
DONVM SEMANTICVM

OPERA LINGVISTICA ET LOGICA IN HONOREM BARBARAE PARTEE A DISCIPVLIS
AMICISQVE ROSSICIS OBLATA

Edited by

PETER ARKADIEV IVAN KAPITONOV
YURY LANDER EKATERINA RAKHILINA
AND SERGEI TATEVOSOV

with assistance of

PAVEL RUDNEV

MOSCOW
2015
LRC PUBLISHERS

Contents

Предисловие	1
1 Барбара Парти — задача наведения мостов Вера Исааковна Подлеская	3
2 Negative events: Evidence from Lithuanian Peter Arkadiev	7
3 Pair-list answers in naïve speakers and professional linguists Asya Achimova, Peter Staroverov, Viviane Déprez and Julien Musolino	21
4 Cause in Russian and the formal typology of coordination and subordination Oleg Belyaev	36
5 Notes on perspective-sensitivity Lisa Bylinina, Eric McCreedy and Yasutada Sudo	68
6 Формальная семантика и философия: мировой опыт и российские перспективы Екатерина Вострикова и Петр Куслий	82
7 Pronouns with multiple indices as conjunctions and disjunctions Natalia Ivlieva and Alexander Podobryaev	99

8	On the quantification of events	112
	Ivan Kapitonov	
9	Quantifiers in RSL: distributivity and compositionality	123
	Vadim Kimmelman	
10	Genitive of cause and cause of genitive	137
	Julia Kuznetsova and Ekaterina Rakhilina	
11	On how compositionality relates to syntactic prototypes and grammaticalization	148
	Yury Lander	
12	Factivity and unreal contexts: the Russian case	158
	Alexander Letuchiy	
13	Semantics of poetical tropes: Non-Fregeanity and paraconsistent logic	180
	Basil Lourié and Olga Mitrenina	
14	Tsakhur as a case-stacking language	195
	Ekaterina Lyutikova	
15	Русские местоимения и снятая утвердительность	219
	Елена Викторовна Падучева	
16	Cluster analysis in DLP technologies	243
	Ekaterina Pshehotskaya and Nikita Nikitinsky	
17	An alternative to the two solutions for the saturative <i>na-+-sja</i> construction	257
	Eugenia Romanova	
18	<i>Kendisi</i> revisited	267
	Pavel Rudnev	

19 Degree modifiers: A new perspective on their semantics and the role of stress in it	276
Galit Sassoon and Natalia Zevakhina	
20 Interpreting sentences without prosody and context	290
Natalia Slioussar	
21 On argument structure, lexical relations, prefixation and coercion	303
Sergei Tatevosov	
22 Две миссии Барбары	320
Владимир Борисович Борщев	
Bibliography	332

Abbreviations

1	First person	GEN	genitive
2	Second person	I	noun class I
3	Third person	II	noun class II
AA	animate attributive	III	noun class III
ABL	ablative	IN	in
ABS	absolute	INF	infinitive
ACC	accusative	INS	instrumental
ACT	active	IPF	imperfective
AFF	affective	IRR	irrealis
AGR	agreement	IV	noun class IV
ALL	allative	LOC	locative
AOBL	oblique attributive	M	masculine
AOR	eorist	N	noun
ATTR	attributive	NDIR	non-directed
AUX	auxiliary	NEG	negative
CNT	count	NEUT	neuter
COM	comitative	NH	non-human
COP	copula	NOM	nominative
CVB	converb	OBL	oblique
D	determiner	P	adposition
DAT	dative	PA	active participle
DEF	definite	PFV	perfective
DEM	demonstrative	PFX	prefix
DU	dual	PL	plural
EL	elative	POSS	possessive
ERG	ergative	PRED	predicative
F	feminine	PRS	present
FUT	future	PRT	particle

PST	past	TOP	topic
PTCP	participle	TR	transitive
REFL	reflexive	V	verb
SG	singular	VBE	existential verb
SUPERS	superessive	VEXP	experiential verb

Semantics of poetical tropes: Non-Fregeanity and paraconsistent logic

Basil Lourié and Olga Mitrenina

...καὶ παράδοξον θαῦμα

To our dear and paradoxal Barbara Partee.

13.1 Introduction

The sentence “There is a bag of potatoes in my pantry” is true if and only if there is a bag of potatoes in my pantry, as truth-conditional semantics defines (Heim & Kratzer 1998: 1).¹ Such examples are often quoted with a reference to Alfred Tarski’s 1933 article, in which his famous truth definition was proposed.² However, when applied to the natural languages, such truth conditions cease to be properly Tarskian. The long first paragraph of Tarski’s 1933 paper is dedicated to the statement that, to him, “the very possibility of a consistent use of the expression ‘true sentence’ which is in harmony with the laws of logic and the spirit of everyday language seems to be very questionable” and, consequently, such definitions as “‘it is snowing’ is a true sentence if and only if it is snowing” are not, *strictly speaking*, logically meaningful (Tarski 1956: 156, 165). Due to these constraints, Tarski’s truth definition was applied to the formal languages only.

1 The present study was supported by the Russian Foundation for Basic Research, project № 13-06-00832.

2 Heim and Kratzer refer to the 1936 (although mistakenly dating it to 1935) German translation from the Polish original as if it were the original article itself: (Heim & Kratzer 1998: 1, 11).

Nevertheless, Irene Heim and Angelika Kratzer do not seem to be uneasy in applying Tarskian definitions to natural languages. In this, they follow Richard Montague's conviction that "[t]here is... no important theoretical difference between natural languages and the artificial languages of logicians" (Montague 1974b: 222) (first published in 1970). In this presumption, Tarski's definition becomes applicable to natural languages (Montague 1974a: 208–210) (first published in 1970). Montague proposed a strategy to overcome the difficulties noticed by Tarski (especially those caused by the vagueness of natural languages) with recourse to PWS (possible worlds semantics, briefly discussed in the concluding chapter of Heim & Kratzer 1998).

Taking into account the necessity of understanding our sentence about the bag of potatoes within the PWS framework, we can hope that we could understand what such things as "potatoes" and "pantry" mean. The condition *sine qua non* for this is to become able to define the meanings ("intensions" in Montague's sense of the word) of the corresponding lexemes as functions from possible worlds to extensions of the appropriate sort.

Now, let us slightly complicate the task. How might one draw such functions ("intensions") in the case of Boris Pasternak's poem "Improvisation" (1915):

I fed out of my hand a flock of keys
 To clapping of wings and shrill cries in flight.
 Sleeves up, arms out, on tiptoe I rose;
 At my elbow I felt the nudging of night³.

This text includes poetical tropes that are quite typical not only for poetry, but for colloquial and literary language as well. Not so long ago, in 1990, Jaakko Hintikka and Gabriel Sandu proposed a semantic theory of poetical tropes which they considered to be, on the one hand, a successful application of Montague's and David Lewis's ideas concerning the possible world semantics⁴ and, on the other hand, a strategy to overcome the stagnation in semantic studies that continue the line of Montague and Lewis. Below we will have occasion to re-examine the relation of the Hintikka-Sandu theory to the Fregean scholarly program as such, not only to its PWS modifications.

Since the 1950s, the study of metaphor and other indirect meanings has been approached from different perspectives. Some of them are certainly

³ Translated by Eugene M. Kayden.

⁴ See below, starting from section 13.3. Cf. Lewis 1986.

relevant for the formal semantics of natural language. Nevertheless, the more our studies advance, the further we are from any consensus. The only exception is the so-to-say “phenomenological” description of the variety of indirect meanings, that is, not an analysis but rather a description of what metaphor, metonymy, and other poetical tropes are.

According to the approach first proposed in 1956 by Roman Jakobson, the variety of indirect meanings can be reduced to two types, metaphor and metonymy.⁵ Metaphor, according to Jakobson, is based on the relation of similarity, whereas metonymy is based on the relation of contiguity. Both of them form together the two “poles” of the spectrum of indirect meanings. This is not the only possible way of representing the variety of indirect meanings within a unique scheme, but, at least, it is basically equivalent to the theory of metaphor/metonymy based on the theory of conceptual spaces by Peter Gärdenfors (who, in turn, elaborated on George Lakoff’s understanding of metaphor as cross-domain mapping).⁶

Thus, there is no problem with defining metaphor/metonymy (or indirect meaning in general). The problems begin when we ask whether these phenomena have anything to do with language at all or, if the answer is positive, with its semantics.

It is a bit embarrassing to admit that the main purpose of the present notice is to put forward one more semantic theory of indirect meaning, in addition to the too many theories now under discussion. By way of an apology, however, we note that our theory will not be completely new but rather an extension of the Hintikka-Sandu theory of metaphor and metonymy.

13.2 Pre-1990s theories of indirect meaning

A very short sketch of the presently available theories of metaphor and other kinds of indirect meaning is unavoidable. We need ultimately to discuss the Hintikka-Sandu theory, but this is impossible without explaining why we consider it to be better than the others. Therefore, in this section, we will list these others.

5 [Jacobson 1971](#) (esp. section V, “The Metaphoric and Metonymic Poles,” pp. 254–259). For a modern interpretation of Jakobson’s approach, see [Peirsman & Geeraerts 2006](#).

6 On this equivalency, see esp. ([Gärdenfors & Löhdorf 2013](#): esp. 453–454). Cf. ([Gärdenfors 2014](#): 39–41).

13.2.1 *Cognitive semantics: metaphors outside language*

In the 1970s, several scholars put forward the theory that metaphor is fundamental for the cognitive sphere as a whole but not encompassed by language.⁷ On the contrary, it is language that depends on metaphors, whereas there are no mechanisms specific to language that regulate our metaphorical thinking. George Lakoff became the most influential proponent of this approach (shared and developed, among others, by Peter Gärdenfors). In Lakoff's words,

...the locus of metaphor is not in language at all, but in the way we conceptualize one mental domain in terms of another. The general theory of metaphor is given by characterizing such cross-domain mappings. And in the process, everyday abstract concepts like time, states, change, causation, and purpose also turn out to be metaphorical.

The result is that metaphor (that is, cross-domain mapping) is absolutely central to ordinary natural language semantics, and that the study of literary metaphor is an extension of the study of everyday metaphor. Everyday metaphor is characterized by a huge system of thousands of cross-domain mappings, and this system is made use of in novel metaphor (Lakoff 1993: 203)

However, the treatment of metaphors and metonymies within the cognitive sphere as a whole does not prevent us from asking whether there are any metaphorical/metonymic mechanisms within the sphere of language. Indeed, even if “[m]etaphors and metonymies are primarily [to be – L&M] seen as *cognitive* operations, and their linguistic expression is only a secondary phenomenon” (Gärdenfors 2000: 164), this is not to say that this “secondary phenomenon” could not have some rules of its own.

The cognitive approach has certainly contributed a great deal to our understanding of the continuity (and even the basic unity) between “indirect” and “direct” meanings, but it is simply not specific enough to settle our questions about the possible existence of the metaphorical/metonymic mechanisms embedded into the logic of natural language. No wonder, therefore, that the current popularity of the cognitive theories of metaphor did not prevent the development of several theories much closer to linguistics.

⁷ The manifesto of this approach was the article by Reddy (1979) (first published in 1979). According to Lakoff, “Reddy showed, for a single, very significant case, that the locus of metaphor is thought, not language...” (Lakoff 1993: 204).

13.2.2 *Descriptionistic approaches*

Descriptionistic approaches to poetical tropes go back to Aristotle (*Poetics* XI, 1457b), who considered metaphor as a kind of analogy assuming that, in the metaphor, the words pointing out a comparison (“as if”, “looks like”, etc.) are omitted, although they are implied. Such an approach — notwithstanding several modifications put forward during the twentieth century — is now largely abandoned by philosophers of language, especially after the critiques by John R. Searle and Donald Davidson.⁸ Most of its twentieth-century modifications (critiqued by Searl and Davidson) had taken into account the Fregean distinction between *Sinn* and *Bedeutung*; therefore, the “regular” and “metaphorical” meanings were treated as different *Bedeutungen*, as if they were homonyms.

There is no need, after Searl and Davidson, to go too deeply into critiquing the theories advocating the existence of any specific “metaphorical” meaning. Instead, we would like to mention a unique consideration that will be relevant to our own approach (articulated by different authors but in an especially helpful manner by Davidson).

In most cases, we cannot retell a poetical text through prose, whereas this could easily have been done if the words of comparison were merely omitted or if there were some “metaphorical meanings” that could be described in an ordinary lexicographical way. The most important part of the text is lost when one attempts such a retelling: “I was playing the piano, the music was noisy, it resembled the sounds of (sea?) birds...”, and the second part of the strophe is even more difficult to retell. Such attempts show that metaphor has “more meaning” than simply a comparison or a kind of “homonymy”.

13.2.3 *Semantic-pragmatic approach*

The attempts to avoid merely descriptionistic approaches are connected with semantics or pragmatics, or with a combination of both. The idea to consider metaphor as a partially pragmatic phenomenon was suggested by Paul Grice in the 1960s.⁹ According to Grice, the words in metaphor or irony do not have their regular meanings. Instead they have some *ad hoc* meaning that the speaker “implicates” to them. Grice called all these additional meanings *im-*

8 Searle (1979: 76–103). Cf. also (especially in connexion with Fregean heritage) Davidson 1984. Moreover, there are important criticisms of the Aristotle-inspired theories of metaphor in the paper by Hintikka and Sandu (see below).

9 His seminal article (written already in 1967) is Grice 1975; see this and other his articles on the topic reprinted as Part I of Grice 1989.

plicature, and we can understand them out of context by means of pragmatics. So his was a semantic-pragmatic approach.

The ideas set out by Grice were developed by John Searle within his more general theory of speech acts. Searle proposes two opposing notions:

1. *word meaning* (or *sentence meaning*) as the meaning that words (or sentences) have in regular non-poetical language, and
2. *speaker meaning* (or *utterance meaning*) as the new meaning that the speaker adds to this word or sentence.

This approach was criticised, among other reasons, because the derivation of sentence meaning is not clear if some words are used in their *word meaning* and others in their *speaker meaning*. The question remains how these numerous speaker-meanings interact with regular word meanings. No general semantics was presented for these meanings, because the speaker/utterance meanings result from pragmatics. However, a theory that would encompass both semantics and pragmatics is not provided by Searle.

The main objection to any “speech acts” treatment of metaphor as well as to the Davidsonian purely pragmatic approach (see next section) is the demonstrable fact that, as Hintikka and Sandu put it, “[m]etaphor is a matter of meaning, not of use”.¹⁰ To show this, Hintikka and Sandu provide, among other examples, a number of instances where the understanding of metaphor is clearly independent from the context.

13.2.4 Pragmatic approach

The most influential pragmatic theory of metaphor was suggested by Davidson (1984). He denied the idea of any “metaphoric meaning” in the sense of Searle or Grice. He denied as well the descriptionistic approach. Davidson insists that the words and phrases that form metaphors do not have any other meanings apart from their regular “dictionary” meaning. However, metaphor does not belong to the domain of semantics at all, being a phenomenon of pragmatics.

According to Davidson, metaphor is a case of a direct reference, albeit not that of a simple “token” (in Ruth Barkan Marcus’ sense). It is rather like a picture:

¹⁰ Hintikka & Sandu (1994: 172–177); Hintikka and Sandu mention Searle as the author of “[o]ne such hopeless approach to metaphor” that they criticise (*ibid.*, p. 185, n.12). As an example of a recent modification of the Gricean approach without paying any attention to these criticisms by Hintikka and Sandu, see Ernie Lepore’s and Matthew Stone’s recent (although somewhat anachronistic) article [Lepore & Stone 2010](#).

How many facts or propositions are conveyed by a photograph? None, an infinity, or one great unstateable fact? Sad question. A picture is not worth a thousand words, or any other number. Words are the wrong currency to exchange for a picture. (Davidson 1984: 263)

Davidson believes that understanding metaphors goes beyond language communication and syntax: “Metaphor makes us see one thing as another by making some literal statement that inspires or prompts the insight” (*Ibid.*) – notwithstanding the fact that (or, rather, precisely because of the fact that) they are patently false or absurdly true.

Of course, there is an “easy” way to disprove Davidson’s theory: to propose any working semantic theory of metaphor. We do believe that this could be possible, with the help of Hintikka and Sandu. However, even if not acceptable in full, Davidson’s theory has a unique merit: it underlines the idea that an “insight” is a necessary part of metaphor. Elaborating on this, Davidson states that the meaning of metaphor could never be covered by the meanings of words. Regarding this latter point, we will take Davidson’s side against even Hintikka and Sandu.

13.3 “Meaning lines” by Hintikka and Sandu

A new attempt to integrate poetical tropes into semantics was undertaken by Jaakko Hintikka and Gabriel Sandu.¹¹ According to them, the metaphor is neither reducible to a comparison based on the similarity of properties nor understandable without comparison. Like the comparison, metaphor points out similar properties (predicates). In the same manner, metonymy points out relevant relations of contiguity. But, then, both metaphor and metonymy go further in establishing so-called “meaning lines” between the proprietaries of properties (subjects of predicates)¹² The meaning lines are based on their

¹¹ Hintikka, Sandu, “Metaphor and Other Kinds of Nonliteral Meaning”. This is an expanded and corrected version of a 1990 paper.

¹² Hintikka’s and Sandu’s treatment of meaning lines has been cautiously criticised by Anders Engstrøm, who noticed that some metaphors could not be interpreted *via* the similarity relation because they are based on the metaphorical mapping and integration in Lakoff’s sense (Engstrøm 2001). This detail does not affect the logical nature of the meaning lines, as Engstrøm acknowledges himself, and, probably, such problems could be overcome within a more universal description of metaphor and metonymy, e.g., the definition by Peter Gärdenfors and Simone Löhndorf in the terms of cognitive science: “Metaphors refer to mappings between domains, metonymies to

relevant properties (predicates). The meaning lines drawn from world to world (in the PWS sense) connect the characteristic sets of individuals in each world corresponding to the relevant predicate, but without identification of the individuals themselves. Otherwise, these meaning lines would be the lines of transworld identification of the individuals.

Therefore, Hintikka and Sandu interpret these meaning lines as establishing some kind of transworld identity, although not an existential one. The meaning lines are not transworld lines, which would be based on neither similarity nor contiguity, but rather on the continuity (as David Kaplan has coined this term as early as 1967 (Kaplan 1979, but cf. the footnote on p. 88)), because it is the continuity which is the criterion of the transworld identification of the individuals. The recourse to PWS is the key feature of the Hintikka-Sandu approach. They propose it as a way out from precisely the problem that Davidson had described before he started to construct his own theory – which, according to Hintikka and Sandu, turned out to be “a non-theory of metaphor”. They agree with Davidson that, in the one-world semantics, his decision has no reasonable alternative, but they prefer to abandon the one-world semantics (Hintikka & Sandu 1994: 154).

In dealing with the necessity of adding something to the ordinary meaning of words, we have to either postulate a possibility of different *Bedeutungen* for the unique *Sinn*, or push this “something” outside the area of meaning, thus, into pragmatics. If we opt for the first alternative, we would have either a problem of conflicting *Bedeutungen* within a unique world (which is already shown to be insurmountable in any logically consistent way) or the necessity of having different worlds, that is, PWS. Therefore, PWS provides a consistent way to deal with various kinds of indirect meaning.

13.4 Dispelling “the paradox of the PWS”?

What do meaning lines mean logically? Hintikka and Sandu call them “cousins” of the “intensions” of Montague; both belong to the truth-conditional semantics and allegedly behave in the same way:

Can metaphorical statements (i.e., statements containing metaphorically used words or expressions) be said to be true or false?

meronomic relations within domains” (Gärdenfors & Lövhndorf 2013: 452). As Engström noticed, the Hintikka-Sandu PWS approach allows one to deal with cognitive definitions of metaphor and metonymy, too.

On the basis of the account we have given the answer is unmistakably: yes. This account shows that the only unusual thing about a metaphoric sentence is that the meaning lines of one of its constituent expressions are drawn in a way different from its literal cousin. But in all other respects, the same semantical rules must apply to it. Otherwise we could not account for its meaning. And these semantical rules imply the applicability of the notions of truth and falsehood to the sentence (Hintikka & Sandu 1994: 170).

The “literal” meaning lines mentioned here are the same things as “intensions” in Montague’s PWS, that is, the functions assigning extensions to the terms and the propositions in each of the possible worlds. The metaphorical meaning lines work, according to Hintikka and Sandu, exactly in the same way. This means that, as they say, “the same semantical rules must apply to” both kinds of meaning and, therefore, both kinds of meaning lines. This, in turn, means for these authors that the statements containing words used in indirect meanings “can... be said to be true or false”. Thus, they insist that there is not a “metaphoric truth different from literal truth. A sentence can have a metaphorical meaning, and this meaning decides whether it is true or not in the normal gardenvariety sense of truth” (Hintikka & Sandu 1994: 170–172).

It is only the fact that the meaning lines are compatible with “the normal sense of truth” that would guarantee, in the eyes of Hintikka and Sandu, that the semantical rules governing them are the same as in Montague’s PWS (we will see, in the next section, that this is not the case, however).

For Hintikka and Sandu themselves it is vital to remain within the realm of Montague’s and David Lewis’s semantics. They open their article with a discussion of the phenomenon they call “the paradox of the possible world semantics”. The paradox is as follows: there is an apparently extremely helpful idea that “...the meanings of different types of lexical items and other expressions are... functions from possible worlds to extensions”.

On the basis of this success in handling the general concept of meaning, one is justified to expect that PWS should offer an excellent framework for the actual analyses of lexical meanings, either analyses of the meanings of particular lexical items or analyses of interesting concrete problems in the theory of lexical meaning. Yet this justified expectation remains largely unfulfilled by what we can find in the literature. We find in the PWS-oriented literature relatively few semantical analyses of particular lexical

items and few informative discussions of interesting problems concerning some types of lexical meaning. This strange state of affairs is what we propose to call the paradox of PWS. We can put it in the form of a question. As far as lexical meaning is concerned, is PWS an instance of false promises or unused opportunities? (Hintikka & Sandu 1994: 151–152).

This is why Hintikka and Sandu turn to the “metaphor as a counter-example to the paradox” (title of section 2 of their article), trying “to dispel the paradox of PWS by means of a concrete example” (Hintikka & Sandu 1994: 152).

If we agree with the authors, as we do, that they succeeded in demonstrating that the semantical rules governing both literal and non-literal meaning are the same, we have to acknowledge that, in fact, they created a powerful argument against PWS in the sense of Montague or Lewis or in any other sense fitting with the Fregean program. To “dispel the paradox of PWS”, it would be not enough to demonstrate that the sentences containing words used in indirect meanings have truth values. One would have to demonstrate, moreover, that these truth values are the denotations of the appropriate sentences — otherwise no Fregean semantics, be it one-world or PWS, would work. Hintikka and Sandu overlooked this problem¹³. Thus, instead of dispelling “the paradox”, they rather “dispelled” the Fregean semantics as such. Let us consider the situation a bit more deeply.

13.5 Shift to situational semantics

To begin with, we can consider once more our example from Pasternak to show that the truth values of the metaphorical and similar sentences have little to do with their meaning. The sentences “I fed out of my hand a flock of keys” and “I was playing the piano” have the same truth values (independent from our definition of the very notion of truth value) but obviously quite different meanings (denotations), because the metaphoric meaning belongs to the first sentence but not to the second.

By the way, this is why we are not even interested to know whether the

¹³ There is one point where they touch it tangentially, when acknowledging that in the actual use of the metaphorical statements “the question of truth and falsity normally does not arise”, and this is “a consequence of their nature” (Hintikka & Sandu 1994: 171). This constatation would be a good point to start wondering whether these truth values could really be the denotations of the corresponding statements.

lyrical character of the poem really did (in the possible world of the poem)¹⁴ play the piano. We are interested in the process *per se*, regardless of whether it did occur in any of the possible worlds (or, to say it differently, it is sufficient to us to know that there is some world, imaginary at least, where these things did occur).¹⁵ This is why, as Hintikka and Sandu noticed, the question of the truth or falsity of such sentences most often does not arise.

Let us take a step to a more formal substantiation of this conclusion. According to Hintikka and Sandu, their meaning lines behave according the same semantical rules as the intensions of Montague. This is not the case. The difference appears in the fact that the meaning lines, unlike the intensional functions of Montague, hold against the permutations used in the demonstration of the theorem proposed by Putnam.

Putnam's theorem (or, as David Lewis termed it, "paradox")¹⁶ demonstrates "...that there are always infinitely many different interpretations of the predicates of a language which assign the 'correct' truth values to the sentences in all possible worlds, *no matter how these 'correct' truth values are singled out*" (Putnam's italics; Putnam 1981: 34–35). In the course of the demonstration, Putnam operates with intensions in the sense of Montague, somewhat artificially but without breaking any rule of Fregean semantics, to obtain an absurd confusion of meanings. In his own example, the sentence "a cat on a mat" turns out to mean "a cherry on a tree" (it turns out to be true if and only if there is a cherry on a tree). Putnam's "devastating", for Fregean semantics, permutations of Montague's intensions are based on the Fregean supposition that the sentences denote their truth values.

Let us suppose that the same permutations are performed with the meaning lines. Thus, we obtain that a cat is the same as a cherry. Such a result is not necessarily absurd, because this could be a metaphor or another poetic trope. For instance, Вишенка ("Little Cherry") is a popular Russian nickname for cats, which has an obviously metaphorical origin (based on the similarity between a cherry and a small kitten that has rolled itself up into a ball). This example is enough to show that Putnam's demonstration, as "devastating" for the Fregean semantics of Montague as it may be, is of absolutely no harm for the meaning lines. And this means, in turn, that the meaning lines are

¹⁴ On this application of PWS see, e.g., Elena Semino's monograph 1997

¹⁵ For a general view of the relevant PWS, see Priest 2005.

¹⁶ Lewis 1984; cf.: "Hilary Putnam has devised a bomb that threatens to devastate the realist philosophy we know and love"; the kernel idea for this, in Lewis' wording, is "...that there is no semantic glue to stick our words onto their referents, and so reference is very much up for grabs" (p. 221).

non-Fregean, that is, they engender the sentences whose denotations are not their truth values.

Finally, let us try to show what kind of non-Fregean semantics the meaning lines imply.

The theory of Hintikka and Sandu can be formalised by means of the so-called “metaphorical logic” recently elaborated by Vladimir Vasjukov for the purpose of formalising the ontology of Alexis Meinong (Vasjukov 2004, 2005), without any particular interest in natural language, although the relations he describes actually correspond to the meaning lines. Namely, Vasjukov provides the following “metaphorical” analogue to Leibniz’s principle of identity of indiscernibles, which he calls “the principle of similarity of indiscernibles from a preconceived viewpoint” (PSIPV):

$$(1) \quad (\text{PSIPV}) (a \supseteq b) \leftrightarrow \exists \varphi(\varphi(a) \Rightarrow \varphi(b))$$

To put this into words: in some preconceived aspect a referentially leads to b . Here \supseteq means “indiscernibles from a preconceived viewpoint”. Connective \Rightarrow means “referentially leads to from some preconceived viewpoint”. It means that, at least, one situation where a does occur must be involved, in some sense (from a preconceived viewpoint), into the situations where b does occur.

It is the principle PSIPV that seems to fit quite well with the meaning lines of Hintikka and Sandu. Indeed, both comparison and contiguity (as well as mapping or other cognitive mechanisms) are able to result in a preconceived viewpoint which, in turn, allows grasping some new meanings and expressing them with poetical tropes.

The connective “referentially leads to from some preconceived viewpoint” on which PSIPV relies is evidently non-Fregean. In fact, it is non-Fregean twice over, and, therefore, Vasjukov calls it “non-non-Fregean”. It is obtained with the weakening of a non-Fregean connective “referentially leads to” by Roman Suszko, whose situational semantics (Suszko 1975)¹⁷ provided a general framework for Vasjukov’s “metaphorical logic”.

In Suszko’s semantics, the stronger correspondent of PSIPV is the following form of the principle of identity of indiscernibles (PII):

$$(2) \quad (\text{PII}) (a \sqsubseteq b) \leftrightarrow \forall \varphi(\varphi(a) \Rightarrow \varphi(b))$$

where φ is a formula, $a \sqsubseteq b$ means “ a situationally entails b ”, \Rightarrow is a non-Fregean connective “referentially leads to”.

¹⁷ Cf. also, as a useful introduction, Wójcicki 1984.

The Suszkean connective “referentially leads to” is defined via his Non-Fregean Axiom (NFA) for the formulae (sentences) p and q :

$$(3) \quad (\text{NFA}) (p \equiv q) \rightarrow (p \leftrightarrow q)$$

To put this into words: the sentences are identical (their denotations are the same) if and only if the situations they describe are the same. Here the sign \equiv “(extensionally/referentially) identical to” is written instead of \Leftrightarrow , the above connective “referentially leads to” in both directions.

Suszko formulated his NFA after having made explicit what he called the Fregean Axiom (FA):

$$(4) \quad (\text{FA}) (p \leftrightarrow q) \rightarrow (p \equiv q)$$

This formula means: the logical equivalence of the formulae (sentences) p and q entails their identity (the identity of their denotations). Thus, the denotations of all sentences are their truth values. In situational semantics, on the contrary, the denotations of the sentences are the *situations* they describe (and *not* their truth values).

FA was not discussed or even explicated in Montague’s or David Lewis’s works, and so it leaked unnoticed into the Hintikka-Sandu theory of metaphor – in the way that they constructed a non-Fregean theory when thinking that they were acting *ad majorem gloriam* of the Fregean semantics...

In fact, Hintikka and Sandu provided a situational semantics theory of indirect meaning. Given that they insist (rightly, in our opinion) that their theory is an integral – and not separate – part of the natural language semantics as a whole, their theory became a challenge to the whole Fregean programme in formal semantics. There is no room here, however, to explore these infinite semantical horizons, because we have to finalise, instead, our own theory of poetical tropes.

13.6 Paraconsistent logic for poetical tropes

Even if poetical tropes work along meaning lines, this fact would not explain why they are so expressive and meaningful. The “insight” marked by Donald Davidson as the main feature of poetical tropes is absolutely unexplainable with recourse to the meaning lines. Thus, either this “insight”, as Davidson thought, does not belong to the realm of semantics at all, or the Hintikka-Sandu semantics is incomplete. The former alternative would mean that we need to

revisit the semantic-pragmatic paradigm and propose a new theory of indirect meaning within it. But we would prefer to pursue the latter alternative.

One could dare to say that Hintikka and Sandu did explain the anatomy of poetical trope but not its physiology. They transformed poetical trope into a description, although a perfectly correct one. Meaning lines are phenomena which we can observe during the autopsy of the corpse of a poetical trope when it no longer lives for us.

The poetical trope is alive when meaning lines are already established but still not explained in the sense of avoiding contradiction – to take famous Putnam’s example, when we still call our kitty “Cherry” but have not yet rationalised this metaphor with the picture of a small kitten rolled up into a ball.

This means that the logic of a poetical trope is necessarily paraconsistent: it invalidates the logical principle *ex contradictione quodlibet* [$\{A, \neg A\} \models B$ for every A and B], that is, it is non-explosive.

As a standard situation, poetical tropes imply a contrary contradiction, that is $A \wedge B$, but not a contradictory contradiction, that is $A \wedge \neg A$. The contrary contradiction is weaker, because, even if the consistent logics do not accept a cat to be a cherry, they easily accept that something is neither a cat nor a cherry, that is, the conjunction of the negations of the two parts of the contrary paraconsistent conjunction. The stronger contradictory contradiction (e.g., somebody is a cat and not a cat) is not typical for poetical tropes. Even when it appears in some highly poetical texts (such as, e.g., *De divinis nominibus* by Dionysius the Areopagite), it belongs rather to philosophy and theology than to poetics.

If we adopt, for our theory of tropes, paraconsistent logic, we are no longer obliged to work in PWS. Let us recall that PWS was called for by Hintikka and Sandu in order to avoid inconsistencies. In the paraconsistent framework, both PWS and one-world reasoning are equally available, providing that, in the latter case, the meaning lines would become not inter-worldly but, for instance, they would be established between different mapping domains of a unique possible world.

Among the paraconsistent logics the most studied are those based on the contrary contradiction¹⁸ We do not intend to go deeper into the technical details at present. Our main purpose is pointing out that the paraconsistent logics satisfy Davidson’s condition of pulling our mind beyond the direct

¹⁸ As an up-to-date introduction to these logics, see, e.g., [da Costa, Krause & Bueno 2007](#).

meanings of words and of ensuring an insight. As the mathematician James Joseph Sylvester (1814–1897) put it,

“[a]s a lightning clears the air of unpalatable vapors, so an incisive paradox frees the human intelligence from the lethargic influence of latent and unsuspected assumptions. Paradox is the slayer of Prejudice.” (Quoted as an epigraph to [da Costa, Krause & Bueno 2007](#): 791.)

13.7 Conclusion

The theory of poetical tropes proposed above is an extension of the Hintikka-Sandu theory of meaning lines with the addition of paraconsistent logic. It is the paraconsistent element that is responsible for the key feature of poetical trope that Davidson called “insight”.

It was argued that the semantics of poetical tropes is situational and, therefore, non-Fregean, and this feature is already implied in the Hintikka-Sandu theory, although Hintikka and Sandu consider their theoretical framework as Fregean.

Bibliography

- da Costa, Newton C. A., Décio Krause & Otávio Bueno. 2007. Paraconsistent logic and paraconsistency: Technical and philosophical developments. In Dale Jacquette (ed.), *Philosophy of logic (handbook of the philosophy of science)*, 791–911. Amsterdam: Elsevier.
- Davidson, Donald. 1984. What metaphors mean. In *Inquiries into truth and interpretation*, 245–264. Oxford: Clarendon Press.
- Engstrøm, Anders. 2001. Hintikka and Sandu on metaphor. *Philosophia*. 391–410.
- Gärdenfors, Peter. 2000. *Conceptual spaces: The geometry of thought*. Cambridge, MA/London: MIT Press.
- Gärdenfors, Peter. 2014. *The geometry of meaning: Semantics based on conceptual spaces*. Cambridge, MA: MIT Press.
- Gärdenfors, Peter & Simone Löhdorf. 2013. What is a domain? Dimensional structures versus meronomic relations. *Cognitive Linguistics* 24. 437–456.
- Grice, Herbert Paul. 1975. Logic and conversation. In Peter Cole & Jerry Morgan (eds.), *Speech acts (Syntax and Semantics 3)*, 41–58. New York: Academic Press.
- Grice, Herbert Paul. 1989. *Studies in the way of words*. Harvard: Harvard University Press.
- Heim, Irene & Angelika Kratzer. 1998. *Semantics in generative grammar*. Malden, MA: Blackwell.
- Hintikka, Jaakko & Gabriel Sandu. 1994. Metaphor and other kinds of non-literal meaning. In Jaakko Hintikka (ed.), *Aspects of metaphor*, 151–188. Dordrecht: Kluwer.
- Jacobson, Roman O. 1971. Two aspects of language and two types of aphasic disturbances. In *Selected writings*, vol. II. Words and Language, 239–259. The Hague/Paris: Mouton.
- Kaplan, David. 1979. Transworld heir lines. In Michael J. Loux (ed.), *The possible and the actual: Readings in the metaphysics of modality*, 88–109.

- Cornell University Press.
- Lakoff, George. 1993. The contemporary theory of metaphor. In Andrew Ortony (ed.), *Metaphor and thought*, 2nd edn., 202–251. Cambridge: Cambridge University Press.
- Lepore, Ernie & Matthew Stone. 2010. Against metaphorical meaning. *Topoi* 29. 165–180.
- Lewis, David K. 1984. Putnam's paradox. *Australasian Journal of Philosophy* 62. 221–236.
- Lewis, David K. 1986. *On the plurality of worlds*. Oxford: Blackwell.
- Montague, Richard. 1974a. English as a formal language. In *Formal philosophy: Selected papers of Richard Montague*, 188–221. New Haven/London: Yale University Press.
- Montague, Richard. 1974b. Universal grammar. In *Formal philosophy: Selected papers of Richard Montague*, 222–246. New Haven/London: Yale University Press.
- Peirsman, Yves & Dirk Geeraerts. 2006. Metonymy as a prototypical category. *Cognitive Linguistics* 17. 269–316.
- Priest, Graham. 2005. *Towards non-being: The logic and metaphysics of intentionality*. Oxford: Clarendon Press.
- Putnam, Hilary. 1981. *Reason, truth, and history*. Cambridge: Cambridge University Press.
- Reddy, Michael J. 1979. The conduit metaphor: A case of frame conflict in our language about language. In Andrew Ortony (ed.), *Metaphor and thought*, 1st edn. Cambridge: Cambridge University Press.
- Searle, John R. 1979. Metaphor. In John R. Searle (ed.), *Expression and meaning: studies in the theory of speech acts*, 76–116. Cambridge: Cambridge University Press.
- Semino, Elena. 1997. *Language and world creation in poetry and other texts*. London/New York: Longman.
- Suszko, Roman. 1975. The abolition of the fregean axiom. In Rohit J. Parikh (ed.), *Logic colloquium: Symposium on logic held at Boston, 1972–73* (Lecture Notes in Mathematics 453), 169–239. Berlin/New York: Springer.
- Tarski, Alfred. 1956. The concept of truth in formalized languages. In *Logic, semantics, metamathematics. Papers from 1923 to 1938*, 152–278. Oxford: Clarendon Press.
- Vasjukov, Vladimir L. 2004. Не-фрегевский путеводитель по гуссерлевским и мейнонговским джунглям I [A non-Fregean guide to Husserl's and Meinong's jungles I]. *Logicheskie issledovanija* 11. 99–118.

Bibliography

- Vasjukov, Vladimir L. 2005. Не-фрегевский путеводитель по гуссерлевским и мейнонговским джунглям II [A non-Fregean guide to Husserl's and Meinong's jungles II]. *Logicheskie issledovanija* 12. 146–161.
- Wójcicki, Ryszard. 1984. R. Suszko's situational semantics. *Studa Logica* 43. 323–340.