes Schema:

² Manfred Bierwisch, Psychologische Aspekte der Semantik natürlicher Sprachen, in Wolfgang Motsch and Dieter Viehweger (edd.), Richtungen der modernen Semantikforschung, Berlin, 1983, 15-64.

³ Cf. A. Kasher, A Step toward a Theory of Linguistic Performance, in: Y. Bar-Hillel (ed.), Pragmatics of Natural Languages, Dordrecht, 1972, 84-93.



In other words, according to Bierwisch, the interpretation of an utterance depends on the following three factors: the linguistic structure of the utterance, its context of use, and the communicative interaction within this context. (As an example, Bierwisch uses the utterance „ich werde alle abschliessen lassen“.)

2. The basic methodological principles of Logical Semantics and the classification of some of its natural-language-relevant directions.

In this section I start with the article of Bierwisch quoted above, which offers a very clear point of departure. After this I summarize an annotated classification created by Partee,⁴ and I conclude with some general remarks on logical systems ...

3. Some (critical) remarks on the further elaboration of Logical Semantics and on its application in the interpretation of natural languages.

I will refer here to the opinions of Partee, Barwise, Bierwisch and Heydrich. Partee⁵ and Barwise⁶ treat the problems from the perspective of logical semantics, Bierwisch⁷ from the perspective of linguistic semantics, and Heydrich⁸ from that of text-theoretical research ...

4. Outline of the theoretical framework of so-called „Semiotic Textology“.

From the results of the critical analyses of logical semantics and of textological research (here I am talking about the results of the analyses presented in this paper

⁴ B. Partee, Possible Worlds in Model-Theoretic Semantics: A Linguistic Perspective, in: Sture Allén (ed.), Possible Worlds in Humanities, Arts and Sciences, Proceedings of Nobel Symposium 65, Berlin – New York 1989, 93-123.

⁵ As cited in the previous note: see also her Speaker's Reply in the same volume, 152-161.

⁶ J. Barwise, Situationen und kleine Welten, in: von Stechow Armin-Dieter Wunderlich (ed.), Semantik/Semantics, Ein internationales Handbuch der zeitgenössischen Forschung/An International Handbook of Contemporary Research, Berlin – New York 1991, 81-89.

⁷ Cf. note 2 above.

⁸ W. Heydrich, Possible Worlds and Enkvist's Worlds. Discussion of Nils Erik Enkvist's paper «Connexity, Interpretability, Universes of Discourse, and Text Worlds», in: Sture Allén (ed.), Possible Worlds in Humanities, Arts and Sciences, Proceedings of Nobel Symposium 65, Berlin – New York 1989, 187-198.

as well as the results of the analyses I myself have developed) I have drawn the following conclusions:

(i) logical semantics can (and perhaps should) be used as a model for the construction of a semiotic-textological theoretical framework; its methodology, however, cannot be used without substantial modifications;

(ii) an attempt should be made at constructing such a textological theoretical framework, which can function as an „interface“ between logical-semantic research and linguistic-textological research, i.e.:

- this framework should be conceived so that its design is relatively near to the design of logical model-theoretic semantics;
- this framework should be furnished with a (semi-formal) representation language which makes it possible: (a) to account for every natural-language word-category; (b) to assign to every type of text-sentences (speech-act types and propositional attitude types too) such a representation as satisfies, at the same time, the criteria of translatability into a logical language, as well as the criteria of textual adequacy; (c) to construct lexical explications having the form of (semi-formal) text representations.

On the basis of these conclusions I have tried to elaborate the framework of semiotic textology. In the following section I would like to briefly outline it.⁹

⁹ For earlier work see J.S. Petöfi, Some remarks on „formal pragmatics“, in: J.S. Petöfi – Hannes Rieser (edd.), *Probleme der modelltheoretischen Interpretation von Texten*, Hamburg 1974, 1-13; id., Some problems of text typology and text processing on the basis of a partial text theory, in: J.S. Petöfi, Adalbert Podlech and Eike von Savigny (edd.), *Fachsprache-Umgangssprache. Wissenschaftstheoretische und linguistische Aspekte der Problematik, sprachliche Aspekte der Jurisprudenz und der Theologie, maschinelle Textverarbeitung*, Kronberg/Ts. 1975, 61-91; id., The logico-semantic theory of natural languages as text theory (A research program for formal linguistics and natural logic), in: J.S. Petöfi (ed.), *Logic and the formal theory of natural language. Selective bibliography*, Hamburg 1978, 313-333; id., Written, spoken, and the face-to-face verbal communication. Some philosophical aspects of the investigation of natural language, in: Rudolf Haller and Wolfgang Grassl (edd.), *Language, Logic and Philosophy. Proceedings of the 4th International Wittgenstein Symposium, 28th August to 2nd September 1979, Kirchberg/Wechsel (Austria)*, Wien 1980, 144-159; id., Representation languages and their function in text interpretation, in: Sture Allén (ed.), *Text Processing. Text Analysis and Generation, Text Typology and Attribution, Proceedings of Nobel Symposium 51, Stockholm 1982*, 85-122; id., Some aspects of the structure of a lexicon entry, in: *Atti a cura di Marta Fattori e Massimo Bianchi, SPIRITUS. IV^o Colloquio Internazionale del Lessico Intellettuale Europeo*, Roma, 7-9 gennaio 1983, Roma 1984, 15-53; id., Lexicon, in: Teun A. van Dijk (ed.), *Handbook of Discourse Analysis, Vol.2: Dimensions of Discourse*, London 1985, 87-101; id., Von der Satzgrammatik zur semiotischen Textologie. Einige methodologische Fragen der Textinterpretation, *Zeitschrift für Phonetik, Sprachwissenschaft und Kommunikationsforschung (ZPSK)* 40/1, 1987, 3-18; id., Language as written medium: text, ch.7 in: N.E. Collinge (ed.), *An Encyclopaedia of Language*, London – New York 1990, 207-243; id., *A human kommunikáció szemiotikai elmélete felé / Towards a Semiotic Theory of the Human Communication (bilingual edition)*, Szeged 1991.

4.1. The design of a semiotic textology.

4.1.0. The semiotic textology to be treated here has been conceived as a discipline the primary aim of which is the first and second degree explicative theoretical interpretation of dominantly verbal objects called „texts“.

The expression „first and second degree explicative theoretical interpretation“ is used, in this context, as a terminus technicus, and it should be explicated as follows:

- the *explicative* interpretation assigns an „architectonics-analysis“ (with its central component „meaning“) to the text to be interpreted;
- the *theoretical* interpretation assigns the architectonics-analysis (with its central component „meaning“), as a theoretical construct, to the text to be interpreted; it should be noted that this theoretical interpretation is not meant to „simulate“ the process (and factors) of „text comprehension in a natural context“ even if, as far as its results are concerned, it is not meant to be counter-intuitive;
- the *first-degree* and *second-degree* interpretations assign, respectively, a „direct“ and a „symbolic“ architectonics-analysis to the text to be interpreted; it should be noted that the text can be interpreted in a symbolic way even if its direct interpretation is successful.

4.1.1 The first-degree components of the architectonics of the text (as they are conceived in the theoretical framework of semiotic textology) and the bases for their first-degree explicative theoretical treatment are represented in the figure in the Appendix (part III). – I am using the term „meaning“ in the sense of the „significatum“-component of this figure.

4.1.2. I should like to present here an informal description of the operations and factors which play a role in the first-degree explicative theoretical interpretation. In this description I do not follow the real order of these operations and I do not treat the possible feedbacks among them.

The interpreter:

(a) separates the physical text-manifestation [= *Vehiculum*] to be interpreted from its context; every other operation and factor of the interpretation is related to this vehiculum, taking into account its linguistic-semiotic facet [= *Notatio*] as well as its material physical-semiotic facet [= *Figura*];

(b) assigns a mental image [= *Vehiculum-imago*] to the vehiculum and the contextual interpretation of its assumed formal (phonological, morphological, syntactic, lexical-prosodic, metrical-rhythmical) architectonics [= *Formatio contextualis*]; here I do not want to deal with the so-called V-model which is the basis for this operation (cf. the symbol $\vee M_F$ in the figure);

(c) assigns a systemic formal interpretation [= *Formatio sistemica*] to the *Formatio contextualis*; the basic lexical units of both of the formal interpretations are „formatives“, that is, elements which are indifferent towards a semantic interpretation;

(d) assigns a systemic semantic interpretation [= *Sensus sistemicus*] to the *Formatio sistemica*; that is, assigns a well-formed configuration of senses to the configuration of the formatives; in the case of an interpretation whose aim is a

philological fidelity, in performing this operation, the interpreter has to use an author- or epoche-specific thesaurus;

(e) assigns a contextual semantic interpretation $/= \textit{Sensus contextualis} /$ to the *Sensus sistemicus*; this implies that the interpreter should perform the following operations:

*

(e11) assign an author-specific set of knowledge – a so-called R-model (cf. the symbol sM_R in the figure) – to the *Sensus sistemicus*; this model contains the presumed knowledge of the author, which refers to the world, on the basis of his thesaurus;

(e12) activate the pieces of knowledge present in this model, with the help of which he can assign a functioning *Sensus contextualis* to the *Sensus sistemicus*; this functionality means that the model contains the image $/= \textit{imago} /$ of such a state-of-affairs configuration $/= \textit{Relatum} /$ as is congruent with this *Sensus contextualis*; for the sake of simplicity, I make no distinction here between the mental images and their indicators as theoretical constructs;

**

(e21) assign a R-model which contains his set of knowledge concerning the world; I do not deal here with the question about how to treat the relation between an interpreter-specific model and an author-specific thesaurus;

(e22) the operations to be performed here are analogous to the ones described in (e21);

(e31) compare the configurations of states of affairs resulting from the operations (e12) and (e22);

(e321) if the two configurations are identical, then the process of interpretation is successfully finished;

(e322) if the two configurations are not identical, then:

- the interpreter should try to make them identical via the reconstruction of the first, or of the second, or of both of them, in order to finish successfully the process of interpretation;
- if he cannot do that, then, on the basis of one of his configurations of states of affairs, he should try to explain one of the producer-specific configurations of states of affairs, in order to make both configurations acceptable, and, in this way, to finish successfully the process of interpretation.

(f) If none of the (e)-operations is successful, the interpreter can revise either the *models* used for the interpretation, or the *Sensus contextualis*, or the *Sensus sistemicus*, or even the *Formatio*.

(I hope that it is not difficult to see the relations between this description of a semantic interpretation and the description made by Bierwisch, which is presented in the first section of this paper.)

4.2. Some aspects of a semi-formal representation-language.

4.2.1. It seems useful to use *functors-argument structures* as basic units in the semi-formal representation-language; the *functor* part of the structure has to be modifiable, the *argument* part has to contain not only argument variables or constants, but also the indicators of their role.

Formula (a) represents the global form of a functor-argument structure, while formula (b) represents the specified form of it.

$$\begin{array}{l}
 \text{(a)} \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad [F] \{ A \} \\
 \text{(b)} \qquad [[[[[[M]]]]]] \left| \begin{array}{l} Q_l \\ Q_n ([F_m]) \end{array} \right. \left| \begin{array}{l}] F_d] \quad F \{ r_1 : x_1, r_2 : x_2, \dots, r_n : x_n \} \end{array} \right. \\
 \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \langle \rangle \qquad \langle \rangle \quad \langle \rangle \qquad \langle \rangle \quad \langle \rangle \quad \langle \rangle \quad \langle \rangle \quad \langle \rangle \quad \langle \rangle
 \end{array}$$

Remarks on formula (b):

- units in round brackets are optional, and they might be cancelled;
- „M“ is a variable for *modifiers*, which correspond to expressions like „very“, „exactly“, and so on;
- „Ql“ is a variable for *quality indicators*, which correspond to adjectives or adverbs, such as „green“, „cold“, „...“, „slowly“, „quickly“, and so on;
- „Qn“ is a variable for *quantity indicators*, which correspond to numbers, or to indefinite numbers, like „some“, „few“, and so on;
- „Fm“ is a variable for *measure functors*, which correspond to units like „piece“, „litre“, „km“, „km/h“, and so on;
- „Fd“ is a variable for *dimension functors*, which correspond to „number“, „weight“, „volume“, „colour“, and so on;
- „F“ is a variable for *basic functors*, which, using the terminology of traditional grammar, correspond to „nouns“, „verbs“, and „conjunctions“;
- „r₁“ is a variable for *argument-role indicators*;
- „x_i“ is a variable for *arguments*;
- the symbols „< >“ indicate the slots where the natural-language-specific morpho-syntactic pieces of information should be inserted.

As we can see, the formula (b) contains symbols for every type of natural-language word category.

If a functor-argument structure does not contain the constant „itc“ (= it is the case), I am speaking about a *proposition kernel*. By using temporal and local specifiers („st“, „sl“, respectively), we can construct propositions from the *proposition kernels*. (See formula (c), in which the symbols „p“ indicate proposition kernels, and the symbols „P“ indicate propositions.)

4.2.2. A proposition can be either elementary or complex; the complex propositions are constructed from the elementary ones by using (semi-formal natural-language-specific) connectives.

By embedding propositions into propositions in a type-specific way, we can create a so-called *atomic text*. Formula (c) represents a (non-completely well-formed) atomic text, which can be assigned to the first text sentence of the „Canticum Canticorum“ (cf. the Appendix (part IV.1)).

This formula has an embedding structure dominated by a *communicative proposition*, which contains the parameters of the communication situation; the dominated propositions are of the following types: *performative-modal* (with the basic functor „TELL“), *world-constitutive* (with the basic functor „DESIRE“), *descriptive world-constitutive* (with the basic functor „FACT“), *descriptive neutral* (with the basic functor „KISS“). The propositions marked with „*“ are semi-formal „interpretative reconstructions“ of some pieces of natural-language information contained in the given text sentence. The graphic representation shows the relations among the temporal specifiers of the individual propositions. For the sake of simplicity, in these propositions I have used English words in capital letters as basic functors.

This type of formula makes it possible:

- to translate it into a formal logical language, if such a language already exists for the case represented in the formula;
- to decompose the different pieces of information in order to create a network of sub-worlds, presumably expressed in the text to be interpreted (the term „sub-world“ is not identical with the logical term „possible world“);
- to decompose a semi-formal text-representation from every relevant point of view.

(c) $P^{Cc} ::= [\text{iitc}]\{\text{st:t}_0, \text{sl:l}_0, \text{up:p}^c\}$

$p^c ::= [\text{COMMUNICATES}]\{r_i: i01, r_j: i03, r_k: P^{Pm}\}$

* $P^{Pm} ::= [\text{iitc}]\{\text{st:t}_0, \text{sl:l}_0, \text{up:p}^m\}$ i01: \$\$\$ /woman/

$p^m ::= [\text{TELL}]\{r_i: i01, r_j: i03, r_k: P^{Ww}\}$ i02: \$\$\$ /man/

* $P^{Ww} ::= [\text{iitc}]\{\text{st:t}_1, \text{sl:l}_1, \text{up:p}^w\}$ i03: X

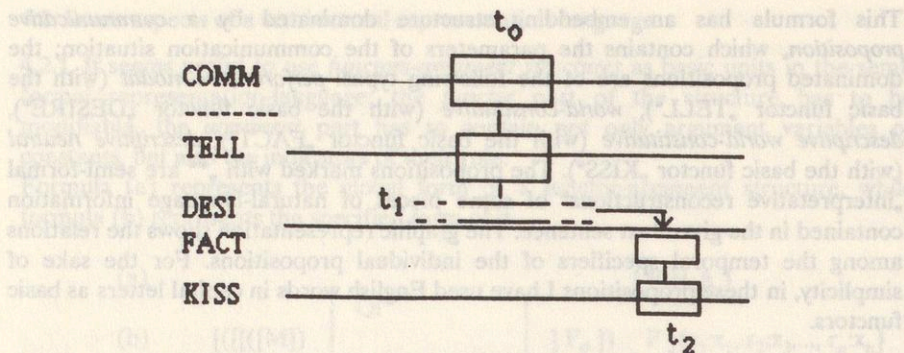
$p^w ::= [\text{DESIRE}]\{r_i: i01, r_j: P^{Dw}\}$ i04: \$the kisses
1 of i02's mouth\$

* $P^{Dw} ::= [\text{iitc}]\{\text{st:t}_2, \text{sl:l}_2, \text{up:p}^w\}$

$p^w ::= [\text{FACT}]\{r_i: i01, r_j: P^{Dn}\}$

$P^{Dn} ::= [\text{iitc}]\{\text{st:t}_2, \text{sl:l}_2, \text{up:p}^n\}$

$p^n ::= [\text{KISS}]\{r_i: i02, r_j: i01, r_k: i04\}$



This formula can be read as follows:

it is the case [=iitc] in $\{t_0, l_0\}$, that i01 COMMUNICATES to i03:

iitc in $\{t_0, l_0\}$, that I [=i01] TELL to i03, that

iitc in $\{t_1, l_1\}$, that I [=i01] DESIRE, that

iitc in $\{t_2, l_2\}$, that it is a FACT for me [=i01], that

iitc in $\{t_2, l_2\}$, that i02 KISSES me [=i01] with i04

Concerning the initial part of the „Canticum Canticorum“, with the help of the communicative propositions, it is possible to represent explicitly the different parameters which are related to the first and the second text sentence respectively. For combining these first two text sentences, we should assign a semi-formal connective to the Latin word „quia“. The English and German translations show two possibilities for the interpretation of „quia“ (cf. the Appendix (part IV.1)).¹⁰

The descriptive neutral proposition of the formula (c) has to be contained in the component „sensus sistemicus“, while the complete formula (c) has to be contained in the component „sensus contextualis“ of the semiotic-textological model of interpretation (Cf. section 4.1 and the Appendix (part III)).

¹⁰ On the aspects of the semi-formal language applied here see, for example, W. Heydrich – J.S. Petöfi, A text-theoretical account of questions of lexical structure, *Quaderni di Semantica* IV, 1983, 120-127, 294-311; Petöfi, Written, spoken, and the face-to-face verbal communication. Some philosophical aspects of the investigation of natural language, in: Rudolf Haller and Wolfgang Grassl (edd.), *Language, Logic and Philosophy. Proceedings of the 4th International Wittgenstein Symposium, 28th August to 2nd September 1979, Kirchberg/Wechsel (Austria)*, Wien 1980, 144-159; id., Representation languages and their function in text interpretation, in: Sture Allén (ed.), *Text Processing. Text Analysis and Generation, Text Typology and Attribution, Proceedings of Nobel Symposium 51, Stockholm 1982*, 85-122.

4.2.3. In connection with the *lexical explications* we have to make a distinction, on the one hand, between *lexicon-* and *encyclopedia-specific* explications and, on the other hand, between *systemic* and *contextual* explications.

In the *systemic* (lexicon- or encyclopedia-specific) explications it is useful to represent the *explicanda* as constituents of functor-argument structures in the following way: the functor-argument structure has only to have the explicandum as a „constant“-constituent, the other places in the structure should be filled with information referring to the relevant properties of the collocations given in the text corpus to be analysed. This way of representation allows us to construct „collocational semantic networks“ specific for the text corpus analysed.

The *explicantia* should have the form of a semi-formal text representation constructed on the basis of the putnamian principles of the stereotypes.¹¹

In order to treat some aspects of the *contextual* explications, let us comment on the examples represented in (d), which contains every occurrence of the expression „*ubera/uberum*“ in the „Canticum Canticorum“.

(d)

- | | |
|--------|--|
| 1 1 W | quia meliora sunt <i>ubera</i> tua vino
Truly, more pleasing is your <i>love</i> than wine.
Ja, deine <i>Liebe</i> ist besser als Wein. |
| 1 3 W | memores <i>uberum</i> tuorum super vinum
Let us extol your <i>love</i> beyond wine!
Deine <i>Liebe</i> wollen wir rühmen höher als Wein. |
| 1 12 W | inter <i>ubera</i> mea commorabitur
between my <i>breasts</i> he lies.
das zwischen meinen <i>Brüsten</i> ruht. |
| 4 5 M | duo <i>ubera</i> tua sicut duo hinuli
Your <i>breasts</i> are like two fawns,
Deine zwei <i>Brüste</i> (sind) wie zwei Kitzen, |
| 4 10 M | pulchriora <i>ubera</i> tua vino
How much more pleasing is your <i>love</i> than wine,
Wieviel besser ist deine <i>Liebe</i> als Wein, |
| 7 3 M | duo <i>ubera</i> tua sicut duo hinuli
Your <i>breasts</i> are like two fawns,
Deine zwei <i>Brüste</i> (sind) wie zwei Kitzen, |
| 7 7 M | et <i>ubera</i> tua botris |

¹¹ Concerning this topic cf. Bierwisch's opinion, quoted in the previous sections, and also F. Neubauer – J.S. Petöfi, Word semantics, lexicon systems, and text interpretation, in Hans-Jürgen Eikmeyer and Hannes Rieser (edd.), Words, Worlds, and Contexts. New Approaches in Word Semantics, Berlin – New York 1981, 337-343, and Petöfi, Some aspects of the structure of a lexicon entry, in: Atti a cura di Marta Fattori e Massimo Bianchi, SPIRITUS. IV° Colloquio Internazionale del Lessico Intellettuale Europeo, Roma, 7-9 gennaio 1983, Roma 1984, 15-53; id., Lexicon, in: Teun A. van Dijk (ed.), Handbook of Discourse Analysis, Vol.2: Dimensions of Discourse, London 1985, 87-101.

- and your *breasts* clusters.
 und deine *Brüste* den (Dattel-) Trauben.
- 7 8 M et erunt *ubera* tua sicut botri vineae
 Let your *breasts* be like the clusters of the vine,
 Dann werden deine *Brüste* wie die Weintrauben sein,
- 7 12 W ibi dabi tibi *ubera* mea
 There I will give you my *love*.
 Dort will ich dir meine *Liebkosungen* schenken:
- 8 1 W *ubera* matris meae
 nursed at my mother's *breasts*!
 der an den *Brüsten* meiner Mutter gesäugt.
- 8 8 (W) soror nostra parva et *ubera* non habet
 ... and she has no *breasts*.
 die hat noch keine *Brüste*.
- 8 10 (W) et *ubera* mea sicut turris
 and my *breasts* like towers.
 und meine *Brüste* sind wie Türme.

(b)

As the English and German translations show, this expression appears in different co-texts with a different sensus. For an explicit representation of the contextualized systemic sensus we have to formulate the „rules of contextualization“. I am sure that these rules cannot be formulated while remaining on the „sensus level“; to create or accept a contextualization means to find an external (relatum specific) context in which the state of affairs correlated to the sensus (to be chosen or accepted) is acceptable on the basis of a „coherence conception“. It means that sensus contextualis and relatum imago (which are the analoga of the „intension“ and the „extension“, respectively) cannot be separately constructed. It is the „textual coherence“ which plays a decisive role in the construction of the „sensus contextualis, relatum imago“ pair. (Of course, the situation is more complex in the case of a second-degree – symbolic – interpretation.)

4.2.4. I have not treated the problems of the symbolic interpretation either in connection with logical semantics or in connection with the semiotic textology. Here I should only mention that the model-theoretic framework of logical semantics can also be used as a pattern for the symbolic interpretation of natural-language texts. It means that we can transform the natural-language expressions into such „semi-formal“ variables as can be interpreted in different ways according to different symbolic interpretation-models. For example, it is possible to treat the Latin words „*ubera*“ or „*vinum*“ as variables in the above sense, and create a Targum-model or some Christian models with the model-specific (semi-formal) functions which assign „model-specific symbolic values“ to these variables. (In the context of the semiotic textology I call the semi-formal texts containing „variables“ *hyper-texts*.¹²)

¹² On the problem of using hyper-texts for the semiotic-textological symbolic interpretation of biblical texts see J.S. Petőfi, *A humán kommunikáció szemiotikai elmélete felé / Towards a Semiotic Theory of the Human Communication* (bilingual edition), Szeged 1991; for the

5. Concluding remarks.

As an introduction to the concluding remarks, I should like to refer, once again, to Partee's opinion on the value of possible-worlds theories: „...possible worlds as a technical tool have helped to provide an appropriate *structure* on the space of meanings“¹³.

I am convinced that even a semi-formal use of the model-theoretic logical-semantic framework as a technical tool can help to provide an appropriate structure on the space of *text*-meanings. For a demonstration of this opinion, however, one should undertake the following pilot-studies:

- to find out which type of semi-formal representation (allowing for translatability and satisfying the requirements of text interpretation) is more appropriate for the defined aim to be reached;
- to analyse the criteria of coherence for biblical texts (e.g. the new edition of Schneider's *Grammatik des biblischen Hebräisch* already deals with the „grammatical tools“ for coherence, and Abadi has presented a survey of the studies made in Israel on the topic of connexity and coherence);¹⁴
- to analyse the possibilities of controlling the construction of hyper-texts for metaphorical and symbolic interpretation; this also implies the analysis of the „adequate sources of knowledge“ to be used in this second-degree interpretation process.¹⁵

Abstract:

The aim of the original paper was to analyse what kind of methodological help the results of the logico-semantic research can offer for the text-interpretation, in general, and for the interpretation of dead-language texts, in particular. – The fulfillment of this aim required: (i) the outlining of a logic-oriented textological conception able to operate with every factor relevant for the meaning-constitution of natural-language texts; (ii) the textological analysis and systematization of the results (and the methodological tools) offered by the logical semantic research; (iii) the demonstration of the applicability of the outlined logic-oriented textological framework in the interpretation of at least a few examples. – The time-limit posed upon each speaker during the conference did not allow me to give a complete presentation of this very complex topic, and it was necessary to further reduce the text for the publication. Due to these reasons, since I hope that (a) a big part of what I presented in connection with (ii) can be reconstructed on the basis of the bibliographical references, and (b) I will have the opportunity to present the applicability of the textological framework also in the analysis of dead-language texts, I reduced the parts of my original paper concerning (ii) and (iii).

Address of the author: Prof. Dr. J.S. Petöfi, Università degli studi di Macerata, Dipartimento di Filosofia e Scienze Umane, Via Garibaldi 20, I-62100 Macerata, Italy.

symbolic interpretation in the Targum see U. Neri, *Il Cantico dei Cantici. Targum e antiche interpretazioni ebraiche*, Roma 1987².

¹³ B. Partee, in: Sture Allén (ed.), *Possible Worlds in Humanities, Arts and Sciences, Proceedings of Nobel Symposium 65*, Berlin – New York 1989, 108.

¹⁴ W. Schneider, *Grammatik des biblischen Hebräisch*, München 1989⁷; A. Abadi, *Studies on connexity and coherence in Israel*, in: Charles Michel, János S. Petöfi, and Emel Sözer (edd.), *Research in Text Connexity and Text Coherence. A Survey*, Hamburg 1986, 369-397.

¹⁵ For the „Canticum Canticorum“ cf., for example, O. Keel, *Deine Blicke sind Tauben. Zur Metaphorik des Hohen Liedes*, Stuttgart 1984; id., *Das Hohelied*, Zürich 1986.

Appendix.

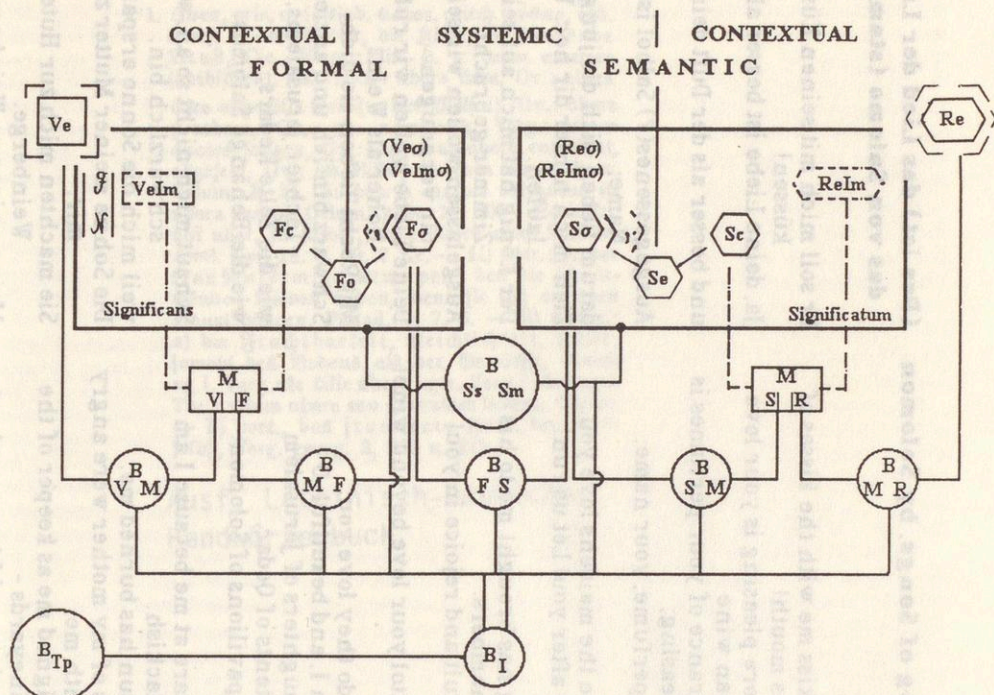
- PART I*:** A Montague-type representation of a sentence (quoted from Manfred Bierwisch, *Psychologische Aspekte der Semantik natürlicher Sprachen*, in: Wolfgang Motsch and Dieter Viehweger (edd.), *Richtungen der modernen Semantikforschung*, Berlin, 1983, 15-64);
- PART II*:** „A5: Truth in a model“ (quoted from Barbara Partee, *Montague grammar and transformational grammar*, *Linguistic Inquiry* 6, 1975, 203-300);
- PART III:** The design of the semiotic textological framework;
- PART IV.1:** *Canticum Canticorum* 1:1-5 (quoted from *Biblia Sacra Iuxta Vulgatam Versionem*, Stuttgart 1983; Roland E. Murphy, *The Song of Songs. A Commentary on the Book of Canticles or the Song of Songs*, Minneapolis 1990; and O. Keel, *Das Hohelied*, Zürich 1986, respectively);
- PART IV.2**:** Index for the quoted Latin biblical text;
- PART IV.3:** Notes to *Canticum Canticorum* 1:1-3 (quoted from Murphy, *Commentary*, ad loc.)

(* - not reproduced here)

(** - only the lexical item „über“ is reproduced here)

PART III

ARCHITECTONICS



- | | | |
|----------------------------|---------------------------|--------------------------|
| Ve : Vehiculum | Fσ : Formatio sistematica | Sc : Sensus contextualis |
| Velm : Vehiculum-imago | Sσ : Sensus sistemicus | ReIm : Relatum-imago |
| Fc : Formatio contextualis | | Re : Relatum |

The symbols containing ,M' refer to the models.
 The symbols containing ,B' refer to different types of knowledge, hypotheses, preferences, and dispositions which can be used in the interpretative process.

PART IV.1.

**(Das ist) das Lied der Lieder
das von Salomo (stammt)**

Er soll mich mit seinen Küssen
küssen!
Ja, deine Liebe ist besser als Wein
und besser als der Duft deiner Salben.
Ausgegossenes(?) Salböl ist dein
Name;
darum lieben dich die jungen Frauen
Zieh mich hinter dir her. Wir wollen
laufen.
Der König hat mich auf sein
Zimmer gebracht.
Ausgelassen wollen wir sein, uns mit
dir vergnügen.
Deine Liebe wollen wir rühmen
höher als Wein.
Mit Recht lieben sie dich.
Schwarz bin ich und anziehend, ihr
Töchter Jerusalems,
wie die Zelte Kedars,
wie die Behänge Salomos.
Schaut mich nicht so an, weil ich
schwarzlich bin,
weil mich die Sonne erspät hat.
Die Söhne meiner Mutter zürnten
mir.
Sie machten mich zur Hüterin der
Weinberge.
Meinen eigenen Weinberg habe ich
nicht gehütet.

The Song of Songs, by Solomon

Let him kiss me with the kisses of
his mouth!
Truly, more pleasing is your love
than wine
The fragrance of your perfumes is
pleasing,
flowing perfume, your name;
therefore the maidens love you.
Draw me after you! Let us run!
The king has brought me to his
chambers.
Let us exult and rejoice in you!
Let us extol your love beyond wine!
Rightly do they love you.
Black am I, and beautiful, O
daughters of Jerusalem
like the tents of Qedar,
like the pavilions of Solomon.
Do not stare at me because I am
blackish,
for the sun has burned me.
The sons of my mother were angry
with me;
they assigned me as keeper of the
vineyards -
my own vineyard I have not kept.

Canticum Canticorum

Osculetur me osculo oris sui
quia meliora sunt ubera tua vino
fragrantia unguentis optimis
oleum effusum nomen tuum
ideo adulescentulae dilexerunt te
trabe me post te curremus
introduxit me rex in cellaria sua
exultabimus et laetabimur in te
memores uberum tuorum super
vinum
recti diligunt te
nigra sum sed formosa filiae
Hierusalem
sicut tabernacula Cedar sicut pelles
Salomonis
nolite me considerare quod fusca
sim
quia decoloravit me sol
filii matris meae pugnaverunt
contra me
posuerunt me custodem in vineis
vineam meam non custodivi

PART IV.2.

1. **über**, eris, n. (altind. *udhar*, griech. *οὐθαρ*, *abh. atar*), I) das Euter, die Biße, die säugende Brust, Cic., Verg., Plin. u. a.: *uber exserere* (entblößen), Val. Max.: *ubera dare*, Ov.: *ubera dare expositis fera* (v. der Bällin), Ov.: *ubera praebere*, Ov., od. *admovere*, Verg.: *ubera ducere*, saugen, Ov.: *raptus ab ubere*, entwöhnt, abgesetzt, Ov.: im Bilde, *distenta musto ubera*, Colum. 3, 21, 3: *putria maturi solvantur ut ubera campi*, Colum. poet. 10, 90. — Sprichw., *ubi uber, ibi tuber*, keine Rosen ohne Dornen, Anul. flor. 18. p. 29, 7 Kr. — II) *übr.*: A) der frauenförmige Klumpen, den die schwärmenden Bienen bilden, wenn sie sich an einen Baum hängen, Pallad. 7, 7, 6. — B) meton.: a) die Fruchtbarkeit, Reichlichkeit, Fülle, sowohl des Bodens als der Gewächse, *divitis agri*, Verg.: *fe tilis ubere agor*, Verg.: *uber agris*, Tac.: *vitem ubere suo gravatam levare*, Colum. — b) poet., das fruchtbare Feld, der Acker selbst, Verg. georg. 2, 234 u. 275.

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PART IV.3.

Notes

אֶלָּהּ יִשָּׁקֵנִי (Qal jussive, יִשָּׁק, plus pronominal suffix: "Let him kiss me") makes appropriate sense in context. Vocalization of the consonantal text to yield יִשָּׁקֵנִי (Hip'il jussive, יִשָּׁק, plus pronominal suffix: "Let him give me to drink") is supported by Gordis (78) and apparently also NEB ("that he may smother me"); cf. the more radical emendation יִשָּׁקֵנִי (Hip'il imperative, יִשָּׁק, plus pronominal suffix: "Make me drink" or "Drown me"), accepted by Karl Budde ("Das Hohelied" in E. Kautzsch and A. Bertholet [eds.], *Die Heilige Schrift des Alten Testament*, Vol. 2 [Tübingen: J. C. B. Mohr (Paul Siebeck), 1923] 392), Friedrich Horst (*BHK*, 1201 n. "a" to 1:2), and others. There is a wordplay on יִשָּׁק ("drink") and יִשָּׁק ("kiss") in 8:1–2; it may be that 1:2 already suggests this play (cf. also 5:1), but nothing is gained by alteration of אֶלָּהּ.

The preposition בְּ in בְּיָמֵיךָ ("with the kisses") is partitive (*GHB* §133c), and it contributes to the alliteration (בְּיָמֵיךָ בְּיָמֵיךָ).

The introductory אֱמֶנֶה ("truly") is to be taken as asseverative or emphatic, rather than causal (Albright, "Archaic Survivals," 2; cf. *HSyn* §449).

"Pleasing" is literally "good" (טוֹב). This word can mean "sweet" in relation to wine, as argued by Albright ("Archaic Survivals," 2) on the basis of the Ugaritic designations: *ym ḥb* is "sweet wine" in contrast to *ym d l ḥb*, "wine that is not sweet" (cf. *UT* 1084.1–23). But this distinction could depend on a quality other than sweetness. Here "good" need not be narrowed in meaning; cf. also 7:10[9].

Both אֶלָּהּ and אֶלָּהּ read consonantal יָדָד as יָדָדָד, "your breasts" (cf. Ezek 23:21; Prov 5:19). But the vocalization of אֶלָּהּ is preferable, deriving the noun from the root יָדָד. Thus one has יָדָדָד ("my love"), as the favorite term used by the woman of the man (1:13, 14, 16; etc.), and אֶלָּהּ in the plural to designate acts or expressions of love (1:4; 4:10; 5:1; etc.).

The pronominal shift in v 2 with reference to the male lover, from third to second person ("his mouth . . . your love"), does not require emendation in the interest of consistency; such shifts (enallage) are well attested in Hebrew poetry (e.g., Ps 23:1–3, 4–5, 6), and elsewhere in the Song (1:4; 2:4; etc.).

Interpretation

The dialogue in vv 2–6 exhibits a bewildering shift in persons (enallage) which creates difficulty in establishing the identity of the speakers. There may even be two units: vv 2–4, with *'ahēbūkā* "(they) love you," serving as an *inclusio* to bind vv 3–4 together, and vv 5–6, the discourse of the woman to the Daughters of Jerusalem. If the maidens of v 3 are to be understood as the Daughters of Jerusalem (v 5), one may regard dialogue as the bond among all these lines.

The genre of vv 2–4 is best classified as a "song of yearning": the woman yearns for the man's kisses ("let him kiss me") and his presence ("draw me"), and proclaims how lovable he is (fragrance, name, love). The genre of vv 5–6 is self-description.¹

The life setting escapes us. Krinetzki identifies the maidens with the companions of the bride, and proposes that the setting is the bringing of the bride to the house of her betrothed.² Similarly, Würthwein understands vv 2–4 as a reply to the bridegroom's invitation to move to his house. But such reconstruction is too specific; nothing in the text really demands it. Verses 2–4 are best understood as a soliloquy by the woman; the physical presence of the man is not necessarily indicated. Verses 5–6 are directly addressed to the Daughters of Jerusalem who are present, either physically or in spirit.

■ 2 The woman expresses a desire to experience the signs of love. It is clear that mouth-kisses are meant, but nose-kissing is also known from Egyptian sources. The opening line certainly plunges *in medias res*, but this strong expression of the woman's desire is appropriate in view of the tenor of the rest of the work.³

The comparison of love to wine means that his caresses and affection provide her more pleasure than even the staple of Israelite life, wine. In 4:10 the man will return the compliment with the same comparison.

1 For these respective genre designations, cf. Horst, "Formen," 186 and 182.

2 L. Krinetzki, 85.

3 Bernard of Clairvaux has caught the spirit of this passionate opening of the Song: "The favors I have received are far above what I deserve, but they are less than what I long for. It is desire that drives me on, not reason. Please do not accuse me of presumption if I yield to this impulse of love. My shame indeed rebukes me, but love is stronger than all. I am well aware that he is a king who loves justice; but headlong love does not wait for judgement, is not chastened by advice, not shackled by shame nor subdued by reason. I ask, I crave, I implore; let him kiss me with the kisses of his mouth" (*Sermon* 9.2 [tr. CFS 4, 54]).