#### **Modal Indefinites**

Paula Menéndez-Benito

Universitat Pompeu Fabra

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# Roadmap

- 1 Introduction
- Ignorance and Quantity
  Background
  The Lower Bound Contrast
  Accounting for the Lower Bound Contrast
  Interaction with Modals
  Indifference
  Taking Stock
- 3 Plural Epistemic Indefinites

#### Review

- On the analysis of the epistemic effect we have discussed
  - 1. Epistemic effects triggered by indefinites are linked to properties of the domain of quantification.
  - Different properties of the domain may generate different pragmatic competitors, giving rise to different effects.

## Today: Two Case Studies

- Cross-linguistic variation in expressions that convey a 'don't know how many' effect.
- The interaction of algún and plurality.

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# **Epistemic Existentials**

- Epistemic Indefinites: 'don't know who/which'
  - Juan compró algún libro.
     Juan bought algún book.
    - Existential Claim: J. bought a book.
    - → EE: Speaker doesn't know which.
- 2. Epistemic Modified Numerals: 'don't know how many'
  - (2) Juan bought at least two books. (# To be precise, three.)
    - → Existential Claim: There are at least 2 books J. bought.
    - → EE: Speaker doesn't know how many. Maybe 2. Maybe more.

#### Implicature Analyses

- Both types of epistemic effects have been analyzed as quantity implicatures.
- For implicature analyses of epistemic modified numerals see, e.g. Büring 2008, Cummins and Katsos 2010, Schwarz 2013, Cohen and Krifka 2014, Coppock and Brochhagen 2013, a.o.

## **Cross-Linguistic Variation**

- We have seen that epistemic indefinites come in different kinds.
- Today: uncovering variation in the domain of 'don't know how many' epistemic effects.
- Contrasting at least n with the Spanish complex determiner algún que otro (Alonso-Ovalle and Menéndez-Benito 2013).

### Algún que Otro

- Complex Spanish determiner *algún que otro* (literally: *que otro* = 'that other').
  - (3) Juan compró algún que otro libro. # En Juan bought ALGUN QUE OTRO book. In concreto, tres. concrete, three 'Juan bought books. To be precise, three.'
- Existential quantification: Juan bought books.
- → Epistemic effect: The speaker does not know how many.

### Semantically Plural

- Morphologically singular, but semantically plural.
  - (4) Juan compró algún que otro libro. Juan bought ALGUN QUE OTRO book. 'Juan bought books.'

#### **Preview**

- 1. Empirical Claim: Algún que otro differs from at least n in that it does not have a lower bound component.
- 2. Hypothesis: the lower bound contrast can be traced back to the different pragmatic competitors the two items evoke.
- (Alonso-Ovalle and Menéndez-Benito, 2013)
- 3. Open-ended discussion of indifference uses. (From joint presentations with Alonso-Ovalle).

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#### At least n: Lower Bound

- (5) Juan bought at least two books.
  - → According to the speaker,
    - Juan might have bought two books ('lower bound'), and
    - he might have bought more.

#### Algún que otro: No Lower Bound

- (7) Juan compró algún que otro libro. Juan bought ALGUN QUE OTRO book
- Says nothing about the minimum number of books that Juan might have bought.
  - (8) Juan compró algún que otro libro, seguro que no menos de tres/cuatro/cinco . . .
    - 'Juan bought books. Definitely no less than three / four / five...'

#### The Contrast

- (9) How many kilometers are there from Barcelona to Sitges?
- (10) (From Barcelona to Sitges), there are at least 30 kilometres.
- → Speaker considers 30 as a live possibility.
  - (11) # De Barcelona a Sitges hay algún que From Barcelona to Sitges there-is ALGÚN QUE otro kilómetro. OTRO kilometer
- compatible with a variety of scenarios (speaker thinks that from Barcelona to Sitges there are 10 kilometres or more, 20 kilometres or more, 30 kilometres or more . . . )
- → Deviant as an answer to (9).

# Roadmap

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#### The Plan

- To trace back the lower bound contrast between at least n and algún que otro to the pragmatic competitors that these items evoke.
- (Building on previous work that derives the ignorance effect of at least n as an implicature).

## At least *n* (à la Büring 2008)

- (12) Juan bought at least 2 books.
- Assertion (Büring, 2008):
  - (13) J. bought exactly 2 books or more than 2 books.
- (Some) Pragmatic competitors of disjunction:
- (see Sauerland 2004 and cf. discussion in Schwarz 2011)
  - (14) a. Juan bought exactly 2 books.
    - b. Juan bought more than 2 books.

## Pragmatic Reasoning

- Both competitors are stronger than the assertion.
- Why didn't the speaker choose any of them? (Quantity)
- It must be because she lacks enough evidence (Quality).

# Pragmatic Reasoning

- (15) (Primary) implicatures:
  - a. Sp. not certain that J. bought exactly 2 books.
  - b. Sp. not certain that J. bought more than 2.
- (16) By Quality: Sp. is certain that J. bought exactly 2 books or more than 2 books.
- (17) Strengthened meaning: (15) plus (16)
  - a. Sp. thinks J. might have bought 2 books.
  - b. Sp. thinks J. might have bought more than 2.

 $\rightarrow$  Lower bound = 2

#### **Next Up**

- 1. Some arguments that the epistemic effect of *algún que otro* is an implicature.
- 2. Deriving the implicature in a way that will predict the absence of lower bound.

# Arguments for implicature status

- 1. Reinforcements
- 2. Disappearance in DE enviroments

#### Reinforcements

(18) Juan compró algún que otro libro, pero no sé Juan bought ALGÚN QUE OTRO book but not l-know cuántos.

how-many.

'Juan bought books but I don't know how many.'

#### Disappearance in DE contexts

- (19) Todos los profesores que compraron algún que all the professors that bought ALGÚN QUE otro libro presentaron un presupuesto. OTRO book presented a budget 'All the professors that bought books presented a budget.'
- can be uttered by someone who knows which books each professor bought

## Deriving the Implicature

 Extending the account of algún in Alonso-Ovalle and Menéndez-Benito 2008, 2010 to algún que otro adopting an idea explored in Nouwen 2015.

#### Background

- Schwarz (2013) and Nouwen (2015) explore the possibility to achieve a Büring effect by assuming that at least n has
  - 1. exactly-competitors: exactly n, exactly n+1,... and
  - 2. scalar competitors: at least n+1, at least n+2 ...
- Nouwen (2015) motivates the exactly-competitors by applying to at least n the account of algún in AO & MB.
- Our claim: Algún que otro triggers only the exactly competitors.
- This derives an ignorance effect, but no lower bound.

# Algún que Otro

```
(20) [algún que otro]
```

- a.  $\lambda f.\lambda P.\lambda Q.\exists n \in f(\{n: n \geq 2\}) \& |P \cap Q| = n$
- b.  $|f({n : n \ge 2})| > 1$

### Working Through an Example

- (21) Juan compró algún que otro libro. Juan bought ALGÚN QUE OTRO book 'Juan bought books.'
- (22) Juan bought exactly n books  $\& n \in f(\{n' : n' \ge 2\})$
- (23)  $f({n': n' \ge 2})$  is not a singleton.

## **Pragmatic Competitors**

```
(24) a. Juan bought exactly n books & n \in \{2\} b. Juan bought exactly n books & n \in \{3\} c. Juan bought exactly n books & n \in \{4\} d. . . .
```

## Pragmatic Reasoning

- Why didn't the speaker choose the domain {2}, which would have been more informative? (Quantity)
- It must because that she lacks enough evidence (Quality).
- Repeating the reasoning for all the sub-domains: the speaker does not have enough evidence to commit to any of the competitors.

#### **Implicature**

- (25) The speaker is not convinced
  - a. that Juan bought 2 books.
  - b. that Juan bought 3 books
  - c. that Juan bought 4 books
  - d. ...

→ She does not know exactly how many books Juan bought.

#### No Lower Bound Effect

 The implicature we derive for algún que otro is compatible with models where the speaker thinks that Juan might have bought two or more books, three or more books, four or more books, etc...

#### Satisfied Here

 The speaker does not know exactly how many books J. bought but thinks he bought between 3 and 5.

 $w_1$ : Juan bought 3 books

(26)  $w_2$ : Juan bought 4 books

w<sub>3</sub>: Juan bought 5 books

#### **And Here**

 $w_1$ : Juan bought 4 books

(27)  $w_2$ : Juan bought 5 books

w<sub>3</sub>: Juan bought 6 books

#### **And Here**

 $w_1$ : Juan bought 6 books

(28)  $w_2$ : Juan bought 8 books

 $w_3$ : Juan bought 12 books

#### No Lower Bound

 The implicature requires that the number of books that Juan bought varies across the epistemic alternatives of the speaker, but the range of variation is left open.

### **Upshot**

The lower bound contrast between *algún que otro* and *at least n* follows from the different pragmatic competitors these items evoke.

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#### Interaction with Modals

- This account of the lower bound contrasts extends straightforwardly to cases with necessity modals.
- (See paper for discussion of *algún que otro* in possibility sentences).

### Background

- (29) The password must be at least 5 characters long. (Büring, 2008)
- Two readings (Büring, 2008)
  - Ignorance reading: The password is required to be a specific number of characters, but the speaker does not know how many.
  - 2. Authoritative Reading: the password is allowed to have exactly 5 characters and it is allowed to have more.
  - → Permitted lower bound: 5
- Next up: Deriving the authoritative reading in a Büring-style account

# **Assertion and Competitors**

- Assertion (Büring, 2008)
- Competitors (à la Sauerland 2004; see Schwarz 2011).
  - (31) a. ⊡ (the password has exactly 5 characters)
    - b.  $\Box$  (the password has more than 5 characters)

# **Primary Implicatures**

- (32) a. The speaker is not convinced that:

  - b. The speaker is not convinced that:

## Secondary Implicatures

- If the speaker is opinionated . . .
  - - b. The speaker is convinced that not:
      - (the password has more than 5 characters).

## Further strengthening

- If the speaker is well-informed . . .
  - (34) a. not: □ (password has exactly 5 characters)
    - b. not: □ (password has more than 5).
  - (35) a. The password is not required to have exactly 5 characters.
    - b. The password is not required to have more than 5 characters.
- Assertion + Implicature: the password can have 5 characters and it can have more.

### Question for You

- Why can't we go beyond the primary implicatures in the non-modal case?
  - (36) Juan bought at least two books.
  - (37) Assertion: J. bought two books or more.
  - (38) Primary implicatures:
    - a. Speaker is not certain that J. bought two books.
    - b. Speaker is not certain that J. bought more.

### Strange Instructions

- # La contraseña debe tener algún que otro the password must have ALGÚN QUE OTRO carácter. character
- Deviant as an instruction.

# **Oddity Predicted**

- Predicted Interpretation:
  - 1. the password must have characters (trivial), and
  - the number of characters varies across the permitted worlds.
- No indication about the range of characters that the password is allowed to have.
- → Not useful as an instruction.

# **Assertion and Competitors**

#### Assertion

```
(40) \boxdot (The password has exactly n characters & n \in f(\{n' : n' \ge 2\})
```

#### Competitors

```
(41) a. \boxdot (exactly n characters & n \in \{2\}) b. \boxdot (exactly n characters & n \in \{3\}) c. \boxdot (exactly n characters & n \in \{4\}) d. ...
```

### **Implicature**

- Implicature (assuming that the speaker is well informed):
  - (42) a. The password is not required to have exactly two characters,
    - b. The password is not required to have exactly three characters.
    - c. The password is not required to have exactly four characters.
    - d. ...
- Compatible with any model in which the number of characters varies across permitted worlds. For instance...

#### Satisfied Here

 Model 1: the password can only have between 4 and 6 characters.

 $w_1$ : The character has 4 characters

(43)  $w_2$ : The character has 5 characters

 $w_3$ : The character has 6 characters

#### **And Here**

Model 2: the password can only have 6, 8 or 12, characters

 $w_1$ : The character has 6 characters

 $w_2$ : The character has 8 characters

 $w_3$ : The character has 12 characters

# **Upshot**

- Thus: upon hearing (45) the hearer will not know what the allowed range is. Deviant as an instruction.
  - (45) # La contraseña debe tener algún que otro the password must have ALGÚN QUE OTRO carácter. character
- Algún que otro and at least n are expected to contrast sharply in contexts where determining a permitted lower bound is relevant.

### Lower Bound Relevant: Class Syllabus

- (46) The final paper must have at least ten pages.
- → specifies the minimum number of pages (relevant info!)
  - (47) # El trabajo final debe tener alguna que otra the paper final must have ALGUNA QUE OTRA página. page 'The final paper must have pages.'
- → Says nothing about the minimum number of pages.

#### Lower Bound not Relevant

(48) Tienes que comer alguna que otra You-have that eat ALGUNA QUE OTRA verdura. vegetable 'You have to eat vegetables.'

can be used to give advice, assuming that the addressee needs not have very specific information about the range of vegetables he should eat.

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#### Indifference

- (49) a. The host of the show: How many politicians have you dated?
  - b. The diva: Alguno que otro.
- (50) a. L: How many A+ did you get this semester?
  - b. P: Alguna que otra.

# Only Ignorance?

- Is this option available for at least n? (Cf. class discussion)
  - (51) a. The host of the show: How many politicians have you dated?
    - b. The diva: At least three.
  - (52) a. L: How many A+ did you get this semester?
    - b. P: At least two.

# **Deriving Indifference?**

- Our derivation of the ignorance effect
  - Why didn't the speaker utter any of the (stronger) competitors? (Quantity)
  - It must be because she lacks enough evidence (Quality).
- Assumption: cooperativity.
- Suspending the assumption of cooperativity:
  - Why didn't the speaker utter of any of the competitors?
  - Because she prefers not to commit to any of them.
- Note that this inference would not be an implicature, as the underlying assumption is that the speaker is not cooperative.

# **Epistemic Indefinites**

- Epistemic indefinites seem to differ with respect to whether they can signal that the speaker does not want to identify the individual.
  - (53) Juan and Marta are in their office. The phone rings. Juan picks up, and the caller identifies himself as Juan's student, Pedro Martínez.
  - (54) a. Marta: Who called?
    - b. Juan: Oh, (just) some student.
    - c. Juan: #Oh, algún estudiante.
      - Oh, ALGÚN student

How can we account for this contrast?

#### **Another Issue**

- When uttered by, e.g., a war correspondent, (55) is odd, but (57) is fine.
  - (55) # Ha habido algún que otro muerto.

    Has been ALGÚN QUE OTRO dead

    'There have been casualties.'
  - (56) There have been at least two casualties.
- (Rough) intuition: (55) conveys some sort of indifference on the part of the speaker. Odd in the given context.

#### **Another Issue**

But if we can derive both indifference and ignorance, why can't *algún que otro* simply convey ignorance in cases like (57)?

(57) # Ha habido algún que otro muerto. Has been ALGÚN QUE OTRO dead 'There have been casualties.'

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## **Taking Stock**

- At least n contrasts with algún que otro in that the latter does not convey a lower bound component.
- Claim: the lower bound contrast results from the different types of alternatives that these items invoke.
- More work on the indifference effect is needed.

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# The Puzzle of Plurality

• The plural of algún, algunos, does not signal ignorance.

### The Plural: No Epistemic Effect

- (58) María vive con algunos estudiantes, en concreto María lives with ALGUNOS students, namely con Pedro, Juan y Carlos. with Pedro, Juan and Carlos 'María lives with some students, namely Pedro, Juan, and Carlos.'
- (59) a. María vive con algunos estudiantes.

  María lives with ALGUNOS students

  'María lives with some students.'
  - b. ¿Con quién?
    With whom?

# Next Up

• Alonso-Ovalle and Menéndez-Benito 2011 on algunos.

#### **Preview**

- In the account we have presented, the epistemic effect of algún comes about via competition with alternative assertions.
- Null hypothesis: algún and algunos only differ with respect to the semantics of number.
- The interaction of plurality with the anti-singleton constraint will block the pragmatic competition. As a result, the epistemic effect will not arise.

# Assumption 1: Ontology (Link 1983)

- D<sub>e</sub>, the domain of individuals, contains both atomic individuals (Juan, Pedro) and plural individuals (sums of atomic individuals: Juan ⊕ Pedro).
- *D<sub>e</sub>* is closed under sum formation (Link, 1983).

### **Assumption 2: Plural Noun Phrases**

 Plural NPs are number-neutral (see, e.g., Schwarzschild (1996), Sauerland et al. (2005) and references therein.)

```
(60) [students]^w =

\begin{cases}
    Juan \oplus Pedro \oplus Sara \\
    Juan \oplus Pedro, Juan \oplus Sara, Pedro \oplus Sara, \\
    Juan, Pedro, Sara
\end{cases}
```

## **Assumption 3: Plural Determiners**

- Algunos introduces a plurality requirement (Martí, 2008).
- But cf. Martí 2015 for a different view.
- Putting this together with the claim that this determiner requires an anti-singleton subset selection function:

(61) 
$$[algunos] = \lambda f.\lambda P_{\langle e,t\rangle}: |f(P)| > 1.\lambda Q_{\langle e,t\rangle}.\exists x[|x| > 1\& (f(P))(x) \& Q(x)]$$

#### Working Through An Example

- (62) a. María vive con algunos estudiantes. María lives with ALGUNOS students. 'María lives with some students.'
  - b. In all accessible worlds, María lives with at least one group of students in the contextually restricted domain of students picked out by *f*.
  - c. Anti-singleton constraint:  $|f(\llbracket estudiantes \rrbracket^w)| > 1$
  - (Assuming the covert assertoric operator).

#### The Plan

- First, we will determine the possible assertions that our example can make.
- Next, we will determine what the potential pragmatic competitors are.
- We will show that none of these potential pragmatic competitors constitute viable alternative assertions.
- As a result, no pragmatic competition will arise.

#### What are the Possible Assertions?

- (63) María lives with at least one group of students in the contextually restricted domain of students picked out by *f*.
- The possible assertions correspond to the possible ways of restricting (64) (possible values for f).

#### What Are the Possible Assertions?

- What are the possible values for  $f(\llbracket estudiantes \rrbracket^w)$ ?
- The set of subdomains of [estudiantes]<sup>w</sup> contains 127 (2<sup>7</sup> – 1) elements.
- The anti-singleton constraint requires  $f([estudiantes]^w)$  to contain more than one member.
- Three types of subdomains meet this requirement.
  - 1. Subdomains that contain only singularities, (e.g., {Juan, Pedro}).
  - 2. Subdomains that contain both singularities and pluralities (e.g., {Juan, Pedro, Juan⊕Pedro}).
  - Subdomains that contain only pluralities (e.g. {Juan⊕Pedro, Pedro⊕Sara}).

# Subdomains with Only Singularities

- The subdomains that contain only singularities give rise to a contradiction:
  - (65) In all acc. worlds, there is a plural individual x in {Juan, Pedro} such that María lives with x.
- These subdomains can be excluded as possible values for f([estudiantes]]<sup>w</sup>).

#### Mixed Subdomains

- What about the 'mixed' subdomains like {Juan, Pedro, Juan⊕Pedro})?
- The atomic individuals in these domains do not make a truth-conditional difference, since the existential quantifier contributed by algunos ranges only over pluralities.

#### Mixed Subdomains

- For instance, the domain {Juan, Pedro⊕Juan} yields the same proposition as the domain {Pedro⊕Juan}.
  - (66) a. In all acc. worlds , M. lives with a plural individual in {J, P⊕J}
    - In all acc. worlds, M. lives with a plural individual in {P⊕J}
- Note: the domain {Juan, Pedro⊕Juan} is a licit (non-singleton) domain, even though it yields the same proposition as the illicit (singleton) domain {Pedro⊕Juan}.

# **Taking Stock**

- To determine the propositions generated by the 'mixed' subdomains, we need only consider the plural individuals.
- As there are 15 combinations of pluralities, we get 15 propositions.
- Some of these 15 propositions are logically equivalent.
- 8 logically distinct propositions.
- The non-singleton domains containing only pluralities do not add any new propositions to the set.

#### Possible Assertions

- In all accessible worlds . . .
  - 1. M. lives with somebody in  $\{J\oplus,P,J\oplus S,P\oplus S\}$
  - 2. M. lives with somebody in {J⊕ P, P⊕S}
  - 3. M. lives with somebody in {J⊕S, P⊕S}
  - 4. M. lives with somebody in {J⊕P, J⊕S}
  - M. lives with somebody in {J⊕P}
  - 6. M. lives with somebody in {P⊕S}
  - 7. M. lives with somebody in {J⊕S}
  - 8. M. lives with somebody in {J⊕P⊕S}

### The Privacy Principle

- Crucially, the hearer does not necessarily know which of these propositions the speaker intended to assert (she does not have to know what value for f the speaker has in mind.)
- The Privacy Principle: Quantifiers can be felicitously used even if the hearer cannot recover the extension of the implicit restriction (Schwarzschild, 2002).

# The Privacy Principle

(67)Me and my partner Fleisch went into debt; serious debt and to some not very nice people. I got an idea that I could sell that old fish farm I have back home and maybe raise a few bucks. I call a lawyer and she tells me: "You can only sell the farm, if all of your relatives die." Since I haven't heard about any genocidal maniacs recently, I give up on that idea. Meanwhile, I relate the story to Fleisch who is more desperate than I am. He asks who's included in "all your relatives"? I say I don't know exactly, but the devilish look in his eves tells me I better go back to the lawyer to find out. (Schwarzschild, 2002)

# What Are the Pragmatic Competitors?

- Following what we said for algún, the pragmatic competitors would in principle be the propositions resulting from restricting the domain to a singleton set.
- These propositions, however, do not constitute viable competitors in the case of algunos.

# What Are the Pragmatic Competitors?

- Two types of singleton domains to consider:
  - 1. Singleton domains containing one atomic individual.
  - 2. Singleton domains containing one plural individual.

- The singleton domains containing just one atomic individual give rise to a contradiction.
  - (68) In all accessible worlds, there is a plural individual x in {Juan} such that María lives with x.
- Hence, the hearer will not consider these as potential alternative assertions.

 What about the singleton domains containing one plural individual?

```
1. { Juan ⊕ Pedro }
```

- 2.  $\{ Sara \oplus Pedro \}$
- **3**. { Sara ⊕ Juan }
- 4. { Juan ⊕ Sara ⊕ Pedro }

- 1. In all acc. worlds, M. lives with somebody in  $\{J \oplus P\}$
- 2. In all acc. worlds, M. lives with somebody in  $\{S \oplus P\}$
- 3. In all acc. worlds, M. lives with somebody in  $\{S \oplus J\}$
- 4. In all acc. worlds, M. lives with somebody in  $\{J \oplus S \oplus P\}$

- Recall: For each illicit (singleton) domain containing only a plural individual a ⊕ b, there are several licit (non-singleton) domains containing that individual and one or more atomic individuals (e.g., {a, b, a ⊕ b}, {a, a ⊕ b}...).
- Adding the atomic individuals allows us to circumvent the anti-singleton constraint, yielding a possible assertion.
- But, as algunos ranges only over plural individuals, this does not have any truth conditional import!

- As we have seen, the (licit, non-singleton) domain {Juan, Pedro⊕Juan} would yield the same proposition as the (illicit, singleton) domain {Pedro⊕Juan}.
  - (69) a. In all acc. worlds, M. lives with a plural individual in {J, P ⊕ J}
    - In all acc, worlds, María lives with a plural individual in {P⊕J}
- More generally, any domain of the form {a<sub>1</sub>...a<sub>n</sub>, d}, where {a<sub>1</sub>...a<sub>n</sub>} are atomic individuals and d a plural individual, yields the same proposition as the domain {d}.

- Each of the potential competitors that result from restricting the domain to just one plural individual corresponds to a possible assertion.
- The Privacy Principle: the hearer does not have to know what proposition the speaker intended to assert.
- The hearer won't be able to rule out any of these potential competitors.
- Any of them could have been the proposition intended by the speaker!

### **Upshot: No Epistemic Effect**

- Potential competitors: propositions that arise from restricting the domain to a singleton.
- But these propositions are not viable competitors.
- Restricting the domain to just one atomic individual yields a contradiction.
- Restricting the domain to just one plural individual yields a possible assertion.
- Since sentences with algunos do not have pragmatic competitors, no epistemic effect is expected.

# Taking Stock: The Puzzle of Plurality

- The Puzzle: Algún signals ignorance; algunos doesn't.
- Null hypothesis: algún and algunos differ only with respect to number morphology.
- The epistemic effect of algún arises because this item imposes an anti-singleton constraint on its domain.
- The interaction of the anti-singleton constraint with plurality blocks the epistemic effect.

#### To Read

- Martí (2015) puts forward an account in which the domain of algún contains atomic and plural individuals, while the domain of algunos contains only plural individuals.
- She notes that her analysis is incompatible with the account in AO & MB 2010, 2011. Under her assumptions
  - The ignorance effect of algún gets blocked (as in our proposal for algunos).
  - An unattested ignorance effect is predicted when algunos combines with collective predicates (see Alonso-Ovalle and Menéndez-Benito 2011).

#### **Tomorrow**

- Assessing the implicature account.
- Exploring an alternative proposal.

<ul> <li>The slides for this course are heavily based on a number joint presentations with Luis Alonso Ovalle.</li> </ul>	er of

# **Funding**



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#### References I

- ALONSO-OVALLE, Luis and MENÉNDEZ-BENITO, Paula (2008). Minimal Domain Widening. In Natasha Abner and Jason Bishop (eds.), Proceedings of the 27th West Coast Conference on Formal Linguistics. Somerville, MA: Cascadilla Proceedings Project, 36 – 44.
- ALONSO-OVALLE, Luis and MENÉNDEZ-BENITO, Paula (2010). Modal indefinites. *Natural Language Semantics*, 18(1):1–31.
- ALONSO-OVALLE, Luis and MENÉNDEZ-BENITO, Paula (2011). Domain Restrictions, Modal Implicatures and Plurality: Spanish *algunos. Journal of Semantics*, 28(2):211–240.
- ALONSO-OVALLE, Luis and MENÉNDEZ-BENITO, Paula (2013). Modal Determiners and Alternatives: Quantity and Ignorance Effects. In Todd Snider (ed.), *Proceedings of the 23rd Semantics and Linguistic Theory Conference*.
- BÜRING, Daniel (2008). The least at least can do. In C. B. Chang and H. J. Hayne (eds.), *Proceedings of the 26th West Coast Conference on Formal Linguistics*. Somerville, MA: Cascadilla Press.
- COHEN, Ariel and KRIFKA, Manfred (2014). Superlative Quantifiers and Meta Speech Acts. *Linguistics and Philosophy*, 37(1):41–90.

#### References II

- COPPOCK, Elizabeth and BROCHHAGEN, Thomas (2013). Raising and resolving issues with scalar modifiers. *Semantics and Pragmatics*, 6(3):1–57.
- CUMMINS, Chris and KATSOS, Napoleon (2010). Comparative and superlative quantifiers: Pragmatic effects of comparison type. *Journal of Semantics*, 27:271–305.
- LINK, Godehard (1983). The Logical Analysis of Plural and Mass Terms: a Lattice-Theoretical Approach. In C. Schwarze R. Bäuerle and A. von Stechow (eds.), *Meaning, Use and Interpretation of Language*. de Gruyter, 302–323. Reprinted in: G. Link *Algebraic Semantics in Language and Philosophy*. Stanford, CA: CSLI Publications, 1988, 77-88.
- MARTÍ, Luisa (2008). The Semantics of Plural Indefinite Noun Phrases in Spanish and Portuguese. *Natural Language Semantics*, 16(1):1–37.
- MARTÍ, Luisa (2015). The morphosemantics of Spanish Indefinites. In *Proceedings of SALT 25*.
- Nouwen, Rick (2015). Modified numerals: the epistemic effect. In Luis Alonso-Ovalle and Paula Menéndez-Benito (eds.), *Epistemic Indefinites*. Oxford University Press, 244–266.

#### References III

- SAUERLAND, Uli (2004). Scalar Implicatures in Complex Sentences. *Linguistics and Philosophy*, 27(3):367–391.
- SAUERLAND, Uli, ANDERSSEN, Jan, and YATSUSHIRO, Kazuko (2005). Linguistic Evidence. In Stefan Kepser and Marga Reis (eds.), *Linguistic Evidence. Empirical, Theoretical and Computational Perspectives*. Berlin: de Gruyter, 409–430.
- SCHWARZ, Bernhard (2011). Remarks on Class B Numeral Modifiers. Handout for a talk given at the workshop *Indefinites and Beyond*, University of G"ottingen, November 18-19, 2011.
- SCHWARZ, Bernhard (2013). Ignorance Implicature and Symmetry. Talk presented at the workshop *Exploring the Interfaces 2: Implicarures, Alternatives, and the Semantics/Pragmatics Interface*, McGill University, May 22-24, 2013.
- SCHWARZSCHILD, Roger (1996). *Pluralities*. Dordrecht: Kluwer Academic Publishers.
- SCHWARZSCHILD, Roger (2002). Singleton Indefinites. *Journal of Semantics*, 19(3):289–314.