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Critical arguments against referential semantics
(of natural language)[*]

Contrary to the title, the aim of the paper goes beyond criticism of some kind of natural-language semantics. The main problem to be discussed here is the problem of linguistic meaning - the key notion of philosophy of language. The choice of the title is justified by the fact that criticisms of referential semantics usually indicate the conditions for an adequate theory of meaning of natural language. In order to achieve this goal I present the genesis of non-referential semantics, give some examples, and indicate their drawbacks. As a response to the difficulties of referential semantics some non-referentail semantics appeared, but there were not free from defects. Finally I present Donald Davidson's arguments against referential semantics and briefly sketch his semantic programm.

1. Semantics

The term "semantics" is used in three main senses. In the first sense semantics is considered as the part of semiotics that deals with the relation between a sign and an extralinguistic object that the sign refers to (or between the language and extralinguistic reality). This sense of "semantics" was introduced by Morris and Carnap. In a more traditional sense semantics is a branch of knowledge that deals with meanings of linguistic expressions. Sometimes by "semantics" just means a specific theory of reference or theory of meaning for a language. This is the sense of this term I refer to in this paper.

The key notion "meaning" is sometimes used in a pre-theoretic way. The best known analytic definitions of this term were given by Ajdukiewicz and by Wittgenstein. In his *Pragmatic Logic*, Ajdukiewicz defined the meaning of an expression as the way of its understanding. On the other hand Wittgenstein in *Philosophical Investigations* proposed to understand the meaning of an expression as the way of its use. Both definitions, though non-synonymic, are complementary. The former indicates the first-person perspective, and the latter the third-person one. From the first-person point of view the meaning ascription of expressions consists just in understanding them, and from the third-person perspective – in recognizing how they are used by a speaker[1]. Both pre-

1. This fact is usually obscured by the meaning conventions for a given language. But if we want to understand a speaker who breaks the conventions, we have to refer to the way he uses the expressions.

theoretic senses of meaning have been explicated in form of different theories of meaning.

2. Aristotle's theory of sign

Aristotle's theory of sign presented in an elliptic way in *The Interpretatione* refers to the first of pre-theoretic senses of meaning. In a short fragment given below Aristotle solves the problem of conventionality of linguistic expression which remained unsolved in Platonic *Cratylus*. Physical shapes of signs are conventional but their meanings, conceived as mental entities, are intersubjective because the relation meaning – reference is the natural relation of resemblance:

Spoken words are the symbols of mental experience and written words are the symbols of spoken words. Just as all humans have not the same writing, so all humans have not the same spoken sounds, but the mental experiences, which these directly symbolize, are the same for all, as also are those things of which our experiences are likenesses. (*Int.* 1, 16a3–8)

In the given fragment one can find the main idea of referential semantics. Mental experience, i.e. the meaning of an expression, exists because the expression refers to something. Moreover the meanings are also some kind of references ("which these directly symbolize") – they are some kind of mental objects.

3. Referential semantics

Let us try to give at least a provisional definition of the term "referential semantics". From now on by a referential semantics I will understand a theory of meaning of natural language where (1) a linguistic expressions have meanings *because* they have references, or (2) linguistic meanings are (at least in some contexts) special references. Let us consider some very well known examples:

a) *Ideational theory of meaning (associationism)* of English empiricists Locke i Hume refers directly to Aristotle's psychological theory of sign, and is as the Aristotelian one restricted to *categorematic* expression (names or terms). The meaning of a name is equivalent to the psychologically conceived *idea* - a mental image of its referent or referents. The theory can be considered as referential in both senses.

b) *Mill's theory of meaning (millianism)* can also be considered as referential in both senses. The reference of a name (*denotation* Mill's terminology) is a real or imagined object. In case of connotational names their meanings are *connotations*, i.e. sets of *essential* properties of their referents, where set of essential properties is just the set of properties shared by all referents and only by the referents of the name. In case of non-connotational names (e.g. proper names), the

meanings are their referents.

c) ***Frege's theory of sense and reference*** formulated in his seminal paper *Sense and Reference* is, contrary to previous theories, referential in the second sense only. Its novelty consists in the fact that, contrary to previous theories restricted to names, this theory deals with meaning of the expressions of all categories. The referents of individual names are individuals, and of declaratives sentences (if they have one) – logical values. The referents of other expressions are ***functions*** of appropriate types. The senses of individual names are ***individual concepts***, of sentences – ***propositional concepts*** (Frege did not use these terms), and of other expressions – the functions of appropriate types. Frege's theory is not of type (1) because it is not a necessary condition for an expression to have the sense to have a referent. Frege's semantics was adapted and modified by Carnap, Church, and Montague (among others).

d) ***Verificational theory of meaning*** of sentences used to be popular among philosophers of Vienna Circle (it is not clear how could be applied to other expressions). In its ***empirical*** part it was a referential theory of type (1). The ***empirical sense*** was assigned only to the sentences that had the mode of verification, i.e. that were logical combinations of ***protocol sentences***. The theory was not referential of type (2) because empirical sense was not considered equivalent to any being[2], moreover it is rather theory of meaningfulness of sentences than a theory of meaning.

e) ***Causal*** or ***historical*** theory of naming of Kripke and Putnam deals only with proper names and natural kind names, and is a modern counterpart of millianism. It is also rather a theory of meaningfulness, and, in consequence, is only of type (1). A name is meaningful if an object (i.e. a referent) was given the name as an individual being (proper name) or as a representative of a natural kind (natural king name). The meaningfulness of names is inherited w a causal chain of their use.

4. The types of arguments against referential semantics

Various arguments were put forward against referential semantics. Some of the arguments were aimed against particular theories indicating their drawbacks as theories of meaning of natural language, or as theories of meaningfulness. From the point of view of the aims of this paper the most interesting drawbacks of the criticized theories are untenable consequences of the fact that the theories in question are referential. There are also general arguments against all referential semantics, I will present some of them later.

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2. Sometimes the sense of a sentence was was described as "a mode of empirical verification". In its ***analytic*** part the verificational theory of meaning was not a referential one.

Frege's arguments against ideational theories of meaning (or against psychology in theory of meaning) belong to the first type. They consist in indicating that mental objects (ideas) are private, and not intersubjective. The similar arguments were put forward by K. Ajdukiewicz in *On the Meaning of Expressions*. The associationists were conscious of the demand of intersubjectivity, but they exemplified their theory giving selected examples of names (e.g. the names with referents of a characteristic sheape). Ajdukiewicz states that for some names, e.g. *teacher* or *dean* there is no intersubjective type of thought. In consequence mental image of reference of a name cannot act as its meaning. There is one important conclusion from this argument. The adherent of a referential semantics should take into account the intersubjetivity of meanings, and in particular the possibility of intersujective access to the beings that act as meanings of linguistic expressions.

The verificational theory of meaning was rejected by its supporters as the result of very strong arguments against it. In their opinion the criteria of empirical meaningfulness were not to be satisfied by natural language sentences and sentences of humanities, but it turned out that they were not satisfied by sentences of empirical theories as well. Moreover it was not possible to establish protocol sentences what deprived verificational theory of any base (the very idea of such sentences was criticized by Quine in *Two dogmas*). The critical arguments against Kripke-Putnam theory indicated that the existence of causal chain of referring a name is neither necessary nor sufficient condition of its meaningfulness.

The general argument against the theories of meaning (or meaningfulness) of names (or meaningfulness of sentences like in case of verificationism) is that these theories cannot explain the obvious fact that we understand the sentences because we understand the words contained by them[3]. This problem was undertaken and apparently solved by Frege.

5. Frege's referential semantics

Frege introduced a new paradigm of the linguistic analysis in terms of *function – argument*. In this paradigm he formulated the *Principle of Compositionality of Referents* and the *Principle of Compositionality of Senses*:

$$R(f(x)) = R(f)[R(x)]$$

where *R(...)* is just the referent of *(...)*. The consequence of the Principle of Compositionality of Referents is *the Principle of Extensional Substitution*:

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3. I do not neglect the fact that the theories in question are important for other reasons, e.g. as parts of wider philosophical systems.

$$If\ R(x) = R(y)\ then\ R(f(x)) = R(f(y))$$
$$If\ R(f) = R(g)\ then\ R(f(x)) = R(g(x))$$

The Principle is supported by an obvious intuition that the reality does not depend on its description. Nevertheless in some contexts this principle seems to fail. To save the Principle Frege argues that in intensional contexts the referents of linguistic expressions are not their „normal' referents, but their senses, e.g. the reference of the sentence *The Earth rotates round the Sun* in *Copernicus knew that the Earth rotates round the Sun* is not a logical value but its sense, i.e. the **thought** expressed by it. As senses within Frege's theory plat the role of special references, the Principle of Compositionality of Senses can be reduced to the Principle of Compositionality of Referents.

Unfortunately Frege's proposal have obvious drawbacks, e.g it leads to the infinite regress of senses like in *John beliefs that Tom thinks* (…). Other arguments against Freges "referential" formulation of the Principles were put forward by Davidson. I will come back to this problem later.

6. Problem of empty names

Rather superficial objection agaist referential semantics of the first type can be stated as follows: If the existence of reference is a necessary condition of menigfullness of names, why do we treat empty names (e.g. names of fictional objects) and sentences containig them as meaningful? The objection is rather superficial because all referential semantics are in fact rather immune to it.

In associationist theory of mening the ideas are divided into simple and compound. The simple ones are direct counterpart of impressions (in Hume's terminology), and compound ideas (e.g. of a winged horse) are results of the operations of the mind. In consequence every name with idea associated with it is meaningful. On the other hand Mill stated that names can denote either real or imagined abjects, avoiding in the same time all ontological problems. The ontological considerations have a key role in phenomenological semantics (Husserl, Meinong, Ingarden) who introduce various **modes of existence**. In consequence every name refers to some **existing** object, but the referents can exist in various ways, e.g. according to Ingarden fictional names refer to **purely intentional objects**.

In case of referential semantics of the second type the problem seams not to appear. In Freges theory meaningful expressions do not have referents, but they have senses, so the problem reappears on a different level. Reading of literary fiction consist in cathing senses of the senstences that have no true values, but the problem of existence of senses remains open.

In case of causal theory of naming, names are not only introduced in acts of the **baptism** of real objects, but can also be introduced by description, what makes the names of fictional objects

meaningful. Nevertheless the solution adopted in this theory, as well as in phenomenology and in Frege's semantics, provokes serious ontological problems. In case of Kripke's theory the doubtful ontological supposition is the one of **essentialism** (see his *Meaning and Necessity*). The problem of Frege's semantics is the one of ontological status of senses usually treated as ideal objects. The plurality of beings proposed by phenomenologists is also difficult to accept by all philosophers.

The given examples illustrate one obvious fact – the consequence of building referential semantics for empty names are rather doubtful ontological commitments.

7. Russell's theory of descriptions

The attempt to avoid ontological commitments for empty names was presented by Russell's who in his 1905 seminal paper *On denoting* formulated the theory of definite descriptions and presented himself as a **descriptionist** in case of proper names[4]. Russell observed that sentences with empty descriptions as their subjects provoke paradoxes. e.g. they seam to have the same logical value as their negations. Russell's idea was to distinguish between superficial (grammatical), and deep (logical) structure of sentences. The grammatically simple sentence *The present king of France is bald* only apparently is paradoxical one. As France is a republic now (as well as in 1905) both sentences (A) *The present king of France is bald* and (B) *The present king of France is **not** bald* seem to have the same logical value (another question is **what** logical value). But Russell maintained that the grammatically simple sentence (A) is in fact the conjunction of three sentences:

(i) There is at least one present king France

(ii) There is at most one present king of France

(iii) Every present king of France is bald.

In consequence (B) is not the negation of (A) because it is a conjunction of (i), (ii), and the negation of (iii). At the same time Russell's proposal permits to solve apparent paradox of negative existential sentences, e.g. *The present king of France does not exist,* and of **belief-sentences**: *Columbus thought that Castro's island lied at the cost of India*[5].

The merit of Russell's solution is to avoid ontological problems with existence of referents of names (empty or non-empty). The theory works if there is at least one object, what is rather an acceptable supposition. As meaningfulness of proper names still demands the existence of their referents, Russell reduced proper names to definite descriptions.

Russell's solution, though provokes no ontological problems has its own drawbacks. First of all the syntax of logical forms of natural language sentences is unintuitive and very far from the

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4. This position is opposite to Mill and Kripke. Descriptionists like Russell and Frege maintain that proper names are just elyptic definite descriptions.
5. This example is of Lycan's *Philosophy of Language*. Russell's construction permits to distinguish between *de re* and *de dicto* interpretations. In consequence the cited sentence about Columbus is grammatically ambiguous.

syntax of grammatical level. Moreover Russell gives no answer to the question of the status of linguistic meaning, treats all sentences about fiction as false, and takes widely criticized position of descriptivism. In spite of the mentioned difficulties Russell's theory of descriptions can be treated as an attempt to save the very idea of referential semantics.

8. Some early non-referential semantics

The first non-referential semantics is probably the ***analytic*** part of verificational theory of meaning. An expression (e.g. mathematical expression) has analytic meaning if it appears (in an essential way) in the set of axioms of a theory. This idea inspired Ajdukiewicz who formulated in his articles *On the Meanings of Expressions* and *Language and Meaning* the ***directival theory of meaning***. The meaning of an expression is just its role in ***language directives*** and represented as its ***place*** in the ***matrix*** of the analysed language[6]. Another non-referential semantics is Quine's theory of meaning formulated in terms of a ***translation manual*** proposed in *Word and Object*. The meaning of an expression is given by the translation manual from the foreign language a familiar language. Both theories are ***holistic***, i.e. they presuppose meaning relations between expressions. Unfortunately, these relations were not established in a satisfactory way.

.   Both theories had one obvious drawback that – paradoxically – did not have Frege's theory of sense and reference. Ajdukiewicz's theory does not accept the Principle of Compositionality and in consequence is unable to explain how it is possible to understand the compound expressions that do not appear in the matrix of a language if we understand simple expressions, i.e. words that appear in them[7]. It is a serious problem for ***open languages***, like natural languages, which obviously are compositional. Moreover Ajdukiewicz's theory does not accept the translation from one language to another if their matrices are not isomorphic, i.e. if there is any difference in their meaning directives[8].

Quine's theory is not compositional but it based on the translation from one language into another. In order to construct translation manual, the translator must presuppose some common beliefs with the user of the translated language. Some common beliefs, i.e. ***empirical beliefs***, constitute the ***experimental basis of translation*** based on ***stimulus meanings*** of sentences[9]. The empirical basis of translation does not suffice to write the translation manual. In order to do this the translator has to appeal to his ***analytic hypothesis*** that cannot be empirically verified. In

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6. Ajdukiewicz formulated his theory for non-existing ***closed languages*** – counterparts of idealized states of total knowledge within alternative scientific theories. Nevertheless numerous examples from natural languages given by Ajdukiewicz and some remarks indicate that Ajdukiewicz's theory can also be applied to natural languages.
7. The construction of the matrix of a language is such that for an open langue all words of a language must appear in it, but it is not necessary in case of compound expressions.
8. Meaning directives represent beliefs expressed in a language that constitute the meanings of its expressions.
9. Stimulus meaning of a sentence is the set of stimuli that prompt the user to assent the sentence, and the set of stimuli that prompt him to dissent the sentence.

consequence the translation is not determined by the totality of empirical data (stimuli), and the two manuals of translation can be written by two authors with a conformity with all empirical data available, but totally incommensurable.

In spite of the indicated drawbacks the two semantics are a good starting point to formulate arguments against all referential semantics.

9. The rejection of truth as correspondence

Referential semantics usual presuppose the correspondence theory of truth, usually in a strict Aristotelian version as a isomorphism of though, language, and reality. The exception is Frege's semantics (see his *Though*), where this strong version is rejected. The verificationist theory of analytic meaning and the theories Ajdukiewicz and Quine reject truth as correspondence. It does not mean that the last two theories disregard connections of language and reality. The ***epistemological*** connection with reality are established by empirical directives (Ajdukiewicz) and stimulus meanings (Quine)[10].

In his seminal paper *Two Dogmas of Empiricism* Quine criticizes the verificationist theory of meaning, questioning the distinction between empirical meaning and analytic meaning, and criticizing the idea of protocol sentences. Quine's arguments can be considered as aimed against all semantics that presuppose the correspondence theory of truth. He also formulates the thesis of ***confirmation holism*** (***Duhem-Quine Thesis***), which roughly says that no sentence (e.g. empirical one) can falsify the given theory. As natural language can be treated as a popular "theory of a world" or as a bundle of popular "theories of the world", the thesis refers also to natural languages[11]. In consequence the ***semantic correspondence*** relation between a language and the reality is not on the level ***word – object*** or ***sentence – state*** of affairs, but on the level ***the whole language – the reality***, what implicates the ***meaning holism.*** The theses is acceptable on the grounds of Ajdukiewicz's and Quine's holistic theories of meaning, but is not compatible with Frege's theory of sense and reference and other referential semantics.

10. Donald Davidson's argument from the learnability

The argument is aimed against referential semantics and was formulated in *Theories of Meaning and Learnable Languages.* It is based on the thesis (supported also by Noam Chomsky) that a competent language user is able in a finite time to acquire dispositions to understand and produce infinitely many sentences of his language. This intuition was obviously shared by Frege when he

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10. In his papers Ajdukiewicz maintaines that the connection established by empirical directives is semantic one. In my oppinion this claim is untenable.
11. What I mean here are so called ***folk theories*** represented by nets of popular beliefs about the world which constitute the meanings of natural language expressions.

formulated his Principles of Compositionality, but as Davidson managed to show, Frege's semantics does not explain this phenomenon.

The aim of Davidson was to indicated that some referential theories of natural language do not explain the learnability of natural languages, and in consequence they cannot pretend to be **adequate** theories of meaning. The theories investigated by Davidson are Tarski's and Quine's theories of quotations and Frege's theory of sense in Church's version. In case of the theories of quotations the reference of quotation is just the expression (or type of this expression) inside the quotation marks, and is treated as as a primitive expression (i.e. as a word) even if it is compound. In consequence the theories accept infinitely many words and cannot explain the learnability of language. In case of Frege's theory of sense and reference Davidson observes that it is impossible to construct the sense of an expression, that plays the role of reference in intensional contexts, if we know its reference. As the theory permits for an expression an infinite hierarchy of senses, it generates infinitely many and independent references for it, and the theory is unable to explain learnability.

The argument form learnability is in fact aimed against all referential semantics for non-extensional contexts, and it indicates that the adequate theory of meaning should be extensional.

11. The Third Man Argument

The name of the argument was probably used for the first time by Lepore and Ludwig in *Donald Davidson. Meaning, Truth, Language, and Reality.* The argument was used by Davidson in *Truth and Meaning*, and is based on original Third Man Argument form Plato's Parmenides.

The argument form learnability indicates that Frege's Principles of Compositionality do not suffice to explain the learnability of natural language. In *Truth and Meaning* Davidson indicates that the Principles in Fregean "referential" formulation are in fact incorrect. The aim of Third Man Argument is to show that the acquaintance of the referents (or reified meanings) of the primitive expressions do not permit to determine the referent (or reified meaning) of the compound expression, because it leads to *regressus ad infinitum*[12]. The problem appears because in order to determine the referet (or reified meaning) of a complex expression one has to determine the referent (or reified meaning) of the **concatenation** of the simple expressions, and treat it as an expression of the language. But in this case the new concatenation operators appear, and the procedure is repeated.

Though the Third Man Argument was aimed against all referential semantics, it does not mean that the **notion of reference** should be abandoned. Moreover – as Davidson indicates – the

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12. Davidson's style is usually described as elliptic. The original formulation of the Argument is also very short. I give more explanations and comments to it in my*, Meaning, Truth, and Beliefs.*

notion of reference is compatible with the very idea of non-referential semantics.

12. The notion of reference

The application of the notion of reference in semantics does not (and should not) mean to assign definite referents (or reified meanings) to linguistic expressions. To illustrate how the postulated theory of reference can work Davidson gives an example of the theory of reference of the term "the father of":

- An expression „*x*" refers to *x-a* (the referent of „*x*" jest *x*).
- An expression "*the father of x*" refers to the father of the reference of "*x*", i.e. to the father of *x*.

The consequences of this "theory" are, e.g. the following sentences :

- An expression "*W. A. Mozart*" refers to W. A. Mozart.
- An expression "*the father of W. A. Mozart*" refers to the father of W. A. Mozart.
- An expression "*the father of the father of W. A. Mozart*" refers to the father of the father of W. A. Mozart

The theory ***makes use of*** the notion of reference but do not indicate any objects as referents of terms. Moreover the theory in some limited sense ***gives*** the meaning of the term "the father of", and as it gives the translation of this term from the object language to the metalanguage, it can be considered as a recursive counterpart of a fragment of Quine's translation manual[13].

A similar "theory" is given by Davidson for a predicate "*is a composer*":

- For every singular term „*x*", „*x*" refers to *x*;
- For every singulat term „*x*", the sentence „*x is a composer*" refers to (*x* is a composer), i.e. refers to (the referent of "*x*" is a composer).

One of the consequences of this "theory" is an artificial sentence:

(*) The sentence "*W. A. Mozart is a composer*" refers to W. A. Mozart is a composer, i.e. refers to (the referent of "W. A. Mozart" is a composer).

13. The Slingshot Argument

In the given example the expression "reference" (of "refers to") are not eliminable. Moreover the referents of sentences could constitute the basis of translation (like experimental base of translation in Quine's theory). The basis could enable to juxtapose the sentences of both languages (the object language and the metalanguage) as referring to "the same", and in consequence to translate one to another constructing relevant partial "theories" of this type. The problem that remains is to answer the question: What are the references of sentences?

The very controversial Slingshot Argument[14] states that the referent (or reified meaning) of a sentence cannot be any object, e.g. a though, fact, situation, state of affair or event, but a logical

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13. In the given example bot the object language a the metalanguage are fragments of English. In general case it is not obligatory.
14. The argument was formulated by Gödel, and was usually applied in favor of Frege's semantics. Davidson uses the argument against Frege's theory of sense.

value. The argument assumes the Principle of Extensional Substitution and the identity of referents of logically equivalent expressions (Leibniz's Law). The conclusion is that all true sentences must have the same referent, i.e. **the Truth**.

14 Tarski's Theory of Truth

The Slingshot Argument is the last of the sequence of Davidson's arguments against referential semantics. From the perspective of this argument (*) can be reformulated to the following form:

(*) The sentence "*W. A. Mozart is a composer*" is true iff W. A. Mozart is a composer

what is just a T-sentence of Tarski's Theory of Truth formulated in *The Concept of Truth in Formalized Languages*.

In fact Tarski's Theory of Truth adopted and adapted by Davidson fulfills all demands of the adequate theory of meaning:

1. The theory is non-referential. It makes use of the notion of reference and truth, but it does not distinguish any sentences as true.

2. It gives the meanings of the object language translating them into the metalanguage. The translation is holistic. In consequence it functions like Quine's translation manual.

3. The theory is recursive, i.e. it accepts non-referential version of the Compositionality Principle.

4. The theory is extensional, and in order to deal with non-extensional contexts Davidson proposes to reduce them to extensional ones[15].

5. The notion of truth enables to establish the basis of translation which is just the totality of T-sentences of the form "The sentence "*p*" is true iff p" which are the consequences of the theory.

6. The theory tolerates the difference of beliefs though the majority of them should be shared by the speaker and the interpreter (*Charity Principle*).

The process of constructing a theory of truth for the speaker's words is accompanied by a process of ascribing beliefs to him. This double process is called **interpretation**.

15. The relation language – reality

One of the possible arguments against non-referential semantics go as follows: The main function of a language is the descriptive one. In consequence linguistic expressions should somehow refer. The non-referential semantics seem to ignore this obvious fact. The objection is based on a misunderstanding noticed probably by Ajdukiewicz, Quine, Wittgenstein (in *Philosophical Investigations*), and by Davidson who expressed his position explicitly. The semantic relation language – reality is holistic, i.e. it holds on the level whole language – reality. On the lower level i.e. "fragments" of reality - "fragments" of language, it is a **causal relation** which is not semantic

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15. The strategy proposed by Davidson is called *paratactic analysis*.

but epistemological[16]. In spite of the fact that this relation is not represented in a non-referential semantics, it is indispensable for formulating it.

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16. Davidson maintains that it holds between events – the events in the "reality" and the events that are utterances of sentences.

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