Plural morphemes, definiteness and the notion of semantic parameter

This paper discusses the semantics of plural markers in Chinese and Japanese with regard to Chierchia's (1998a) semantic parameter. According to this parameter, languages are divided into three types with respect to semantics types of nouns, as in (1).

(1) The Nominal Mapping Parameter: \( N \Rightarrow [\text{argument, +predicate}] \)
   a. \( N \Rightarrow [+\text{arg}, -\text{pred}]; \) (e.g. Chinese/Japanese)
   Nouns can be of type \( e \), cannot be of type \( \langle e, \rangle \).
   b. \( N \Rightarrow [+\text{arg}, +\text{pred}]; \) (e.g. English)
   Nouns can be of type \( e \), can be type \( \langle e, \rangle \).
   c. \( N \Rightarrow [-\text{arg}, +\text{pred}]; \) (e.g. French)
   Nouns cannot be of type \( e \), can be of \( \langle e, \rangle \).

In languages like Chinese and Japanese, the parameter values are set as \([+\text{arg}, -\text{pred}]\), which means that in these languages, nouns are kind/mass-denoting expressions of type \( e \). This accounts for the observation that in these languages, there is no determiner and no plural morpheme, bare nouns are used in argument positions, and there is a rich system of classifiers. As is pointed out by Kawasaki (1989) and Li (1999) among others, however, Japanese -ra and -tachi, and Chinese -men are true plural morphemes, used with [+human] nouns such as gakusei 'student', and they function as definite markers (cf. gakusei-ra 'the students'). In this paper, I will give new evidence for the definiteness of these plural morphemes, concerning the maximality, the impossibility of predicative use and the incompatibility with mative 'almost', and propose the definition as follows.

(2) Lexical item Translation Type
-\( \langle e \rangle \)
\( \text{gakusei} \) \( \text{men} \) \( \text{gakusei-men} \) \( \text{gakusei-\text{men}} \)
\( \text{student} \) \( \text{student} \) \( \text{student} \) \( \text{student} \)
\( \text{NP.2.3} \) \( \text{DP.4} \) \( \text{NP.3} \) \( \text{DP.4} \)
\( \text{D:1} \) \( \text{D:1,2} \) \( \text{D:1,2} \) \( \text{D:1,2} \)

In contrast to the parameter setting in (1a), the definition in (2) requires that the nouns followed by the plural morphemes not be kind/mass-denoting but denote properties. (5) is the convergent derivation in the case where the noun translates into a property while (6) is the derivation when the noun first translates into a kind-denoting term and then is type-shifted by the \( \text{\textit{?}} \) operator (cf. Chierchia 1998b), and the resulting representation is uninterpretable.

(5) \( \text{DP.4} \)
\( \text{NP.3} \) \( \text{D:1,2} \)
\( \text{gakusei} \) \( \text{student} \)
Type-theoretically, the function application in (6) is completed. Semantically, however, PL(\text{\textasciitilde}\text{STUDENT}) makes the whole DP uninterpretable, since mass terms cannot be pluralized. The extension of \text{\textasciitilde}\text{STUDENT} (= \lambda x[\text{STUDENT} x]) is the closure of atoms of being a student in a situation s, namely *\text{\textasciitilde}\text{STUDENT}. Thus PL(\text{\textasciitilde}\text{STUDENT}) = *\text{\textasciitilde}\text{STUDENT} - \text{\textasciitilde}\text{STUDENT} = \phi, denoting nothing.

The definition in (2) accounts for the ungrammaticality of *san xueshen-men 'three students-Pl', where no classifier is used. I assume the internal structure of a noun phrase as in (7), which is slightly different from the one proposed by Li (1999).

Putting aside how to deal with traces left behind by head-movement, the ungrammaticality of (7) is self-evident: xueshen and -men combine first, yielding 'the students', and then san is combined. The ungrammaticality of (7) is thus the same as that of *three the students.

The descriptive generalization we have obtained is that in Chinese and Japanese, bare/common nouns with the [+human] feature are ambiguous between count nouns and mass/kind nouns. Semantically this means that they are ambiguous between type \(e\) and type \(<e, \triangleright>\). This result is very important with respect to the Nominal Mapping Parameter in (1). The generalization suggests that even in [+arg, -pred] languages there are common nouns of type \(<e, \triangleright>\) in the lexicon. The immediate question is then: Are Chinese and Japanese [+arg, +pred] languages like English? And a more general question is: Is the Nominal Mapping Parameter correct? I would like to claim that [+arg, -pred] are default values in Chinese and Japanese, and once fixed, these values are not changed, and the [+human] nouns are exceptionally marked as [+arg, +pred] when the semantics of -men or -ra is learned through positive evidence. This situation is reminiscent of Itô, Mester and Padgett’s 1995 analysis of voicing of consonants after nasal in Japanese. In the framework of Optimality Theory, they claim that the constraint ranking for native Japanese vocabulary differs from the one for non-native Japanese vocabulary. The distribution of the plural morphemes is very similar to this case in that a language has two types of vocabulary and one has the opposite value of parameter setting against the other. So, it should be concluded that the Nominal Mapping Parameter is basically correct, but it does not apply across-the-board; rather the parameter setting can be lexically specified.

References