

Restoring indefinites to normalcy: an experimental study on the scope of Spanish *algunos*

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ABSTRACT. It is widely assumed that the scope of indefinites is island insensitive, i.e., that, generally, an indefinite inside of a syntactic island, such as an adjunct clause, is capable of taking scope outside of that island. This paper challenges this assumption by studying the scope behavior of the Spanish plural indefinite *algunos* (roughly, ‘some (pl.)’). It presents an experimental study that shows that the scope of *algunos* is not free and depends on its syntactic environment, at least in the dialect of Spanish studied here. The paper discusses some of the implications of the study for current theories of indefinite scope: it points out the problems that choice functions and singleton indefinites have with the Spanish data, and it also discusses the implications for Schwarzschild’s (2002) solution to the so-called “Donald Duck” problem.

1 INTRODUCTION

Consider the English indefinites in (1) (italicized):

- (1) a. John gave an A to every student [who recited *a difficult poem by Pindar*] (Farkas 1981)
- b. [If *some relative of mine* dies], I will inherit a house (Reinhart 1997)
- c. Mary dates exactly half the men [who know *a producer I like*] (Fodor and Sag 1982)

A well-known claim is that indefinite noun phrases inside syntactic islands can take scope outside of them. (1a), with the indefinite inside a relative clause, is claimed to have a reading in which there is this one difficult poem by Pindar such that John gave an A to every student who read it; (1b), with the indefinite inside an *if*-clause, is taken to suggest that there is this one relative of mine such that, if s/he dies, I will inherit a house; and (1c), again a case with a relative clause, is claimed to be true in a situation in which Mary dates less than half of the men who know a producer I like, as long as she still dates exactly half of the men who know the same producer. In all of these readings, the indefinite takes scope outside the bracketed phrase. I refer to such readings as wide scope readings, even though sometimes they have been argued to be cases of apparent wide scope readings, and non-scopal analyses have been proposed for them (see section 2 for more discussion on this).

The examples in (1) are taken to contrast with those in (2), where instead of an indefinite, quantifiers like *every new patient* or *most of my relatives* appear in similar contexts:

- (2) a. A doctor will examine [the possibility that we give *every new patient* a tranquilizer]
- b. [If *most of my relatives* die], I will inherit a house (Reinhart 1997)

Neither *every new patient* nor *most of my relatives* can take scope outside the complex NP or the *if*-clause, respectively. Complex NPs and *if*-clauses are islands for overt syntactic movement as well:

- (3) a. *Which patients will a doctor examine [the possibility that we give a tranquilizer]?
 b. *Which patients should a doctor worry [if we sedate]? (Reinhart 1997)

The conclusion drawn in the literature is that the mechanism that generates indefinite wide scope is not the same as the mechanism that generates the scope of quantifiers like *every new patient*. What this other scope-providing mechanism is is a question open for debate and there are several proposals in the literature: choice functions (see Reinhart 1997 and others), singleton indefinites (Schwarzschild 2002), referential indefinites (Fodor and Sag 1982), specific indefinites (van Geenhoven 1998, Geurts 1999), etc. None of these mechanisms is naturally amenable to a modification that makes them sensitive to syntactic islands. In fact, that they are not naturally so is taken to be advantageous, given (1)-(3). Some of these accounts are discussed in more detail in section 2 of this paper.

The material in the paper comes from an experiment that was designed to test the hypothesis that the scope of indefinites is unconstrained syntactically. The experiment tested, in particular, whether the scope of Spanish *algunos* (roughly, ‘some (pl.)’)¹ is sensitive to syntactic islands such as *if*-clauses, *wh*-clauses, relative clauses or coordinations. We will see that for a group of speakers of Spanish from the Madrid (Spain) area, the scope of the plural indefinite *algunos* is indeed syntactically constrained. I do not challenge the generalizations concerning the English examples in (1) or comment on the status of *algunos* in other dialects of Spanish but, given the results obtained here, I do think that better testing needs to be done in other languages and in other dialects.

The organization of the paper is as follows. Section 2 discusses some of the theories currently entertained in the account of indefinite wide scope. Section 3 presents some background information on the meaning of *algunos*. It also contains a brief discussion of the phenomenon tested in the experiment. The experiment itself is described in detail in section 4. The results are summarized in section 4.2. What these results mean for the theories in section 2 is discussed in section 5. Section 6 is the conclusion.

2 THEORIES OF INDEFINITE WIDE SCOPE

If the wide scope of indefinites is not constrained syntactically, it is not desirable to use syntactic mechanisms such as Quantifier Raising (QR) to account for their wide scope. If we did, then we would have to explain why this mechanism is sensitive to islands in cases such as (2) but not in cases such as (1), and why the operation behaves differently from other syntactic operations such as those exemplified in (3).² In this section I consider some of the alternatives to QR/movement that have been pursued in the literature. I do not attempt to be thorough in this brief review. Instead, I concentrate on two accounts: the choice function account and the singleton indefinite account. I discuss the choice function account because it is a good example to show how syntactically insensitive theories of indefinite wide scope fail in the account of the scopal behavior of *algunos*. I discuss the singleton indefinite account

¹ *Algunas* in the feminine.

² See Reinhart (1997) for a very helpful exposition of this argument.

because it is a good example to show how linking indefinite wide scope to other grammatical phenomena is problematic. Section 2.3 points out briefly where in the logical space other theories of indefinite wide scope are located.

2.1 Choice function indefinites

Reinhart (1997) and Winter (1997) propose to use choice function variables in the account of wide scope indefinites. The important point about this kind of account is that the existential closure of these variables is not sensitive to syntactic islands, they can be closed off at any point in the derivation.³ Let us consider what a choice function approach to the semantics of *algunos* would say.⁴ This analysis says that *algunos* denotes a choice function variable, of type $\langle\langle e, t \rangle, e \rangle$, which takes a (non-empty) set of plural individuals and returns one of these pluralities as output.⁵ The denotation of *algunos niños* ‘*algunos* children’, would be as in (4):

- (4) $[[\text{algunos niños}]] = f([[\text{niños}]]) = \text{a plural individual with children as singular subparts}$

This choice function variable can be existentially closed at any point in the derivation. If it is closed off outside of a syntactic island, we get a reading for the indefinite in which it scopes outside of that island; if it is closed off inside of the island, a narrow scope reading is obtained instead.

This approach predicts that wide scope readings should be possible for *algunos* outside all sorts of islands, since the process of existential closure of choice function variables is not sensitive to islands. The (rough) LF for the embedded clause of example (5), similar to some of those used in the experiment described later in section 4, is in (6a), giving rise to the (rough) truth-conditions in (6b):

- (5) Estela le dijo que [le mataría si se llevaba *algunas* joyas]
 clitic said that clitic would.kill if clitic took jewels
 ‘Estela said she would kill him if he took *algunas* jewels’
- (6) a. $[\exists f[\text{if take (he, } f(\text{jewels})), \text{kill (Estela, him)}]]$
 b. $\exists f[\text{CH}(f) \ \& \ (\text{take (he, } f(\text{jewels}))) \rightarrow \text{kill (Estela, him)}]$

The sentence is predicted to give rise to the meaning “there is a choice function f such that Estela said that if the singular subparts of the plurality of jewels that it selects are taken by

³ Matthewson (1999) has argued instead that choice function variables are always given maximal scope. For Kratzer (1998), (Skolemized) choice function variables are free. Chierchia (2001) and Schwarz (2001) are recent discussions of the problems and advantages of these various possibilities. All of these approaches belong to the same camp in this paper, since they all use choice function variables. Geurts (1999, 2000) discusses certain problems with choice functions.

⁴ Gutiérrez-Rexach (1999a, b) pursues such an analysis for *algunos*.

⁵ I simplify and assume that in this account *niños* ‘children’ denotes a set of plural individuals. For reasons independent of the issue at hand, it is better to say that *niños* denotes a set of singular and plural individuals. This detail is orthogonal to the issue discussed in this section.

him, she kills him” (we will see that this is an incorrect prediction of this approach). For the narrow scope reading, the analysis is as in (7):

- (7) a. [if $\exists f$ take (he, f(jewels)), kill (Estela, him)]
b. [[$\exists f$ CH(f) & take (he, f(jewels))] \rightarrow kill (Estela, him)]

This reading can be paraphrased as follows: “Estela said that she would kill him if he took some jewels or other” (the existence of this reading is not under debate).

2.2 Singleton Indefinites

Schwarzschild (2002) argues that indefinites are special quantifiers in that their domain of quantification (i.e., their contextual restriction) can be a singleton set.⁶ Indefinites don’t move, and, when their domain is not a singleton, they give rise to narrow-scope readings. When their domain is a singleton, we get (the appearance of) wide scope. Consider the English sentence in (8), with the indefinite *some relative of mine* embedded inside of an *if*-clause:

- (8) If *some relative of mine* died this year, I will inherit a house

The prediction of this account is that (8) should give rise to a wide scope reading as in (9):

- (9) [$\exists x x \in C$ & x is a relative of mine & x died this year] \rightarrow I will inherit a house
 C is a singleton set containing a contextually-salient individual

In (9), the indefinite *some relative of mine* does not move out of the syntactic island. The trick is in C being restricted to contain a single individual⁷: there has to exist this unique, contextually salient relative of mine who died this year for me to inherit the house. Not any relative of mine makes this reading true, which suggests that this is not a narrow scope reading. In fact, it is equivalent to a wide scope reading of the indefinite. If, on the other hand, the domain of quantification happens not to be restricted to a singleton, then any relative of mine counts and we obtain a narrow scope reading of the indefinite.

Importantly, Schwarzschild argues that the assumption that the domain of indefinites can be a singleton set is needed independently. It has been known at least since Heim (1982) that simple existential quantification outside of islands is not enough; this is known since Reinhart (1997) as the “Donald Duck” problem. One of the things that choice functions do is “pull out” the restriction of the indefinite from the island, which begins to address the problem (cf. (6b)). However, Schwarzschild argues that that is still not enough. To see why this is so, consider the wide scope paraphrase of (8) in (10). In this paraphrase, the overt restriction of the noun has been “pulled out” from inside the island, which is what choice function variables do:

- (10) I have some relative such that if s/he died this year, I will inherit a house

⁶ Breheny (2003) makes a proposal that is in some ways very close to Schwarzschild’s.

⁷ This would be a single plural individual in the case of a plural indefinite.

(10) is not immediately true if some individual or other exists (e.g., Donald Duck, who is not a relative of mine). This is an improvement over the analysis in which all that there is existential quantification outside of the *if*-clause, with the noun restriction remaining inside the island. However, (10) is true as long as I have some relative who did not die this year, which is still too weak. If the domain restriction of *some* is a singleton set, however, only the relative in the domain restriction of the quantifier counts. The individual in that set must be contextually salient, and the relative of mine who died this year is such an individual.^{8,9}

2.3 Other theories of indefinite wide scope

Mechanisms other than those described in sections 2.1 and 2.2 have been proposed to deal with wide scope indefinites. All of these other accounts share with choice function indefinites and singleton indefinites a crucial property: they are developed on the basis of the assumption that indefinite wide scope is not sensitive to syntactic islands and, hence, are not easily amenable to a state of affairs in which the wide scope of indefinites is sensitive to them.

For example, Fodor and Sag (1982) claim that free indefinite wide scope is the result of these indefinites being interpreted referentially, which makes them insensitive to the presence of other scope-bearing elements in the sentence and to the syntactic environment.¹⁰ For van Geenhoven (1998) and Geurts (1999), free indefinite wide scope is the result of these indefinites being interpreted specifically, where specificity is treated together with presupposition projection.¹¹ In this kind of account, presupposition projection and hence specificity are treated as pragmatic phenomena, and so again sensitivity to the syntactic environment is lost. One important aspect of these accounts is that they put a significant burden of explanation in the pragmatics, whereas the accounts discussed in sections 2.1 and 2.2 would seem to assign the crucial job to the semantics. In all of these cases, what is crucial, again, is that the syntax is not involved.

In section 5, I return to the problems that the data on *algunos* raises for the accounts in sections 2.1 and 2.2 only.

⁸ See Schwarzschild (2002: §5) for notes on how to draw the distinction between the domain restriction of indefinites and that of other quantifiers.

⁹ See Haida (2003) for another way of showing that the “Donald Duck” problem does not go away with the help of choice functions.

¹⁰ Actually, Fodor and Sag draw a distinction between wide scope readings and referential readings, but the two are close enough for our purposes here.

¹¹ Again (cf. footnote 10), it is not completely accurate to say that these authors equate indefinite wide scope with specificity. It is quite difficult to distinguish specificity (or referentiality in the sense of Fodor and Sag 1982, for that matter) from indefinite wide scope. As before, the two kinds of interpretations are close enough for our purposes. Or, in other words, it is relevant to discuss these theories here because, if specificity (or referentiality) and indefinite wide scope are actually the same thing, then these theories provide mechanisms to deal with indefinite wide scope and hence the issue of whether they can explain the wide scope possibilities of *algunos* arises.

3.1 *Background information on ‘algunos’*

Algunos is a plural indefinite determiner that has the following characteristics:¹² it can appear in existential sentences ((11)), it is semantically plural ((12)), it necessarily takes scope above sentential negation ((13)), it induces a partitive effect ((14)) and it can have event distribution readings ((15)):

- (11) Hay *algunos* libros sobre la mesa
‘There are *algunos* books on the table’
- (12) John: ¿Viste a *algunos* niños jugando en el patio?
‘Did you see *algunos* children playing in the garden?’
Mary: #Yes, I saw one/No, I saw only one (based on Laca 1996: 243)
- (13) A la reunión no vinieron *algunos* profesores
‘To the meeting there didn’t come *algunos* teachers’
- (14) *Algunos* estudiantes vinieron ayer a verme.
‘*Algunos* students came to see me yesterday’
- (15) *Algunos* estudiantes vinieron ayer a verme. ✓Lo hicieron uno a uno.
‘*Algunos* estudiantes came to see me yesterday. They did so one by one’

(12) is a question about a plurality of children and hence it cannot be answered in the positive if all that you saw was one child. (13) is impossible if no teachers came, something which would be allowed if the sentence had a narrow scope reading. (14) is felicitous in a scenario in which some though not all the students came to see me. In (15), there are different events of coming to see me, one for each student. Some of these properties become very clear when one compares the behavior of *algunos* with that of *unos*, another plural indefinite in the language. For example, *unos* cannot replace *algunos* in (14) (in the partitive scenario) or (15) (though it can in (11) and (12) without any apparent change in meaning). It is hard to say what the best translation into English is for *algunos*, so I have left it untranslated in the glosses, though it is possible sometimes to translate it as English *some*. I assume that *algunos* is an existential generalized quantifier that operates on plural individuals and that induces a partitive implicature.

In the experiment described below, the (im)possibility of event distributivity is used in some of the test items to draw conclusions about scope. Hence, it is important to be clear about how I assume event distribution readings are generated.

I take verbal predicates to contain an event argument (cf. Davidson 1967, Parsons 1991, and many others). The denotation assumed here for, e.g., *vinieron* ‘came (pl.)’, is as in (16):

- (16) $[[\text{vinieron}]] = \lambda x. \lambda e. \text{came}(x)(e)$

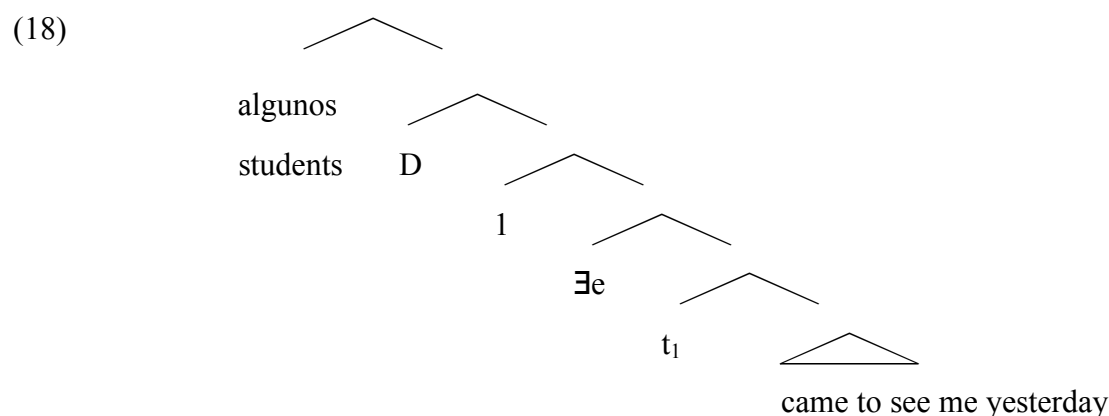
¹² For a more thorough description, see Martí (under review).

The event argument does not generally get saturated but is existentially bound at some point in the derivation, following standard practice (for a recent discussion, see Chung and Ladusaw 2004).

In order to account for event distributivity, I use a D-operator that can be inserted in the syntax anywhere it is type-wise compatible (c.f. Landman 1989, Link 1983, Roberts 1987, Schwarzschild 1996, Beck 2000, among others). The contribution of the D-operator is in (17):

$$(17) \quad [[D]] = \lambda f_{\langle e, t \rangle}. \lambda x. \forall y [(sing\ ind(y) \ \& \ y \leq x) \rightarrow f(y)]$$

What the D-operator does is collect into a set all of those individuals whose singular parts are such that they apply to a predicate like *vinieron*. Since *vinieron* comes with an event variable, what it will do is collect plural individuals into a set and then it will express that for each of their singular subparts, there is an event in which each singular part came. This gives us event distribution when the events chosen for each singular subpart are different. I propose an LF like that in (18), where the *algunos* phrase has moved above D. The truth-conditions we obtain are in (19):



$$(19) \quad [[algunos\ students\ came\ to\ see\ me\ yesterday]] = 1 \text{ iff there is a plural student individual } x \text{ and for all of its singular subparts } y, \text{ there is an event } e \text{ such that } y \text{ came to see me yesterday in } e$$

Even though the experiment reported below did not test for non-event-distribution readings, I think it is fairly uncontroversial that a sentence like *algunos estudiantes vinieron ayer a verme* can also be true in a situation in which there is a single event of coming for all of them; i.e., they all came at the same time.¹³

Event distributivity is, then, a case of scope: it is obtained whenever *algunos* scopes above the D-operator and the point at which event variables are existentially bound.

¹³ In this case, we have two ways of predicting truth: via the narrow scope LF, and via the wide scope LF (when the events chosen for all the coming students are the same event).

3.2 *The phenomenon: wide and narrow scope readings of ‘algunos’*

In this section I go through the wide and narrow scope readings that the sentences included in the experiment could in principle give rise to. I do this because it is necessary to be very clear about what these sentences can potentially tell us about the scope possibilities of *algunos*. Consider again (5), repeated as (20):

- (20) Estela le dijo que le mataría si se llevaba *algunas* joyas
'Estela said she would kill him if he took some jewels'

There are two kinds of readings that this sentence could in principle have, depending on the scope relation between *algunas joyas* ‘*algunas* jewels’ and *si* ‘if’. The wide scope reading of *algunas joyas* can be paraphrased as follows: “Estela said that a particular group of jewels *x* is such that she would kill him if he took *x*”. In this reading, it is not enough to take just any jewels to satisfy the antecedent of the conditional; only taking certain jewels does.¹⁴ On the other hand, in the narrow scope reading, which can be paraphrased as “Estela said that she would kill him if he took some jewels or other”, taking any jewels is enough to satisfy the antecedent of the conditional. The two readings are logically independent. Notice that the *algunos* NP is embedded inside of an adjunct clause. It is particularly important to consider *if*-clauses in the context of this paper because *if*-clauses have traditionally been taken to allow wide scope readings for indefinites (recall sections 1 and 2) but, at the same time, they are adjunct clauses, and hence they are strong islands for syntactic movement.

Consider next the cases exemplified in (21) and (22):

- (21) Preguntó que cuándo se habían marchado *algunos* invitados
 asked that when clitic had left guests
 ‘He asked when some guests had left’
- (22) Dijo que Teresa San Juan y *algunos* hombres habían atracado
 said that and men had robbed
 el Deutsche Bank
 the
 ‘He said that Teresa San Juan and some men had robbed the Deutsche Bank’

(21) is a case in which an *algunos* phrase is embedded inside of a *wh*-island. *Wh*-islands, especially those in which the *wh*-word is argumental, as in this case, are weak islands for the movement of arguments. Overt extraction in these cases usually results in slight unacceptability, if at all. (22) embeds *algunos hombres* ‘*algunos* men’ inside of a coordination, a strong island for syntactic movement. (23) summarizes the different possibilities that the account of event distributivity assumed here (see section 3.1) affords us for these two cases (and for the first sentence in (15)):

¹⁴ This is a collective wide scope reading. In principle, a second kind of wide scope reading, a distributive one, could be available. See footnote 17.

- (23) a. *algunos* scopes above $\exists e$; D-operator used
 if different events are chosen \rightarrow different leavings/robblings (wide scope reading)
 if same event is chosen \rightarrow same leaving/robbing (narrow scope reading)
 b. *algunos* scopes below $\exists e$; no D-operator used
 same leaving/robbing (narrow scope reading)

Assuming that time is a necessary criterion for event identification, the important thing to notice is that, even though there is an implication relation between the wide scope reading and the narrow scope reading, only the wide scope case can match the situation in which there are different leavings/robblings. If all we generated was an LF according to (23b), we would not be able to predict that a sentence like (15) can be true in a situation in which different students came to see me at different times.

I assume time to be crucial in event identification in these cases, and emphasis on this is placed in the contexts provided in the experiment. A reviewer challenges this assumption: one could, e.g., in the case of (21), consider that the whole party the guests are attending is one extended event, with multiple participants still leaving at different times. If time were not crucial in the identification of events, with the technology for event distribution introduced above, (23) is modified as in (24). The difference between the two is underlined:

- (24) a. *algunos* scopes above $\exists e$; D-operator used
 if different events are chosen \rightarrow different leavings/robblings
 if same event is chosen \rightarrow different leavings/robblings or same leaving/robbing
 b. *algunos* scopes below $\exists e$; no D-operator used
different leavings/robblings or same leaving/robbing

If time is not an event identifier, we can, within the same event, e.g., the party viewed as a big leaving event, have different leavings taking place at different times. Hence, in the case in (24a), if we choose the same event for all the guests, we can still predict that a sentence like (15) is true in the situation in which the students came to see me separately. Likewise, if we were simply to choose (24b), we would be in the same situation. The problem would be that then we would not need to generate an LF according to (24a), and sentences like (15), (21) or (22) would tell us nothing about the scope capabilities of this indefinite.

However, as we will see later, the subjects of the experiment were indeed assuming that time is a necessary event identifier. For a well-defined group of speakers, examples such as (22) turned out not to be true in the situation in which there were different robberies happening at different times, one per man. If time was not a crucial event identifier, they should have said that the sentence is true in that situation: they would have been able to consider that there was a big robbery of the Deutsche Bank event, taking up the whole year, with different parts of the robbery taking place at different times. And that is not what they did. Therefore, the only logical possibilities we have to worry about are those in (23). It can't be that in a sentence like (15) we predict the different comings scenario via a narrow scope LF (or a wide scope LF in which the same event is chosen for all of the students). The sentences in (15), (21) and (22), then, do tell us something about the scope possibilities of *algunos*.¹⁵

¹⁵ This suggests that the event of building of Rome or the event of pruning the roses, which, as one of the reviewer points out, would normally be temporally extended events with

(25) exemplifies the scope interaction of *algunos* with the focus-bearing item *una sola persona* ‘only one person’. Focused items have been found to hinder syntactic movement in certain cases (Beck 2006). (26) embeds *algunos* inside of another strong island for syntactic movement, a relative clause:

- (25) Vi a una sola persona llevándose algunos cuadros
 saw to one only person taking.away paintings
 ‘I saw only one person taking some paintings away’
- (26) Dijo que recompensaría a todos los que consiguieran
 said that would.reward to all the that obtained
algunos indicios sobre su hija
 clues about his daughter
 ‘He said that he would reward all who obtained some clues about his daughter’

The potential wide and narrow scope readings are logically independent of each other in these two sentences (notice that in (26), *algunos* is in the restriction of *todos* ‘all’). In (25), the wide scope reading would have it that it is possible that there were several different people involved in the robbing of the paintings. The reading is compatible with there being paintings that were each taken by more than one person. In the narrow scope reading, there can only have been one person involved in painting taking. In (26), for the wide scope reading to be true, there has to be a particular group of clues such that all of those who obtain them get rewarded. According to the narrow scope reading, obtaining any set of clues is enough.

4 THE EXPERIMENT

4.1 Method

4.1.1 The informants

Twenty-seven subjects were tested in this experiment. All of them are native speakers of Spanish and have spent most of their lives in the area of Madrid and its surroundings. All of them are undergraduate students of Translation or English Philology. The test took place at the Universidad Autónoma de Madrid (Madrid, Spain) in April 2006. Each subject was paid a total of 25€. The subjects were invited to a debriefing session after the experiment was over in which the goals of the experiment were explained and their feedback was collected. The reason for limiting the experiment to speakers of the Madrid area was the wish to introduce as few variables as possible.

different pieces of the event occurring at different times, is conceptualized differently from the event of leaving the party or the event of robbing the bank, which somehow cannot be temporally extended and composed of different pieces occurring at different times. This can be seen in other examples, such as *He robbed the bank once* (Klaus Abels, p.c.): the sentence has the implicature that there was only one time that he entered the bank, took the money and left.

4.1.2 *The task*

The task carried out by the informants was a truth-value judgement task in the form of a questionnaire.¹⁶ The questionnaire contained a total of fifty-four items (where item = context+sentence), of which twenty-seven were test items and twenty-seven were fillers. The questionnaire was divided into three parts of eighteen items each, which were administered on different days to avoid speaker fatigue.

Short and clear instructions were provided to the subjects at the beginning of each session, and the first few items in each session were benchmark items that allowed the subject to practice (without her knowledge).

In the instructions, speakers were told a short story about a city with a powerful mafia which has been involved in a number of criminal acts, and which has bribed some witnesses to not tell the truth to the police. Each item in the experiment was judged against this background and contained a description of a situation (a robbery, a murder, etc.), and then a dialog between a POLICE OFFICER and a WITNESS. Every item asked the informant to judge the truth of what the WITNESS said, where what the WITNESS said was or contained the test sentence. *Algunos* was used only in test sentences, never in the descriptions of the different contexts.

4.1.3 *The materials*

There were 3 examples of each sentence type, and there were 6 sentence types. The sentence types were as follows:

- (27) Sentence type I: *algunos* c-commanded by an *only*+numeral phrase
- (28) Sentence type II: *algunos* c-commanded by the D-operator and the point at which event variables are existentially closed; no islands involved
- (29) Sentence type III: *algunos* embedded inside of an *if*-clause
- (30) Sentence type IV: *algunos* embedded inside of a *wh*-island
- (31) Sentence type V: *algunos* embedded inside of a relative clause
- (32) Sentence type VI: *algunos* embedded inside of coordination

No test items for narrow scope readings were included, since the existence of narrow scope readings for *algunos* is not under debate.¹⁷

(33)-(37) exemplify how some of these sentence types were tested (everything was presented to the speakers in Spanish, but here I include English for convenience):

¹⁶ The questionnaire can be downloaded from the author's webpage at http://www.hum.uit.no/a/marti/algunos_experiment.html.

¹⁷ Each example belonging to sentence types I, III and V was tested twice (i.e., there were two test items per example sentence in these cases), once for distributive wide scope and once for collective wide scope. This is because originally the idea was to find out also if there were differences in the availability of these readings. However, as two reviewers pointed out, the contexts that I provided in the experiment to test for wide scope distributive readings may not have made some necessary distinctions. Distributive wide scope readings are ignored in the statistical analysis below.

(33) Sentence type III

In the jewelry store *García Brothers* they have a lot of cheap stuff and they really earn their living on this cheap stuff more than on real jewels. However, they have a collection containing a bracelet, a watch, a ring, and a pair of earrings that is altogether quite expensive, even though each of these items by themselves are not so incredibly expensive. If there were a robbery, it would be terrible if they took the collection. This morning there has been one, and Esteban García, one of the owners, has taken out his gun and has said to the robber: “Take whatever you want from these jewels over here, I don’t care. But don’t take the collection. If you take it, I will kill you. Look, you can even take the earrings, but don’t take the whole collection”.

Dialog between policeman and witness:

POLICEMAN: What did Esteban García say to the robber?

WITNESS: Le dijo que le mataría si se llevaba *algunas* joyas

‘He said he would kill him if he took some jewels’

Question:

Is the witness telling the truth? YES NO

This item tests for a wide scope reading of *algunos*. In this reading, it is not enough to take just any jewels (or a single jewel) to satisfy the antecedent of the conditional; only taking certain jewels does (i.e., the ones from the collection). The narrow scope reading of *algunas* is false in this scenario. If speakers answer this item with “yes”, it is then because they allow a wide scope reading of *algunas*.

(34) Sentence type II

One of the most valuable pieces in the Duchess of Teruel’s diamond necklace collection has disappeared tonight during a party. One of the guests is suspected of being responsible. The necklace was in the safe, in the study room, which is adjacent to the room where the party took place. It is important to know who left and entered the party room when. Several guests left the party room, separately, between 6pm and 7pm, the time during which the necklace disappeared.

Dialog between policeman and witness:

POLICEMAN: What happened between 6pm and 7pm?

WITNESS: Que *algunos* invitados salieron del salón.

‘Some guests left the living room’

(35) Sentence type VI

The Deutsche Bank has been robbed several times this year. One of the mafia groups in the city is responsible. In a meeting with his associates at the end of the year, the mafia boss summarized the achievements of the year as follows: “dear friends, our much appreciated Teresa San Juan, accompanied in each occasion by a different new member of our group, has robbed the Deutsche Bank several times this year”. One of the boss’ projects for this year was to train all new members with Teresa, since she is such a good robber. So he made sure that each time Teresa robbed a bank, one of the new members accompanied her, a different one each time.

Dialog between policeman and witness:

POLICEMAN: You say that, while you were cleaning in the adjacent room, you listened to some of the things that were said in the meeting. What did the mafia boss say?

WITNESS: Que Teresa San Juan y *algunos* hombres habían atracado el Deutsche Bank
'(He said) that Teresa San Juan and some men had robbed the Deutsche Bank'

(34) and (35) test for the wide scope reading of *algunos* over the D-operator and the point at which event variables are existentially bound. The contexts make sure that it is clear that there were different events of leaving the room or of robbing the bank, happening at different times, which unambiguously make these contexts wide scope contexts (recall discussion in section 3.2).

(36) Sentence type I

There has been a robbery in the art gallery *Goya*. The perpetrators were three women and one man. The man transported, all by himself, five small paintings, all of them at the same time. The women joined forces and transported a huge and heavy painting together, as well as a smaller yet still heavy one. Several people have witnessed the whole operation.

Dialog between policeman and witness:

POLICEMAN: You say you saw the whole operation. What did you see?

WITNESS: A una sola persona llevándose *algunos* cuadros
'(I saw) only one person taking some paintings away'

(37) Sentence type V

The daughter of one of the richest mafia bosses in the whole city, Esteban Iturralde, was kidnapped last week. Some of the details of the kidnapping are known: where it took place, at what time, and that the girl is alive. Yesterday, Mr. Esteban met with several of his men and said: "There is a reward for every one of you who manages to find out certain things about my daughter. I want to know who kidnapped her, where she is, and if she is well fed. But I must know all of these things; only those who tell me everything will get the reward. Don't come telling me that she is alive, because I already know that."

Dialog between policeman and witness:

POLICEMAN: You say that, while you were cleaning in the adjacent room, you heard some of the things that were being said at the meeting. What did Mr. Esteban say?

WITNESS: Que recompensaría a todos los que consiguieran *algunos* indicios sobre su hija.
'(He said) that he would reward all who obtained some clues about his daughter'

In the wide scope reading tested in (36), it is possible that there were several different people involved in the robbing of the paintings. The reading is compatible with there being paintings that were each taken by more than one person. This is the situation that is depicted in the

context in (36); the women take two paintings together, the man takes five paintings all by himself. There are, then, some paintings that were all taken by a single person (the man). The narrow scope reading of the sentence is false in this situation: in this reading, there can only have been one person involved in painting taking, but in the situation described there are three. In the wide scope reading tested in (37), there has to be a particular group of clues such that all of those who obtain them get rewarded. This reading is true in the scenario described here. The narrow scope reading is false: according to this other reading, obtaining any set of clues is enough.

4.1.4 *The hypotheses*

The null hypothesis is that *no* responses are equally likely in two groups of sentence-types: if the wide scope of *algunos* is not constrained syntactically, then the likelihood of obtaining a *no* response for sentence-types I/III/V/VI should be as likely as obtaining a *no* response for sentence-types II/IV. The experimental hypothesis is that the likelihood is different: a *no* response should be more likely in I/III/V/VI than in II/IV. A two-tailed paired t-test comparing *no* responses for I/III/V/VI vs. II/IV was used.

The hypotheses entertained in the experiment are based on *no* responses rather than on *yes* responses because of the need to control for certain interfering factors.

4.1.5 *Controlling for errors*

To make sure that the experiment was guarded against concluding that the experimental hypothesis is correct when in fact it is the null hypothesis that is correct (a type I error), a conservative test of the experimental hypothesis was conducted.

In the truth-value judgement task carried out here, sentences were presented with a context. The context in each case is such that it makes only the wide scope reading of *algunos* available, in a natural and pragmatically plausible way. For those cases that are hypothesized to lack a wide scope reading, the answer in the task should be “no”. The test of the experimental hypothesis is conservative because it is conducted in such a way that wide scope readings, which according to the experimental hypothesis should not always be there, are given as many chances as possible. All the relevant contexts in the questionnaire are carefully constructed so as to facilitate them. Confirmation of the experimental hypothesis happens then via *no* responses, protecting the experiment for the subjects’ natural tendency towards *yes* responses.

Nine different orders for the questionnaire were provided to control for order effects. They involved both shuffling test items within one session and shuffling sessions. Filler items were interspersed with the test items at regular intervals, except for the benchmark items, which were the first four items in each one of the sessions.

4.2 *Results*

The overall group results are in Table 1:

<i>‘no’ responses in I/III/V/VI</i>	<i>‘no’ responses in II/IV</i>
75.9%	30.9%

Table 1 Overall results

Recall that for the experimental hypothesis to be correct, a *no* response should be more likely in the first column of Table 1 (corresponding to I/III/V/VI) than in the second column (corresponding to II/IV). This predicted contrast was robustly significant by paired t-test: $t(26)=9.52$, two-tailed $p<.0001$. This means that the difference obtained between the two columns is highly unlikely to have arisen by chance. For the null hypothesis to be correct, there should have been a statistically insignificant difference between the two columns, or no difference at all.

From the perspective of the experimental hypothesis, there were fifteen very well behaved speakers. For these fifteen speakers, Group A, the difference between I/III/V/VI and II/IV is at least 30% and the number of overall *no* responses is not overwhelmingly high (not more than 60% on average per speaker). For the remaining twelve speakers, Group B, the difference between the two types of syntactic contexts is not so great and/or the percentage of *no* responses is quite high.¹⁸ Why did the speakers from Group B behave in this way? In particular, there is a significant subgroup in Group B, comprised of nine speakers, who have an overwhelming number of *no* responses in both columns in Table 1 (more than 60% of *no* responses on average per speaker; in some cases, quite a lot more). Why is that? One possibility is that, for these nine speakers, *algunos* is a narrow scope indefinite. This would account for the overwhelming number of *no* responses, and for the fact that the number of *no* responses for both I/III/V/VI and II/IV is so similar. If this hypothesis is correct, the experimental hypothesis is not in trouble: these speakers are just irrelevant.

Another possibility is as follows.¹⁹ In the debriefing session, one of the speakers expressed the following concern. The dialogs in the experiment are between a POLICEMAN and a WITNESS, and because of this situation, full cooperation on the part of the WITNESS is expected. In many of the descriptions of the scenarios, the number of, say, suitcases that got stolen, or the number of people that got murdered, was very precise. The WITNESS, in answering with “*algunas* suitcases” or “*algunas* persons” is being more vague than he could be; he could be more cooperative and give the precise number. This apparently led this speaker to answer a lot of the items with *algunos* with “no”. If this is what these speakers were doing, then the experiment suffers from a type II error: the experimental hypothesis might be right, but it is the null hypothesis that actually comes out right for these speakers. While, as explained in section 4.1.5, the experiment is guarded against a *yes* bias, it is not guarded against a *no* bias. Distinguishing these two possibilities requires a second experiment specifically designed for this purpose, something I have not undertaken.

It is important to remember, however, that the results of the experiment, as shown above, are statistically significant even with Group B factored in. For the next analysis, where the results per sentence type are considered, I concentrate on Group A, since this is the group that shows the greatest sensitivity to syntactic islands and for which the contrasts are sharper.

Table 2 shows the general results for Group A. Table 3 partitions the results per sentence type for this same group:

¹⁸ There is one speaker in this group that behaves according to the null hypothesis. For this speaker, a *no* response is equally likely for the two groups of sentence types (66.7%).

¹⁹ The general form of this hypothesis was suggested to me by Tom Roeper.

<i>'no' responses in I/III/V/VI</i>	<i>'no' responses in II/IV</i>
71.1%	8.9%

Table 2 Results Group A

The predicted contrast for Group A was also robustly significant by paired t-test: $t(14)=13.15$, two-tailed $p<.0001$.

<i>'no' in I</i>	<i>'no' in II</i>	<i>'no' in III</i>	<i>'no' in IV</i>	<i>'no' in V</i>	<i>'no' in VI</i>
86.7%	6.7%	84.4%	11.1%	60%	53.3%

Table 3 Sentence types (Group A)

For Group A, sentence types I, III, V and VI are islands for the scope of *algunos*. This is clearest for sentence types I (*sólo un N* 'only one N') and III (*if*-clauses). The reason why sentence types V (relative clauses) and VI (coordinations) should be considered scope islands for *algunos* for these speakers is that there is more contrast in their behavior with respect to non-islands (i.e., sentence types II and IV) than in their behavior with respect to sentence types I and III, i.e., the sentence types that are the clearest islands. The contrast between *no* responses to sentence types I/III vs. sentence type V is significant by paired t-test ($t(14)=2.46$, two-tailed $p=.027$) but much less robust than the contrast between sentence types II/IV vs. sentence type V ($t(14)=4.94$, two-tailed $p=.00021$). The contrast between sentence types I/III vs. sentence type VI is also significant ($t(14)=2.84$, two-tailed $p=.012$) but much less robust than the contrast between sentence types II/IV vs. sentence type VI ($t(14)=4.57$, two-tailed $p=.00043$).^{20, 21}

5 DISCUSSION

The two empirical generalizations that arise in section 4 are as follows:

²⁰ Why it is that sentence types V and VI have less incidence of *no* responses than sentence types I and III is an issue that I leave for further research. It is interesting to note in this connection the difference between sentence types III (*if*-clauses) and V (relative clauses headed by a universal quantifier): their semantics is very similar, so it must be their syntax that is at stake here.

²¹ Martí (2005) can be viewed as the preliminary work leading to the current paper. The results reported there differ from the ones here in some ways, particularly in the fact that *if*-clauses (sentence type III) were reported not to be islands for the scope of *algunos* in the earlier work (see also Gutiérrez-Rexach 1999a, b). The empirical work done for the current paper is much better grounded than that early work and hence the results here should be taken more seriously.

Because of the preliminary results in Martí (2005), the experimental hypothesis initially formulated for the experiment reported here predicted a contrast between sentence types I/V/VI vs. I/III/IV. The contrast between these two groups is in fact statistically significant (though less than the contrast between I/III/V/VI vs. II/IV). I think this is because of the very few *no* responses in sentence types II and IV; i.e., adding sentence type III to this very low *no* incidence group does not make the contrast insignificant.

- (38) whether one looks at the overall group results or at the results per sentence type, the generalization is that *algunos* cannot freely take wide scope, contrary to what the received wisdom on indefinites suggests. The wide scope of *algunos* is sensitive to the syntactic environment
- (39) there is a group of speakers, Group A, for whom *if*-clauses, relative clauses, coordinations and *sólo un N* ‘only one N’ phrases hinder the wide scope of *algunos*

I concentrate on (38) in this section, and return to (39) in the conclusion. In this section I discuss the problems that (38) raises for accounts of indefinite wide scope based on choice function variables or singleton indefinites.

The problem that (38) poses for choice functions is one of overgeneration, since nothing prevents wide scope readings from being generated with *if*-clauses, relative clauses, coordinations or above *sólo un N* ‘only one N’. This is because one of the important features of choice functions is that their existential closure can happen anywhere in the syntactic tree. One could, of course, build syntactic sensitivity into the mechanism that closes off choice function variables, but notice that the reason why theories of indefinite scope turned to choice function variables was precisely that there doesn’t seem to be anything that connects their existential closure with the syntactic environment.

Of course, as is often argued in the literature, a choice function approach is not incompatible with the idea that indefinites are ambiguous between a choice function meaning and a quantificational meaning. With a quantificational meaning for *algunos* it might be possible to make the movement of the quantifier sensitive to islands, but notice that wide scope readings would still be generated across the board, thanks to the choice function option.

As for singleton indefinites, recall that one crucial aspect of this proposal is that wide scope readings of indefinites are linked to a particular choice of domain restriction. However, whether the domain restriction of the indefinite is a singleton set or not has nothing to do with its syntactic environment. This is the reason why *algunos* cannot be a singleton indefinite. In order to predict wide scope readings out of the islands that allow them and at the same time not predict them in the cases that don’t, the mechanism that gives rise to wide scope readings, i.e., restriction of the domain of quantification down to a singleton, would have to be sensitive to islands. But there is no independently justified reason to think that this mechanism would be sensitive to something like that. A mixed account, just as in the case of choice functions, overgenerates as well.²²

The facts about *algunos* force us, interestingly, to reject Schwarzschild’s nice attempt at dealing with the “Donald Duck” problem. The reason is that, despite the fact that something like singleton indefinites seems to be necessary to prevent truth-conditions that are too weak (recall (10)), the domain restriction of indefinites being a singleton set is not something that can naturally be made to depend on the indefinite’s syntactic environment, as suggested above. That is, linking indefinite wide scope to a solution to the “Donald Duck” problem, as Schwarzschild does, seems, given the Spanish data, ill-advised: once it is established that *algunos* cannot freely take wide scope, Schwarzschild’s strategy to deal with

²² As pointed out earlier, Breheny (2003) makes a proposal similar to Schwarzschild’s in some respects, particularly in their common use of the domain restriction of indefinites. The same criticism that applies to Schwarzschild applies to him.

the “Donald Duck” problem is no longer available to us. Yet, the “Donald Duck” problem does arise with *algunos*, so it must be that its solution lies elsewhere.²³ Just as Schwarzschild does with other quantifiers, something must be built into the semantics or pragmatics of *algunos* that prevents its domain from being a singleton set.^{24, 25}

6 CONCLUSION

Generalization (39) would seem to suggest that indefinites really behave like any other item that moves, since *if*-clauses (generally, adjunct clauses), relative clauses, focused items and coordinations generally hinder movement. Thus, generalization (39) indicates that *algunos* does not need to be considered in a special scope category, separate from items that move. The scope properties of *algunos* are just like the scope properties of these other items.²⁶

What does it mean to find out that the scope of *algunos* is syntactically restricted? It means that a syntactically sensitive mechanism for *algunos* to achieve wide scope is necessary. Do we then add this mechanism to the list of scope achieving mechanisms for indefinites? Perhaps English uses choice functions and Spanish does not. Or perhaps there are different kinds of indefinites, requiring different scope mechanisms, even within the same language. Both kinds of conclusions seem problematic if our goal is to arrive at an explanatorily adequate theory of indefinite scope. Before pursuing either, then, I suggest that we review and test experimentally our empirical generalizations about the scope of indefinites in other languages, and other indefinites in Spanish,²⁷ perhaps following methodology similar to the one used here and in other (experimental) work on scope such as that in Pafel (2006) or Villalta (2003).

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²³ This conclusion is also drawn in Martí (2005).

²⁴ The recent proposal in Schlenker (2006) seems likewise problematic, since it is an attempt at relating indefinite wide scope to so-called branching readings of indefinites.

²⁵ Both choice functions and singleton indefinites may have problems generating wide scope distributive readings, depending on what else one assumes. Since the experiment described in section 4 did not properly test for wide scope distributive readings, I do not draw conclusions about them here.

²⁶ Let me also note that it is immaterial to the main point of the paper whether, in the end, what I have been calling wide scope readings are genuinely wide scope or not (recall section 2.3). What matters is that the interpretation possibilities of *algunos* are constrained by syntactic islands, no matter how those interpretations are generated.

²⁷ Consider that, initially, *algunos* was also thought to be able to freely take wide scope (see for example Gutiérrez-Rexach 1999a, b).

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Only I am responsible for whatever mistakes the paper contains.

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