(In)definiteness in natural languages
Day 3

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A note on demonstratives

Elbourne (2008) argues that demonstratives are essentially definite DPs:

- They introduce the existential and uniqueness presuppositions.
- They have anaphoric uses.

Special properties:

- Ostension: Demonstrative DPs often rely on ostension/extralinguistic deixis for their reference, as in e.g.(1a). There are interesting cases of "deferred ostension".

(1) a. that dog [pointing at a dog]
     b. That dog [pointing at an empty kennel] is just outside of its kennel, but this dog [pointing at another empty kennel] is very lazy.

A note on demonstratives

Elbourne's analysis: Demonstrative NPs have two additional arguments on top of ordinary definite NPs: an index (an individual variable), and a relational variable that determines the relation between the index (what is being pointed at) and the referent of the NP. The denotation below is a simplification.

(2) $[\![this]\!] = \lambda P.\lambda x.\lambda R.\iota y.P(y)\&R(x,y)$

(3) $[\![$this dog[pointing at a kennel]$]\!] = \iota y.y$ is a dog and y lives in the kennel that I'm pointing at

- Proximity/distality

Macedonian: *ovoj* (proximal), *toj* (medial), *onoj* (distal)

An alternative to the theory of uniqueness

- Familiarity approach
- Christophersen (1939): "Now the speaker must always be supposed to know which individual he is thinking of; the interesting thing is that the *the*-form supposes that the hearer knows it too."
- A major boost to this approach: Kamp (1981) and Heim (1982)
- ▶ Essentially the same idea
- ▶ Certain NPs introduce entities which can be discourse relevant (i.e. they can be referred to in the subsequent discourse)
- ▶ Certain NPs introduce *discourse referents*.

Definiteness and indefiniteness: Heim 1982

- The difference between a definite and an indefinite NP in mini-discourses like (4) is explained as follows:

  (4) A woman sat with a cat on her lap. She stroked the cat and it purred.

- Indefinite NPs: introduce new entities into the discourse.
- Definite NPs: refer to existing discourse entities.
- Both indefinite and definite NPs are non quantificational
  - their meaning is a variable + descriptive content

Definiteness and indefiniteness: Heim 1982

- Discourse: building up a file (metaphor)
  - The variables are indices on file cards representing discourse entities
  - Indefinite NPs: introduce a new variable ("starting a new card")
  - Definite NPs: look for an existing variable ("updating a suitable old card")
    - The descriptive content of the definite NP has to be compatible with the already existing information about the correspondent discourse referent
    - Fully compatible with the presupposition of existence.

Definiteness and indefiniteness: Heim 1982

Difficult cases

(5) Harold bought the/#a first house he looked at.

(6) The instructor assigned the/#some most difficult exercises she could find.

(7) In her talk, Baldwin introduced the/#a notion that syntactic structure is derivable from pragmatic principles.

(8) What's wrong with Bill? Oh, the woman he went out with last night was nasty to him.

(9) Mary's gone for a spin in the car she just bought.

Definiteness and indefiniteness: Heim 1982

- To solve problematic cases accommodation is used.
- Heim's proposal: accommodated entities have to be linked with existing discourse referents.
- ▶ Descriptions referring to unique entities constitute a problem for the familiarity approach.

Insertion: The form of discourse-novel entities in Catalan (experimental)

- Gap-filling: definite or indefinite article.
- We assume that the choice of the form represent the interpretation (from the previous study, definite as unique and indefinite as non-unique).
- The NP in question is discourse-novel; a sentence-initial subjects. It may or may not be uniquely identified in the given contexts.
- Discourse context-referent pairs were labeled as follows: *popular blog – author; local shopping centre – guard; school trip – teacher; butchery – butcher; office – manager; private company – programmer; ambulance – nurse*
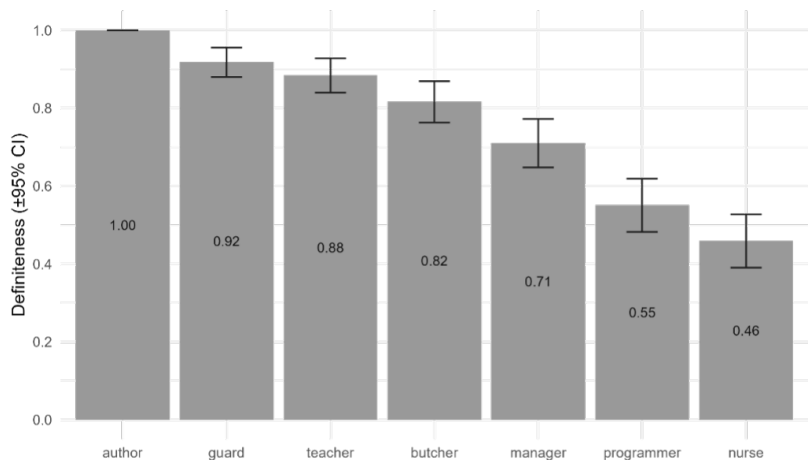
Insertion: The form of discourse-novel entities in Catalan (experimental)

Example item:

(10) En aquesta empresa privada, els deutes salarials van començar a augmentar i els treballadors van començar a anar-se'n. ___ informàtica se'n va anar fa un any i mig. El director general li devia 47.000 euros.

'In this private company the salary debts started to grow, and the workers started to leave. ___ programmer left a year and a half ago. The CEO owed her 47,000 euros.'

Insertion: The form of discourse-novel entities in Catalan (experimental)

Insertion: The form of discourse-novel entities in Catalan (experimental)

- Clear preference for def. NPs in some contexts (*popular blog - author, local shopping center - guard, school trip – teacher*), while in other contexts def. or indef. article can be used (*private company - programmer, ambulance - nurse*).

- The interpretation of "bare" nominal as unique or non-unique (and the subsequent choice of the article) indeed depends on the context, based on the shared beliefs of discourse participants' about the situation.

- A discourse-novel NP can be definite. Accommodation: the link to the previous context (bridging).

Main theories of definiteness

- Uniqueness (Frege, 1892; Russell, 1905; Strawson, 1950, i.a.): exactly one individual satisfying the descriptive content of the NP
  For plurals: inclusiveness/maximality (Sharvy 1980, Link 1983)
  ι/σ-shift

- Familiarity (Christophersen, 1939; Kamp, 1981; Heim, 1982, i.a.), also identifiability: definite article signals that the hearer can identify the referent (due to previous mention, immediate situation, world knowledge...). Familiarity is a particular case of identifiability.

- The two approaches are not mutually exclusive: if the referent is familiar to the speaker and the hearer, it is uniquely identifiable (within a restricted domain).

Determinacy

- Coppock & Beaver (2015) analyze definiteness into two main components: uniqueness and determinacy.

- Definiteness marking is seen as a morphological category that triggers a uniqueness presupposition, while determinacy consists in referring to an individual (i.e. having a type e denotation).

- Definite descriptions typically receive determinate interpretations, but they can be interpreted indeterminately as well!

Indefiniteness

(11)   I just heard the dog bark.

(12)   I just heard a dog bark.

What is the difference?

Indefinites. Distribution

Indefinites vs. quantifiers

- Predicative use

(13) Milou is a nice dog.

(14) *Milou is every dog I've loved.

- Existential constructions

(15) There was a/one book on the table.

(16) *There was each book on the table.

Indefinites. Distribution

Unmarked vs. marked indefinites

- Argument position. Existential interpretation

(17)   a. A dog is barking outside.

          b. Some dog is barking outside.

          c. A certain dog is barking outside.

- Argument position. Generic interpretation

(18)   a. A dog is faithful.

          b. *Some dog is faithful.

          c. *A certain dog is faithful.

- Scopal ambiguities of *a/some*

(19) Every tourist read a/some guidebook.
  - a. every > a/some
  - b. a/some > every

(20) Peter wants to marry a Norwegian...
  - a. so he is going to move to Norway.
  - b. and she's really beautiful.

Main characteristics of indefinites

- Long distance scope

▶ Normally, quantifiers cannot scope out of islands (e.g., relative clauses):

(21)   Mary read a book that every teacher had praised.

only a > every

▶ Indefinite quantifiers, however, seem to be able to have a so-called 'long distance scope':

(22)   Mary read every book that some/a teacher had praised.

inverse scope possible

Main characteristics of indefinites

- Discourse anaphora
- ▶ Some indefinites introduce discourse referents, whereas the others do not (Karttunen 1976):

(23)   a. I owned a car. It was a Ferrari.

          b. I needed a car. *It was a Ferrari.

Some theoretical approaches

- Montague (1974)'s tradition; Barwise & Cooper (1981)
- Indefinites are treated as generalized quantifiers (type $<< e, t > t >$)

(24)   a. A dog barked.

       b. there is a thing x such that it is a dog and it barked

       c. $\exists x(DOG(x) \ \& \ BARKED(x))$

(25)   Any man who owns a donkey beats it.

- 'a donkey' is indefinite
- should be formally represented like an indefinite in (24).
- But the problem is...

Donkey anaphora problem

- Donkey anaphora

(26) a. Any man who owns a donkey beats it.

  b. $\forall x$ [MAN(x) & $\exists y$[DONKEY(y) & OWN(x, y)] $\rightarrow$ BEAT(x, y)]

The variable y is left free in the predicate BEAT(x, y)

- A pre-Heim solution

(27) $\forall x \forall y$[[MAN(x) & DONKEY(y) & OWN(x, y)] $\rightarrow$ BEAT(x, y)]

▶ An indefinite is represented as the universal quantifier, which suggests
  an ambiguity in the interpretation of indefinites.

▶ It's intuitively incorrect.

Some theoretical approaches

- Kamp (1981) and Heim (1982) departed from the logical tradition of treating idefinites as quantifiers. They treat them as individual variables. The quantificational force of indefinites is not intrinsic them.

Donkey sentences

- 'a donkey' refers to any individual having the property of being a donkey, i.e., a random individual is extracted from the set of donkeys.
- The quantificational force of the individual variable 'donkey(x)' is contributed by some element of the context.
- The universal force observed in (26a) is due to the quantified NP 'every man', which binds both *a donkey* and the anaphoric pronoun *it*, which is coindexed with *a donkey*.

Some theoretical approaches

- A choice function approach
- A choice function maps any non-empty set onto an element of that set. It is a function of type $<<e, t>, e>$, which applies to the property denoted by the nominal predicate (of type $<e, t>$) and yields an individual (of type e) that has that property.
    - ▶ Only choice function indefinites (Winter 1997)
    - ▶ Choice function and quantification indefinites (Reinhart 1997)
- The contribution of the indefinite is to introduce a variable over choice functions that gets bound by existential closure, which may apply at various points of the representation. (Examples from Dobrovie-Sorin & Beyssade 2012)

(28) a. A student is absent.

  b. $\exists f$(be-absent (f(student)))

  c. There exists a choice function and the student that this function chooses is absent.

Some theoretical approaches

- Scope ambiguities represented in the choice function approach.

(29)   Every woman read a book.

     a. $\exists f\ [\forall x\ (woman(x) \rightarrow read(x, f(book)))]$

     b. $\forall x\ [woman(x) \rightarrow \exists f\ (read(x, f(book)))]$

Traditional approach (the relative position of the quantifiers accounts for the difference in the interpretation)

(30)   a. $\exists x\ \forall y\ (woman(y) \rightarrow (book(x)\ \&\ read(y,x)))$

       b. $\forall y\ \exists x\ (woman(y) \rightarrow (book(x)\ \&\ read(y,x)))$

Some theoretical approaches

- Superiority of choice function approach: when property denoted by the head noun is empty. E.g., in a world where there are no philosophers, (31a) is undefined and (31b) is true (contra the intuition)

(31)   Max will be furious if I invite a philosopher.

      a. $\exists f$ [invite(I, f(philosopher)) $\rightarrow$ furious(Max)]

      b. $\exists x$ [(philosopher(x) & invite(I, x)) $\rightarrow$ furious(Max)]

Summary

The semantic type of indefinites is an open question!