Teodora Mihoc, Harvard University, tmihoc@fas.harvard.edu

Epistemic indefinites, number marking, and certainty

Puzzle. In a seemingly episodic context, the Spanish indefinite *algun / algunos* (henceforth *algun-SG/PL*), the English indefinite *some* (henceforth *some-SG/PL*), and the German indefinite *irgendein / irgendwelche* (henceforth *irgend-SG/PL*) can all give rise to an epistemic free choice aka **speaker ignorance effect**, (1), that is, they are what is called epistemic indefinites.

(1) Jo called algun-SG/PL / some-SG/PL / irgend-SG/PL student(s)$_{\{a,b,\dots\}}$. $\rightsquigarrow$ speaker ignorance

However, in spite of their ability to give rise to ignorance, these items are all also **compatible with positive and/or negative certainty about a member of the domain**, that is, with a context such as (2-a) or (2-b).

(2) a. Positive certainty context: The speaker knows that Jo called Alice / Alice and Bob.
b. Negative certainty context: The speaker knows that Jo didn't call Alice / Alice and Bob.

Interestingly, as reported in the literature (e.g., Alonso-Ovalle and Menéndez-Benito 2010 and references therein) this compatibility with certainty isn't uniform: *algun-SG*, *irgend-SG*, or *irgend-PL* are only compatible with negative certainty, but *algun-PL*, *some-SG*, or *some-PL* are compatible with either positive or negative certainty, as summarized in the table below.

indefinite	number	comp. w/ + certainty	comp. w/ − certainty
algun	SG	no	yes
	PL	yes	yes
some	SG	yes	yes
	PL	yes	yes
irgend	SG	no	yes
	PL	no	yes

Existing literature and this talk. Alonso-Ovalle and Menéndez-Benito (2010) focus on the patterns for *algun*. They notice the contrast within *algun-SG* and also the contrast between *algun-SG* and *algun-PL*. They propose a solution on which *algun-SG* and *algun-PL* are fundamentally similar – they are both anti-singleton indefinites, that is, they make an existential statement about an x drawn from some non-singleton subset of the domain and are pitched against alternatives that make an existential statement about an x drawn from some singleton subset of the domain – but where number makes a difference – singular NPs are assumed to range over atoms but plural NPs are assumed to be number neutral, and *algun-PL* is assumed to carry a requirement that x be a plurality. As they show, this setup derives incompatibility with positive certainty for *algun-SG* but not *algun-PL*, capturing the patterns for *algun*. However, as they acknowledge, this setup does not capture the patterns for *some* or *irgend* – these items are both compatible with negative certainty in the singular, just like *algun*, but, unlike *algun-SG*, *some-SG* is also compatible with positive certainty, and, unlike *algun-PL*, *irgend-Pl* is incompatible with positive certainty. In this talk we argue that, while *algun* seems to suggest that number determines compatibility with certainty, *some* and *irgend* suggest that, to the contrary, compatibility with certainty generally varies regardless of number, by item. In this talk we propose a solution.

Proposal. Building on Kratzer and Shimoyama (2002) and Alonso-Ovalle and Menéndez-Benito (2010), and especially on the alternatives-and-exhaustification approaches to variation among epistemic indefinites (Chierchia 2013, Fălăuş 2014, etc.), we propose the following:

⋆ A singular NP ranges over atoms. A plural NP ranges over atoms and pluralities (ab below denotes the plurality consisting of a and b). In both cases the NP defines a domain of individuals, and the indefinite quantifies existentially over it.

(3) $\exists x \in \{a, b\}[C(j, x)]$
Abbreviated: $a \vee b$.

(3') $\exists x \in \{a, b, ab\}[C(j, x)]$
Abbreviated: $a \vee b \vee ab$.

⋆ Replacing the domain in the truth conditions with its subsets yields subdomain alternatives, DA . (Replacing the scalar element, $\exists$, with its scalemate $\forall$, yields scalar alternatives, σA .)

(4) $\{\exists x \in \{a\}[C(j,x)], \exists x \in \{b\}[C(j,x)]\}$
Abbreviated: $\{a, b\}$.

(4') $\{\exists x \in \{a\}[C(j,x)], \exists x \in \{b\}[C(j,x)], \exists x \in \{ab\}[C(j,x)], \exists x \in \{a,b\}[C(j,x)]\}, \exists x \in \{a,ab\}[C(j,x)], \exists x \in \{b,ab\}[C(j,x)]\}$
Abbreviated: $\{a, b, ab, a \vee b, a \vee ab, b \vee ab\}$.

$\star$ Alternatives are factored into meaning via a silent exhaustivity operator O . O asserts the prejacent and negates the non-entailed alternatives. The DA of all our indefinites must be factored in in a pre-exhaustified form, ExhDA (obtained by applying O to individual DA; I assume pre-exhaustification of a DA is done relative to other DA of the same size). $\mathrm{O}_{\text{ExhDA}}$ without an intervening operator leads to a crash, but with an intervening modal leads to a Free Choice effect. Our seemingly episodic utterances are actually prefixed with a null epistemic necessity modal (akin to the Gricean Bel_S 'the speaker believes ...'), so $\mathrm{O}_{\text{ExhDA}}$ proceeds across this modal and yields an epistemic Free Choice effect aka ignorance, as shown below for SG.

(5) $\mathrm{O}_{\text{ExhDA}}\ \Box_S\ (a \vee b)$

$$= \Box_S\ (a \vee b) \wedge \underbrace{\neg \mathrm{O}\ \Box_S\ a}_{\Box_S\ a \to \Box_S\ b} \wedge \underbrace{\neg \mathrm{O}\ \Box_S\ b}_{\Box_S\ b \to \Box_S\ a}$$

a. $= \Box_S\ (a \vee b) \wedge \Box_S\ a \wedge \Box_S\ b$ (✗; clash w/ scalar implic)

b. $= \Box_S\ (a \vee b) \wedge \neg\Box_S\ a \wedge \neg\Box_S\ b$ $\boxed{\text{✓; total ignorance}}$

$\star$ Compatibility with certainty arises if an item can prune a natural subclass of its DA , e.g., just singletons or just non-singletons. As illustrated below for SG for a domain with 3 elements (pruning from a 2-element domain would destroy the domain), pruning the singletons / exhaustifying relative to just the non-singleton DA yields compatibility with positive certainty, (6), and pruning the non-singletons / exhaustifying relative to just the singleton DA yields compatibility with negative certainty, (7). If *algun-SG* and *irgend-SG&PL* only allow pruning of non-singleton DA whereas *algun-PL* and *some-SG&PL* allow pruning of either singleton or non-singleton DA , this captures the variation.

(6) $\mathrm{O}_{\text{ExhNonSgDA}}\ \Box_S\ (a \vee b \vee c)$ **just NonSgDA ⇒ *positive* certainty about a specific element ✓**

$$= \underbrace{\Box_S\ (a \vee b \vee c) \wedge \neg \underbrace{\underbrace{\mathrm{O}\ \Box_S\ (a \vee b)}_{\Box_S\ (a\vee b)\wedge\neg\Box_S\ (a\vee c)\wedge\neg\Box_S\ (b\vee c)}}_{\Box_S\ (a\vee b)\to\Box_S\ (a\vee c)\vee\Box_S\ (b\vee c)} \wedge \neg \underbrace{\underbrace{\mathrm{O}\ \Box_S\ (a \vee c)}_{\Box_S\ (a\vee c)\wedge\neg\Box_S\ (a\vee b)\wedge\neg\Box_S\ (b\vee c)}}_{\Box_S\ (a\vee c)\to\Box_S\ (a\vee b)\vee\Box_S\ (b\vee c)} \wedge \neg \underbrace{\underbrace{\mathrm{O}\ \Box_S\ (b \vee c)}_{\Box_S\ (b\vee c)\wedge\neg\Box_S\ (a\vee b)\wedge\neg\Box_S\ (a\vee c)}}_{\Box_S\ (b\vee c)\to\Box_S\ (a\vee b)\vee\Box_S\ (a\vee c)}}_{\text{verified, e.g., by } \Box_S\ a \wedge \neg\Box_S\ /\Box_S\ \neg b \wedge \neg\Box_S\ /\Box_S\ \neg c}$$

(7) $\mathrm{O}_{\text{ExhSgDA}}\ \Box_S\ (a \vee b \vee c)$ **just SgDA ⇒ *negative* certainty about a specific element ✓**

$$= \underbrace{\Box_S\ (a \vee b \vee c) \wedge \neg \underbrace{\underbrace{\mathrm{O}\ \Box_S\ a}_{\Box_S\ a\wedge\neg\Box_S\ b\wedge\neg\Box_S\ c}}_{\Box_S\ a\to\Box_S\ b\vee\Box_S\ c} \wedge \neg \underbrace{\underbrace{\mathrm{O}\ \Box_S\ b}_{\Box_S\ b\wedge\neg\Box_S\ a\wedge\neg\Box_S\ c}}_{\Box_S\ b\to\Box_S\ a\vee\Box_S\ c} \wedge \neg \underbrace{\underbrace{\mathrm{O}\ \Box_S\ c}_{\Box_S\ c\wedge\neg\Box_S\ a\wedge\neg\Box_S\ b}}_{\Box_S\ c\to\Box_S\ a\vee\Box_S\ b}}_{\text{verified, e.g., by } \Box_S\ \neg a \wedge \neg\Box_S\ b \wedge \neg\Box_S\ c}$$

Summary and outlook. As their name indicates, epistemic indefinites all have in common the ability to give rise to ignorance. However, they are also sometimes compatible with certainty. This compatibility with certainty varies in interesting ways within and between items. We started from the observation that, contrary to existing descriptions, this variation does not generally seem to be conditioned on number marking, and provided an alternative-based approach that derived it from an item's lexically encoded ability to prune one natural subclass of its subdomain alternatives or another. This parametric approach captures the range of empirical data better than the existing accounts, offering a unified account for *algun*, *some*, and *irgend*. However, unlike the existing account of *algun*, it fails to explain why this particular indefinite / an indefinite in general, varies / may vary in its parametric setting between its singular and its plural form. A tentative answer in terms of how number marking may affect pruning tendencies will be explored in the talk.

References

Alonso-Ovalle, L. and Menéndez-Benito, P. (2010). Domain restrictions, modal implicatures and plurality: Spanish algunos. *Journal of Semantics*, 28(2):211–240.

Chierchia, G. (2013). *Logic in grammar: Polarity, free choice, and intervention*. OUP Oxford.

Fălăuş, A. (2014). (partially) free choice of alternatives. *Linguistics and Philosophy*, 37(2):121–173.

Kratzer, A. and Shimoyama, J. (2017 [2002]). Indeterminate pronouns: The view from Japanese. In *Contrastiveness in Information Structure, Alternatives and Scalar Implicatures*, pages 123–143. Springer.