Contents

Chapter 1

Intentional Identity: A Semantic Approach

This chapter introduces the problem of intentional identity as formulated by Geach. We then discuss Saarinen's reconstruction of various interpretations of sentences containing attitude attributions, which, in the course of analysis, turn out to be unsatisfactory. We arrive at the conclusion that in sentences with attitude ascriptions the intentional identity is not the only problem we face. When comparing the logical form of these sentences with their intuitive natural language meanings, we encounter the problem of asymmetry, and that indicates a mismatch between our philosophical-pragmatic and logical intuitions.

1.1 What Is Intentional Identity

In his article "Intentional Identity" (1967), Geach pointed out a difficulty with identity in sentences containing attitudes. This has remained a notoriously difficult and interesting puzzle in philosophy and linguistics. Several solutions to this problem have been proposed but all leave some unanswered questions.

The phenomenon called *intentional identity* shows up when we talk about a number of people, or one person on different occasions, having attitudes towards an object of common focus, regardless of there actually being something at that focus.[1] In other words, the problem occurs in sentences containing at least two propositional ascriptions when one of them syntactically dominates a quantifier phrase and the other dominates a related pronoun, which follows the quantified expression.

Geach's puzzle about intentional identity applies to sentences containing attitude verbs, such as *believe* or *think*. This puzzle in the philosophical literature is known as the

[1] Geach (1972).

Hob-Nob case. The Hob – Nob case yields a number of different readings, formalizations, and interpretations of just one sentence.

The story Geach presented to the philosophical audience goes as follows:

> The Gotham City newspapers have reported that a witch, referred to as "Samantha", has been on quite a rampage. According to the article she has been blighting farm animals and crops and throwing people down the wells. In reality, there is no such person: the animals and crops all died because of natural causes, and the people found at the well bottoms had all stumbled in by accident in a drunken stupor. The news reporters simply assumed that a witch was responsible for all the mishaps, and dubbed her "Samantha". Hob and Nob both read the *Gotham Star* and, like most folks, they believe the stories about the witch. Hob thinks Samantha must have blighted Bob's mare, which took ill yesterday. Nob thinks Samantha killed his friend Cob's sow. (For purposes of later discussion, we assume Nob has no beliefs at all about Hob or about Bob's mare; he is unaware of the existence of either.)

Suppose a reporter is describing the outbreak of the witch mania in Gotham Village. He would be perfectly right in asserting the following sentence:

(1) Hob thinks a witch has blighted Bob's mare, and Nob wonders whether she (the same witch) killed Cob's sow[2].

The reading of (1) that Geach finds acceptable, says that Hob and Nob have attitudes towards an object of common focus, but neither of them has to have a particular existing individual in mind to serve as a belief object. This example seems to pose two difficulties: The first concerns attitudes directed towards a non-specific, *de dicto* individual. The second deals with the attitudes of the two agents, Hob and Nob, who in spite of the non-referential character of the individual focus on the same object. In the literature, we find that considerations on this topic reveal that to satisfy both of these problems is rather difficult.

[2] This example is Edelberg's (1986), p.2, reconstruction of the situation presented by Geach (1967), while sentence (1) is the original Geach's sentence.

1.2 Possible Interpretations of Intentional Identity Sentences

To get a feeling for how the puzzle of intentional identity has been treated in the philosophical literature, let us show how sentences have been analyzed in semantics. Regarding the construction of the indirect-speech clauses, Quine noticed that certain uses of pronouns correspond closely to the use of variables in symbolic logic, and that the relation between pronouns and their antecedents can be seen to correspond to the binding of variables by quantifiers[3].

Geach suggested we should extend the use of the notions of binding and scope from the symbolic language to English. This idea is taken over by Saarinen (1979), Edelberg (1986, 1992, 1995), King (1993), and gave rise to an approach in philosophy that gives a quantificational interpretation to intentional identity sentences.

In the literature on intentional identity one comes across various attempts to formalize sentence (1), which do not give a satisfactory account for the reading Geach intended.[4] What are these readings? First, consider translation (2), which might seem to capture the meaning of (1):

(2) B_H ($\exists$x) (x is a witch & x has blighted Bob's mare) & B_N ($\exists$y) (y is a witch & y killed Cob's sow).

For the sake of simplicity let the expressions *Hob thinks* and *Nob wonders whether* be substituted by *Hob believes* (B_H) and *Nob believes* (B_N) respectively. Why should one think that (2) is an adequate translation of (1)? Example (2) shows explicitly that the two attitudes involved are *de dicto* and that they are not directed towards a specific individual. At first glance, it might seem that this is exactly what was needed, but unfortunately the meaning of (2) differs from the meaning of (1). The meaning of (2) is expressed by

[3] Quine (1971).
[4] Saarinen (1978), Edelberg (1986, 1992, 1995), Hintikka (1969).

(3) Hob believes that a witch has blighted Bob's mare and Nob believes that a witch has killed Cob's sow.

Sentence (3) is also true when there is no relation between the witch that Hob has his belief about, and the witch that Nob has his belief about. But what we needed was a common witch in focus. This translation thus fails to convey the intuitive meaning of the sentence (1). Since (2) is not what we need, we can try the following translation:

(4) $(\exists x)$ (B_H (x is a witch & x has blighted Bob's mare) & B_N (x is a witch & x killed Cob's sow)).

This formalization does not work either, because one could infer from (4) that a particular, specific individual is in focus. This is because Hob and Nob's attitudes are interpreted *de re*.[5] What the above translation means is rather something like:

(5) With respect to someone, Hob believes that she is a witch who has blighted Bob's mare and Nob believes that she is a witch who killed Cob's sow.

There is no doubt that the translation (4) represents one of the readings of (1), but it is not the one that interested Geach. In *Intentional Identity*, he points out that the problem of intentional identity cannot be handled if one understands "a witch" (the antecedent of "she") as referring to a real individual - in that case one would be dealing with a *real* identity, not an intentional one, which is in focus here [6].

The interpretation of sentence (4), represented as (5) is ruled out because "it would imply that Hob and Nob have some one person in mind as a suspected witch;

[5] But there is also a possibility to let the quantifier be interpreted as standing for a non-existent object, like in Hintikka (1969).

[6] At this point we consider it worth mentioning that in the philosophical literature there were papers in which a considerable doubt about the existence of *de re* / *de dicto* distinction has been expressed. Robert Kraut (1983) doubts the existence of *de dicto* attitudes. All the attitudes, according to him, are *de re*. So, translation (4) according to such point of view would be redundant on other interpretations. With respect to this thesis, we believe that the distinction between *de re* and *de dicto* attitudes exists, although we leave the argument for this stance, out of consideration.

whereas it might be the case, to the knowledge of our reporter, that Hob and Nob merely thought there was a witch around and their suspicions had not yet settled on a particular person"[7]. It is important to remember that it is the intentional identity, not a real one, which makes the sentence (4) a defective representation of (1).

Another attempt at giving an adequate interpretation of (1) as involving a non-specific object might go as follows:

(6) B_H ($\exists$x) (x is a witch & x has blighted Bob's mare) & B_N (x is a witch & x killed Cob's sow))).

In this case, Hob's attitude is indeed *de dicto* and it is directed towards a non-particular witch. However, the second part of the sentence, concerning Nob's beliefs, is problematic. It turns out that Nob's attitudes are in the scope of Hob's. What we then talk about is not what Nob believes, but what Hob believes about Nob's beliefs. Moreover, according to Saarinen's reconstruction, although Hob's attitude is directed towards a non-specific individual, Nob's belief presumably is not: it seems that (6) suggests Nob to have a specific witch in mind. [8]

Another attempt at a proper interpretation of the sentence proposes to consider *she* to be what Geach calls a *pronoun of laziness*, *i.e.* a substitute for a definite description in order to avoid repetitious language[9]. Following this suggestion, we rephrase (1) as:

(7) Hob believes a witch has blighted Bob's mare, and Nob believes *the witch who blighted Bob's mare* killed Cob's sow.

This suggestion is also ruled out because the definite description occurring in (7) has the following two possible interpretations. Firstly, one may read (7) as:

(8) Hob believes a witch has blighted Bob' mare, and the witch who really blighted Bob's mare is such that Nob believes that she killed Cob's sow.

[7] Geach (1967), p. 148.
[8] Saarinen (1978), p. 250.
[9] Geach (1962), p.125.

This reading is unacceptable because the reporter (speaker) would himself have to assume the existence of witches, and that was not the assumption of sentence (1). On top of that, Nob's belief in (8) is *de re*, which is also not what (1) intuitively means. Then we have to consider the second interpretation of the same definite description:

(9) Hob believes a witch has blighted Bob's mare and Nob believes that the witch who blighted Bob's mare, killed Cob's sow.

Sentence (9) is unacceptable as an interpretation of (1) because it presupposes that Nob has beliefs about the witch who blighted Bob's mare. On the other hand, one can infer from the original sentence that it can be true even in situations where Nob does not have any information or beliefs about Bob or Bob's mare. Sentences (8) and (9) therefore show that *she* cannot be interpreted as a pronoun of laziness because it would give rise to assumptions not present in the original example.

In case one is still tempted to think that the way out of the puzzle is by referring to the witch by some definite description or other, we refer to Geach's suggestion (explicitly stated by Donnellan and Devitt later[10]) that a definite description does not help in establishing intentional identity, because "…in purporting to refer to a given person, Hob or Nob may have more than one definite description 'of that person' that he might produce; consequently, Hob and Bob might 'refer to her' with the same description in mind, and likewise Bob and Nob, but not Hob and Nob."[11]

As we shall see in the next chapter, in the analysis of sentences with attitude ascriptions, we shall make use of definite descriptions, though determined pragmatically, to explain the identity of an intended object.

A particular individual or a thing can be described by several definite descriptions. Therefore, in the puzzle of intentional identity the laziness account in relation with definite descriptions, determined semantically, is not of much help. However, we would like to note that speaking about (intended) objects, practically we do

[10] Donnellan (1972), Devitt (1981).
[11] Ibid. Note.

characterize them by using definite descriptions. So, although we agree with the idea that the laziness approach to intentional identity, as it is mentioned above, does not give a proper interpretation of a Hob – Nob sentence, nevertheless, definite descriptions are useful while trying to learn *who* is a referent of that sentence. (Especially presupposing that while uttering a sentence like (1) the speaker has someone in particular in mind.)

When looking for an adequate logical form and interpretation of Hob-Nob type sentences that would have the same intuitive meaning as their natural language versions, we see Geach's puzzle evolve into an analysis of intentional identity represented by anaphora. For a semanticist, a way out would be to resort to counterparts. In the next section, however, we argue that such proposals are not completely tenable. That is why, in the next chapter, we turn to a pragmatic explanation of the sentences.

Through interpreting intentional identity in Hob – Nob type sentences that inspired further examples of this type like asymmetric Arsky – Barsky sentences, later semantic theories came up with the idea that intended objects, ascribed to different agents, are related to each other as counterparts. This idea gave a start to a new approach to intentional identity. There are two semantic theories that model belief objects as counterparts[12], given by Edelberg and van Rooy, called perspectivalism and realism, respectively. [13]

The next section of this chapter introduces and briefly explains Edelberg's and van Rooy's accounts of sentences, containing attitude ascriptions. By exploiting the notion of context these two theories have inspired us to take a pragmatic point of view to the problem, which shall be presented by the next chapter. But let us first introduce the two above-mentioned semantic theories and see how they deal with intentional identity and its further effects.

[12] Among the theories of Lewis (1968), Zeevat ("The Mechanics of the 'Counterpart Relation'").
[13] Another interesting interpretation of Hob-Nob type sentences is due to G. Sandu and A. Pietarinen (2000). Their present a game-theoretic approach to the problem. T. Aho (2000) gives a perspectival representation of these sentences.

1.3 Perspectivalism and Realism

In this section we shall discuss the problem of intentional identity in terms of the puzzle of asymmetry, introduced by Edelberg. We present Edelberg's perspectivalist approach to asymmetries and van Rooy's realist account of the same issue.

While analyzing sentences with attitude ascriptions and their logical forms, Edelberg (1986) discovered an interesting phenomenon that shows up after commuting a sentence. He called it *the new puzzle of intentional identity*. Later, this puzzle came to be called the asymmetry problem. It is best illustrated by the following story and the subsequent sentences, the first of which is intuitively true and the second is false:

> Arsky and Barsky investigate the apparent murder of Smith, and they conclude that Smith was murdered by a single person though they have no one in mind as a suspect. A few days later, they investigate the apparent murder of a second person, Jones, and again they conclude that Jones was murdered by a single person. At this point, however, a disagreement between the two detectives arises. Arsky thinks that the two murders are completely unrelated, and that the person who murdered Smith, but not the one who murdered Jones, is still in Chicago. Barsky, however, thinks that one and the same person murdered both Smith and Jones. However, neither Smith nor Jones was really murdered. [14]

(10) Arsky thinks *someone* shot Smith, and Barsky thinks *he* shot Jones.

(11) Barsky thinks *someone* shot Jones, and Arsky thinks *he* shot Smith.

The reason why these sentences are called asymmetric is that they have different truth-values although their contents seem to be very closely related. A superficial glance at the examples above might suggest that asymmetry in the sentences is generated by the non-commutativity of *and* in natural language, and by forcing it to function like a conjunction in standard logic.[15] We suppose that the properties of *and* are not the only - at least not the decisive - factor in generating this phenomenon.

[14] Edelberg (1995).

[15] Quine (1956) and Kaplan (1971) have discussed the problem of interpreting commuted sentences with attitude ascriptions earlier.

Commutation of the constituent parts of a sentence creates an asymmetry while preserving the indefinite noun phrase in the first conjunct and its anaphoric pronoun in the second. Intentional identity is usually explained by referring to an anaphoric relation between the intended individuals, denoted by an indefinite antecedent phrase and an anaphoric pronoun.[16] While analyzing sentences we follow this line of thinking while keeping in mind the changes we make in these sentences when commuting them.

The perspectivalist approach. Ever since the new puzzle of intentional identity was formulated, there were several attempts (including King and van Rooy) to explain the anaphoric relations in sentences containing attitude attributions. The first attempt to account for asymmetric intentional identity statements is due to Edelberg himself.

In contrast with conventional realist semantic theories for which truth and falsity are possible properties of sentences in the actual (or possible) world, Edelberg's semantic theory makes truth a relation between a sentence and a theory or a belief system. In Edelberg's framework the theories or belief systems have several typical features. First, each belief system has an ontology, which is the set of objects that exist according to that belief system. Second, although the same object can not exist in several theories, objects from distinct theories can be counterparts. In relation to this, Edelberg gives a new explanation of the counterpart relation, different from a traditional one. Third, belief (intended) objects have an unconventional complex structure.

The perspectivalist theory aims at explaining the phenomenon exemplified by the behavior of sentences like (10) and (11), called the asymmetry problem about intentional identity (among the other problems, such as a simple problem of intentional identity, *de re* attitudes and the variable-aboutness problem of attitudes *de re*).

Analyzing intentional identity in attitude contexts Edelberg notices that there are cases, in which it can not be explained using the standard notion of counterparts, which is based on communication or experience. To account for those specific cases, another conception of objects as counterparts is needed. As an example of an extraordinary case, in which communication or transmission of ideas between the agents does not play a role

[16] Edelberg, King, van Rooy among others.

in explaining intentional identity, Edelberg introduces the Astronomers story[17]. Keeping its main idea the same, we shall present a brief version of the Astronomers story:

> American and Soviet teams of astronomers have been investigating the peculiar motions of superclusters of galaxies. Neither of the teams knows about the work of the other, but both independently discover the peculiar motions of the Hydra-Centaurus supercluster. Both teams attempt to explain the vectors of the peculiar motions in the same way: by postulating an "overdensity" of galaxies at roughly twice the distance between the Hydra-Centaurus supercluster and our own galaxy. The American team calls the structure "The Great Attractor", the Soviet team calls it "The Overdensity". Due to certain differences in instrumentation and atmospheric conditions, the two teams conjecture the structure to be at "slightly" different distances. The Americans say it is twice the distance of the Hydra-Centaurus supercluster, the Soviets say it is at 2.1 times the distance. In reality, the Great Attractor does not exist: peculiar motions of the various superclusters are caused by independent factors.

According to this story, the following sentence will be true:

(12) The American team believes that *the Great Attractor* is at twice the distance of the Hydra-Centaurus supercluster, but the Soviet team thinks *it* is at 2.1 times that distance.

In this case, the concept we apply in assessing intentional identity is *rough similarity of explanatory role*. According to Edelberg, if two ideas are introduced to explain roughly the same (or better counterpart) data in roughly the same way, they are counterparts.[18]

We are worried about the fact that the above principle is vague in two ways. First, two ideas are counterparts if they are postulated to explain "roughly" the same data in "roughly" the same way. However, Edelberg sees this vagueness as a positive feature of his theory, corresponding to the vagueness in our intuition about intentional identity. Second, the above principle is vague because it uses un-explicated concept of *rough similarity of explanatory role*. Nevertheless, says Edelberg, this principle offers a sufficient condition for individuals as being counterparts. As we shall see in a short while in the exposition of the realist account, there are counterexamples to this account of

[17] Edelberg (1992), pp. 574-575.
[18] Ibid., p. 576.

counterparts, in which rough similarity of explanatory role is not a sufficient condition for intended individuals to be counterparts.

For analyzing the anaphoric relations in sentences like (10), (11) and (12), Edelberg's approach offers a rather complicated semantic picture involving a home theory (or a belief state with respect to which sentences are true or false) determined by the context[19], theories of agents, a counterpart relation, a context, and a sub-object relation to account for asymmetry between intentional identity statements.

A home theory is the theory, which (depending on a context) can be the theory of a speaker or the theory of a certain community, with respect to which a sentence is evaluated. To explain how this idea works in accounting for intentional identity in Arsky – Barsky sentences, let us consider the following. The Arsky – Barsky story presents a home theory that contains two objects: Arsky and Barsky. In sentence (10), according to the home theory, Arsky's theory has an object that shot Smith and Barsky's theory contains an object that shot Jones. These two objects are counterparts of themselves and one another, but are not counterparts of anything in the home theory. The claim about their counterparthood is justified by the fact that Arsky's and Barsky's intended objects play sufficiently similar explanatory roles (explained above) in their respective theories, and that no object in the home theory plays a role sufficiently similar to these.

To put it in Edelberg's terminology, sentence (10) is true in a home theory $T_{\bullet}$ iff (a) according to $T_{\bullet}$, Arsky's theory T_{Arsky} contains an object o^{S}_{Arsky} that in T_{Arsky} shot Smith. (b) According to $T_{\bullet}$, Barsky's theory T_{Barsky} contains an object o^{J}_{Barsky} that in T_{Barsky} shot Jones. (c) Objects o^{S}_{Arsky} and o^{J}_{Barsky} are counterparts, and (d) objects o^{S}_{Arsky} and o^{J}_{Barsky} are not counterparts of any other objects in $T_{\bullet}$.[20]

In order to explain why intentional identity in the conjunctions like (10) and (11) may be asymmetric, Edelberg suggests enriching the theory's ontology. He introduces the idea of a *part* relation, holding between some of the more finely individuated individuals and some of the more coarsely individuated ones. Where previously we thought of

[19] This concept very closely relates to what R. Parikh called *community theory* (containing accepted views of community), with respect to which possible worlds are evaluated. It is also an important criterion in looking for reference of belief objects of the agents. R. Parikh (1999).

[20] Edelberg in his papers uses a different notation to express belief objects of agents. For instance, while in his earlier papers he used to express Barsky's intended object, as Barsky's belief object [SJ], in the later papers the same intended object corresponds to o^{SJ}_{Barsky}.

objects, now we are in a situation where contexts can assign *sub-objects* of a complex *super-object* to the existential quantifier occurrences as their contextual referents. For instance, Barsky's belief object "the murderer of Smith and Jones" is a *super-object* of its *sub-objects* "the murderer of Smith" and "the murderer of Jones".

One more feature of Edelberg's perspectivalism is that the notion of context plays an important role in the theory. This pragmatic component, and the meta-theory that underlies it, has important philosophical implications: contexts can assign sub-objects (or super-objects) to existential quantifier occurrences as their contextual referents.

Given a context that assigns sub-objects to the occurrences of the existential quantifier in a sentence, it remains to be shown how a context picks out the proper sub-object and that is a semantically complicated matter. In order to handle the procedure of picking out the right (sub)object the theory contains a special operator $drop_c$, responsible for associating an object or sub-object with its respective context during the process of the sentence's evaluation.[21]

Let us see how the concept of context integrates into the perspectival approach to Arsky – Barsky type sentences. For the language of the perspectival semantics, by seeing belief objects as indices i in a model M, c being any context for M that is admissible for formula ξ, Edelberg defines the interpretation function V. Let formula ξ represent any Arsky – Barsky type sentence. Then: if $\xi = (\mathbf{\Phi} \,\&\, \mathbf{\Psi})$ then $V[M, i, c, \xi] = 1$ iff $V[M, i, c, \mathbf{\Phi}] = 1$ and $V[M, i, drop_n(c), \mathbf{\Psi}] = 1$, where n is the number of occurrences of an existential quantifier in formula $\mathbf{\Phi}$.

Given the above interpretation of a conjunction, the most natural use of sentence (10), in which the speaker intends to refer to Arsky's "the murderer of Smith", which is true, is captured in the following way. The use of the above mentioned sentence is captured by evaluating (10) in the home theory $T_\heartsuit$ in a model M, relative to a context $c_1 = \langle T_{Arsky}, o^S_{Arsky} \rangle$. The reader may verify that $V[M, T_\heartsuit, c_1, (10)] = 1$. The most natural use of sentence (11) is that one in which the speaker intends to refer to Barsky's "the murderer of Jones", which is false, according to the asymmetric Arsky – Barsky story. To capture

[21] Although the operator $drop_c$ plays an important role in accounting for asymmetric conjunctions, in Edelberg's theory it remains un-explicated.

this use of (11), we evaluate the sentence in the home theory $T_{\blacktriangledown}$ in a model M, relative to the context $c_2 = \langle T_{Barsky}, o^J_{Barsky} \rangle$. The reader may verify that $V[M, T_{\blacktriangledown}, c_2, (11)] = 0$.

Such an interpretation, according to Edelberg, resolves the asymmetry problem of intentional identity statements. However, the theory does not give an explanation to the question why one of the uses of (11) is more intuitively acceptable than others. After all it is theoretically possible that by uttering that sentence the speaker meant "the murderer of Smith" or "the murderer of Smith and Jones" instead of "the murderer of Jones".

Moreover, the notion of a counterpart relation as specified in Edelberg's theory does not cover the Twin-Earth type examples, which we shall shortly introduce. We also think that the function from contexts to contexts although implicit to the perspectivalist's approach would look rather strange in a more realistic or pragmatic approach to intentional identity. Despite the fact of making use of the function from contexts to contexts, Edelberg did not give an account of it, so, the mechanism showing how and according to what principles we arrive from one context to another is not clear. And this is what we need for explaining the problem of how an otherwise false sentence can obtain a true interpretation.

The perspectivalist theory accounts for intentional identity and solves the problem of asymmetry in Arsky – Barsky type sentences in a highly subjective manner. It seems that quantification over intended objects in Edelberg's theory is essentially related to pragmatic choices. That is why a pragmatic account for intentional identity seems to be more relevant than a semantic one. An independent reader who may hear an Arsky – Barsky sentence uttered in a life situation, may also expect a more objective explanation of intentional identity occurring in that sentence.

Edelberg did not argue that other ways of accounting for intentional identity, less subjective in their nature, are impossible. As a matter of fact, he suggested that we could consider the problem from a realist point of view, which has been adopted by van Rooy.

The realist approach. The perspectivalist approach to asymmetric intentional identity in sentences with attitude ascriptions has inspired van Rooy (1997, 2000) to develop a realist theory of intentional identity that rests on the traditional assumption that what is said in a sentence has to be true or false in a world, thus, avoiding the danger of perspectivalist subjectivism.

In his realist approach van Rooy makes use of entities called "belief objects" and the notion of a counterpart relation, which differs from the one of Edelberg's. The specific feature of the realist theory is that it models counterparts as functions from belief objects and information states to belief objects, and accounts for the truth value of a sentence *via* supervaluation on all possible ways of picking out counterparts.

According to van Rooy, in the part of a sentence containing the anaphoric pronoun (in the interpretation of the variable representing that pronoun), a variable (standing for that pronoun) does not necessarily refer to the actual referent of the variable. What it does refer to is the belief object that is a counterpart of the actual referent of that variable. To explain this problem of *double vision* of belief attributions – the possibility of truly attributing to the agent beliefs about the same object, in different conversational contexts, that are inconsistent with each other (discussed by Quine (1956)) - he appeals to Stalnaker's (1987) conclusion that a single object in the real world might have two distinct counterparts in worlds that characterize a belief state, because there might be different ways of picking out counterparts[22].

In explaining belief ascriptions van Rooy uses van Fraassen's[23] super-valuation account of truth, which says that a sentence is true (or false) if and only if it is true (or false) for all contextually admissible ways of picking out counterparts. This approach is attractive because while it supports our intuition that belief attributions are context-dependent, it leaves the semantics of intentional identity relatively simple.[24]

Being dissatisfied with the traditional and Edelberg's explanation of the counterpart relation, van Rooy finds an example, which shows that in order to account for intentional identity properly, another explanation of counterpart relation is needed. He refers to Zimmermann's (1998) Twin-Earth example. Imagine a Twin-Earth variant of the earlier presented Astronomers story, according to which the two teams live in two distinct regions of the universe that happen to be qualitatively identical. In the original Astronomers story the two teams would have beliefs about the same phenomenon, but in

[22] Ibid., p.171.
[23] Van Fraassen (1966).
[24] As it is presented in van Rooy (2000), it applies not only to *de re* cases but also to intentional identity attributions.

its Twin-Earth version, the phenomena are different. Therefore, in this case sentence (12) is false.

Provided Edelberg's counterpart conception, it is possible to successfully relate two *distinct*, though qualitatively identical, objects. That's why, van Rooy, following Zimmermann, concludes that rough similarity of explanatory role is not a sufficient condition for objects to be counterparts.

In reaction to this, to account for intentional identity, van Rooy proposed a new conception of counterparts. He suggests that two subjects can be counterparts of each other if they represent the same source. If two objects are to be counterparts of each other, having a source in the same event is the minimal condition that has to be met.[25] In the realist framework, objects are partial functions over possible worlds and they can be related as counterparts although they inhabit different information states.

The idea of two belief objects being counterparts if they have the same source is based on the requirement that the counterpart functions obey the following constraint for all possible worlds *w*:

> For all $cp \in CP(w)$, $s, s' \in [(G \times W) \rightarrow D]$ and $Z \in \mathcal{P}(G \times W)$: if $cp(s, Z) = s'$, then there is an event $e \in D(w)$ such that s and s' have common source e.[26]

Here *w* is a possible world, *cp* is a counterpart function, *CP(w)* the set of admissible counterpart functions between subjects in *w*, *s* and *s'* are subjects, *Z* is an information state, *cp(s, Z)* is the subject that is a counterpart of *s* under *cp* in information state *Z*, *G* is a set of assignments and *W* is a set of possible worlds, *D* is the domain of individuals in a model *M*.

According to this constraint, if two belief objects are counterparts, they have a common source. However, we shall see in what follows that this is not all we would like to ask from the theory.

The realist theory using a super-valuation account of truth presents a semantic method of evaluating a sentence as true or false with respect to all admissible ways of

[25] Van Rooy (2000), p. 173. Without going into the discussion, we have to notice that there are counterexamples to this approach, e.g. Edelberg's car accident case.

picking out counterparts. Let us explain how asymmetric conjunctions like (10) and (11), introduced in the beginning of this section, are treated in the relation to a super-valuation account of truth.

Let us take a look at the Arsky – Barsky case again. Arsky has a two-murderer theory while Barsky has a one-murderer theory, therefore, we can say that Arsky has two relevant objects in his information state [S] and [J]; while Barsky has only one – [SJ]. Accounting for intentional identity by means of counterpart functions, van Rooy points out that in this case there are only two relevantly different counterpart functions *cp* and *cp*'. Let K(a) and K(b) be Arsky's and Barsky's belief states respectively. Intuitively, it is the case that Barsky's belief object [SJ] in K(b) is a counterpart of Arsky's [S] and [J], for *any* counterpart function. To express it functionally: *cp*([S], K(b)) = [SJ], *cp*([J], K(b)) = [SJ], and *cp*'([S], K(b)) = [SJ], *cp*'([J], K(b)) = [SJ]. That's why in van Rooy's framework sentence (10) is true in the context of the given Arsky – Barsky story.

It seems rather commonsensical that a common source may be the crucial factor in deciding whether belief objects are each other's counterparts. However, we would expect the implication given above, to work also the other way around.[27] Such a bi-directional function of the constraint would be useful in explaining intentional examples in general.

Take a look at the following. It is *not* the case that for *all* the counterpart functions Arsky's belief object [S] is in K(a) a counterpart of Barsky's [SJ] or Arsky's [J] is in K(a) a counterpart of Barsky's [SJ]. That is, although one counterpart function relates [SJ] to [S] - *cp*([SJ], K(a)) = [S], the other one relates it to [J] - *cp*'([SJ], K(a)) = [J]. Therefore, we need an explanation of why in the latter case a counterpart function picks an object different from that one in the first case. (We know that Arsky has a two-murderer theory, in which [S] is not the same as [J], while Barsky has one-murderer theory. Therefore, sentence (11) will not be true and acceptable for all ways of picking

[26] Ibid., p.173.

[27] In our presentation above, we saw that van Rooy does not introduce any constraints on the counterpart relation in the direction from common source to counterparts. However, for a more complete understanding of the principal concept of the realist theory, it would be nice to learn about how belief objects can be counterparts in the direction form the source to counterparts, or at least to see some restrictions, when they are not counterparts.

out counterparts.) Thus, we see that van Rooy's account for counterparts in some cases does not work.

The problem is, that in van Rooy's semantic framework, the truth-value of a sentence depends on *all* possible ways of picking out counterparts. He suggests, however, that in an *actual* situation it might be the case that a sentence is taken to be true because it is true with respect only to all the *conversationally* relevant counterpart functions. [28] This suggests that one should expect that some ways of picking out counterparts for a particular case are not acceptable. In the pragmatics of belief attributions we have to look only at all conversationally relevant counterpart functions.

For the context to be accommodated in such a way that only some specific counterpart functions are relevant to the interpretation, as van Rooy suggests, a certain extra pragmatic reasoning is needed. However, his account does not clearly state how to discriminate among conversationally relevant and other counterpart functions. This means that van Rooy in principle does not explain the truth-falsity puzzle of asymmetric conjunctions. That is our main criticism of his theory.

We have to conclude that even though van Rooy's semantic account of intentional identity is attractive, the super-valuation account of truth does not provide a satisfactory explanation of the Edelberg asymmetries. Van Rooy has no means to separate conversationally relevant counterpart functions from all admissible ways of picking out counterparts. The process of differentiation between the ways of picking out counterparts is highly pragmatic in its nature, and can hardly be incorporated into the proposed semantic framework.

In this section we have presented two semantic theories - Edelberg's perspectivalist and van Rooy's realist account for asymmetric identities. In what follows, we want to explore the problem of asymmetric conjunctions from a pragmatic point of view, exploiting the notion of context.

[28] Van Rooy (2000), p. 175.

Chapter 2

Intentional Identity: A Pragmatic Approach

Arsky – Barsky sentences are asymmetric conjunctions whose commuted versions may have different truth-values. This poses a big problem for a classical semanticist. As these sentences are part of our natural language, we shall consider their use with respect to particular contexts, thus approaching them from a pragmatic point of view. In looking for an appropriate interpretation of the Arsky – Barsky type sentences we shall see what interpretational predictions can be offered by Grice's pragmatic theory. Later, we shall present the framework, according to which in the analysis of the Arsky – Barsky examples we shall assume that the information content of the first belief in an asymmetric conjunction is a straightforward indication of how the speaker understands an intended individual. (If it is not explicitly suggested to consider some other information from the immediately preceding context.) Exploiting the notion of overriding contexts, we shall explain why, otherwise intuitively false sentences may turn out to be true, thus solving the puzzle, which is not accounted for by a semanticist.

2.1 Background

The main line of our discussion concerns a pragmatic interpretation of anaphoric relations in asymmetric conjunctions. In what follows we shall analyze the Edelberg asymmetry and the problem arising from it: the possibility of viewing a false sentence when evaluated in isolation as true, exploiting the notion of context.

In our analysis we adopt a point of view according to which the content of the first belief attribution in sentences like (3a) and (3a'), introduced in the next section, indicates how the speaker conceives of the discourse referent. In other words, we assume that the speaker regulates the interpretation process of a sentence primarily by linguistic

expression of her assumptions, and by embedding the information given in the sentence, in a certain way. For example, by linguistically marking some presupposed information and thus, restricting the ways in which a sentence has to be interpreted.

The most important fact about asymmetric conjunctions is that the information material of the first conjunct indicates *whom* the speaker has in mind as a sentence's referent (or an intended individual). For instance, the first conjunct of sentence "Arsky believes someone shot Smith, and Barsky believes he is in Chicago" suggests that the individual intended by the speaker is the person who shot Smith. The information material of the first conjunct allows characterizing that individual by the definite description "the murderer of Smith". The anaphoric pronoun "he" in the second conjunct of the sentence co-refers with that definite description thanks to the specific character of the anaphoric construction.

We assume that indefinites in the Edelberg asymmetries, when uttered in actual situations, relate to specific intended individuals in a speaker's information state. By using indefinite noun phrases the speaker introduces new discourse referents, which relate to their intended objects. Pronouns related to the anaphoric antecedents can refer back to the same object for which the antecedent phrase was introduced.

In natural language, we quite commonly encounter so-called free pronouns, which do not necessarily refer to the individuals introduced by antecedent noun phrases. Their occurrence usually indicates that a sentence is a fragment of a larger piece of discourse from which the pronoun's reference can be reconstructed. While interpreting a sentence, the hearer can understand anaphoric expressions only if he knows which object (individual) the phrases refer to, or at least thinks he can match his own belief object with one of the original speaker. This makes the meaning of a sentence and the connection holding between the intended objects intersubjective, though it is also context dependent.

The crucial notion that shall be at work in our pragmatic approach to the Edelberg asymmetries is the notion of context. In the last two sections of this paper we shall interpret asymmetric conjunctions, occurring in appropriate contexts, by using an extended E-type account. We shall arrive at a solution of the problem of the possibility of interpreting a false sentence taken in isolation as true, by using the notion of overriding contexts.

2.2 Arsky – Barsky Examples

We start our analysis by introducing two Arsky – Barsky stories according to which we formulate sentences called symmetric and asymmetric conjunctions (the latter shall be frequently referred to as the Edelberg asymmetries).

Story 1.

Arsky learns about the death of Smith and Jones from Barsky, who says that one murderer is responsible for the death of both victims. Barsky has collected some evidence about what happened in Chicago, and that evidence suggests that there was only one murderer. Smith and Jones were shot from the same gun. Bullets and fingerprints on the gun and on the victims' things match one person. Arsky, who has not seen the two victims, relies on Barsky's sincerity and experience and believes him. The two detectives start looking for the criminal. In fact, there are no murderers.

On the basis of this story the following sentences would be true:

(1a) Arsky believes *someone* shot Jones, and Barsky believes *he* shot Smith and Jones.

(1b) Arsky believes *someone* shot Smith, and Barsky believes *he* shot Smith, too.

The commuted versions of sentences (1a) – (1b) are true, too:

(1a') Barsky believes *someone* shot Smith and Jones, and Arsky believes *he* shot Jones.

(1b') Barsky believes *someone* shot Smith, and Arsky believes *he* shot Smith, too.

As we said, we can see that these sentences are true and sound natural only if the speaker has in mind an individual, or an individual concept (or something of that kind) that can be characterized by a definite description. Analyzing the process of commutation of the

sentences (1a) – (1b) above, we immediately notice that what goes on in these sentences is more than a simple logical commutation.

The fundamental difference between commutation *simpliciter* and the commutation in the sentences above lies in the fact that in the second case, after commuting the constituent parts of the sentence, the anaphoric antecedent remains in the first conjunct and its pronoun in the second. In the pure case, the indefinite pronoun phrase would appear in the second conjunct, while its anaphoric pronoun would occupy a place in the first conjunct of the sentence. In our case, however, this does not happen, because we analyze intentional identity in terms of anaphora where an antecedent phrase always appears before its related pronoun (this is specific of anaphora).

The sentences that result from commuting the conjunctions contain constructions that seem to introduce *a new* anaphoric expression referring not to the original object but to another one. In other words, the anaphoric expression in the commuted version of a sentence is not the same as its counterpart in the original sentence. For symmetric examples like the present one, this observation does not make much difference in the sentences' analysis, but for the asymmetric cases, which we shall discuss later, this is crucial, because it gives rise to the puzzle.

Let us complicate the story and introduce an example that generates an asymmetry in the sentences. That results in a change in the anaphor's behavior when compared to the sentences from **Story 1**.

Story 2.

Arsky and Barsky investigate the apparent murder of Smith, and they conclude that Smith was murdered by a single person, though they have no one in mind as a suspect. A few days later, they investigate the apparent murder of a second person, Jones, and again they conclude that Jones was murdered by a single person. At this point, however, a disagreement between the two detectives arises. Arsky thinks that the two murderers are completely unrelated, and that the person who murdered Smith, but not the one who murdered Jones, is still in Chicago. Barsky, however, thinks that one and the same person murdered both Smith and Jones. (However, neither Smith nor Jones were actually murdered.)

The hearer may consider sentences like:

(2a) Arsky believes *someone* shot Smith, and Barsky believes *he* shot Jones.

(3a) Arsky believes *someone* shot Smith, and Barsky believes *he* shot Smith and Jones

which are true, but the following, theoretically, can have different readings:

(2a') Barsky believes *someone* shot Jones, and Arsky believes *he* shot Smith.

(3a') Barsky believes *someone* shot Smith and Jones, and Arsky believes *he* shot only Smith.

A hearer, having certain information about the context, may not agree that the above sentences are false; so, without knowing the particular context, the truth-value of these sentences is undecided. The hearer may ask the speaker *whom* he means by "someone" and "he", and theoretically, the speaker could specify his intended object, of for instance (3a'), in several ways:

(3b') Barsky believes *the murderer of Smith* shot Smith and Jones, and Arsky believes *he* shot only Smith.

(3c') Barsky believes *the murderer of Jones* shot Smith and Jones, and Arsky believes *he* shot only Smith.

(3d') Barsky believes *the murderer of Smith and Jones* shot Smith and Jones, and Arsky believes *he* shot only Smith.

The first of these sentences, in the context of **Story 2**, turns out to be true, while the second is false and the third is uninterpretable or also false.

Definite descriptions that are used in the sentences (3b') – (3d') as possible candidates for understanding of "someone" and "he" are theoretical possibilities, provided that sentence (3a') occurs without any further context. In an actual situation, we suppose, a sentence is interpreted in a certain context, which suggests one particular way of how it has to be understood.

However, once such a possibility has been considered in the philosophical literature at a considerable length, we should just dismiss it by saying that sentence (3a')

is simply false. The pragmatist has to explain why in factual situations there is considered only one interpretation of sentences like (3a') instead of three. We think that the hearer, in understanding sentences in a conversation, follows her linguistic intuitions indicating those about the "habit" of speaker's use of linguistic constructions that suggests the way in which that sentence has to be interpreted.

We shall suggest that the hearer's intuition about how to interpret sentences such as (3a'), is guided by the speaker's indications about the linguistic structure encoding the information material of that sentence, and by certain linguistic markings to the further context.

2.3 Anaphora in Grice's Cooperative Conversation

Contrary to our intuitive understanding that the commuted versions of asymmetric conjunctions are false, Grice's theory predicts such sentences to be true. In the presentation of Grice's pragmatic theory we shall use the following pragmatic tools: a context and a Gricean conception of a cooperative communication to explain the hearer's preferences in evaluating the Arsky – Barsky sentences.

In a theoretic model of communication, we assume that the speaker and the hearer communicate according to Grice's maxims. An important goal of a cooperative and goal-oriented conversation consists in formulating truthful utterances, relying on the principle of hearer's charity. While assuming that asymmetric conjunctions may have more than one interpretation, we intend to show in this section why some versions of those sentences are more acceptable in a cooperative conversation than others.

According to Grice's theory, communication between the members of a community is regulated by the principle of rationality (adequate behavior with respect to achieving the goal), cooperation and conventions. According to these principles, utterances can be seen as cooperative or not. For example, sentences like

(4) It is raining in London but I do not know whether it is raining there.

(5) A cat is on the mat but I do not believe it.

are incorrect and therefore uncooperative because they violate the maxim of quality, which is one of the principles underlying the rationality of communication.

Unlike the above sentences (4) and (5), sentences like (2a) and (2a') (introduced at the beginning of this chapter) are well-formulated and therefore, correct despite the fact that the former is true and the latter is false. From the point of view of a semanticist, a sentence like (2a') may be seen as theoretically dubious because it may have different readings, of which only one is acceptable intuitively or with respect to a cooperative conversation.

Here we face a dilemma of an intuitive interpretation of (2a') contradicting the reading suggested by Grice's pragmatic theory. In what follows, we shall see that in order to resolve the clash between an intuitive and a theoretic interpretation of a sentence like (2a'), we have to ask the speaker to be more explicit in formulating sentences than it is required by the accepted pragmatic theory.

One of the means in a cooperative conversation is uttering only true sentences. However, in a real life situation, this is not a necessary condition for an adequate understanding of each other's utterances. Although uttering only true sentences in a cooperative conversation is very desirable, we can not ignore the fact that in real life situations quite often falsities abound. Therefore, to reconcile the interpretation that Grice's theory predicts to (2a') with our intuitive understanding of that sentence, it is necessary for the speaker to be very linguistically explicit in order to suggest the hearer her interpretational preferences of a given sentence. Such an extreme explicitness in Grice's theory can be treated as the violation of the maxim of quantity, but without that we can not resolve the mismatch of an intuitive and a theoretic readings of the same sentence.

In the process of evaluation, Grice's maxims, especially the maxim of quality, and the principle of charity are at work in choosing the appropriate interpretation of a given sentence. Consider sentence (2a') again:

(2a') Barsky believes *someone* shot Jones, and Arsky believes *he* shot Smith.

If we assume that while uttering this sentence the speaker has a particular 'someone' in mind, then, theoretically, **Story 2** allows for three possible interpretations of this sentence. "Someone" can be interpreted as "the murderer of Smith", "the murderer of Jones" or "the murderer of Smith and Jones". We speculate that not having any one specific in her mind, the speaker, uttering the above sentence, is not clear about whose identity she intends to state by using the anaphoric construction. Theoretically, the hearer might "choose" among the three interpretations of the sentence's referent. Suppose that while uttering (2a'), the speaker meant:

(2b') Barsky believes *the murderer of Jones* shot Jones, and Arsky believes *he* shot only Smith.

This is the most intuitive interpretation of (2a'), even though the sentence comes out false, according to the hearer. In Arsky's information state, "the murderer of Smith" shot Smith[29]. If this is what the speaker meant, having someone specific in mind, then although it is false with respect to the given Arsky – Barsky **Story 2**, (2b') is sufficiently clearly formulated and respects the maxim of quality, and, finally, results in an appropriate understanding of that sentence by the hearer.

However, the means for reaching the understanding in a Gricean conversation is uttering only true sentences. It then follows that the above given interpretation of (2a') can not be the most appropriate one, theoretically speaking. This is because the hearer's understanding of (2a') as (2b') is not sufficiently charitable. Thus, although intuitively correct, this interpretation turns out to be inappropriate with respect to the principle of charity in Grice's model of conversation.

On the other hand, had the speaker meant (2c') by (2a'), she should have better said so in order to comply with the rules of the game, which exhort not to utter ambiguous sentences:

(2c') Barsky believes *the murderer of Smith* shot Jones, and Arsky believes *he* shot Smith.

[29] The idea that this is the most intuitive interpretation of the given sentences has also been expressed in Edelberg (1995) and van Rooy (1997, 2000), among others.

Because the content of the first belief in sentence (2a') does not contain the information about Smith's murderer, this is intuitively not the best alternative for (2a'). However, this reading is charitable as it makes the sentence true. According to Grice's model of a cooperative communication, (2c') should then be the most appropriate understanding of (2a'). Although we already have the appropriate interpretation of the sentence in question, (2d') is another theoretic alternative to be considered because we cannot be sure that the speaker had somebody particular in mind. If the speaker did have a particular referent in mind, she should have said so.

(2d') Barsky believes *the murderer of Smith and Jones* shot Jones, and Arsky believes *he* shot Smith.

Even though theoretically possible, this sentence is false and hardly interpretable because there is no individual in Arsky's information state with which his belief object could be associated that would correspond with the murderer of Smith and Jones from Barsky's information state. So, this way of interpreting (2a') is not likely at all.

Among the theoretically possible interpretations of (2a'), there is only one that is unlikely – (2d'). As for the other two candidates, the speaker, anticipating the occurrence of a possible mistake while interpreting that sentence, would save the conversation by directly uttering (2c'), thus being fully cooperative with the hearer.

This choice, however, contradicts our practical intuition about how the sentence should be understood. We considered three theoretic possibilities of (2a')'s interpretation. But in a real life situation there is only one way to understand that sentence, and it is that one which we call intuitive and which makes the sentence false. Practically speaking, (2b') but not (2c') is the appropriate understanding of (2a').

The clash between our theoretical considerations and our practical intuitions about interpretation of sentences like (2a') creates the puzzle and shall be resolved in the subsequent section.

Before closing this section let us observe that in the symmetric cases of the Arsky - Barsky sentences it is not necessary to specify the anaphoric antecedent as it is done in (2b') – (2d'). Consider sentences (1a) and (1a') from **Story 1**:

(1a) Arsky believes *someone* shot Smith, and Barsky believes *he* shot Smith, too.

(1a') Barsky believes *someone* shot Smith, and Arsky believes *he* shot Smith, too.

Both sentences are symmetric conjunctions and it makes no difference in their interpretation whether the anaphoric antecedent is expressed as a general term or a definite description. Given the contextual information of these expressions, a mistake in their interpretation is unlikely. The use of "someone" or "the murderer of Smith" in the sentence does not affect the appropriate understanding. Both the hearer and the speaker know that there is only one concept that can be univocally characterized in both as the general term "someone", and as the definite description "the murderer of Smith". Here the most intuitive interpretation is also one that is considered true, so no problem arises.

In the symmetric case of the story, the speaker knows that referring to the individual she has in mind by means of the definite description is not qualitatively conversationally different from referring to it by the means of the general term. By using either of the expressions, the speaker does not violate the maxim of quality and is sufficiently cooperative with the hearer.

From a semantic point of view, efficiency and optimality of a discourse does not play a role. But from the point of view of a pragmatist, which we favor, goal-orientedness and efficiency of a conversation are important factors, which allow discriminating between better and worse interpretations of uttered sentences.

The advantage of the pragmatic approach to intentional identity and the asymmetry problem over the semantic point of view is in the freedom of choosing a more appropriate expression in a given context instead of an ambiguous phrase.

To sum up: In this section we considered the speaker's preferences for interpreting Arsky – Barsky sentences with respect to the notion of a cooperative goal-oriented conversation and the principle of charity, which gave a different prediction than our intuitive one. As we see it, the purpose in a conversation is to communicate information to the hearer and to be appropriately understood. This provides a sufficient

motivation for a clear formulation of true sentences. Theoretically, some cases – e.g. the asymmetric ones - require more precision from the speaker in formulating his assumptions, while practically this might not be necessary.[30] In other cases – e.g. the symmetric ones – a theorist sees the more generally characterized anaphoric antecedents as just as informative as their precise counterparts.

2.4 Intended Individuals in Asymmetric Conjunctions

The present section and section immediately subsequent are the key parts of this thesis. We discuss the ways in which the speaker theoretically conceives of the intended individual[31] in asymmetric conjunctions. The speaker's understanding of a referent in a given sentence is compared with the way in which the hearer understands it in a real life situation. We suggest that the way, in which the sentence's truth-value with respect to its reference is conceived of, corresponds to what we call an extended version of the E-type approach to anaphoric pronouns (which due to the use of notion of discourse referent can be called a mixture of the standard E-type account and DRT).

Let us remind ourselves that in principle this thesis discusses two questions: the Edelberg asymmetry and a further issue - the problem of how an intuitively false sentence, under certain circumstances can be seen as true. Before considering the latter issue, we start by explaining the asymmetry in terms of information contained in a sentence. As we shall see in the next section, the pragmatic explanation of asymmetry (although it can be perfectly well elucidated in a semantic way) coheres very well with the explanation of the second problem, which can not be accounted for by semantics.

Let us start explaining our approach to asymmetry with the supposition that beliefs about the intended objects in the Arsky – Barsky sentences as they stand without

[30] A similar idea (however, without mentioning the asymmetric conjunctions, which where discovered by Edelberg (1986)) is present in Burge (1978), whom we can call the initiator of a pragmatic approach to the sentences containing attitude ascriptions.
[31] We use the notion of intended individual and the notion of discourse referent (DRT term) interchangeably.

any further context are, in referential terms, under-specified. Terms like “someone” and “he” have little semantic content, that is why they become interpretable only when the speaker associates them with a certain definite description that characterizes her intended individual.

To account for intentional identity, we believe it is reasonable to assume that pronouns are descriptive – they abbreviate definite descriptions recoverable from the information material of the sentence in which their antecedents occur. By using an anaphoric pronoun in an asymmetric conjunction, the speaker shows not only identity, but also its knowledge under certain description, necessary to assert the identity of an intended individual. By using conjunction, the speaker indicates her choice for making an identity claim under a description recoverable from the information material of an introducing context (first belief ascription in the Edelberg’s asymmetric conjunction) of a sentence, which may turn out as true or false.

The set of all sentences a speaker may use in life situations contains the following sentences, formulated against the background of **Story 2**:

(3a) Arsky believes *someone* shot Smith, and Barsky believes *he* shot Smith and Jones.

(3a’) Barsky believes *someone* shot Smith and Jones, and Arsky believes *he* shot only Smith.

We noted earlier that in the light of the given asymmetric Arsky – Barsky story, sentence (3a) is true while (3a’) is intuitively false.

In the eyes of a semanticist, the Arsky – Barsky sentences are called asymmetric conjunctions because - although they are commuted versions of each other - they have *different* contents (otherwise they could not have different truth-values). The semantic asymmetry of the above sentences may also be explained in pragmatic terms, focusing on the way that the two belief ascriptions obtain different interpretations. We suggest that a discourse referent introduced by an anaphoric antecedent in the Arsky – Barsky type sentences (if they occur in isolation; and if they do not contain any other indications of

how a discourse referent has to be understood) is initially characterized by a definite description constructable from the information material of the first belief ascription.

In sentence (3a), for instance, the hearer can retrieve a definite description "the murderer of Smith", which she attributes to the object that a speaker has in mind, on the basis of the information contained in the first belief, namely that someone shot Smith. From the information material of the second belief ascription about someone shooting Smith and Jones, the hearer formulates a definite description "the murderer of Smith and Jones", which she also associates with the referent of that sentence. But the information coded in the linguistic structure of a given sentence, is a primary indication of what is a sentence's referent, although not necessarily the only one.

In our opinion, the order of the contextually retrievable definite descriptions in sentences like (3a) and (3a') matters, and has an effect on the truth-value of a sentence. But before we proceed with the explanation of why a sentence is sometimes true and sometimes false, we have to mention a very specific feature of our analysis of intended objects in asymmetric conjunctions.

Our point of view has roots in the standard DRT and E-type approaches[32]. According to the former, an indefinite description (an indefinite noun phrase) introduces a discourse referent, which an anaphoric pronoun co-refers with. According to the latter, an anaphoric pronoun associates with a contextually retrievable definite description. We associate that definite description with a pronoun, introduced by its antecedent. We claim, on the other hand, (and this is not standard) that the anaphoric antecedent is, at the moment of its appearance in a sentence, already associated with a description constructable from the material of the first belief ascription. In a word, we want to suggest that not only an anaphoric pronoun is associated with context retrievable definite description, but also an indefinite noun phrase.

Although this approach is non-standard, it allows us to understand more clearly why, in a real-life interpretation of the Arsky – Barsky sentences (3a) and (3a'), a hearer prefers interpreting the former as true and the latter as false. But let us now proceed with considering what are the hearer's theoretic and practical preferences in interpreting asymmetric conjunctions.

[32] Kamp (1990), Evans (1977).

Theoretically, sentences like (3a) and (3a') are implicitly present in the speaker's language. We suggest that the (un)likelihood of a sentence's interpretation is determined by linguistically coded information contained in a sentence, and also by certain particles (or intonation) indicating that there is some additional information that must be taken into consideration in the process of a sentence's evaluation.

As we said, facing sentence (3a'), we see three theoretically possible interpretations:

(3b') Barsky believes *the murderer of Smith* shot Smith and Jones, and Arsky believes *he* shot only Smith.

(3c') Barsky believes *the murderer of Jones* shot Smith and Jones, and Arsky believes *he* shot only Smith.

(3d') Barsky believes *the murderer of Smith and Jones* shot Smith and Jones, and Arsky believes *he* shot only Smith.

The construction of the sentence allows the hearer to recover the speaker's assumption to talk about the identity of an intended object. But the problem for a semanticist as well as for a pragmatist is - *whom* does the speaker have in mind? The hearer's task is to understand who is referred to by the expressions "someone" and "he" in sentence (3a'), whereas the theorist's task is to spell out the hearer's preferences and explain her interpretation.

We suppose that the hearer's preferred understanding of a sentence is influenced by the constructions used in that sentence, as long as there are no indications onto the additional contextual properties that may suggest an interpretation of a sentence different from that one coded in its expressions. We speculate that the hearer might use two strategies in understanding a sentence. The first strategy is to use the information material given in the first belief ascription to determine the referent. The second strategy is for her to ignore that information and to pick out the referent that may be associated with the information from the second belief, and a preceding sentence (context, assumptions, etc.). According to the first strategy, the most acceptable candidate for interpreting (3a') is then (3d'), while following the second strategy, it would be (3b'). But as we said, the order in

which the information is introduced (without any immediately preceding context) matters, and that is why a rational hearer would opt for the first strategy to determine the sentence's referent.

We should ask ourselves now why we should prefer the understanding of anaphora presented above to the Gricean one based on assumptions about the hearer's charity and the speaker's uttering only true sentences in a conversation, discussed earlier. The answer may be the following: Our preference for the present conception of anaphora is based on the assumption that one's preferences in interpreting natural language sentences are driven by something more than charity and the goal of uttering only true sentences in a conversation.

In real conversations speakers often utter false as well as true sentences. The hearer's intuition of what a sentence means is affected primarily by the linguistic assumptions explicitly indicated by the sentence in question. We suppose that in natural circumstances the linguistic means that indicate the information content of a sentence and the means that do not directly contribute to it, are much stronger than the theoretic idea about the hearer's charity and the "persistent" truth of sentences in a Gricean conversation.

However, we do not insist that linguistic assumptions indicating the information content (or semantics) is the only criterion driving our intuition of how natural language sentences have to be interpreted.[33] Like Bartsch (1979), we believe that the way in which a sentence has to be understood can be indicated by certain words as a means of showing that some extra material must be taken into account, in order to correctly understand a given sentence.

Going back to the asymmetric conjunctions: looking for an alternative to our accepted approach of how they should be interpreted, we might theoretically speculate that the information material of the first belief ascription might indicate something else than it linguistically suggests. Looking at the second conjunct of sentence (3a'), we could come up with possible reasons why the hearer may prefer other interpretations to (3d').

[33] To explain why, for instance, one is inclined to associate an individual concept (a referent of a given sentence) with certain definite descriptions, linguistic assumptions are not sufficient. There must be some habit, intuition or some other pragmatic reason, present in our linguistic practice that would explain why

However, common sense, rationality and linguistic practice tell us that if the speaker meant to associate the referent of the sentence with the description constructable from the second belief, and introduce it as a new discourse referent, she should have done that by using "someone" in that conjunct.

Despite our theoretic speculations about what would have happened if the speaker by saying one meant the other, the sentence's structure speaks for itself, and this suggests a straightforward interpretation in terms of information content and linguistic structure, which are the obvious facts the hearer can not simply ignore.

To substantiate our choice for (3d') as the only appropriate interpretation of (3a'), we want to add that the hearer's intuition while interpreting natural language sentences is not driven by theoretical speculations about the principle of charity which would always save the speaker from uttering false sentences. True and false sentences both belong to our language and both of them are used. However, when considering sentences like (3a') without any further context, we want to voice our doubt about their *natural* occurrence in actual situations. What we mean is that such sentences *must* be uttered in a context in order to receive a proper interpretation.

Nevertheless, we suggest that in the Arsky – Barsky sentences occurring in isolation the interpretation of *the first belief ascription* indicates the way its referent is understood. With this we hope to have explained why (3d') would be the only preferred reading of (3a') in an actual conversation.

The above considerations about pragmatic preferences at play in the process of interpretation have implications for the supposed indeterminacy in the Arsky – Barsky sentences. We want to emphasize that the supposed indeterminacy is theoretic, not practical. To put it otherwise, there is no indeterminacy in the interpretation of a sentence in a real life conversation, because the hearer arrives at only one reading of the sentence in question, and that will be determined by his linguistic intuition and practice (if there is no explicit linguistic - or even intonation - limitations on a possible interpretation).

Looking back on the sentence (3a), the original uncommuted version of the Arsky – Barsky sentence, we can hypothetically reason that it has more than one reading (as it

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the intended object seems to be more easily understood when it is associated with a definite description. Perhaps we shall not be able to answer this question exhaustively and we will have to leave it open.

may have in different contexts, as we will see in the next section), too. However, the hearer encountering this sentence will consider only one way of understanding it: the one that involves interpreting “someone” and “he” as “the murderer of Smith”. This is because the content of the first belief linguistically indicates that the referent should be associated with somebody who shot Smith.

So, provided that the first belief of a sentence indicates which description the individual should satisfy, a rational hearer should have no doubt about the referent of the given sentence unless there she has *additional information* at her disposal (explicitly stated in that sentence) which would allow a different characterization of the intended individual. This principle can only be elucidated in terms of pragmatics, and that is why it is so convenient to have a pragmatic explanation of the Edelberg asymmetry.

In this section we explained how the speaker understands a discourse referents denoted by anaphoric expressions. We related the way in which the speaker conceives of the intended individual, indicated by the first belief of an asymmetric conjunction, to the theoretically possible interpretations of the Arsky - Barsky sentences. We have also suggested that in real-life situations the speaker’s understanding of the discourse referents is motivated linguistically rather than by the theoretic idea that in a cooperative conversation only true sentences are allowed. In this way we explained why the reading of the commuted Arsky – Barsky sentence, on which it turns out to be false, is its most intuitive interpretation. The pragmatic explanation of the Edelberg asymmetry as presented in its appropriate context gives rise to the notion of overriding contexts, presented in the next section, which solves the problem of occasionally interpreting a false sentence as true.

2.5 Overriding contexts

This section presents a pragmatic explanation of the truth and/or false readings related to the Edelberg asymmetry puzzle, which seems untreatable by semantical means. For a semantic theory, the problem lies in the fact that once we explain why is the

commuted Arsky – Barsky sentence false, we cannot explain within the same framework why can the same sentence be on certain occasions evaluated as true. We suggest that even though the commuted Arsky – Barsky sentence is false according to the hearer's interpretation preferences, it might turn out to be true provided an appropriate context preceding that sentence. Such context can override the interlocutors' conception of the discourse referent as indicated by the information content of the first belief ascription.

We take a pragmatic view on the problem of asymmetry because we realize the importance of the context in the process of interpreting asymmetric conjunctions. As we explained in the previous section, we think it is intuitive that the content of the first conjunct (if there are no reasons for doubting it) indicates how the speaker conceives of the discourse referent, to which the anaphoric pronoun in the second conjunct refers. This way we emphasize that the hearer's linguistic intuition about coded information, particles, intonation, is taken to be stronger than the assumption about the principle of charity exploited in Gricean communication. However, in hypothetical or even in real situations we sometimes observe that broadening of the context of the sentence can affect the way in which the hearer understands the intended individual. So, although at first sight the hearer is inclined to interpret "someone" and "he" in example (3a') as "the murderer of Smith and Jones" -- even though the speaker did not say this explicitly -- the context of that sentence can suggest a different interpretation.

As in the previous cases, while bearing in mind the difference in the number of interpretations between a real hearer and a theorist, we shall consider the understanding of sentences by the latter. Recall that the most likely interpretation of (3a'), given our assumptions and linguistic intuitions, is (3d'). Now, suppose that (3a') is preceded by a context as in (6a'):

(6a') Barsky believes *the murderer of Smith* also shot Jones, but Arsky does not believe it. So, (3a') Barsky believes *someone* shot Smith and Jones, and Arsky believes *he* shot only Smith.

The sentence "Barsky believes *the murderer of Smith* also shot Jones, but Arsky does not believe it" is the immediate context of (3a'), which can be reconstructed from the story or from the circumstances in which the sentence is uttered. The speaker indicates the connection between the two sentences by using a particle "so" in (3a'). This particle straightforwardly indicates that sentence (3a') has to be interpreted with respect to the preceding sentence. It means that the speaker suggests the way of understanding the intended object of (3a'), as depending on the referent of its immediate predecessor. Thus, the hearer infers that there is a concept of an individual in the speaker's mind that satisfies the definite description "the murderer of Smith", and that "someone" co-refers with that description. Then we see why the hearer can intuitively correctly understand sentence (6a'), judging it to be true.[34]

It also fits very well with the hearer's Gricean assumption that a speaker in a cooperative conversation aims at uttering only true sentences. So, in fact, the above interpretation of (3a') confirms both the linguistic assumptions and the principle of charity, which are a desirable feature of a theory of understanding.

The result would be the same if we analyzed a real-life understanding of the same sentence. We mentioned earlier that in a real-life situation sentence (3a') has, without further context, only one reading, and that is (3d'). Preceded by another sentence, as in (6a'), we get the one and only true interpretation of (3a').

Another impact the preceding context has on a sentence's interpretation results in accepting the reading of (3a') that otherwise would not be likely or preferred by the hearer. As we suggested in Section 2.4, the most intuitive interpretation of that sentence, taken in isolation, according to our point of view, is (3d'). In a case like (6a'), where the sentence with anaphora has an immediate context and a particle, pointing to that context, the most acceptable interpretation is (3b'). This phenomenon we shall call an *overriding context*. Its influence on a sentence's understanding consists in affecting the speaker's interpretation of the discourse referent suggested by the content of the first belief in an asymmetric conjunction.

[34] Although it is unconventional, we take it that the idea that "someone" co-refers with a definite description is appropriate. Without any doubt we support the idea that "someone" introduces a discourse referent and "he" is associated with a contextually retrievable definite description. However, we want to

We may consider how our theoretic interpretations of (3a') change when the context differs from the one in (6a').

(7a') Barsky believes *the murderer of Jones* also shot Smith, but Arsky does not believe it. So, (3a') Barsky believes *someone* shot Smith and Jones, and Arsky believes *he* shot only Smith.

A consequence of adding the sentence "Barsky believes *the murderer of Jones* also shot Smith, but Arsky does not believe it" in front of (3a') and indicating that additional context by a particle "so", is that the latter gets false reading. Though (3a') on its own can sometimes be considered true and sometimes false, depending on how the speaker understands who is the intended shooter, sentence (7a') is always false. Such an interpretation is caused by the presence of the particle (which does not contribute to the information content of that sentence), indicating how (3a')'s referent has to be understood.

(8a') Barsky believes *the murderer of Smith and Jones* shot both Smith and Jones, but Arsky does not believe it. So, (3a') Barsky believes *someone* shot Smith and Jones, and Arsky believes *he* shot only Smith.

The most intuitive and best justified interpretation of this sentence makes (8a') false, just as (3d') is when without an immediate context. We notice that in sentences (6a') – (8a') the context, indicated by a particle, suggests a possible individual that fits a particular definite description. The hearer then has no difficulty interpreting these sentences as clearly true or clearly false. In other words, there is no ambiguity in interpreting these sentences because the definite descriptions associated with the intended objects are effectively retrievable from the context.

Looking at sentences (6a') - (8a') we notice that the power of overriding contexts is in their being explicit about which object satisfies the expression in the immediate

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add, that at the moment of introducing a discourse referent, an indefinite noun phrase is also associated with a contextually retrievable definite description.

context, with which the hearer associates the anaphoric antecedent of the asymmetric conjunction.

We can see now that with our conception of overriding contexts, when they are explicitly indicated by a particle of a subsequent sentence, we can explain why an intuitively false sentence like (3a') can have interpretations that make it true.

That's why one version of a sentence (containing a general term and an associated definite description) like (3a') seems to be more acceptable than the other. Usually, the intuitive meaning of sentence (3a') is evaluated already in connection with the definite description, despite the fact that this definite description does not appear in the immediate context of the sentence or in the sentence itself. It seems that in asymmetric cases like the Arsky – Barsky **Story 2**, a definite description has to be explicitly present in front of a sentence containing a general term in an anaphoric antecedent for the sake of a theoretic clarity of a conversation. In practice, however, it might not be so necessary because there are certain means (like intonation) for indicating a supposed referent.

To strengthen our argument about overriding contexts, let us examine the sequence of sentences below[35]:

(9) Barsky believes *the murderer of Smith* shot Jones, and Arsky believes *he* shot Smith. Therefore, Barsky believes *someone* shot Jones, and Arsky believes *he* shot Smith.

In the context of "Barsky believes *the murderer of Smith* shot Smith, and Jones and Arsky believes *he* shot Smith", sentence (3a') is perfectly fine.

The problem with an intuitively false Arsky – Barsky sentence when a hearer is willing to interpret it as true, is not the sentences' structure or commutation *per se*, but in the missing link between the antecedent (if it is a general term) and an explicitly stated pragmatically determined definite description as its immediate context. To have such a link there must be a particle present in Arsky – Barsky sentence, which suggests that anaphora in this sentence co-refers with the individual of a preceding expression.

[35] Henk Zeevat (2001) has examples of this type, too.

Having considered how the idea of an overriding context works for (3a')'s interpretation, let us now see if it works for the interpretation of its un-commuted version (3a).

(6a) Arsky believes *the murderer of Smith* shot only Smith, but Barsky disagrees with him. So, (3a) Arsky believes *someone* shot only Smith, and Barsky believes *he* shot Smith and Jones.

(7a) Arsky believes *the murderer of Jones* shot only Jones, but Barsky disagrees with him. So, (3a) Arsky believes *someone* shot only Smith and Barsky believes *he* shot Smith and Jones.

(8a) Arsky believes *the murderer of Smith and Jones* shot only Smith, but Barsky disagrees with him. So, (3a) Arsky believes *someone* shot only Smith and Barsky believes *he* shot Smith and Jones.

While hearing sentence (3a), against the background of **Story 2** the theorist may think of three ways in which the sentence's referent can be understood. Intuitively, only (6a) is an appropriate context in which we get a true interpretation of (3a), and not (7a) and (8a).

Take context (7a). In Arsky's information state "the murderer of Smith" from the first belief ascription in (3a) and "the murderer of Jones" from the preceding context associate with different discourse referents. Practically, context (7a) and sentence (3a) speak about two *unrelated* individuals inhabiting Arsky's information state, and therefore to link these two sentences by a particle would violate the conditions of use of that particle. The preceding context is inappropriate for (3a) to occur in, if the speaker intends the referent of (3a) as being the same as the referent of (7a). The intended individuals referred to in these sentences are independent of each other. That's why context (7a) does not override the context of the first belief of (3a). The same holds for context (8a), which straightforwardly contradicts **Story 2**.

If compared to (6a), the contexts preceding (3a) in (7a) and (8a) are obviously inappropriate. Combined with (3a), they contradict the information of **Story 2**. Under the assumption that the speaker is rational and formulates his sentences pragmatically

correctly, the chance for (3a) to occur in contexts like (7a) and (8a), in a cooperative conversation, is very low, unless the speaker wants to mislead his interlocutor. By using (3a) as referentially related to context (7a) the speaker would contradict the contextual information. Therefore, such preceding context in a given situation is improper and does not influence the interpretation of (3a).

Before closing this section we want to take a look at the Hob – Nob sentence, which is the source of the problem of Edelberg asymmetry and its further issues. Recall sentence (1) presented in the first chapter of this thesis. According to the original Hob – Nob story from the section 1.1, a reporter is describing the outbreak of witch mania in Gotham Village. Provided that Hob and Nob do not communicate and learn about the witch from the newspaper, a reporter is correct in saying:

(10a) Hob believes *a witch* blighted Bob's mare and Nob believes *she* killed Cob's sow.

(Here (10a) corresponds to (1) from Chapter 1.) In the context of the original Hob – Nob story (10a) is true. Now, suppose that (10a) occurs as an isolated utterance, then, following our point of view, according to which linguistic assumptions direct the pragmatic understanding of a sentence, we may offer the following interpretation of the above sentence.

From the information material of the first conjunct a hearer formulates a definite description "the mare blighter", which she associates with the anaphoric pronoun of the second conjunct, as well as with the indefinite noun phrase. That definite description associates with an intended object of the speaker. Given the way, in which a sentence's referent is normally determined, the following interpretation of (10a) is the most appropriate one:

(10b) Hob believes *the mare blighter* blighted Bob's mare and Nob believes *she* killed Cob's sow.

However, suppose that this sentence is uttered in the context as presented by Geach, which does not square well with the intentions of the speaker in Geach's story. Imagine that sentence (10a) is placed into the context containing the information about a witch mistreating animals in the Gotham Village, described in the newspaper.

(10c) Hob believes *the newspaper witch* is mistreating animals, and so does Nob. So, (10a) Hob believes *a witch* blighted Bob's mare and Nob believes *she* killed Cob's sow.

The referent of the above sentence is an individual that fits the description "the newspaper witch", which co-refers with "a witch" and "she". The information material about the witch from the newspaper may override the information about a witch who blighted Bob's mare, because the two sentences are connected by a particle "so", however, without changing the sentence's truth-value.

The things should turn out to be different if the original Hob – Nob story is adjusted in such a way that Nob learned about a witch from Hob, and the latter learned about her from the newspaper. In addition to that, Nob has independently come to believe this witch killed Cob's sow. Upon such a story sentence (10a'), which is a commuted version of (10a), would be false:

(10a') Nob believes *a witch* killed Cob's sow and Hob believes *she* blighted Bob's mare.

The reason why the above sentence is false is that Hob can not associate a definite description "the sow killer" with a witch from his information state, because he knows nothing about Cob's sow. But if sentence (10a') appears in an appropriate context, it may change its truth-value. Observe:

(10b') Nob believes that *the newspaper witch* has been abusing Gotham Village animals, and so does Hob. So, (10a') Nob believes *a witch* killed Cob's sow and Hob believes *she* blighted Bob's mare.

As the above two sentences are connected to each other by “so”, the immediate context of (10a’) overrides the context of the first belief ascription, and therefore (10b’) turns out to be true.

The *appropriate* preceding context of the asymmetric conjunction indicates that its anaphoric pronoun is associated with a definite description constructable from that preceding context, which would yield a truthful interpretation of the sentence, rather than with the description retrievable from the material of the first belief ascription, which would not render a truthful interpretation.

Like in the Arsky – Barsky example (6a), Hob - Nob sentence (10a), if it is formulated from the asymmetric version of the story, does not change its truth-value if placed in a preceding context like in (10c).

“The newspaper witch” and “the mare blighter” in Hob’s information state associate with the same individual, therefore, the preceding context of (10a) is appropriate. Even though the preceding context overrides the context of the first belief of (10a), the sentence’s truth-value remains the same. If instead of “the newspaper witch”, in that preceding context occurred a definite description, not associated with Hob’s “the mare blighter”, that context would not override the subsequent one, because that sentence would speak about an individual different form the one introduced in (10a). Such a preceding context would then be inappropriate and the sentences would not be connected.

As the result of the analysis of the Arsky – Barsky and the Hob – Nob sentences, we predict (3a), (3a’), (10a) and (10a’) in their special contexts to be all right. This means that commutation of (3a) and (10a) in those special contexts is allowed. With respect to the change of the sentence’s truth-value, it is the overriding context that does the job of elucidating why an otherwise intuitively false sentence under certain circumstances may turn out to be true.

Although we presented a similar analysis of the Hob - Nob and the Arsky – Barsky sentences, we nevertheless think these examples to be slightly different. The difference between them lies in the fact that Hob – Nob sentences, especially (10a), is presented in such a way that looks natural and calls for its intuitive interpretation. The Arsky – Barsky sentences stem from the story that seems to be artificially constructed for

specifically creating the puzzle of asymmetry. The setup of the Arsky - Barsky story calls for other theoretically possible interpretations of a given sentence, including Grice's conception of a cooperative conversation, than it would normally be intuitively required. Geach's story describes the situation, for whose sentence Grice's pragmatics predicts the interpretation corresponding to the intuitive understanding of the sentence in mind. This happens because the Hob – Nob sentence, in principle, is symmetric, while the Arsky – Barsky sentence from the **Story 2**, is not.

A sentence like (3a') would not even be uttered by a rational discourse participant in the given context because it contains an "unlicensed" use of an anaphoric construction. Without a mereological structure of Barsky's belief object, from the point of view of an ordinary hearer, there is only one intentional object in Barsky's belief state – the person who shot both Smith and Jones. Knowing that there are two murderers in Arsky's information state, the speaker by (3a'), containing anaphora, would utter an ill formulated sentence. So, the utterance of (3a') in the context of **Story 2** must be either a pragmatically accidental, or a theoretically imposed issue. As for the Hob – Nob example, it seems to be well formulated and naturally interpretable.

One may ask the question if it is worth considering such artificial cases as (3a') in the context of **Story 2**. As philosophers, we must not ignore the problem, which is already formulated and discussed at a considerable extent. However, analyzing natural language sentences and their interpretations in actual situations, we should be aware of the fact that sentences like (3a') in the context of **Story 2**, in a conversation would not normally occur.

To sum up: Looking back at the Edelberg asymmetry and its further feature - a possibly true interpretation of a sentence, under certain circumstances, which without any further context is false - we conclude that our extended E-type analysis and the conception of overriding contexts is the key in solving this difficulty. In this section we have been interpreting asymmetric conjunctions, which by using a particle are linguistically connected with their immediate contexts. The idea of overriding contexts justifies our intuition (already reflected by Bartsch (1979)) that the hearer's interpretation of a sentence is guided not only by the information material of a given sentence, but also

by additional means, such as particles. These particles are meant to establish the connection with the sentence's preceding context, which indicates the way in which the subsequent sentence has to be understood. It is due to such a link between sentences, and the notion of overriding contexts, that the theory can explain both intuitive falsity and possible contextual truth of commuted asymmetric conjunctions.

2.6 Conclusion

In this chapter we considered sentences from the point of view of a theoretician in a goal-oriented and cooperative conversation; as well as from the standpoint of a hearer in a real situation. We saw that an appropriate understanding of Arsky – Barsky and Hob – Nob type sentences consists of a correct interpretation of anaphoric relations, which means that anaphoric pronouns are associated with definite descriptions that are efficiently retrievable from the material of a sentence and / or related contexts.

While analyzing intentional identity sentences we have adopted a pragmatic point of view upon the asymmetric conjunctions in their contexts by exploiting the notion of context. In contrast to Grice's pragmatic theory, which offers a counterintuitive prediction of how the Edelberg asymmetries have to be treated, we presented a pragmatic theory, which says that, linguistically encoded information, together with certain particles (or intonation), which refer to additional context properties, indicate the way in which we usually interpret natural language sentences. Such an approach predicts the interpretation of sentences, similar to their intuitive understanding.

Even though intentional identity can be accounted for in semantic terms, the issue stemming from the Edelberg asymmetry: a commuted Arsky – Barsky sentence being possibly true, despite its intuitive falsity when taken in isolation, can be accounted for only in pragmatic terms. Namely, noticing that the referent of that sentence is indicated not only by the information material coded in its linguistic structure, but also by connecting that sentence with a certain preceding context. That context, if explicitly connected with a sentence in mind by using a certain linguistic construction, is called an overriding context. In order to synchronize the interpretation of the Edelberg asymmetry

with the elucidation of the problem arising from it, we also give a pragmatic explanation of the former.

Chapter 3

The Pragmatic Account and Other Theories

In this chapter we relate our understanding of indefinite noun phrases and their related pronouns to their treatment in other theories. The fact that a proper understanding of a sentence can be obtained only in the context in which it was uttered, places the problem of asymmetry and the issues resulting from it into the area of pragmatics. However, the analysis of the Edelberg asymmetry in a pragmatic framework does not mean that there is no semantic puzzle involved.

3.1 Indefinites and Related Pronouns

When interpreting indefinites and dependent pronouns we associate them with definite descriptions. We even require that theoretically, in cases such as the asymmetric Arsky- Barsky story, definite descriptions have to be used in sentences explicitly in order to avoid confusion in the process of interpretation. Our understanding of anaphora in a way resembles the standard E-type and DRT reading or - even more closely - the reading obtained by using individual concepts. In this section we want to clarify the relation of our approach to anaphora with other theories.

According to the standard E-type approach, anaphoric pronouns are proxies for (abbreviations of) definite descriptions constructed from the context of antecedent clauses. The sentence exemplifying the so-called donkey anaphora, namely

(11) Every farmer, who owns a donkey, loves *it*

is interpreted according to the standard E-type approach as:

(12) Every farmer, who owns a donkey, loves *the donkey he owns*.

We are as well aware that such a treatment of anaphoric pronouns encounters the problem of implying undesirable uniqueness. The definite description constructed from the context material of the first clause in sentence (12) carries the uniqueness implication that each farmer who owns a donkey has only one donkey. (Some theorists have argued that this is indeed a genuine implication of (11)).

One way to avoid uniqueness implication was suggested by Neale (1990)[36]. He suggests that instead of using definite descriptions, we should exploit numberless descriptions that do not carry semantic implications about the number of individuals associated with them.

According to Neale, anaphoric pronouns dependent on a context may be taken as standing proxy for numberless descriptions. In such theory, (11) will be interpreted as

(13) Every farmer, who owns a donkey, loves *whatever donkey he owns*.

(13) does not carry the uniqueness implications and captures the truth conditions of (11).

The uniqueness implication, crucial to the above sentences, is not so undesirable for the interpretation of the Arsky – Barsky examples. On the contrary, from the **Story 2** we know that we are interested in finding the unique individual, who will satisfy a certain definite description. Thus, in our particular case, the uniqueness of the traditional E-type account is not an obstacle implication (shooting being usually carried out by one person).

What is specific in our way of treating indefinites and their anaphoric pronouns is that we construct definite descriptions associated with an intended individual not only from the direct material of the sentence, but also from its preceding context. This feature of our proposal, as well as the idea of associating definite descriptions not only with a pronoun but also with an antecedent indefinite, clearly separates us from the standard E-type approach, and is *crucial* in solving the puzzle of asymmetry.

If we did not have an explanation of why a sentence like (3a') from the previous chapter may have an interpretation that makes it true, we would need another form of the E-type reading, *weaker* than the standard one.

[36] Neale (1990), p. 139.

As a remote alternative to our conception, the hypothetical weaker version of the E-type interpretation would go as follows: anaphoric pronouns are analyzed as proxies for definite (numberless) descriptions constructed from *part* of the material of antecedent clauses.

This type of E-type version would allow for the following readings of (3a'):

(14) Barsky believes *someone* shot Smith and Jones, and Arsky believes *the murderer of Smith* shot Smith.

(15) Barsky believes *someone* shot Smith, and Jones and Arsky believes *the murderer of Jones* shot Smith.

(16) Barsky believes *someone* shot Smith and Jones, and Arsky believes *the murderer of Smith and Jones* shot Smith.

Upon this reading, sentence (14) turns out to be true, while sentences (15) and (16) are read as false. A weak E-type reading would allow for some flexibility in the interpretation of an anaphoric pronoun dependent on the context of a sentence like (3a'). However, one thing is missing in such an account. We can not formulate a rule saying *which* part of the first belief ascription's information should be used in constructing a definite description. While interpreting the above sentences, the hearer usually uses all the information given in the first attribution belief to retrieve a description.

What we would like the linguistic structure of a sentence in the weak E-type account to do, is to be self-sorting or self-discriminating with respect to its own bits of information. It is important for this kind of approach that different parts of content information can be as a basis of formulating a definite description associated with a pronoun and an indefinite phrase. Providing an explanation of how to discriminate between the bits of information of the same belief attribution is crucial to the interpretation of the Arsky – Barsky sentences. If the weak E-type approach can not explain this, we should discard it as unfit.

What we do need from an E-type approach is not the weaker but the extended standard version. An extended E-type approach allows for a more flexible interpretation of Arsky – Barsky type sentences, when they occur in particular situations.

While speaking about introducing *discourse referents* into a discourse by an anaphoric antecedent and interpreting it according to the information material provided by a given sentence, we are close to the Discourse Representation Theory, developed by Kamp (1990). According to DRT, indefinite descriptions and pronouns introduce discourse referents that are variable-like entities. The discourse referents have conditions on them (anaphoric dependency across sentential boundaries) that have to be satisfied by the assignments of their values. Our interpretation of indefinites and related pronouns is also closely related to the notion of individual concepts developed by Stalnaker (1987) and used by van Rooy (1997, 2000). According this approach, a single object in the real world might have two different counterparts in worlds that characterize a belief state, because there might be different ways of picking out counterparts.

In our extended E-type approach we use the notion of discourse referent as related to the notion of intended individual (or a concept), characterized by a pragmatically determined definite description.

It is very important for the pragmatic treatment of the Arsky – Barsky sentences that an intended object is associated with a definite description, which characterizes it in the agent's information state. A contextually retrievable definite description characterizes that intended individual which the speaker has in mind while uttering an asymmetric conjunction.

Unlike van Rooy, we differentiate between all possible ways of picking out definite descriptions characterizing an intended individual and the ways that are linguistically - contextually relevant by taking into account additional information (or a context) provided by the sentence preceding the sentence in question. This means - that although theoretically possible - the readings that are not suggested by the first belief ascription (and a preceding context) in a sentence are not preferred by the hearer in actual circumstances.

We think that in some cases, for example in the asymmetric Arsky – Barsky situations like (3a'), to understand what the speaker means by uttering such a sentence, a definite description is preferable to appear in the anaphoric antecedent in order to give a univocal interpretation of a related pronoun. This idea is close to Schiffer's point of view (Schiffer, 1987, 1997). In his theory of belief, Schiffer suggests that *de re* attitudes are

incomplete and that objects referred to by general expressions need to be characterized by a definite description.

According to Schiffer's theory, without presupposing a particular description of the person who shot Smith, there is no way in which the speaker can hope to be understood what her *de re* attribution means. In other words, it is not possible for one uttering "someone shot Smith" or "he shot Smith" to mean an object dependent proposition involving the murderer of Smith without bringing a certain contextually salient definite description into play.

So much for a comparison of how we treat indefinites and related pronouns with other theories.

3.2 Between Semantics and Pragmatics

In our analysis of Edelberg's and van Rooy's theories, we called them *semantic* treatments of intentional identity and the Edelberg asymmetries. However, we called these theories semantic being perfectly aware of the fact that they contain and make use of a pragmatic parameter – context - in explaining sentences with attitude attributions. We want to clarify that because of the importance of the role that the notion of context plays in these frameworks there can be no sharp distinction between semantics and pragmatics in interpreting Arsky – Barsky type sentences. In fact, the semantic approaches presented in this paper are actually semantic / pragmatic. What we can call "purely" pragmatic, is only the treatment of the problem – namely, the possibility of interpreting a false sentence taken in isolation as true, under certain conditions - to which no semantic theory has yet been offered.

Final Remarks

In this paper we have been concentrating on two interesting problems: intentional identity in the form of the puzzle of Edelberg asymmetry and its further issue – there being a possibility to interpret an otherwise false sentence as true in specific contexts. We have presented a perspectivalist and a realist theory about the issue, both of which have contributed a great deal to the literature of philosophical logic. We called both approaches semantic (however, bearing in mind that they contain a pragmatic parameter – a context). As the semantic approach left the truth-falsity puzzle in the Arsky – Barsky type sentences unsolved, we have decided to take a pragmatic look upon that issue.

Our "pragmatic turn", in trying to solve the problem of the Edelberg asymmetry and its effect is not unnatural. In the philosophical literature we come across phenomena that are discussed from a logical, a semantic, and a pragmatic point of view. Because of its interpretational diversity, anaphora in asymmetric conjunctions poses problems interesting for all three areas of philosophy. This is due to the context sensitivity of the linguistic constructions of natural language sentences that we analyze.

By developing a pragmatic approach to anaphoric relations in asymmetric conjunctions, we hope to have contributed to the philosophical literature by giving a richer understanding of how the Edelberg asymmetries and its further issues have to be interpreted.

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This thesis is dedicated to the memory of my grandfather.

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