Specificity as speaker identifiability

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0 Introduction

The concept of specificity is often referred to in the linguistic literature. However, the precise definition of the term is unclear. Different researchers argue for different definitions of specificity. The specific / non-specific contrast is sometimes claimed to be semantic in nature, and sometimes, pragmatic. Under the semantics approach, specificity is considered to affect truth conditions of a sentence, and is often essentially treated as scope (Karttunen 1976; Farkas 2002, among others). Under an alternative pragmatic approach (Groenendijk & Stokhof 1980), the crucial component of specificity is identifiability to the speaker. Thus, the referent of a specific NP is identifiable to the speaker, whereas the referent of a non-specific NP is not.

In this paper, I argue in favor of the pragmatic approach. I argue that the notion of speaker identifiability is linguistically relevant and should be reflected in an adequate representation of the context. I will bring new evidence in favor of this approach, coming from the interpretational properties of certain lexical items in Russian. I will then propose a formal analysis of specificity which is based on the notion of speaker identifiability.

1 Previous analyses

1.1 Semantic approaches: Scope

As mentioned above, within the framework of the semantics approach, specificity is often analyzed as a property essentially identical to scope. According to this approach, specific NPs are wide scope NPs, whereas non-specific NPs are NPs that take narrow scope relative to some operator. For instance, consider sentence (1), which is ambiguous between two readings.

(1)   Melinda wants to buy a motorcycle. (Ioup 1977: 233)

According to one reading, it means that there is a particular motorcycle that Melinda wants to buy. Under this interpretation, the indefinite NP *a motorcycle* takes wide scope relative to the intensional verb *wants.* Alternatively, the sentence can mean roughly that Melinda wants to buy *any* motorcycle. Under this reading, the indefinite NP takes narrow scope.

Intuitively, the wide/narrow scope ambiguity seems to correspond in this case to the specific/non-specific contrast. Under the wide scope reading, Melinda wants to buy a specific motorcycle, whereas under the narrow scope reading, all she cares about is the property *motorcycle,* and the non-specific interpretation results.

The scope approach has a number of shortcomings. Firstly, within the framework of this analysis the concept of specificity seems to be redundant. The term *scope* has a long history of use in the literature on linguistics and philosophy, and it seems to be unnecessary to introduce an additional term that corresponds to exactly the same distinction.

The second problem of the scope analysis is its failure to account for the specificity contrast in such sentences as (2).

(2)   A picture fell off the wall.

Intuitively, this sentence exhibits the specific/non-specific opposition. Under the specific reading, the speaker knows exactly which picture is missing but for some reason chooses not to name it. Under the non-specific reading, the speaker merely knows that (at least) one picture is absent, without being able to identify it, say, because she has just heard the electronic device go off in the gallery signaling an empty frame on the wall. This contrast cannot be accounted for within the scope approach, however, as the sentence contains no operator relative to which the indefinite NP could take wide or narrow scope. Thus, scope ambiguity is absent.

1.2   Pragmatic approach: Speaker identifiability

Alternatively, specificity has been accounted for within the framework of a pragmatic approach, which analyzes specific NPs as NPs whose referent is identifiable to the speaker. A formal analysis of specificity on these lines is provided in Groenendijk & Stokhof (1980). G&S propose that specificity of definite NPs differs in an important way from specificity of indefinite ones. A definite NP, by virtue of its definiteness, denotes a unique individual (or set of individuals), and it is specific if and only if the speaker knows which individual(s) it denotes. In contrast, specificity of indefinite NPs is claimed to be dependent on the speaker's knowledge of the denotation of two predicates: the one contributed by the NP in question and the one that corresponds to the predicative part of the sentence. An indefinite NP is specific only if the speaker knows the denotation of the set that constitutes the intersection of these two predicates. Further conditions depend on the determiner that the phrase contains. For instance, in the case of the English indefinite article *a,* the intersection must constitute a singleton set. Importantly, this approach fails to provide a unified analysis of specificity.

It has been claimed that the pragmatic approach in general is problematic since identifiability is a vague concept that has to do with knowledge of the world, with people's minds and intentions, but does not constitute a part of the message that an utterance encodes. In addition, it has been suggested that identifiability is not lexically encoded, whereas semantic properties associated with specificity are (Ioup 1977).

Below, I will demonstrate that certain lexical items with existential meaning in Russian are inherently specified as not speaker identifiable. This proves that speaker identifiability is a linguistically relevant property that can be lexically marked.

2   *-to* items

-to items constitute a series of lexical items with existential meaning in Russian. Morphologically, they consist of a wh-word and the suffix *-to* attached to it. The items are exemplified in Table 1.

Table 1.

kto-to	who + *-to*	someone
chto-to	what + *-to*	something
kakoj-to	which + *-to*	some

Pereltsvaig (2000) mentions briefly that these items can only have wide scope readings. This conclusion is also drawn by Dahl (1970). He analyzes *-to* items as inherently specific, as he assumes an approach according to which specificity is identical to scope. Below,

I consider the semantic and pragmatic properties of *-to* items and their behavior with respect to scope and speaker identifiability.

2.1 *-to* items and scope

Indeed, NPs that contain the word *kakoj-to,* which can be roughly translated as 'some', tend to allow for only wide scope readings.

(3) Dima ne   zametil kakogo-to studenta.
     Dima NEG noticed some   student
     'There is a student that Dima didn't notice.'

(4) Maša   xochet vyjti zamuž za kakogo-to šveda.
     Masha wants marry-INF to some   Swede
     'Masha wants to marry some Swede.'

For instance, (3) can only mean that there was a student that Dima failed to notice, and not that Dima noticed no student at all. Thus, the existential NP that contains a *-to* item obligatorily takes wide scope relative to the negative operator. In turn, (4) means that there is a particular Swede whom Masha wants to marry. The sentence does not have a reading according to which Masha is ready to marry any Swede.

It should be pointed out that, in certain cases, *-to* items can take narrow scope as well; thus, their appearance is not always restricted to wide scope readings. Still, *-to* items strongly tend to take wide scope, as demonstrated in (3–4), and this generalization is sufficient for our current purposes.

2.2 *-to* items and speaker identifiability

There is, however, a property that unifies all the uses of *-to* items independently of their scope options. In particular, these items are obligatorily *not* speaker identifiable. Even in those environments in which they obligatorily take wide scope, the referent of an NP that contains such an item must not be identifiable to the speaker. This property of *-to* items is noted in Haspelmath (1997), who classifies them as *unknown to the speaker.* It should be emphasized that for Haspelmath, this property is independent from specificity. Thus, he classifies *-to* items as *unknown to the speaker* and, at the same time, *specific.*

Leaving aside the question of specificity at this point, let us focus on the absence of speaker identifiability. The claim that *-to* items inherently lack this property is supported by the infelicity of (5), as opposed to (4) above.

(5) # Ja xochu vyjti zamuž za kakogo-to šveda.
       I   want marry-INF to some   Swede
     'I want to marry some Swede.'

My informants consider (5) strange and even funny. By virtue of the semantic properties of the word *kakoj-to* 'some', discussed in the previous section, this sentence means that the speaker wants to marry a particular Swede. At the same time, it follows from (5) that the speaker has no idea who that Swede is. Since, at least out of context, such a situation is rather unlikely, the sentence sounds strange.

In contrast, it is perfectly easy to conceive of a situation whereby the speaker knows about Masha's willingness to marry a particular individual, but cannot identify him. As a result, (4) is perfectly acceptable.

An additional example illustrating that *-to* items are obligatorily *not* speaker identifiable is provided in (6):

(6)　# Ja xorošo znaju kakogo-to šveda.
　　　I　well　know　some　　Swede
　　'I know some Swede well.'

The use of the *-to* item ensures that the referent of the object NP is not speaker identifiable, a factor that is incompatible with the assertion that the speaker knows the individual well.

-To items are therefore very important, since they demonstrate that the notion of speaker identifiability is indeed linguistically relevant and, crucially, it is relevant independently of the notion of scope. Thus, in most cases, *-to* items obligatorily take wide scope, which, in turn, is in principle perfectly compatible with speaker identifiability. Still, the latter property is obligatorily absent.

Thus, speaker identifiability is not an extra-linguistic factor. Language is sensitive to this property, as there are lexical items inherently specified as (not) speaker identifiable, and this property must be present in an adequate representation of discourse. Since on the intuitive level, this property is strongly associated with specificity, as revealed in the linguistics literature on the topic, I propose to analyze specific NPs as NPs whose referent is identified by the speaker. Below, I propose a formal analysis of specificity in terms of speaker identifiability.

3　Specificity as speaker identifiability: A formal representation

In order to represent specificity as speaker identifiability, a framework is needed that allows to distinguish knowledge of different individuals. Such a framework is provided in Gunlogson (2001).

3.1　Representing beliefs of different discourse participants: Gunlogson (2001)

Following Stalnaker (1978), Gunlogson analyzes discourse using the notion of **context set (CS),** a set of possible worlds 'of which all of the propositions representing mutually held beliefs of the participants are true' (Gunlogson 2001: 39). In other words, this is a set of worlds that are compatible with mutually held beliefs of the individuals who participate in the conversation.

Gunlogson demonstrates, however, that context set as defined above cannot include all the information shared by the participants since it is limited to their *mutual* beliefs. Clearly, individuals who participate in a conversation may disagree on some points. Thus, they may publicly disagree on whether a proposition q is true. Participant A may say that q is true, and participant B may disagree and claim that q is false. Thus, neither q nor $\neg q$ constitutes a part of the participants' mutual beliefs. Still, it is clear that q is in some way present in the discourse. In particular, the participants know that A believes q to be true and B believes q to be false. These facts do constitute a part of the participants' mutual beliefs.

Gunlogson develops a system that allows including this kind of information in the formal representation of the context. First, she introduces the notion of an individual's public belief. (The definition in (7) holds for a discourse with two participants, A and B.)

(7) **Definition: Public belief**
p is a **public belief** of A iff 'A believes p' is a mutual belief of A and B. (Gunlogson 2001: 42)

She further proposes to distinguish context sets associated with different discourse participants. Thus, for a discourse in which two individuals, A and B, participate, she distinguishes CS_A from CS_B. CS_A is a set of possible worlds in which all the propositions representing A's public beliefs are true. Thus, it is a set of possible worlds that are compatible with A's public beliefs. Similarly, CS_B is a set of possible worlds in which all the propositions representing B's public beliefs are true. In turn, the mutual context set is recoverable from $\langle CS_A, CS_B \rangle$, as it constitutes the set of possible worlds in which all the mutual beliefs of A and B hold.

3.2 Specificity as speaker identifiability: The analysis

3.2.1 Speaker identifiability

The notion of distinct context sets corresponding to different individuals makes it possible to formally represent speaker identifiability without presupposing that the referent of an NP is identified by other discourse participants.

The definition in (8) below contains a formal definition of speaker identifiability for a singular NP (I restrict the discussion to singular NPs for the sake of simplicity):

(8) **Definition: Speaker identifiable**
A singular NP that appears in a sentence S uttered by speaker A is **speaker identifiable** iff

$$\exists y \forall w [w \in CS_A \rightarrow (P(y, w) \land Q(y, w))],$$

where P is the property contributed by the content of the NP, and Q is the other property ascribed to the referent of the NP in the sentence.

(If the NP in question functions as the subject of the sentence, then Q corresponds to the property denoted by the VP. Thus, in the sentence *A picture is missing from the gallery*, P corresponds to the property of being a picture, and Q to the property 'missing from the gallery'. In turn, in the sentence *John saw a student*, P stands for the property of being the student, and Q for the property of being an individual that John saw.)

The condition in (8) essentially means that an NP is speaker identifiable if and only if there is an individual that constitutes its referent in every possible world that belongs to the speaker's context set. If the speaker identifies the referent as a particular individual, say, a, then a will have the properties ascribed to the referent in every world that is compatible with the speaker's beliefs.

An NP is not speaker identifiable if the condition in (8) does not hold. This can happen in two cases. Firstly, the speaker may not be committed to the existence of a referent at all. Secondly, the speaker may be committed that the referent exists but be unable to identify it. In that situation, it is possible for different individuals to satisfy the properties P and Q in different worlds in CS_A, as represented in (9):

(9) $\forall w [w \in CS_A \rightarrow \exists y (P(y, w) \land Q(y, w))],$
where P is the property contributed by the content of the NP, and Q is the other property ascribed to the referent of the NP in the sentence.

To illustrate, consider again the sentence in (2), repeated below:

(2) A picture fell off the wall.

Suppose that the speaker utters this sentence having in mind Primavera and intending to refer to this particular picture. In that case, Primavera would be a picture that fell off the wall in every possible world that belongs to the speaker's context set. Since the speaker is committed that Primavera fell off the wall, a world in which this is not the case will be excluded from her context set. Such a world will not be compatible with her beliefs.

In turn, consider a situation when the speaker utters (2) without having any idea as to which picture has fallen. In that case, any world in which at least one picture fell off the wall will belong to the speaker's context set, as long as it conforms to the speaker's beliefs in all the other respects. Thus, in every possible world in the speaker's CS there will be an object that is a picture and that fell off the wall, but in one world this may be Primavera, in another, Portrait of a Lady, in the third one, Mona Lisa, etc.

It can be seen that speaker identifiability is essentially represented as a condition on scope. Namely, it is a condition on the relative scope of the existential operator that binds the NP in question and the universal quantifier that quantifies over possible worlds in the speaker's CS. Crucially, however, the universal quantifier does not constitute part of the truth conditions of the sentence. Rather, it is introduced by the context, and quantifies over possible worlds in a context set.

3.2.2 Uniqueness

It should be pointed out, however, that speaker identifiability is not a sufficient condition for specificity. According to the definition in (9), an NP is speaker identifiable iff there exists an individual that has the properties ascribed to the referent in the sentence in every possible world within the speaker's context set. This, in turn, does not eliminate the possibility that other individuals share these properties. It thus follows that a sentence that satisfies the condition in (8) may still exhibit a specific/non-specific contrast.

Consider, for example, the following scenario. Mary is a teacher, and I know that yesterday she talked to five students. I know that one of these students was Bill, because he is my neighbor and he has told me about the meeting. However, I have no idea as to who the other four students were. In this case, the sentence in (10) can have both a specific and a non-specific reading.

(10) Mary talked to a student yesterday.

Contrary to Groenendijk & Stokhof (1980), I believe that such a sentence can be specific, despite the fact that the intersection of the set of students and the set of individuals to whom Mary talked yesterday is not a singleton set. A specific reading will result if I utter (10) having in mind Bill and intending to refer to him and not to anybody else. (10) can then be followed by a sentence like *He is my neighbor,* which is a property that characterizes Bill and not the other students. This will make it clear that the indefinite NP in (10) is specific, even though this sentence happens not to contain reference to properties that characterize Bill only.

On the other hand, (10) has a non-specific reading as well. Suppose that someone tells me that Mary is haughty, inconsiderate and never even talks to her students. I can then disagree and utter (10) as evidence that my interlocutor is wrong. In this case, it makes absolutely no difference whether I can identify the individuals to whom Mary talked or not. As far as I am concerned, any of the five students satisfies the conditions in

(10), making the utterance true and appropriate, Bill to the same extent as the ones that I cannot identify. Crucially, under this scenario, the indefinite NP is non-specific, despite the fact that the conditions of speaker identifiability formalized in (8) are fulfilled.

It thus follows that an additional condition should be added that must hold in order for an NP to be specific. This condition is **uniqueness.** It is not sufficient that there exists an individual who has all the properties of the referent in every world within the speaker's CS; there must exist *only one* such individual.

The representation of the uniqueness restriction provided below is based on the analysis of singleton indefinites proposed in Schwarzschild (2002). According to Schwarzschild, the indefinites are existentially quantified. However, the set that the existential operator quantifies over may be determined not only by the content of the NP but also by the context. Namely, the restrictor includes implicit material available from the context, in addition to the overt material. In turn, the implicit information that turns the set into a singleton may be available to both the speaker and the hearer, or to the speaker only, or sometimes even to a third party. In the case of specific NPs, it must be available to the speaker.

This approach allows defining uniqueness which constitutes one of the conditions for specificity:

(11) **Definition: Uniqueness**
A singular NP **has a unique referent** (in the sense discussed above) if

$$\exists R \exists y \forall w [w \in \mathrm{CS}_A \rightarrow (P(y,w) \wedge R(y,w) \wedge \forall z[((P(z,w) \wedge R(z,w)) \rightarrow z = y)])],$$

where P is the property contributed by the content of the NP, and R is a property known to the speaker.

R is a property that causes the NP to have a unique referent, as far as the speaker's beliefs are concerned.

Thus, under the scenario proposed above for (10), the speaker knows that the intersection of the two properties ascribed to the referent of the indefinite NP is not a singleton. However, under the specific reading, when she intends to refer to Bill, she knows about additional properties which distinguish the intended referent from the other students to whom Mary talked yesterday (for instance, the property of being the speaker's neighbor). The intersection of these properties corresponds to R in the formula in (11).

Note that uniqueness defined in (11) is not a sufficient condition for specificity under the analysis developed in this paper. The speaker may be aware of properties that distinguish the referent from other individuals without being able to identify the referent. For instance, the speaker may utter (10) above knowing that Mary talked to only one student. Still, she may have no idea as to which student that was.

Thus, speaker identifiability and uniqueness are the two conditions each of which must hold in order for an NP to be specific. We can now provide a formal definition of specificity, which constitutes a combination of the two conditions:

(12) **Definition: Specificity**
A singular NP that appears in a sentence S uttered by speaker A is **specific** iff

(i) $\exists y \forall w [w \in \mathrm{CS}_A \rightarrow (P(y,w) \wedge Q(y,w))]$;

(ii) $\exists R \exists y \forall w [w \in \mathrm{CS}_A \rightarrow (P(y,w) \wedge R(y,w) \wedge \forall z[(P(z,w) \wedge R(z,w)) \rightarrow z = y])]$,

where P is the property contributed by the content of the NP, Q is the other property ascribed to the referent of the NP in the sentence, and R is a property known to the speaker.

3.3 A formal analysis of *-to* items

It has been demonstrated above that *-to* items in Russian are inherently specified as not speaker identifiable. At this point it is possible to provide a formal representation of this property.

(13) **Felicity condition imposed by *-to* items**
Let S be a sentence that is uttered by speaker A which embeds an NP containing a *-to* item. Let P be the property contributed by the content of the NP, and let Q be the other property ascribed to the referent of the NP in the sentence.

Then S is felicitous iff

$$\neg\exists y\forall w[w \in \mathrm{CS}_A \rightarrow (P(y,w) \wedge Q(y,w))].$$

The referent of an NP that contains a *-to* item cannot be identified by the speaker. Thus, one of the conditions for specificity is violated and, as a result, an NP that contains a *-to* item is obligatorily non-specific.

4 Conclusion

To sum up, in this paper I have argued that speaker identifiability is a linguistically relevant property which can be lexically encoded and which affects the interpretation of a sentence. However, this is a pragmatic property dependent on the context in which a sentence is uttered and, thus, it does not affect the truth conditions of the sentence. Rather, as suggested in Groenendijk & Stokhof (1980), it constitutes a restriction on the context in which a given utterance is appropriate. I have proposed a formal analysis of specificity based on this property which captures the intuition that the referent of a specific NP is 'known' or 'familiar' to the speaker.

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