

# (In)definiteness in natural languages

Day 5

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## Languages without articles

Chierchia (1998:360): In languages without articles, the meaning shift ( $\iota$ ,  $\cap$ , or  $\exists$ ) is chosen “depending, presumably, on the context.”

(1) *Russian*

**Koška** est rybu.  
cat.NOM eats fish.ACC

‘The/A cat eats/is eating (the) fish.’

- Russian does not express definiteness as a binary grammatical category, but the values of def./indef. are ‘perceptible’ for the speakers (see the English translation).
- There are syntactic, lexical, morphological and prosodic means to encode ‘definiteness’ intuitions, but none of them is strong enough to work in all possible cases (Borik et al. 2020, i.a.)

# Characteristics of Russian bare NPs

Russian bare singular NPs:

<i>indefiniteness characteristics</i>	<i>definiteness characteristics</i>
have wide and narrow scope	can be used deictically
introduce novel referents	can be used anaphorically
can be used in existential sentences	can be used for unique referents
can be used in distributive contexts	can have generic reference

Distribution: both argument and predicate position.

## Readings of bare singular NPs

As summarized in Šimík & Demian (2020):

Property	$\lambda x[\text{CAT}(x)]$	(the property of being) a cat
Quantifier	$\lambda Q\exists x[\text{CAT}(x) \wedge Q(x)]$	(the set of properties that at least) some cat (has)
Entity	$\iota x \text{CAT}(x)$	the (single) cat
Kind	$\cap \text{CAT}$	the species called “cat”

- Not all the meanings are always equally available.
- These meanings are interrelated via general type-shifting principles (postulated by Partee 1987; Chierchia 1998, i.a.)

# Hypotheses about bare nominals

In argument position:

- Heim (2011): bare NPs are indefinite (they don't presuppose uniqueness) covert type-shift from  $\langle e, t \rangle$  to  $\langle \langle e, t \rangle, t \rangle$  by  $\exists$ ; definite readings are inferred pragmatically (from the context/speakers' background knowledge). Hypothesis for all languages without articles.
- Geist (2010): bare NP are ambiguous between definiteness and indefiniteness, covert type-shift from  $\langle e, t \rangle$  to  $e$  or  $\langle \langle e, t \rangle, t \rangle$  either by  $\iota$  or  $\exists$ . Bare NPs in topic position must be definite. The proposal is Russian-specific but possible extendable to other languages without articles.
- Dayal (2004, 2011): bare NP are kinds or definites (they presuppose uniqueness), covert type-shift from  $\langle e, t \rangle$  to  $e$  by  $\cap$  or by  $\iota$ . Bare NPs are never indefinite. For all languages without articles, empirical evidence from Hindi, Russian and Mandarin.

# The indefiniteness hypothesis

Indefiniteness hypothesis in a nutshell (Heim 2011).

- (2) a. [[The director joined our discussion]]  
= [ $\iota x.x$  is a director] joined our discussion
- b. [[A director joined our discussion]]  
=  $\exists x.x$  is a director and  $x$  joined our discussion

- There is an entailment relation between sentences containing definites and indefinites.
- Whenever (2a) is true, (2b) is true as well, but not the other way around.

# The indefiniteness hypothesis

## Horn scales and implicatures

*The* and *a* are on a Horn scale of alternatives (Horn 1972).

- (3) a. *Horn scale for articles*  
the > a
- b. *Horn scale for numerals*  
5 > 4 > 3 > 2
- c. *Horn scale for quantifiers*  
always > sometimes, all/every > some
- This scale generates conversational implicatures, i.e.
    - ▶ If the speaker uses an indef. NP, the hearer concludes that it's the strongest statement the speaker can commit to under the circumstances (given that we follow the Grice's maxim of quantity).
    - ▶ The hearer infers that the stronger statement is false or its presuppositions are not satisfied.

# The indefiniteness hypothesis

The strengthened interpretation for (2b):

- (4)  $\exists x.x$  is a director and  $x$  joined our discussion &  $\neg [\iota x.x$  is a director] joined our discussion  
'Some director but not our director joined our discussion.'

# The indefiniteness hypothesis

## Predictions for languages without articles

- The corresponding Horn scale does not exist.
- For any bare NP, an indefinite interpretation is the only one derived semantically
  - ▶ No implicature about a 'stronger statement' is triggered and a definite reading is not ruled out for an 'indefinite'.
  - ▶ There is no competing expression for the narrower domain restriction, so semantically indefinite nominal phrases are compatible with a (contextually triggered) definite interpretation.

# The ambiguity hypothesis

## Geist's (2010) in a nutshell

- More permissive (EX-shift or IOTA-shift), but there are distributional and interpretational restrictions.
  - Bare indefinites are non-specific. For specificity they need to be modified, e.g. with *one*
  - Preverbal bare NPs are (usually) topics. And they must be definite.

- (5) a. Maša xočet vyjti замуž za izvestnogo bankira.  
Maša wants marry PREP famous banker  
'Maša wants to marry a famous banker (not a particular one)'
- b. Maša xočet vyjti замуž za *odnogo* izvestnogo bankira.  
Maša wants marry PREP one famous banker  
'Maša wants to marry a famous banker (a particular one)'

## The ambiguity hypothesis

- (6) *Kniga ležit na tom stole.*  
book.NOM lies on that table
- 'The book is lying on that table.'
  - Unavailable: 'A book is lying on that table.'
- (7) *Na tom stole ležit kniga.*  
on that table lies book.NOM
- 'The book is lying on that table.'
  - 'A book is lying on that table.'

# The definiteness hypothesis

Dayal (2004, 2011), following Chierchia (1998)

- Bare NPs are 'born' as property-denoting or kind-denoting. Directly applicable to NPs predicative positions and NPs selected by k-level predicates.
- But for other cases:

(8) Kot ne sidit na stule.  
cat NEG sits on stool

a. 'The cat is not sitting on the stool.'

b. 'There isn't any cat sitting on the stool.'

$\neg > \exists$

c. \*'A cat is not sitting on the stool.'

$*\exists > \neg$

## The definiteness hypothesis

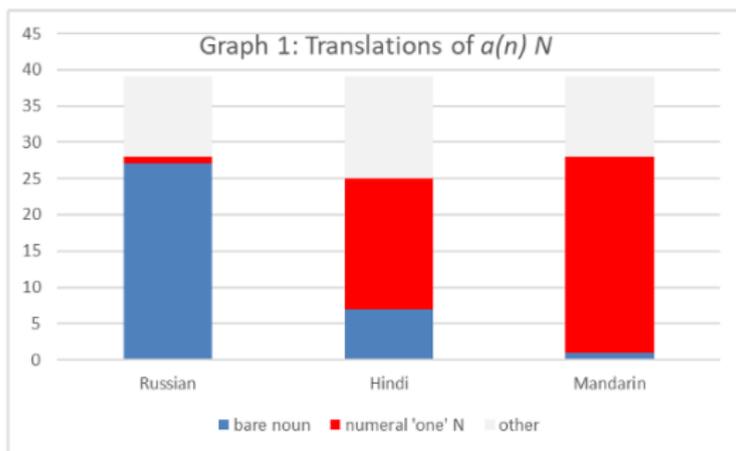
- (9) Mne kažetsja, čto v komnate myš'.  
me seems that in room mouse
- 'The mouse seems to me to be in the room.'
  - 'It seems to me that there's a mouse in the room.' seem > ∃
  - \*'A mouse seems to me to be in the room.' \*∃ > seem
- If EX-shift were a general interpretive option, bare NPs should scope similarly as English indefinites do. But they don't. Notice: Not all native speakers agree with these judgements, e.g. Bronnikov (2006) or Borik (2016).
  - The only available shift is the IOTA-shift (which makes narrow scope problematic).

## The definiteness hypothesis

- Dayal (2004:408–409) suggests that (i) narrow scope bare NPs do not presuppose that their referent is familiar; (ii) the uniqueness presupposition (introduced by the IOTA-shift) —might not be able to project across operators such as negation.
- Bottom line: (i) Bare NPs are predicted to presuppose uniqueness (unless under operators). (ii) Wide-scope indefinites are non-bare. Marked by 'odin'.
- Bare NPs cannot be indefinites. Overt marking is required.

## Insertion: A parallel corpus study w.r.t Dayal's proposal

- Dayal's (2004) proposal is supposed to apply to all languages without articles. But it seems to work for Hindi and Mandarin but not for Russian.
- Liu et al. (work in progress).



## Insertion: A parallel corpus study w.r.t Dayal's proposal

- (10) It was on the corner of the street that he noticed the first sign of something peculiar - *a cat* reading a map.
- a. Russian: a bare NP
  - b. Hindi: ek N
  - c. Mandarin: yi + classifier + N

### Summary

- Bare singular NPs are indefinites (no uniqueness presupposition).  
Definiteness is pragmatically inferred.
- Bare singular NPs are either definite or indefinite. Topicality comes into play.
- Bare singular NPs are definite (have a uniqueness presupposition).

Which approach do you chose?

## Do bare NPs presuppose uniqueness?

- Empirical data: Russian vs. English (Seres & Borik 2021)

- (11) Vrač prišel tol'ko k večeru. Drugoj vrač prosto  
doctor.NOM came only to evening other doctor.NOM simply  
pozvonil.  
called  
'The doctor came only towards the evening. #The other  
doctor/#Another doctor simply called.'

## Do bare NPs presuppose uniqueness?

(12) Avtor ètogo očerka polučil Pulitzerovskuju  
author.NOM this essay.GEN received Pulitzer  
premiju.  
prize.ACC

Drugoĵ avtor daže ne byl upomĵanut.  
other author.NOM even not was mentioned

'The author of this essay got a Pulitzer prize. #The other author/#Another doctor was not even mentioned'.

## Experimental study: Overall description of items

Seres, Borràs-Comes & Espinal (under review)

- Test items were originally taken from the Russian Web Corpus (ruTen-Ten) on SketchEngine and translated into Catalan, then altered for the purposes of the research.
- Each test item contains a brief preceding context, describing the situation, and a sentence with a preverbal non-anaphoric bare sg NP (Ref1); the following sentence introduces an identical but not co-referential *drugoj* NP (Ref2), presumably cancelling the uniqueness of Ref1.
- Discourse scenario-referent pairs are labeled as follows: *popular blog – author; local shopping centre – guard; school trip – teacher; butchery – butcher; office – manager; private company – programmer; ambulance – nurse*.
- Bridging relationship may be activated.

- The experimental study consisted of four Acceptability Judgment tasks:
  - Task 1-2: Acceptability of def./indef. in Catalan vs. bare NPs and NPs modified by *odin* in Russian (Ref1).
  - Task 3-4: Acceptability of def./indef. in Catalan vs. bare NPs and NPs modified by *odin* in Russian (Ref1) when followed by *altre/drugoj* NP (Ref2).

# Research questions

Q1: What is the acceptability of sentences with definite and indefinite NPs (in Catalan), and bare and *odin*-NPs (in Russian) when reference is made to a discourse-novel but possibly identifiable individual (Ref1)?

Q2: What is the acceptability of sentences with definite and indefinite NPs (in Catalan), and bare and *odin*-NPs (in Russian) for Ref1 when an (in)definite *altre/drugoj* NP for Ref2 is introduced in the subsequent discourse?

Q3. Do speakers' judgements change when participants (in both Catalan and Russian) have access to only one referent or two?

## Participants and procedure

- An online study with Alchemer software.
- Native Russian and Catalan participants mainly recruited through social media.
- A sociolinguistic questionnaire before the study, but it did not show any significant effect on the results.
- A total of 263 participants: 50 Catalan (Task1), 57 Russian (Task2), 108 (51+57) Catalan speakers (Task 3) and 50 Russian (Task 4).
- Participants were given short instructions to rate every piece of discourse on a scale from 'not natural at all' to 'completely natural', using a horizontal slider.

## Example items

### Task 1 (Catalan) and 2 (Russian)

- (13) a. Gairebé immediatament, l'ambulància va arribar al lloc dels esdeveniments. *La/Una* infermera va demanar que li donessin alguna cosa per aturar l'hemorràgia.
- b. Počti srazu k mestu proisšestvija priexala brigada skoroj pomošči. *Medsestra/Odna medsestra* poprosila čto-nibud', čtoby ostanovit' krov'.

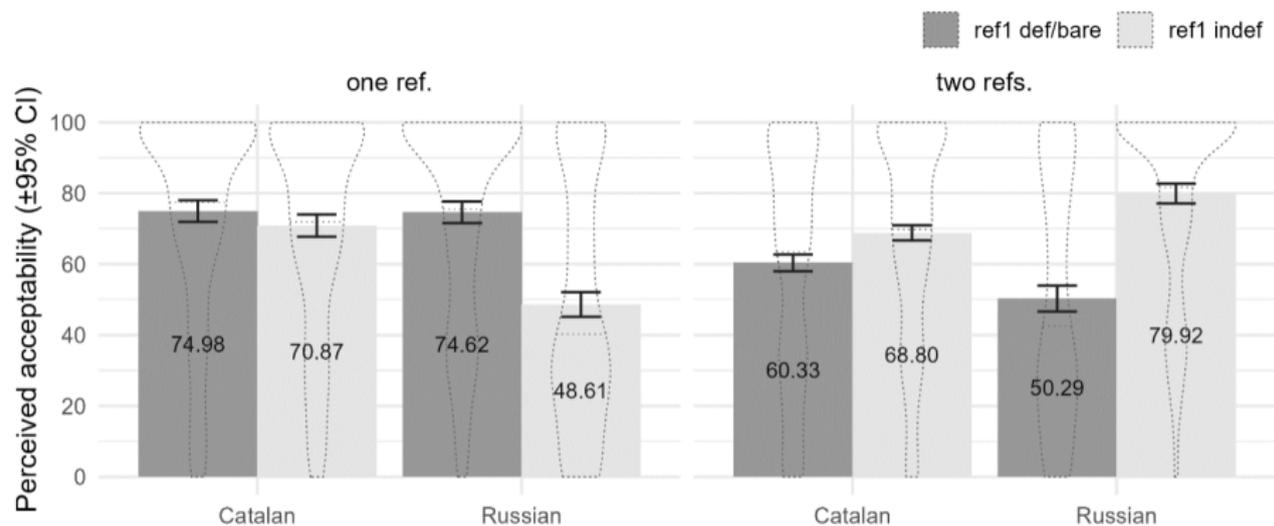
'Almost immediately, the ambulance arrived at the place of the events. The/A nurse asked for something to stop the bleeding.'

## Example items

### Task 3 (Catalan) and 4 (Russian)

- (14) a. Gairebé immediatament, l'ambulància va arribar al lloc dels esdeveniments. *La/Una* infermera va demanar que li donessin alguna cosa per aturar l'hemorràgia. *L'/Una altra* infermera, que era a prop, li va oferir la seva bufanda.
- b. Počti srazu k mestu proisšestvija priexala brigada skoroj pomošči. *Medsestra/Odna medsestra* poprosila čto-nibud', čtoby ostanovit' krov'. *Drugaja medsestra* predložila svoj šarf.  
'Almost immediately, the ambulance arrived at the place of the events. The/A nurse asked for something to stop the bleeding. The other/Another nurse that was nearby offered her her scarf.'

# Results and discussion



## Results and discussion

- Preference for def./bare NPs (over indef. NPs) when reference is made only to Ref1. This preference is much clearer for Russian (*odin*-phrases are chosen at chance).
- For Ref1 the difference in Catalan is not statistically significant.
- With Ref2, a significant preference for indefinite NPs (over definite/bare NPs).
- For indefs. NPs. In one-referent contexts speakers of Catalan show higher acceptance rates than speakers of Russian, for indefinite NPs in two-referent contexts speakers of Russian show higher acceptance rates than speakers of Catalan.

## Results and discussion

- Preference for bare nominals in Russian: they can be interpreted as either expressing uniqueness or lack of it. (Remember the results of the pilot study where the participants were asked to agree or disagree with a statement about the uniqueness of the referent).
- *Odin*-NPs are chosen at chance: non-obligatoriness for the introduction of novel referents in Russian (Padučeva, 1985; Borik, 2016).
- Catalan: novel referents can be expressed by either def. or indef. NPs (depends on the speakers' knowledge/beliefs of the situation). For felicitous uses of a def. NP without a preceding referent (Clifton, 2013, based on results from the previous psycholinguistic studies: Faurud, 1990; Poesio & Vieira 1998; Spenser 2002)

## Results and discussion

- A significant preference for an indefinite/*odin*-NP, when the second referent is present. An indef. doesn't presuppose uniqueness, so a second referent may be introduced to the reference domain without conflict for the disjoint reference.
- Unexpected result: rather high (60.33%) overall acceptability of def. NPs in Catalan as Ref1 in two-referent contexts. Participants accommodate the introduction of a second NP that encodes disjoint reference as a general tendency (“desire for discourse coherence”, Hobbs (1979)). Or these results can be explained by the interpretation of the two descriptions in different domains of quantification (see, for instance, Szabó 2000).

## Overall conclusions

- Two typologically different languages w.r.t. the choice of nominal forms and interpretations in preverbal position.
- The use of bare NPs in Russian may be comparable with the use of both definite and indefinite NPs in Catalan in contexts where the referent cannot necessarily be identified as unique or non-unique.
- When the non-uniqueness of the referent is unambiguously established due to the co-presence of a second referent, speakers of both languages under study prefer to use an NP specified for indefiniteness –preceded by an indefinite article in Catalan and by *odin* in Russian.

THANK YOU!

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