

Plural Epistemic Indefinites

Epistemic Indefinites. Across languages, we find epistemic indefinites, which express ignorance on the part of the speaker (see e.g., Haspelmath 1997). German *irgendein* and Spanish *algún* belong to this category: The examples in (1) convey that the speaker does not know which doctor María married (hence the oddity of the continuation with *namely*.) Recent work has shown that the class of epistemic indefinites is not uniform: Kratzer and Shimoyama 2002 [henceforth K&S] argue that *irgendein* triggers a total ignorance (Free Choice ‘FC’) effect: (1a) conveys that, as far as the speaker knows, María might have married *any* doctor. Alonso-Ovalle and Menéndez-Benito (to appear) [henceforth AO & MB] show that *algún* expresses only partial ignorance: (1b) is compatible with situations where not all the doctors are epistemic possibilities. This sets the stage for a research program that aims to identify the parameters along which epistemic indefinites vary and to determine how these parameters interact. The present paper contributes to this enterprise by (i) identifying a hitherto unobserved contrast between types of epistemic indefinites, and (ii) providing an analysis for this contrast that crucially links it to other attested parameters, thereby making concrete typological predictions.

Novel Data: Plural Epistemic Indefinites. While some epistemic indefinites express ignorance in both their singular and their plural forms, others only do so in the singular. The examples in (2) illustrate this contrast for *irgendwelche* and *algunos*, the plural forms of *irgendein* and *algún*, respectively. *Irgendwelche* in (2a) triggers the inference that the speaker is unable to disclose the identity of the students that María is living with (hence, the continuation with *namely* is odd.) In contrast, no such inference is drawn in the case of *algunos*, as shown by the acceptability of (2b). As noted above, the singular forms, *algún* and *irgendein*, differ in that the former conveys partial ignorance whereas the latter triggers a total ignorance (FC) effect. We contend that the correlation between this contrast and the contrast exemplified in (2) is not accidental. Building on K & S, AO & MB argue that the different epistemic effects induced by *algún* and *irgendein* result from the different constraints that these indefinites impose on their domain of quantification. We show that the contrast in (2) can also be traced back to these constraints.

Background: Domain Constraints and Degrees of Ignorance. K & S claim that the FC effect induced by *irgendein* comes about because *irgendein* is a domain widener (i.e., it signals that its domain of quantification is maximal). On this analysis, if the set of doctors in the evaluation world is $D = \{a,b,c\}$, (1a) asserts that in all worlds compatible with what the speaker knows, María married at least one doctor in D (3a). The use of a domain widener triggers a competition with the alternative assertions in (3b) and (3c): the hearer concludes that the speaker picked the maximal domain because any smaller domain would have led to a false claim (i.e., because all the assertions in (3b) and (3c) are false.) Putting this together with the assertion yields the FC effect (as far as the speaker knows, María might have married any of the doctors in the domain.) AO & MB argue that *algún* is not a domain widener but simply signals that its domain *is not a singleton*. On this view, (1b) expresses the proposition in (4). This proposition competes *only* with the alternative assertions in which the domain has been narrowed down to a singleton (3c). The hearer concludes that all alternatives in (3c) are false, which results in a partial ignorance effect: (1b) will be appropriate even in situations where not all the doctors are epistemic possibilities, as long as the speaker does not know which doctor Mary married.

Claim: Domain Constraints and Ignorance in the Plural. We argue that the domain constraints identified above are also responsible for the contrast between the plural forms *irgendwelche* and *algunos*. **Algunos:** We assume that (i) plural noun phrases are number-neutral

(they denote sets containing both atomic and plural individuals, see, e.g., Martí 2008, a.o.), and (ii) plural morphology in the determiner imposes a proper plural requirement: while *algún* conveys that the intersection of its two arguments is not empty (5a), *algunos* conveys that the intersection contains two or more individuals (5b). Modifying the analysis in AO & MB slightly, we propose that both *algún* and *algunos* signal that the domain of quantification contains *at least two atomic individuals*. As a result, (2b) will express the proposition in (6a) (assuming that the domain of students is also $\{a,b,c\}$). This will in principle trigger a competition with alternative assertions in which the domain has been restricted to a singleton set containing *just one atomic individual*. The derivation of the epistemic effect of the singular form will proceed as above. In the case of the plural form, reducing the domain to a singleton containing just one atomic individual (as in (6b)) would result in a contradiction. Hence, the hearer will not consider propositions like (6b) as possible alternative assertions. Competition with these alternatives will thus be blocked, and therefore no epistemic effect will arise. **Irgendwelche**, like its singular version, imposes domain widening (7). The proposition in (8a), corresponding to (2a), can compete with all the *non-contradictory* assertions that result from narrowing the domain (8b). The FC effect is derived as above: (8a) together with the inference that all the alternatives in (8b) are false entails that as far as the speaker knows, María may be living with any group of students. **Typological predictions.** The analysis presented here predicts that (i) epistemic indefinites that convey a FC effect will express ignorance in both their plural and their singular forms, while (ii) epistemic indefinites that convey partial ignorance will only do so in their singular form. This investigation hence sets the basis for an explanatory semantic typology of modal indefinites.

- (1) a. Maria hat irgendeinen Arzt geheiratet, # und zwar Dr. Smith.
b. Maria se casó con algún medico, # en concreto con el doctor Smith.
‘Maria married some doctor or other, namely Dr. Smith.’
- (2) a. Maria wohnt mit irgendwelchen Studenten zusammen, # und zwar mit Pedro und Juan.
b. María vive con algunos estudiantes, en concreto con Pedro y Juan.
‘Maria lives with some students, namely Pedro and Juan.’
- (3) a. $\Box \exists x [x \in \{a, b, c\} \& M(m, x)]$ (‘M’ stands for ‘married’, and ‘m’ for María.)
b. $\Box [M(m,a) \text{ or } M(m,b)], \Box [M(m,b) \text{ or } M(m,c)], \Box [M(m,a) \text{ or } M(m,c)]$
c. $\Box [M(m,a)], \Box [M(m,b)], \Box [M(m,c)]$
- (4) $\Box [\exists x \in f(\text{doctor}): M(m,x)]$ (where f is a subset selection function that restricts the domain)
Antisingleton constraint: for any set X , $|f(X)| > 1$
- (5) a. $[[\text{algún}]] = \lambda f. \lambda P. \lambda Q. |\{x: f(P)(x) \& Q(x)\}| \geq 1$
b. $[[\text{algunos}]] = \lambda f. \lambda P. \lambda Q. |\{x: f(P)(x) \& Q(x)\}| \geq 2$
- (6) a. $\Box (|\{x: f(\text{students})(x) \& L(m, x)\}| \geq 2)$ where, for any X , $|\{x: \text{atom}(x) \& f(X)(x)\}| \geq 2$
b. $\Box (|\{x: x \in \{a\} \& L(m, x)\}| \geq 2)$
- (7) $[[\text{irgendeinwelche}]] = \lambda f. \lambda P. \lambda Q. f = \text{IDENTITY}. |\{x: f(P)(x) \& Q(x)\}| \geq 2$
- (8) a. $\Box (|\{x: x \in \{a, b, c, a+b, b+c, a+c, a+b+c\} \& L(m, x)\}| \geq 2)$
b. $\Box (|\{x: x \in \{a, b, a+b\} \& L(m, x)\}| \geq 2), \Box (|\{x: x \in \{a, c, a+c\} \& L(m, x)\}| \geq 2),$
 $\Box (|\{x: x \in \{b, c, b+c\} \& L(m, x)\}| \geq 2)$

References: Alonso-Ovalle, L. and Menéndez-Benito, P. (to appear) Modal Indefinites, *NALS* | Haspelmath, M. (1997) *Indefinite Pronouns*, C.U.P | Kratzer, A. and Shimoyama, J. (2002) Indeterminate Pronouns: The View from Japanese. | Martí, L. (2008) The Semantics of Plural NPs in Spanish and Portuguese. *NALS*, 16.