

### The morpho-semantics of Spanish indefinites and the theory of number

Following Harbour's (2014) theory of number in the nominal domain, I propose that number plays a role in the determiner domain. I show how certain previously unnoticed properties of the Spanish indefinite *algún* and what looks like its plural counterpart, *algunos*, follow naturally from this proposal. The hypothesis leads to unexpected consequences about where and how semantic number may be expressed in a language, and opens up the door to a theory of the cross-linguistic expression of number in the determiner domain.

There is extensive work on the scopal and epistemic properties of *algún*, *algunos*, and bare plurals (Alonso-Ovalle and Menéndez-Benito 2010, López Palma 2007, Martí 2007, 2008, a.o.), but I concentrate on issues illustrated by the following data (translations approximate):

- (1) Hay alguna mosca en la sopa  
 there.is ALGÚN.FEM fly in the soup  
 'There is some fly in my soup'
- (2) Hay algunas moscas en la sopa 'There are some flies in my soup'
- (3) Hay moscas en la sopa 'There are flies in my soup'

In (1), there can be one or more flies in my soup, but there can't be many. In (2), there have to be a plurality of flies in my soup, there can't be many, and there are more flies than in (1). In (3), there have to be a plurality of flies in my soup, and no further requirements are made on the number. This is reminiscent of Sursurunga, a language in which the pronominal system distinguishes between paucal (a few), greater paucal (several), and plural (non-atomic, number-undetermined) (Corbett 2000: 26-7, Harbour p. 201). My proposal is that these differences may be expressed on determiners, not (only) on (pro)nouns.

I propose that *algún* is a paucal determiner which operates on a join-complete semilattice and returns a join-incomplete proper subsection of it where the 'cut' is low but vague. A lattice is join-complete iff whenever two elements of the lattice are joined, they yield a third element that is also in the lattice. Thus, (1) is appropriate if there is one, two, three, or perhaps four flies in my soup, but not more. *Algunos* is a greater paucal, a determiner which operates on an atomless, join-complete upper subsection of a lattice and returns a join-incomplete proper subsection of it. The cut for the greater paucal is also vague. Thus, (2) is appropriate if there are four, five, perhaps six flies in my soup. The plural ending of the bare plural noun operates on a lattice and returns an atomless, join-complete proper subsection. Thus, (3) is true if there are two or more flies in the soup. The plural is closed under addition, the approximatives are not. Harbour's semantics for [ $\pm$ additive] is as follows (' $x \sqcup y$ ' is the join of  $x$  and  $y$ , 'QCP' says that  $Q$  is a proper subpart of  $P$ , and  $Q$  is a contextually supplied free variable):

- (4) [[+additive]] =  $\lambda P \lambda x: Q(x) \ \& \ QCP. \ \forall y (Q(y) \rightarrow Q(x \sqcup y))$   
 (5) [[-additive]] =  $\lambda P \lambda x: Q(x) \ \& \ QCP. \ \neg \forall y (Q(y) \rightarrow Q(x \sqcup y))$

*Algún* contributes [-additive], as follows:

- (6) [[algún]] =  $\lambda R_{et}. \lambda S_{et}. \exists z ([[-additive]](R))z \ \& \ S(z)$

(6) introduces  $\exists$ -quantification over individuals, as standard. A statement of the form '*algún* (R)(S)' is true iff there is an individual  $z$  that is presupposed to be  $Q$ , for  $Q$  a proper subset of  $R$ , and which is either an atomic  $R$  or non-atomic  $R$  and which, when coupled with other members of  $R$ , may or may not result in a member of  $R$ ;  $z$  is also in  $S$ . In Fig. 1,  $z$  is set to be one of the points in the  $Q$  subsection of the lattice, making *algún* a paucal determiner. As shown in Harbour, [-additive] can co-occur with [+additive], but not in any order. (+additive(-additive(P))) is unsatisfiable (cannot obtain a join-complete lattice from a join-incomplete one), but (-additive(+additive(P))) is satisfiable and results in a greater paucal meaning ( $Q'$  in Fig. 2). The denotation of *algunos* is thus as follows:

- (7) [[algunos]] =  $\lambda R_{et}. \lambda S_{et}. \exists z ([[-additive]]([[[+additive]](R)))z \ \& \ S(z)$

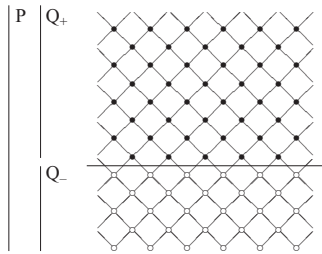


Figure 1 (Harbour, p.195)

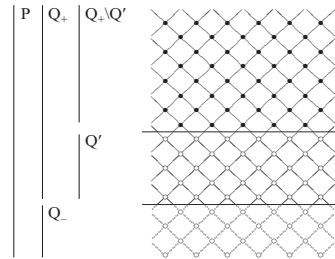


Figure 2 (Harbour, p.200)

A natural hypothesis is that *alg-* = [-additive] and that *-s<sub>algunos</sub>* = [+additive]. Evidence that *-s<sub>algunos</sub>* is semantically contentful comes from DPs with *pluralia tantum* nouns (López Palma 2007): *algunas gafas* 'several pairs of glasses' is a plurality of glasses, but that cannot come from *gafas* because *gafas* is not semantically plural, as can be seen from the fact that *unas gafas* 'a pair of glasses' is semantically singular (I assume that *gafas* triggers plural agreement on the determiner *unas*, the feminine of *unos*; thus, *-s<sub>unos</sub>* is only an agreement suffix).

If *algún* is as in (6), *mosca* in *alguna mosca* must be semantically number neutral (contributing both atomic and non-atomic individuals, see P in Fig. 1). Morphologically plural nouns, however, must be semantically plural: since *unas moscas* is semantically plural (Martí 2008) but *unas gafas* is not, *unos* cannot be semantically plural, but *moscas* must. Thus, whereas semantic singularity in a Spanish DP must come from D, semantic non-singularity has a D source and an N source. A natural assumption is that *-s<sub>noun</sub>* = *-s<sub>algunos</sub>* = [+additive] (*algunas moscas*, is, hence "doubly" [+additive], but this is harmless because (-additive(+additive(+additive(P)))) is indistinguishable from (-additive(+additive(P)))); more on this below). The problem raised for the idea that morphologically plural nouns are semantically plural by Lasersohn (2011), Schwarzschild (1996), and others, on the basis of downward-entailing quantifiers, can be resolved if these quantifiers quantify over the atomic individuals provided by the plural individuals in the denotation of those nouns (cf. Chierchia 1998, Lasersohn p. 1136).

This approach also predicts, correctly, that *unos* and *un*, because they lack *alg-*, are not approximative: *una mosca* 'a fly' is semantically singular, and *unas moscas* 'some flies' is semantically plural. The system also predicts that the way to semantically pluralize *unas gafas* is to add [+additive], which is, in fact, what we find: *unas cuantas gafas* 'several pairs of glasses' is, indeed, semantically plural (this also argues for the independence of [+additive], since it is presumably realized by itself in *cuantos*). Interestingly, *\*algunas cuantas gafas* can also be predicted, because Harbour (p. 205) prohibits (+additive(+additive(P))) when the two [+additive] features come from the same domain (in *algunas moscas*, they come from different domains). Finally, that *-s<sub>noun</sub>* = *-s<sub>algunos</sub>* = [+additive] suggests that [ $\pm$ atomic] is not operative in nouns in Spanish, contrary to common assumption: [+additive] already removes the atomic layer of the lattice, so there is no need for [-atomic] to create plurals.

In Harbour's theory, only the features [ $\pm$ additive], [ $\pm$ atomic] and [ $\pm$ minimal] can appear in the Number projection of N. Together with certain parameters, such as whether or not a feature may be repeated, Harbour derives an impressive amount of generalizations concerning the expression of nominal number cross-linguistically. The approach argued for here thus opens the door to the idea that the number distinctions that determiners make cross-linguistically are not accidental but depend on a theory which regulates the features that appear in the Number projection of D. Neither the *algún-algunos* distinction argued for above, nor, for example, the Adyghe paucals (*zəɾəzɾer/zejeɾ<sup>w</sup>aje* '1-2'), greater paucals (*lawəze/zawəle/qawəme* 'more than 1-2 but not many') and greater plural (*pčəve* 'quite a few, but not many') determiners (Nikolaeva 2012; my labels) would constitute an accident.