# Minimal Domain Widening

## Luis Alonso-Ovalle[a] and Paula Menéndez-Benito[b]
### [a]University of Massachusetts Boston and [b]University of Göttingen

## 1. Introduction

Across languages, we find indefinites that trigger modal inferences. One such indefinite is Spanish *algún*. The sentence in (1), for instance, makes an existential claim (that there is a student that María married), and additionally conveys that the speaker does not know which student satisfies this claim. Hence, adding the continuation *namely Pedro*, which explicitly identifies the student that María married, would result in oddity. In contrast, the counterpart of (1) with the 'plain' indefinite *un* allows for such a continuation, witness (2).

(1)  María se casó    con algún  estudiante del    departamento de lingüística  (♯ en concreto
     María SE married with ALGÚN student    of the department    of Linguistics   namely
     con  Pedro).
     with Pedro

     'María married a Linguistics student (namely Pedro.)'

(2)  María se casó    con un estudiante del    departamento de lingüística  (en concreto con
     María SE married with UN student    of the department    of Linguistics namely      with
     Pedro).
     Pedro

     'María married a Linguistics student (namely Pedro.)'

In a possible world semantics, the ignorance component of sentences like (1) can be modeled by saying that *algún* imposes a constraint on the set of worlds compatible with what the speaker believes, namely that María didn't marry the same Linguistics student in all those worlds. When *algún* is in the scope of an intensional operator, it imposes the same type of constraint on the worlds that the operator quantifies over. This is illustrated by (3) below. When *algún* is in the scope of *pensar* ('to think'), (3) says that Pedro believes that María married a student, but that he is not sure who. In this case, Pedro's epistemic alternatives vary with respect to the identity of the student that María married.

(3)  Pedro piensa que María se casó    con algún  estudiante del    departamento de lingüística.
     Pedro thinks that María SE married with ALGÚN student    of the department    of Linguistics

     'Pedro thinks that María married a Linguistics student.'

When interpreting sentences like (1) or (3) above, we are likely to make a uniqueness assumption: in all relevant worlds, María married only one student. When uniqueness cannot be taken for granted, *algún* can convey ignorance with respect to the total number of individuals that satisfy the existential claim. The example in (4), for instance, strongly suggests that the speaker doesn't know how many dents her car has.

(4)  Mi  coche tiene algún    abollón.
     My car    has   ALGÚN dent

---

A number of recent works focus on indefinites that convey a modal component, henceforth 'modal indefinites'.[1] These studies differ widely with respect to the description and analysis of the modal component. Since no systematic cross-linguistic investigation of modal indefinites has been undertaken, it is not clear whether these divergences correspond to typological differences. This sets the stage for a research program which aims to understand along which lines modal indefinites can vary, and to seek a unifying core underlying the observed diversity.

This paper contributes to this enterprise by describing the modal component of *algún* and contrasting it with that of modal indefinites like German *irgendein* or Italian *uno qualsiasi*. The latter indefinites have been characterized in the literature as Existential Free Choice Items because they convey that each of the individuals in the domain of quantification can satisfy the existential claim — 'the Free Choice component', see Kratzer & Shimoyama (2002), Kratzer (2005), and Chierchia (2006). We show that the modal effect induced by *algún* is weaker than Free Choice, and we propose that the differences between *algún* and Free Choice indefinites follow from the fact that the two types of indefinites impose different constraints on their domains of quantification.

## 2. The modal component of *algún*

This section is devoted to describing the modal component of *algún* in cases like (5), where a uniqueness assumption is forced by the context: Juan can only be in one room in a given world (at a given time.) Let us consider this example on the epistemic reading of the modal *tener que*. When *algún* is in the scope of the modal, (5) asserts that in all the worlds compatible with the speaker's evidence, Juan is in a room of the house.[2] Additionally, (5) is felicitous only if two or more rooms are live options as far as the speaker is concerned.

(5)  Juan tiene que estar en alguna    habitación de la  casa.
     Juan has  to  be   in ALGUNA room        of the house
     'Juan must be in a room of the house.'

The modal component of *algún* differs from that of Existential Free Choice Items like German *irgendein* or Italian *uno qualsiasi* (Kratzer & Shimoyama, 2002; Kratzer, 2005; Chierchia, 2006). The Free Choice effect induced by *irgendein* can be illustrated with the example in (6). According to Kratzer (2005), on the narrow scope reading of the indefinite, (6) conveys that Mary had to marry a doctor, and that *any* doctor was a permitted possibility for her. That is, in all permitted worlds there is a doctor that Mary married, and for *every* doctor $d$, there is some permitted world in which Mary marries $d$. In general, a sentence with an LF of the form in (7a) will convey, on top of the assertion in (7b), the Free Choice component in (7c).[3]

(6)  Mary musste irgendeinen Arzt   heiraten.
     Mary had to  irgend-one  doctor marry
     'Mary had to marry some doctor or other.'                                        (Kratzer, 2005)

(7)  a.  LF: $\square[\text{irgendein}(P)(Q)]$
     b.  Assertion: $\forall w' \in \mathscr{A}_w \exists x[P(w)(x) \,\&\, Q(w')(x)]$
     c.  $\forall x[P(w)(x) \rightarrow \exists w' \in \mathscr{A}_w[Q(w')(x)]]$
         (where $\mathscr{A}_w$ is the set of worlds accessible from $w$ and $P$ and $Q$ are two properties)

---

[1]Amongst them: English singular *some* (Strawson, 1974; Becker, 1999; Farkas, 2002), German *irgendein* (Kratzer & Shimoyama, 2002; Aloni & van Rooij, 2004; Aloni, 2007), the *-to* series in Russian (Yanovich, 2005; Kagan, 2007), the *-kin* series in Finnish (Kagan, 2007), Romanian *vreun* and *un NP oecare* (Farkas, 2006; Ciucivara, 2007), French *quelque*, *un NP quelconque* and *n'importe quoi* (Zabbal, 2004; Tovena & Jayez, 2006), and Italian *(un) qualche* and *uno qualsiasi* (Aloni & van Rooij, 2004; Chierchia, 2006; Zamparelli, 2007).

[2]This is a simplication: Overt epistemic modals like English *may* can be sensitive to different bodies of information (see, for instance, von Fintel & Gillies (2008a) and von Fintel & Gillies (2008b).)

[3]Menéndez-Benito (2005) notes that in order to characterize the Free Choice effect displayed by universal Free Choice items (like English *any* or Spanish *cualquiera*) we need to introduce an exclusivity condition in formulations like the above. In what follows, we will ignore this complication, since our focus will be on items that do not convey Free Choice.

If *algún* were a Free Choice indefinite, we would expect the sentence in (5) to convey that Juan may be in *any* of the rooms of the house (for every room *r* there should be some world compatible with the evidence of the speaker in which Juan is in *r*. That is, the speaker should be completely ignorant as to which room Juan is in.) To see that this is not the case, consider the scenario below:

(8)   SCENARIO: HIDE AND SEEK. María, Juan, and Pedro are playing hide-and-seek. Juan is hiding. Pedro believes that Juan is not hiding in the garden or in the barn: he is sure that Juan is inside the house. Furthermore, Pedro is sure that Juan is not in the bathroom or in the kitchen. As far as he knows, Juan could be in any of the other rooms in the house.

In this scenario, Pedro can felicitously utter the sentence in (5), even though not all the rooms are epistemic possibilities for him — he knows that Juan is not in the bathroom or in the kitchen. Thus, *algún* does not convey that *all* rooms are possibilities, i.e., it does not trigger a Free Choice effect. The modal component of *algún* is weaker than the Free Choice component: *algún* simply requires that at least two individuals in the domain be possibilities. This constraint, which we will dub the 'Modal Variation' component, can be formalized as in (9), following von Fintel's suggestion for *some* (von Fintel, 1999b).

(9)   LF: $\Box[\text{algún}(P)(Q)]$
The Modal Variation component:
$\exists w', w'' \in \mathscr{D}_w[\{x : P(w')(x) \ \& \ Q(w')(x)\} \neq \{x : P(w'')(x) \ \& \ Q(w'')(x)\}]$
(where $\mathscr{D}_w$ is the set of worlds compatible with the speaker's evidence in $w$)

The Modal Variation effect arises also when *algún* is not in the scope of a modal element, as in the sentence in (1), repeated as (10a), which conveys that the speaker doesn't know which student María married. To capture the parallelism between the cases where *algún* combines with an overt modal and the cases where it doesn't, we will build upon a suggestion in Kratzer & Shimoyama (2002) and assume that assertions are implicitly modalized.[4] For concreteness, we will assume that a covert assertoric operator (10b) occupies the topmost position at LF, as illustrated by (10c) below. This will allow us to use the same mechanism to derive the Modal Variation component both with and without an overt modal.

(10)  a.  María se casó   con algún  estudiante del   departamento de lingüística.
          María se married with ALGÚN student    of the department   of Linguistics

          'María married a Linguistics student.'

     b.  $[\![\text{ASSERT}]\!]^c = \lambda p.\lambda w.\forall w' \in \text{Epistemic}_{\text{speaker of } c}(w)[p(w')]$

     c.  LF: ASSERT (María se casó con algún estudiante del departamento de lingüística)

While so far all our examples have involved necessity modals, the Modal Variation component is also present in cases where *algún* combines with a possibility modal: the sentence in (12) is deviant in the scenario in (11) in which there is only one room of the house where Juan might be.

(11)  SCENARIO. We are in the hide-and-seek situation described before, but now, according to what Pedro knows, if Juan is in the house, he could only be in the bathroom.

(12)  ♯ Juan puede estar en alguna   parte de la casa.
      Juan may  be  in ALGUNA part of the house

     'Juan may be in a room of the house.'

Again, we can see that the modal inference triggered by *algún* is *not* a Free Choice effect. In fact, the case can be made even sharper for possibility modals. Spanish has a universal Free Choice item, *cualquiera*, which conveys Free Choice truth-conditionally: the sentence in (13) is true only if the addressee is allowed to take *any* card, i.e., if for every card in the domain of quantification, there's a deontically accessible world where the addressee takes that card (see Quer (2000) and Menéndez-Benito (2005).)

(13)  Puedes  coger cualquiera de las cartas de esta baraja.
      You can take  any      of the cards in this deck

     'You can take any of the cards in this deck.'

---

[4]See also Alonso-Ovalle & Menéndez-Benito (2003) and Chierchia (2006).

*Algún* and *cualquiera* contrast sharply in scenarios where not all the individuals in the domain of quantification are possibilities.[5] Consider, for instance, the scenario in (14).

(14) SCENARIO. We are playing hide-and-seek and Juan is hiding, as before. Pedro is convinced that Juan is not in the bathroom or in the kitchen, but for all Pedro knows, Juan could be in any of the other rooms in the house, or even outside the house (say, in the barn.)

In the scenario in (14), not all parts of the house are epistemic possibilities. As expected, the sentence in (15) with the Free Choice determiner *cualquiera*, is false, but its counterpart with *algún* in (16) is true.

(15) Juan puede estar en cualquier    parte de la  casa.
     Juan may   be    in CUALQUIER part  of the house

     'Juan may be anywhere in the house.'

(16) Juan puede estar en alguna     parte de la  casa.
     Juan may   be    in ALGUNA part  of the house

     'Juan may be somewhere in the house.'

To summarize, *algún* requires that at least two individuals in its domain be possibilities, but it does not convey Free Choice. This raises two questions, which are addressed in the next section: (i) how can the Modal Variation component be derived? and (ii) how can we account for the differences between *algún* and *irgendein*?

## 3. The proposal

First of all, we would like to argue that the modal component of *algún* is a conversational implicature. Like quantity-based implicatures, it disappears under negation and other downward entailing environments: (17) does not convey that the speaker knows which girl Juan is dating but simply that Juan is not dating any girl, and, likewise, (18) simply says that Pedro doubts that Juan is dating any girl in the Linguistics department.

(17) No  es verdad que Juan salga        con alguna   chica del       departamento de lingüística.
     Not is true    that Juan date:SUBJ3S with ALGUNA girl   from the department    of Linguistics

     'Juan is not dating any girl in the Linguistics department.'

(18) Pedro duda   que Juan salga        con alguna   chica del       departamento de lingüística.
     Pedro doubts that Juan date:SUBJ3S with ALGUNA girl   from the department    of Linguistics

     'Pedro doubts that Juan is dating any girl in the department.'

Since the modal component of *algún* is a conversational implicature, it should be derivable from general conversational principles. In what follows, we will present a derivation of the implicature which draws heavily on Kratzer & Shimoyama (2002). Kratzer & Shimoyama (2002) analyze the modal component of German *irgendein* as a conversational implicature that arises because *irgendein* is a domain widener (its domain cannot be restricted). In this section, we propose that the modal implicature triggered by *algún* is also due to a constraint that this indefinite imposes on its domain of quantification, namely that it cannot be narrowed down to a singleton. On this proposal, the differences between the two indefinites come about because of the constraints that they impose on their domains of quantification.

### 3.1. The antisingleton constraint

Kratzer (2005) suggests the possibility that indefinites might be domain shifters. On this view, different indefinite determiners may impose different constraints on their domain of quantification.[6] The determiners *un* and *algún* exhibit a contrast that fits well in this picture. Consider, for instance, (19) below.

---

[5]This comparison is not available in the necessity sentences above, where *cualquiera* is ruled out.

[6]See also von Fintel (1999a), Matthewson (2001), Farkas (2002), Giannakidou (2004) and Etxebarria & Giannakidou (2007) for the role of determiners as domain shifters.

(19)  a.  Juan compró un libro que resultó    ser  el  más  caro      de la librería.
          Juan bought  UN book that happened to be the most expensive in the bookstore

          'Juan bought a book that happened to be the most expensive one in the store.'

      b.  ♯ Juan compró algún   libro que resultó   ser  el  más  caro       de la librería.
            Juan bought  ALGÚN book that happened to be the most expensive in the bookstore

          'Juan bought a book that happened to be the most expensive one in the store.'

In the examples above, the extension of the noun phrase that the indefinite combines with is a singleton set, since there can only be one book that turned out to be the most expensive one in the bookstore. The version of the sentence with *un* (19a) is acceptable, but the version with *algún* (19b) is not. This shows that only *un* is compatible with a singleton restriction.

In what follows, we will use subset selection functions (functions from sets to subsets) to model contextual domain restrictions (von Fintel, 2000; Kratzer, 2003, 2005). The determiner *un* ranges over a contextually relevant subset of the extension of the noun phrase that it combines with. We will assume that this subset is picked out by a subset selection function *f* that *un* takes as its argument:

(20)  $[\![\text{un}]\!] = \lambda f_{\langle et,et \rangle} \lambda P_{\langle e,t \rangle} \lambda Q_{\langle e,t \rangle}.\exists x[f(P)(x)\ \&\ Q(x)]$

Domain shifting constraints can be treated as constraints on the possible values of the subset selection function. We can have singleton subset selection functions, as in (21a), which would yield 'specific' indefinites (Schwarzschild, 2002), and, conversely, we can have anti-singleton subset selection functions: functions that never return a singleton domain, as in (21b).[7]

(21)  a.  *f* is a singleton subset selection function iff for any set *P*, *f*(*P*) is a singleton.

      b.  *f* is an antisingleton subset selection function iff for any set *P*, *f*(*P*) is *not* a singleton.

We would like to propose that that *algún* requires an anti-singleton subset selection function:[8]

(22)  $[\![\text{algún}]\!] = \lambda f_{\langle et,et \rangle} \lambda P_{\langle e,t \rangle} \lambda Q_{\langle e,t \rangle} : \textbf{antisingleton}(f).\exists x[f(P)(x)\ \&\ Q(x)]$

Consider now the sentence in (23a). Under our current assumptions, *algún* and *un* only differ in that the former requires a non-singleton domain. Thus, a speaker who uses *algún* flags that she is not restricting the domain *D* to a singleton. It seems then reasonable to assume that *algún* triggers a competition with all the singleton subsets of *D*. After all, restricting the domain to a singleton would have resulted in a stronger claim. For concreteness, let us assume that the set of actual rooms is (24). Uttering the sentence in (23a) raises the issue of why the speaker didn't make any of the (stronger) claims in (25).

(23)  a.  Juan tiene que estar en alguna habitación de la   casa.
          Juan has  to  be   in a     room        of the house

      b.  Assertion: $\Box[\exists x[x \in f(\textbf{room})\ \&\ \textbf{Juan is in } x]]$

      c.  Antisingleton constraint: $|f(\textbf{room})| > 1$

(24)  {the bedroom, the living room, the bathroom}

(25)  a.  $\Box(\exists x[x \in \{\textbf{the-bedroom}\}\ \&\ \textbf{Juan is in } x])(= \Box(\textbf{Juan is in the bedroom}))$

      b.  $\Box(\exists x[x \in \{\textbf{the-living-room}\}\ \&\ \textbf{Juan is in } x])(= \Box(\textbf{Juan is in the living room}))$

      c.  $\Box(\exists x[x \in \{\textbf{the-bathroom}\}\ \&\ \textbf{Juan is in } x])(= \Box(\textbf{Juan is in the bathroom}))$

---

[7]See von Fintel (1999a) for the definition of a singleton subset selection function.

[8]For the sake of concreteness, we will assume that the antisingleton constraint is a presupposition on the value of that function, much as $\phi$-features on pronouns are modelled as presuppositions on their value of their possible referents (Cooper, 1983; Dowty & Jacobson, 1989; Sauerland, 2003; Heim & Kratzer, 1998; Heim, 2007). The function in (22) is partial. Following the notation in Heim & Kratzer (1998), the expression right before the colon indicates the definedness condition.

We will assume —following Kratzer & Shimoyama's analysis of *irgendein*— that the hearer concludes that the speaker uttered (23a), rather than any of the competitors in (25), in order to either (i) avoid making a false claim, or (ii) prevent the hearer from drawing a false exhaustivity inference. In what follows, we will consider each of these two reasons in turn.

Upon hearing the sentence in (23a), the hearer might infer that the speaker did not reduce the domain to a singleton to avoid making a false claim, i.e., because the singleton competitors in (25) are false. Putting together this implicature with the assertion, we will get the conjunction of (26a) and (26b), which gives us the Modal Variation effect: it rules out scenarios in which the speaker knows which room Juan is in, and, yet, it does not require all rooms to be possibilities.[9]

(26)   Strengthened meaning: assertion & implicature.

    a.  Assertion: $\Box$ (**Juan is in bedroom** $\vee$ **in the living room** $\vee$ **in the bathroom**)

    b.  Implicature: $\neg\Box$(**bedroom**) & $\neg\Box$(**living room**) & $\neg\Box$(**bathroom**)

However, appealing to this reasoning does not give us what we want in the case of possibility modals, since (27a) entails that at least one of the pragmatic competitors in (28) is true (Aloni & van Rooij, 2004).

(27)   a.  Juan puede estar en alguna     habitación de la   casa.
          Juan may   be   in ALGUNA room       of the house

    b.  Assertion: $\Diamond[\exists x[x \in f(\textbf{room}) \ \& \ \textbf{Juan is in } x]]$

    c.  Antisingleton constraint: $|f(\textbf{room})| > 1$

(28)   $\Diamond$(**Juan is in the bedroom**), $\Diamond$(**Juan is in the living room**), $\Diamond$(**Juan is in the bathroom**)

Kratzer & Shimoyama (2002) explore a second type of reasoning that will give us the Modal Variation component when *algún* is in the scope a possibility modal: The hearer may assume that the speaker is using an anti-singleton indefinite to prevent her from drawing a false exhaustivity inference. What does this mean? Consider the dialogue in (29) below, which takes place in the hide-and-seek scenario that we presented before. A can conclude from B's reply that Juan might be in the bathroom or in the living room, but that he might not be in any other room. B's answer is naturally understood as an exhaustive enumeration of the rooms where B thinks that Juan might be (Zimmermann, 2001).

(29)   A:  "We know that Juan must be in the house, but where in the house is he?"

    B:  "(He is) either in the bathroom or in the living room."

Shrinking the domain down to a singleton would have led to an exhaustivity inference, as well. Suppose that instead of asserting (27b) the speaker had chosen a singleton domain and asserted, for instance, the proposition in (30). The hearer could have reasoned as follows: the speaker uttered (27a) because she was trying to avoid the potential exhaustivity inference in (31). The hearer will then conclude that (31) is false, or in other words, that (32) is true.

(30)   $\Diamond(\exists x[x \in \{\textbf{the bedroom}\} \ \& \ \textbf{Juan is in } x])(= \Diamond(\textbf{Juan is in the bedroom}))$

(31)   $\Diamond$(**Juan is in the bedroom**) $\&\neg\Diamond$(**Juan is in the living room**) $\&\neg\Diamond$(**Juan is in the bathroom**)

(32)   $\Diamond$ (**in the bedroom**) $\rightarrow$ $\Diamond$ (**in the living room** $\vee$ **in the bathroom**)

Applying the same reasoning to the other two competitors, the hearer ends up with the strengthened meaning in (33). The sentence asserts that there is at least one epistemically accessible world in which Juan is in one of the rooms. The antiexhaustivity inference rules out scenarios in which there is only one room where Juan might be, but it does not require that all rooms be possibilities.[10]

---

[9]The ignorance implicature triggered by sentences like (1), which do not contain an overt modal, is derived in the same way under the assumption that these sentences contain a covert assertoric modal, as proposed above.

[10]The reader can verify that avoiding a false exhaustivity inference also gives us the right results for sentences in which *algún* is in the scope of a necessity modal. In that case, the strengthened meaning is also compatible with a situation in which all individuals in the domain of quantification satisfy the existential claim (van Rooij, 2006). We assume that a run-of-the-mill scalar implicature, which results from the competition between *algún* and *todos* ('all') rules out that type of scenario.

(33) Strengthened meaning: assertion & implicature.

    a. Assertion: $\Diamond[\exists x \in f(\textbf{room}) \ \& \ \textbf{Juan is in } x]]$

    b. Implicature:

        i. $\Diamond$ (**in the bedroom**) $\rightarrow \Diamond$ (**in the living room** $\vee$ **in the bathroom**)

        ii. $\Diamond$ (**in the living room**) $\rightarrow \Diamond$ (**in the bedroom** $\vee$ **in the bathroom**)

        iii. $\Diamond$ (**in the bathroom**) $\rightarrow \Diamond$ (**in the bedroom** $\vee$ **in the living room**)

## 3.2. Domain widening vs. antisingleton constraint

We have argued that the Modal Variation component is an implicature that arises via the pragmatic reasoning that Kratzer & Shimoyama (2002) put forward to derive the Free Choice component of German *irgendein*. Yet, the implicature that we have derived is weaker than the Free Choice component associated with *irgendein* or *uno qualsiasi*. Why should this be so?

The key lies in the different nature of the pragmatic competitors. Kratzer & Shimoyama (2002) assume that *irgendein* is a domain widener (it cannot be contextually restricted.) Consequently, the pragmatic competitors for a sentence with *irgendein* are determined by *all* the subsets of the extension of the noun phrase that combines with *irgendein*. To see the contrast, consider the proposition in (33a). If *algún* were a domain widener, the competitors to (33a) would be all the propositions in (34). If *all* subdomains are competitors, on top of the antiexhaustivity implicatures in (33b) we should get the antiexhaustivity implicatures in (35). Putting the implicatures in (33b) together with the implicatures in (35) and the assertion, yields the Free Choice Effect (i.e., that *all* rooms are possibilities.)[11]

(34) $\Diamond$(**Juan is in the bedroom**), $\Diamond$(**Juan is in the living room**), $\Diamond$(**Juan is in the bathroom**)
$\Diamond$(**Juan is in the bedroom** $\vee$ **in the living room**), $\Diamond$(**Juan is in the bedroom** $\vee$ **in the bathroom**),
$\Diamond$(**Juan is in the living room** $\vee$ **in the bathroom**)

(35) $\Diamond$(**in the bathroom** $\vee$ **in the living room**) $\rightarrow \Diamond$(**in the bedroom**)
$\Diamond$(**in the bedroom** $\vee$ **in the bathroom**) $\rightarrow \Diamond$(**in the living room**)
$\Diamond$(**in the bedroom** $\vee$ **in the living room**) $\rightarrow \Diamond$(**in the bathroom**)

# 4. Non-uniqueness

In all the examples that we have seen so far, uniqueness is either forced or strongly suggested by world knowledge. Consider now the example in (36) below, which does not presuppose uniqueness. This example conveys that there's at least one fly in the soup and, additionally, it suggests that the speaker doesn't know how many flies there are.

(36) Hay     alguna    mosca en la   sopa.
There is ALGUNA fly     in the soup

This 'ignorance with respect to number component' is an implicature: it disappears in downward entailing environments. The example below, for instance, just means that the soup is "fly-less", and cannot be interpreted as saying that the speaker knows how many flies the soup contains.

(37) No es verdad que haya    alguna    mosca en la   sopa.
not is true    that there is ALGUNA mosca in the soup

Given the assumptions that we are making, the implicature can be derived as follows: A singleton domain could have triggered the exhaustivity inference that there is exactly one individual that satisfies the existential claim (38). The hearer may infer that the speaker chose an antisingleton indefinite to prevent her from concluding (38). This could be because (a) the speaker thinks that there's more than one fly in the soup, but doesn't know how many, (b) the speaker thinks that there's more than one fly in the soup and knows exactly how many, or (c) the speaker thinks that there is at least one fly in the

---

[11]To see why, assume, for instance, that Juan might be in the bedroom or in the living room, but not in the bathroom. The third conditional in (35) would be false.

soup, and possibly more. Possibility (a) is ruled out by the competition with the sentence in (39) which conveys that there is more than one fly in the soup. Possibility (b) is ruled by the competition with numerals: if the speaker knew how many flies there were in the soup, he would have used a numeral. This leaves us with possibility (c), which is the inference we wanted to derive.

(38)   In all worlds compatible with what the speaker believes, there is *only one* fly in the soup.

(39)   Hay      moscas en la   sopa.
       there are flies    in the soup.

The crucial difference between cases like (36) and the examples discussed in the previous sections is that in the latter it is assumed that only one individual can satisfy the existential claim in a given world. Computing the 'ignorance with respect to number' component would yield a conflict with the common ground. In examples that in principle do not require uniqueness, both implicatures are possible and which one we get depends on the contextual assumptions we are making. Consider, for instance, (40) below:

(40)   Vino algún    estudiante.
       came ALGÚN student

Our system derives two possible strengthened meanings. When it is presupposed that only one student came, we get the inference that the speaker does not know who that student was. In cases where uniqueness is not presupposed, the sentence can convey that the speaker does not how many students came. Both readings are attested. Suppose, for instance that both A and B passed by Juan's office and saw Juan talking to a young man. B knows that this man is a student of Juan's. In that context, if A asks B who came to Juan's office, and B answers with (40), B's answer will naturally convey that he is ignorant about the identity of the student who came to Juan's office. Suppose now that B utters the sentence in (40) as an answer to the question of whether a lot of people came to the party. In this case, B would be understood as saying that he doesn't know how many students came to the party.

The 'ignorance with respect to number' implicature is not available for *irgendein* or *uno qualsiasi*. The sentence in (41a), for instance, can only be interpreted as saying that there is exactly one fly in the soup (and the speaker does not know which one). As a result, (41a), is odd, much as the example in (41b), due to Strawson, which '... with its suggestion of a possible identification of the wasp in question seems absurd." (Strawson 1974, 110-11).

(41)   a.  Da   ist irgendeine    Fliege in der Suppe.
           there is  IRGENDEINE fly      in the soup
       b.  I've been stung by some wasp.                              (Strawson 1974, 110-11)

The examples above show that *irgendein / uno qualsiasi* and *algún* also differ in that only the former obligatorily convey uniqueness. This opens up an interesting question for further research: Do Existential Free Choice items always come with uniqueness requirement, cross-linguistically? If so, why should that be the case?

## 5. Concluding Remarks

We have shown that in contexts that require uniqueness, *algún* conveys that there are at least two individuals that can in satisfy the existential claim (Modal Variation). When uniqueness is not taken for granted, *algún* may also express ignorance with respect to number. In our proposal, both inferences come about because *algún* imposes an anti-singleton constraint on its domain of quantification.

The picture that emerges from this investigation is that different modal inferences can be traced back to different domain shifting constraints: the Free Choice effect is due to domain widening (Kratzer & Shimoyama, 2002) and the Modal Variation component, to the antisingleton constraint. This supports a view, suggested by several recent studies, according to which the semantics of determiners is crucially linked to domain shifting operations (see for instance Matthewson (2001), Kratzer (2005), Giannakidou (2004) or Etxebarria & Giannakidou (2007).)

By describing and analyzing the contrast between *irgendein*-type indefinites and *algún*, this research has deepened our understanding of the behavior of modal indefinites. In future research, we hope to be

able to investigate how other modal indefinites discussed in the literature fit into the picture we have sketched here.

## References

Aloni, Maria (2007). Expressing ignorance of indifference. Modal implicatures in BiOT. ten Cate, Balder & Henk Zeevat (eds.), *Logic, Language, and Computation, 6th International Tbilisi Symposium on Logic, Language, and Computation*, Springer-Verlag, Heidelberg, pp. 1–20.

Aloni, Maria & Robert van Rooij (2004). Free choice items and alternatives. *Proceedings of the KNAW Academy Colloquium: Cognitive Foundations of Interpretation*, pp. 5–26.

Alonso-Ovalle, Luis & Paula Menéndez-Benito (2003). Some epistemic indefinites. Kadowaki, Makoto & Shigeto Kawahara (eds.), *Proceedings of the North East Linguistic Society, 33*, GLSA, Amherst, MA, pp. 1–12.

Becker, Misha (1999). The *some* indefinites. Storto, Gianluca (ed.), *UCLA Working Papers in Linguistics*, pp. 1–13.

Chierchia, Gennaro (2006). Broaden your views. Implicatures of domain widening and the 'logicality' of language. *Linguistic Inquiry* 37:4, pp. 535–590.

Ciucivara, Oana Săvescu (2007). *Oarecare* indefinites and free choice in Romanian. Alboiu, G., A. Avram, L. Avram & D. Isac (eds.), *Pitar Moş: A building with a View. Papers in honor of Alexandra Cornilescu*, Editura Universităţii Bucureşti, Bucharest.

Cooper, Robin (1983). *Quantification and Syntactic Theory*. Reidel, Dordrecht.

Dowty, David & Pauline Jacobson (1989). Agreement as a semantic phenomenon. Powers, John & Francisca de Jong (eds.), *ESCOL 88*, Cornell Linguistics Club publications, Ithaca, pp. 95–101.

Etxebarria, Urtzi & Anastasia Giannakidou (2007). Contextual restrictions and the definite determiner. Talk presented at *Context-Dependence, Perspective and Relativity in Language and Thought* Paris, November 9-11.

Farkas, Donka (2006). Free choice in Romanian. Birner, Betty J. & Gregory Ward (eds.), *Drawing the Boundaries of Meaning, Neo-Gricean Studies in Pragmatics and Semantics in Honor of Laurence R. Horn*, John Benjamins, Amsterdam, pp. 71–94.

Farkas, Donka F. (2002). Varieties of indefinites. Jackson, Brendan (ed.), *Proceedings of SALT XII*, CLC Publications, Cornell University, Ithaca, NY, pp. 59–83.

von Fintel, Kai (1999a). Quantifier domain selection and pseudo-scope. Paper presented at the *Cornell Conference on Context-Dependence*.

von Fintel, Kai (1999b). Whatever. Class notes, 24.979 Topics in Semantics, Spring 1999.

von Fintel, Kai (2000). Singleton indefinites (re. Schwarzschild 2000). Ms., MIT.

von Fintel, Kai & Anthony S. Gillies (2008a). CIA leaks. *The Philosophical Review* 117:1, pp. 77–98.

von Fintel, Kai & Anthony S. Gillies (2008b). *Might* made right. To appear in a volume on epistemic modality, edited by Andy Egan and Brian Weatherson, Oxford University Press.

Giannakidou, Anastasia (2004). Domain restriction and the arguments of quantificational determiners. *Semantics and Linguistics Theory*, Cornell Linguistics Club, Ithaca, NY, vol. 14, pp. 110–128.

Heim, Irene (2007). Person and number on bound and partially bound pronouns. Ms. MIT.

Heim, Irene & Angelika Kratzer (1998). *Semantics in Generative Grammar*. Blackwell, Malden, MA.

Kagan, Olga (2007). Specificity and the speaker's belief. Ms. University of California, Santa Cruz.

Kratzer, Angelika (2003). Indefinites and functional heads: From Japanese to Salish. Talk given at SALT 13, University of Washington (Seattle).

Kratzer, Angelika (2005). Indefinites and the operators they depend on: From Japanese to Salish. Carlson, G. N. & F.J. Pelletier (eds.), *Reference and Quantification: The Partee Effect*, Stanford: CSLI, pp. 113– 142.

Kratzer, Angelika & Junko Shimoyama (2002). Indeterminate pronouns: The view from Japanese. Otsu, Y. (ed.), *Proceedings of the 3rd Tokyo Conference on Psycholinguistics*, pp. 1–25.

Matthewson, Lisa (2001). Quantification and the nature of crosslinguistic variation. *Natural Language Semantics* 2:9, pp. 145–189.

Menéndez-Benito, Paula (2005). *The Grammar of Choice*. Ph.D. thesis, University of Massachusetts Amherst, Amherst, MA.

Quer, Josep (2000). Licensing free choice items in hostile environments: The role of aspect and mood. *SKY Journal of Linguistics* 13, pp. 251–268.

van Rooij, Robert (2006). Free choice counterfactual donkeys. *Journal of Semantics* 23:4, pp. 383–402.

Sauerland, Uli (2003). A new semantics for number. Youn, R.B. & Y. Zhou (eds.), *SALT 13*, Cornell Linguistics Club publications, Ithaca, pp. 258–275.

Schwarzschild, Roger (2002). Singleton indefinites. *Journal of Semantics* 19:3, pp. 289–314.

Strawson, P.F. (1974). *Subject and Predicate in Logic and Grammar*. Methuen and Co, Ltd, London.

Tovena, Lucia M. & Jacques Jayez (2006). Epistemic determiners. *Journal of Semantics* 23:3, pp. 217–250.

Yanovich, Igor (2005). Choice-functional series of indefinite pronouns and hamblin semantics. Georgala, Effi & Jonathan Howell (eds.), *Proceedings of SALT XV*, CLC Publications, Ithaca, NY.

Zabbal, Youri (2004). A compositional semantics of the French expression *N'Importe*. Ms. University of Massachusetts Amherst.

Zamparelli, Roberto (2007). On singular existential quantifiers in Italian. Comorovski, Ileana & Klaus von Heusinger (eds.), *Existence: Semantics and Syntax*, Springer, pp. 293–328.

Zimmermann, Thomas Ede (2001). Free choice disjunction and epistemic possibility. *Natural Language Semantics* 8, pp. 255–290.

# Proceedings of the 27th West Coast Conference on Formal Linguistics

## edited by Natasha Abner and Jason Bishop

**Cascadilla Proceedings Project     Somerville, MA     2008**