Information Structure and the Referential Status of Bare Plurals*

Norberto Moreno
Universidad de Castilla La Mancha/
Instituto Universitario Ortega y Gasset
quipen@retemail.es

Isabel Pérez
Instituto Universitario Ortega y Gasset/
Universidad Autónoma de Madrid

0. Starting Point

The goal of this paper is to study the influence of information structure in the referential status of linguistic expressions such as bare plurals and indefinite NPs in Spanish. In particular, we will argue for the following claims: (a) Spanish bare plurals can receive a generic interpretation in object position and (b) Spanish bare plurals in object position can be topics in situ. We will focus on object position because of the well known semantic and syntactic constraints that affect preverbal subject bare plurals in Spanish.

There are two reasons why it is important to pay attention to the interaction between information structure and the interpretation of Bare Plurals in Spanish. First, it has been argued that Spanish bare plurals in object position can only be existentially interpreted (Laca 1990, 1996; Zubizarreta 1998). This interpretation arises in examples like (1). In these examples, the bare plurals are always weak NPs in Milsark's (1977) sense:

(1) a. Eva trajo novelas a la reunión.
   'Eva brought novels to the meeting'
   \[ \exists s, x \cdot \text{novel}(x) \land \text{brought-to-the-meeting}(s, E, x) \]\n   b. Juan compró manzanas para su hermana.
   'Juan bought apples for her sister'
   \[ \exists s, x \cdot \text{apple}(x) \land \text{bought-for-her-sister}(s, J, x) \]

It is also important to note that Spanish bare plurals cannot denote kinds in the sense of Carlson (1977). Bare plurals in Spanish cannot be arguments of predicates selecting kind-denoting arguments, as the ungrammaticality of (2) shows (see Longobardi 1999, 2000 for Italian):

(2) a. Edison inventó *(las) bombillas.
    'Edison invented *(the) bulbs'

Special thanks for their suggestive comments must be given to Brenda Laca, Louise McNally and Manuel Leonetti. Earlier versions of this paper were presented at the 10th Colloquium on Generative Grammar (University of Alcalá de Henares, April 12-14, 2000), the Preferably non Lexical Semantics meeting, (University of Paris 7, Paris, May, 30 -31 , 2000) the GISSL Workshop (Universitat de Girona, Girona, July 22, 2000) and the Deutsche Gesellschaft für Sprachwissenschaft (University of Leipzig, Leipzig, February 2-March 3, 2001). We want to thank the audiences of these meetings for useful suggestions. Any errors are our responsibility.

* Special thanks for their suggestive comments must be given to Brenda Laca, Louise McNally and Manuel Leonetti. Earlier versions of this paper were presented at the 10th Colloquium on Generative Grammar (University of Alcalá de Henares, April 12-14, 2000), the Preferably non Lexical Semantics meeting, (University of Paris 7, Paris, May, 30 -31 , 2000) the GISSL Workshop (Universitat de Girona, Girona, July 22, 2000) and the Deutsche Gesellschaft für Sprachwissenschaft (University of Leipzig, Leipzig, February 2-March 3, 2001). We want to thank the audiences of these meetings for useful suggestions. Any errors are our responsibility.

1 See Bosque (1996) and the references cited there.

2 We will use very simple logical forms, disregarding the semantic representation of Tense. Variable s ranges over situations; variable x ranges over individuals.
The topical status of bare plurals in these examples is made clear in question-answer contexts like (6) and (7). In these cases there is a previous mention of the bare plural in the question and the answers convey information about the relation between Pedro and the apples in (6), and about the Council’s intentions concerning brick houses in (7):

(6) a. Pedro nunca come manzanas, ¿verdad?
   ‘Pedro never eats apples, right?’
   b. No, hombre, manzanas, Pedro las come todos los días.
   ‘Not really, apples, Pedro eats them every day’

(7) a. Me han dicho que van a construir una barriada de casas de adobe para estudiantes.
   ‘I have heard that they are planning to build a new urban area of brick houses for students’
   b. No puede ser. Estoy segura de que, casas de adobe, el ayuntamiento no permite construirlas.
   ‘It cannot be possible. I am sure that, brick houses, the Council does not permit building them’

In this paper, we will show that bare plurals in object position can have a generic interpretation in sentences with a generic operator (either explicit or implicit), and with a characteristic information structure. We will also show that exactly in those cases, bare plurals can be clause-internal argumental topics. To achieve this goal, we will explore the parallel semantic behavior of indefinites and bare plurals in object position.

The paper is structured as follows: In section 1, we present the semantic background we assume with respect to the denotation of bare plurals and indefinite NPs. In section 2, we deal with the role played by information structure in shaping the mapping from syntactic structure to logical form in Spanish, following the model put forth by Partee (1991) and Büring (1995). We will show how, in sentences with a special topic-focus articulation, bare plurals and indefinite NPs in object position can receive a generic interpretation. In section 3, we will defend the claim that generic bare plurals in object position are topics. We will explore some control properties of these NPs that support our claim. Finally, in section 4, we present some remaining problems.

1. The denotation of indefinite NPs and Bare Plurals: unselective binding and tripartite structures at LF

In this section we will present the theoretical background we assume with respect to the interpretation of indefinite NPs and bare plurals, and with respect to the mapping from syntactic structures to logical forms.

1.1. The denotation of Indefinite NPs and Bare Plural NPs

With respect to the semantic denotation of indefinite NPs and bare plurals, we will adopt Kamp’s (1981) and Heim’s (1982) framework in which indefinite NPs introduce an open formula (a variable with a predicate condition on it) into the logical representation of the sentence. Diesing (1992) and Longobardi (1999, 2000) extend the same kind of denotation to bare plurals:
Since this variable is not inherently quantified, it can be bound by an operator at LF. In the absence of any quantificational operator, Spanish indefinite NPs and bare plurals in object position can only receive an existential interpretation, since the variables with which they are associated are bound by the process of existential closure that applies at the sentence level:

\[(9)\]
\[
\begin{align*}
&a. \text{ Eva ha criado un perro en casa.} \\
&\text{ 'Eva has raised a dog at home'} \\
&b. \exists_{x} \text{ } [\text{dog}(x) \land \text{raise-at-home}(s, E, x)]
\end{align*}
\]

The existential interpretation of indefinite NPs and bare plurals licenses entailments of the following sort:

\[(11)\]
\[
\begin{align*}
&a. \text{ Eva ha leído novelas.} \\
&\text{ 'Eva has read novels'} \\
&b. \text{ Eva ha criado un perro en su casa.} \\
&\text{ 'Eva has raised a dog at home'} \\
&\rightarrow \\
&\text{ Eva ha leído libros} \\
&\text{ 'Eva has read books'} \\
&\text{ Eva ha criado un animal en su casa.} \\
&\text{ 'Eva has raised a pet animal at home'}
\end{align*}
\]

1.2. The Mapping Hypothesis

We follow Heim (1982) and Kamp and Reyle (1993) in assuming that, at LF, quantificational elements such as modals, adverbs of quantification, habitual aspect, and so on, trigger the partitioning of a sentence into three elements: an operator, a restrictive clause (the domain or range of quantification) and a nuclear scope (which contains the assertion), (12). The quantificational element is treated as an unselective quantifier that binds every free variable in the restrictive clause. Free variables in the nuclear scope are closed off by the process of existential closure:

\[(12)\]
\[
\text{Operator}_x [\text{Predicate-1}(x)] \quad \exists_y [\text{Predicate-2}(x), \text{Predicate-3}(y)]
\]

The relevant question is, then, what pieces of syntactic structure are mapped onto the restrictive clause, and which ones are mapped onto the nuclear scope. We will tentatively adopt Diesing's Mapping Hypothesis (Diesing 1992) as an answer to this question, (13). Her proposal amounts to the claim that the nuclear scope of an operator in a tripartite structure is made up from the verb phrase:
   a. Material from VP is mapped onto the nuclear scope.
   b. Material from IP is mapped onto the restrictive clause.

According to these assumptions, the generic interpretation of subject indefinite NPs in sentences like (14a) can be obtained if we assign such sentences logical forms like (14c), in accordance with Diesing's hypothesis. The indefinite is mapped onto the restrictive clause in accordance with Diesing's Mapping hypothesis, since it occupies the subject (Spec IP) position:4

(14)  a. Un gato siempre hace ruido por las mañanas  
       'A cat always makes noise in the morning'
   b. [IP A cat always [VP makes noise in the morning]]
   c. ALWAYS$_s$x [cat(x) ∧ C(s, x)] [make-noise-in-the-morning(s, x)]

Indefinite NPs in object position can also receive a generic interpretation in sentences like (15), where there is a quantificational operator such as an adverb of quantification (15a,b) or a null generic operator (15c):

(15)  a. Juan siempre aplaude a un buen músico.  
       'Juan always applauds a good musician'
   b. Juan siempre agradece un regalo.  
       'John is always grateful for a gift'
   c. Reconoces a un caballero por su forma de hablar.  [Leonetti 1991]
       'You identify a gentleman by his way of talking'

The logical form of (15a) is the one we have in (16):

(16)  ALWAYS$_s$x [good-musician(x) ∧ C(s, J, x)] [applaud(s, J, x)]

In this case, the indefinite NP is not existentially interpreted since it is mapped onto the restriction of the operator. Therefore, inferences of the following type are not licensed:

(17)  Juan siempre aplaude a un buen músico  -/>  Juan siempre aplaude a un artista
       'Juan always applauds a good musician'  'Juan always applauds an artist'

It is important to note that, in the syntactic representation of the sentence, the indefinite NP is within the VP, but, at LF, is mapped into the restrictive clause, in apparent contradiction to Diesing's hypothesis.

4 We introduce in the logical representation of sentences a predicate C that relates individuals to the eventualities in which they are participants. We will use this device to represent the implicit quantification over eventualities apparent in many sentences, as is the case in (14). Intuitively, the logical form in (14c) says that all the eventualities of the (pragmatic) appropriate type in which a cat is a participant are eventualities in which it makes noise in the morning.
2. Information Structure and Logical Form

Partee (1991), von Fintel (1994), Hajicova et al. (1998), among others, have pointed out that the information structure of a clause plays a crucial role in the process of deriving logical forms.

According to Partee (1991), topic-focus articulation (TFA) contributes to the formation of tripartite structure as follows:

(18)  a. Focus Material projects onto the nuclear scope.
   b. Non-focused (focus-frame) material projects onto the restrictive clause

We will show that the TFA is fundamental to deriving the generic interpretation of bare plurals in object position. But first let us consider the generic interpretation of Spanish indefinite NPs in object position. Leonetti (1990, 1991) noted that indefinite NPs which receive a generic interpretation in object position are usually part of the topical portion of the sentence. In the framework we are assuming, this amounts to saying that the indefinite generic NP is mapped onto the restriction of the generic operator, given its topical character. Note that for the indefinite object in a sentence like (19a) to have a generic interpretation, the sentence must have the intonational structure in (19b), where the verb is assigned prosodic prominence:

(19)  a. Juan siempre aplaude a un buen músico.
     b. Juan siempre APLAUDA a un buen músico

(20)  a. [TOPIC Juan] siempre [FOCUS aplaude] [TOPIC a un buen músico]
     b. ALWAYS_kx [good-musician(x) ∧ C(s, J, x)] [applaud(s, J, x)]

The TFA will predict a LF such as (20b) if the information structure of the sentence is as in (20a). The LF in (20b) gives the right truth conditions for the generic interpretation of the sentence.

If there is a parallelism in the denotation of indefinite NPs and bare plurals in Spanish, as we have assumed following Diesing (1992) and Longobardi (1999, 2000), we expect Spanish bare plurals in object position to have the possibility of being interpreted generically.

Consider the sentences in (21). In these sentences, generic interpretation of the bare plurals is triggered by an implicit generic operator (associated with nonperfective tense). In the sentences in (22), generic interpretation is related to the presence of the adverb of quantification, siempre:

(21)  a. Ana veía películas francesas en el extranjero.
     ‘Ana used to watch French movies in other countries’

(22)  a. Ana siempre veía películas francesas en el extranjero.

   Since this is a controversial issue, we will only consider the possibility of verb focus in (20a). Nothing crucial in the argumentation hinges on this matter. (see Nikolaeva 2001 and the references cited therein)
b. María consigue novelas japonesas en las bibliotecas.
‘Maria obtains Japanese novels at the libraries’
c. Correos admite giros urgentes hasta las ocho.
‘The Post Office admits express postal orders until eight o’clock’

(22) a. Juan siempre aplaude músicos minusválidos.
‘John always applauds handicapped musicians’
b. Juan siempre compra estatuillas africanas en los Estados Unidos.
‘Juan always buys African statues in the USA’

Note, however, that the generic interpretation of the bare plural in object position requires a particular intonational/information structure. In each of the sentences above, the focal domain cannot include the bare plural (where F means Focal Domain) as shown in the question-answer pairs in (22). The topic-focus articulation of these sentences is the argument-focus or narrow focus. The PP identified by the wh-word is the focus in each case. The bare plural is out of the focus domain:

(23) a. A. - ¿Dónde veía Ana una película francesa en aquella época de prohibiciones?
‘Where did Ana use to watch a French movie in those years of censorship?’
B. - Ana veía películas francesas [F en el extranjero]
‘Ana used to watch French movies in other countries’
b. A. - ¿Dónde consigue María una novela japonesa hoy en día?
‘Where does María obtain a Japanese novel in these days?’
B. - María consigue novelas japonesas [F en las bibliotecas]
c. A. - ¿Hasta qué hora admite Correos un giro urgente?
‘Until what time does the Post Office admit an express postal order?’
B. - Correos admite giros urgentes [F hasta las ocho]
‘The Post Office admits express postal orders until eight o’clock’

In the following question-answer pairs, bare plurals are also non-focussed material. In (24a), we find a deaccented object to the right of the accented verb (Lambrecht 1994). In (24b), the bare plural can be considered a partial topic, in the sense of Büring (1995):6

(24) a. A. - Me han dicho que Juan insultó a un músico de la orquesta.
‘They told me that Juan insulted a musician in the orchestra’
‘That, it can’t be. Juan always applauds handicapped musicians’
b. A. - ¿Dónde suele comprar Juan arte africano?
‘Where does Juan use to buy African art?’
B. - Juan siempre compra estatuillas africanas [F en Estados Unidos]
‘Juan always buy African statues in the USA’

6 It is important to note that in all of these examples, the bare plural is not the only topic in the sentence. It can be considered a secondary topic, in addition to the primary topic, which is usually the subject of the sentence. Secondary topics are topical elements (mainly objects) such that the utterance is construed to be ABOUT the relationship between it and the primary topic. For the notion of secondary topic, see Nikolaeva 2001.
From the TFA of these sentences, we can derive the following Logical Forms, in which the bare plurals have been mapped onto the restriction of the generic operator:

(25) a. Gen_{s,A} [French movie(x) ∧ watch(s, A, x)] [abroad(s, A, x)] (LF for 21a)
b. ALWAYS_{s,A} [handicapped-musicians (x) ∧ C(s, J, x)] [applaud(s, J, x)] (LF for 22a)

Since these bare plurals are generically interpreted, inferences such as the following are not licensed:

(26) a. Juan siempre aplaude a músicos minusválidos -/> Juan siempre aplaude a artistas minusválidos
   ‘Juan always applauds handicapped musicians’ -/> ‘Juan always applauds handicapped artists’
b. Correos admite giros urgentes hasta las ocho -/> Correos admite giros hasta las ocho.
   ‘The Post Office admits express postal orders until eight o’clock’ -/> ‘The Post Office admits postal orders until eight o’clock’

3. Generic Bare Plurals are Topics

We have just seen that for the bare plurals to receive a generic interpretation they must be within the non-focused part of the sentence (focus frame/background). Now we will explore the syntactic effects associated with these information structures. In particular, there are certain syntactic facts concerning control properties that suggest that generic bare plurals in object position may display topic-like behavior.

Katz (1993) notes that only presuppositional NPs can control the null subject of the extrasentential constructions known as free adjuncts (FA) (Stump 1985). These constructions are illustrated in (28a,b) for English, and in (29a,b) for Spanish. In these examples, a proper noun (a typical case of presuppositional NP) is the controller of the null subject of the free adjunct:

(27) Katz’s Generalization (1993):
Only presuppositional NPs can control the null subject of Free Adjuncts

(28) a. Wearing an ugly mask, Sarah would frighten everyone.
   [From Stump 1985]
b. Crossing the street, Jane went into the store.
c. Alone, John decided to read a book. [From Stump 1985]

(29) a. Enfadado, Juan no puede concentrarse.
   ‘Angry, John cannot concentrate’.
b. Cansado, Juan decidió irse a dormir.
   ‘Tired, John decided to go to sleep’.

Other presuppositional NPs controlling free adjuncts, such as definite NPs, bare plurals in the domain of a quantificational operator, or indefinite NPs with a specific use, are in (30).
(30)  a. Being intelligent, your brother attended the conference.  
b. Crossing the street, women usually enter the store.  
c. Being intelligent, linguists go to conferences. [Katz 1993]  
d. Desperate, a student cheated on the exam.  

When a NP is not presuppositional, it cannot control the null subject of a free adjunct. For example, bare plurals in the following sentences can only be existentially interpreted. They are weak NPs in Milsark’s sense. Therefore, they cannot act as controllers:

(31)  a. * Crossing the street, women went into the store.  
b. * Being intelligent, linguists attended conferences. [Katz 1993]

However, it seems that in addition to being presuppositional, controllers must be topics, as has been generally argued in the case of backwards pronominalization (Carden 1982, Kuno 1972, Reinhart 1982). Note that a presuppositional NP inside a focus domain cannot act as controller of a null subject of a free adjunct. This is shown in (32) and (33):

(32)  a. * Cansado, se ha dormido [Juan] Focus Domain  
     b. Cansado, Juan se ha dormido.  
        ‘Tired, Juan fell asleep’

(33)  a. * Enfadado con su hermana, se fue al cine [Juan] Focus Domain  
     b. Enfadado con su hermana, Juan se fue al cine.  
        ‘Angry with his sister, Juan went to the movies’

Postverbal subjects in Spanish are always focal. This kind of sentence can be the answer to questions like the following:

(34)  A. - ¿Quién se ha dormido?  
     ‘Who fell asleep?’  
   B. - Se ha dormido [Juan]  
     ‘JUAN fell asleep’  
   A. - ¿Quién se fue al cine?  
     ‘Who went to the movies?’  
   B. - Se fue al cine [Juan]  
     ‘JUAN went to the movies’

These data suggest that the right generalization must be stated in terms of topic-hood:

(36)  Only topics can be controllers of the null subject of free adjuncts.

Consider the sentences under (37). (37a) shows that generic indefinite NPs can control free adjuncts as well as specific indefinites, (37b). Indefinite NPs with existential readings cannot be controllers, (37c):

---

Norberto Moreno & Isabel Pérez

(37) a. Desesperado ante la posibilidad de suspender, un alumno siempre copia.
   ‘Desperate for the possibility of failing the exam, a student always cheats’

b. Comprado con cariño, Juan siempre agradece un regalo.
   ‘Bought with love, Juan is always thankful for a gift’

c. * Desesperado ante la posibilidad de suspender, ha copiado un alumno.
   ‘Desperate for the possibility of failing the exam, there is a student who
   cheated in the exam’

Spanish bare plurals in object position can act as controllers of null subjects of free
adjuncts if they are interpreted generically, hence out of the focus domain, as shown in
(38):

(38) a. [Prohibidas en su país pro₁], Ana veía [películas francesas], [F en el
   extranjero]
   ‘Forbidden in her own country, Ana used to watch French movies in
   other countries’

b. [Escasas en Europa pro₁], Juan siempre compra [estatuillas africanas], [F
   en EEUU]
   ‘Being uncommon in Europe, Juan always buys African statuettes in
   EEUU’

c. [Difíciles de encontrar en las librerías pro₁], María consigue [novelas
   japonesas], [F en las bibliotecas]
   ‘Being hard to find in the bookshops, María obtains Japanese novels
   from the libraries’

d. [Urgentes y de máxima importancia pro₁], Correos admite [giros], [F hasta
   las ocho]
   ‘Being urgent, the Post Office admits postal orders until eight o’clock’

What these examples show is that generic bare plurals in object position are topics. Note
that when the bare plural is within the focus domain, it is not possible for the null
subject of a free adjunct to be controlled by the bare plural:

(39) a. Ana leía [novelas japonesas]₁ con gusto/ Ana leía con gusto [novelas
   japonesas]₁
   ‘Ana used to read Japanese novels with pleasure’

b. * Bien escritas, Ana leía [novelas japonesas]₁ con gusto
   ‘Well written, Ana used to read Japanese novels with pleasure’

4. Conclusions and open questions

We have tried to show that many of the interpretative properties of Spanish bare plurals
can be explained if we treat them semantically as open formulas that introduce a free
variable into the logical representation of a sentence, as has been proposed by
Longobardi (1999, 2000) for Italian. Concretely, we have shown that Spanish bare
plurals’ interpretation is affected by sentence-level genericity and therefore, bare plural
NPs can receive a presuppositional generic-like interpretation if they are within the non-
focussed part of a sentence. Being non-focussed material they are projected, in logical
Information Structure and the Referential Status of Bare Plurals

form, onto the restriction of a generic-like operator present in the sentence. We have also suggested that, in those cases, bare plurals are topics. Their control properties seem to confirm our proposal.

Of course, some questions remain open. The most important one is the following: since we have assumed that bare plurals are open formulas from the semantic point of view, very much like indefinite NPs, we are forced to find an explanation for their differences concerning scope possibilities (noted by Carlson 1977). Unfortunately, we don’t have an answer for that.

References


