Proposal

1. Introduction

Research Question: Are numeral classifiers always functional heads projected by nouns, as claimed by Boror (2005) and Simpson (2005)?

Claim: Crosslinguistically, classifiers are not structurally uniform; they can either head functional projections of the noun or adjoin to NPs, forming a constituent with the noun.

Evidence: Certain syntactic constructions are strongly correlated with the order of quantifier-classifier (QClf) relative to the lexical common noun (N):

i. CLf-N only occurs in QN languages (§4).
ii. Quantifier Float only occurs in NQ languages (§5).
iii. These coordinations follow from different syntactic structures for extended NPs (anPs).

This claim contrasts with approaches such as Cinque (2005) which derive word order variation within NP by movement.

2. The syntax of numeral classifiers

Numeral classifiers in languages have general transfer (Cinque 2000), meaning they can be interpreted as singular or plural. The obligatory occurrence of classifiers with numerals may be tied to general number or an equal-part concept (Chierchia 1998, Greenberg 1975; Pullum & You 2006).

Tang (1990) proposes that classifiers head projections of N:

\[(1) \text{ cp } Q \text{ [cLf] [a N] }\]

This leads Boror (2005) and Simpson (2005) to claim that a similar structure — where Q is also a functional head — is universal, even if the QN order is not transparently reflected on the surface.

Yet while classifiers are clearly selected by the quantifier, nouns and classifiers do not always cooccur. Thus the structures below are logical alternatives (cf. Inoue & Matsushita 2006, ex. 22a):

\[(2) \text{ a. } \text{NP} \quad \text{b. } \text{NP}\]

\[(3) \text{ CLfP } \quad \text{NP} \quad \text{NP} \quad \text{CLfP}\]

\[(4) \text{ QP } \quad \text{CLf} \quad \text{N} \quad \text{Q} \quad \text{NP}\]

Q-Clf form a constituent in these structures, and adjoin to NP.

The choice between [1] and [2] corresponds to the syntactic selection of NP by the classifier.

Proposal:

i. (3) \rightarrow (Q-Clf) N surface order
ii. N-Clf surface order \rightarrow (2b)
iii. Languages with multiple orders vary between (2a) and (2b).

3. Generalizations about the word order typology of numeral classifiers

Crosslinguistically, quantifiers precede classifiers regardless of headiness, accounted for by the theory that quantifiers are in Spec, CP VP (1.2).

i. Q both precedes and follows N (Greenberg 1975; Jones 1970).

ii. QN vs. NQ does not correlate with the genetic affiliation (Table 1).

\[\text{QP} \quad \text{CT} \quad \text{ClfP} \]

If a language is QN, then it is head-initial (Table 1).

\[(4) \text{ QN vs. NQ correlates with } \text{Clf-N} \quad \text{and} \quad \text{Q-Float} (Table 1).\]

\[\text{Examples of QN vs. NQ:}\]

\[\begin{array}{ll}
\text{Classifier-QNum:} & \text{Noun-QNum:} \\
\text{ba-ci} & \text{ba-ci} \\
\text{bít} & \text{bít} \\
\text{3-clf} & \text{3-clf} \\
\text{pen} & \text{pen} \\
\text{(Nguyen 2004, ex. 1)} & \\
\text{san-ben} & \text{san-ben} \\
\text{shù} & \text{shù} \\
\text{5-clf} & \text{5-clf} \\
\text{book} & \text{book} \\
\text{(Mandarin) (Japanese)} & \\
\text{ib-tus} & \text{ib-tus} \\
\text{tub.tub} & \text{tub.tub} \\
\text{1-clf} & \text{1-clf} \\
\text{message} & \text{message} \\
\text{(Bisang 1993, ex. 6)} & \\
\end{array}\]

Languages in Table 1 with the NQ order also allow QF, indicating that Q-Clf is a constituent in (13) via NP-movement (Miyagawa 1989, Sportiche 1989). Yet (13) is head-final (Table 1).

\[\begin{array}{ll}
\text{Languages} & \text{Clf-N} \\
\text{Chinese} & \text{Indonesian} \\
\text{Vietnamese} & \\
\text{Turkish} & \\
\end{array}\]

Languages differ in which QN classifier languages. In Japanese, Korean, and Indonesian, only numerals license classifiers. In Thai and Chinese, demonstratives, along with several ‘every’, ‘some’, and ‘also’, do so.

4. Numerical classifiers without numerals

In most QN languages, classifiers occur without a numeral, the Clf-N construction. Clf-N in subject position must be interpreted as definite:

\[(9) \text{ a. Cuôn sách hay(dim).} \]

\[(b. Tính múa cuôn sách.}\]

\[\text{I want buy qclf book.}\]

\[\text{The book is very interesting.}\]

\[, Clf-N is always singular. Plurality is marked with a plural determiner (10), or by substituting a plural classifier (11), depending on the language:}\]

\[(10) \text{ caéc còn ngaú don (11) ga’ardi or.} \]

\[\text{CLF horse black} \]

\[\text{CLF car/the cars}\]

\[\text{(Viet., 2004, p. 18); (Cant, Cheng & Syb 1999, p. 18).}\]

\[\text{Weining Aluau and Wu Chinese mark (in)definiteness on the classifier with tone (Genette & Bisang 2008, Cheng & Syb 2005).}\]

\[\text{Like articles, which also mark number and definiteness, classifiers can be analyzed as taking NP complements, as in (1).}\]

\[\text{QNP languages have no equivalent, N-Clf construction, which indicates that nouns are not selected by classifiers in these languages.}\]

5. Numerical classifiers and quantifier float

Languages in Table 1 with the NQ order also allow quantifier float (QF) to adverbial positions, shown below for Thai:

\[(12) \text{ Nāk-riían ?aan nān sâk-thâi-khon.}\]

\[\text{Everyone student read book} \]

\[\text{Every student read a book.}\]

Benjamin (1990) shows that QF in Arabic involves a Q that is an independent QNF. He proposes that this QNF always an adjunct, whether to the NP, as in (2), or to the clause (also Docties 1998).

\[\text{Likewise, Thai QF involves to syntactically independent Q:}\]

\[(13) \text{ Dêk, kláp bínan wàn níl. (} \text{pùa phiaà-thíi-càì, mò.}\]

\[\text{The children went home today in order to }\]

\[\text{read homework } \text{every day/mmorrow.}\]

In (13) the QF is embedded in an adjunct island while its antecedent NP is in the main class, see Jenkins (2010) for more arguments.

As in Arabic, floated Q in Thai is syntactically independent from NP. The presence of QF in NQ languages, then, is unsurprising if the NQ order always indeponents independent Q, as in (2b):

6. Additional correlations with word order

\[\text{Korean and Japanese also have QN with prevail Q-Clf marked by a genitive suffix typical of NP adjectives as in (2a). At these head-final languages both a reflex-refining, their NQ order likely represents a structure besides (2b), such as a small clause.}\]

\[\text{Indonesian is QN, but allows QN in restricted environments and lacks Clf-N, indicating an alternation between (2a) and (2b).}\]

\[\text{Mandarin only has indefinite, postverbal Cnf. So Cnf there is tied to syntactic restrictions or null ‘one’ (cf. Cheng & Syb 1999).}\]

Languages differ in which QN classifier languages. In Japanese, Korean, and Indonesian, only numerals license classifiers. In Thai and Chinese, demonstratives, along with several ‘every’, ‘some’, and ‘also’, do so.

\[\text{QN is typical of older classifier systems (Greenberg 1975); Archaic and Medieval Chinese used Q-Clf before QN arose (Parry 1999).} \]

\[\text{QN languages also tend to have general, semantically bleached classifiers. Mandarin } -\text{it} \text{ is an extreme case, occurring with any quant noun.} \text{ These generalizations show that (1) is the more grammaticalized structure; classifiers in (2) are lexical categories.}\]

7. An alternative

\[\text{Simpson (2005) generates the QN order from (1) via NP-movement under the assumption that classifiers are always functional projections.}\]

\[\text{The complementarity between Cnf-N (or N-Cnf) and NQ orders could be due to a feature on N that is satisfied by Cnf-to-DP or NP-to-DP:}\]

\[\text{(15a) [as Cnf] [as N] [as N]} \]

\[\text{Cnf-to-DP (for QCN)} \]

\[\text{b. [as NP]} \]

\[\text{NP-to-DP (for QCN)} \]

\[\text{Yet this proposal lacks independent support. The only argument for this position is the word order itself.}\]

\[\text{Simpson’s approach would mesh with analyses of Q as Q-stranding by NP-movement (Mitamura 1989, Sportich 1989). Yet (13) indicates that such an approach is problematic in accounting for QF.}\]

8. Conclusions

\[\text{The syntax of numeral classifiers is not crosslinguistically uniform.}\]

\[\text{QN classifiers can have a Cnf-N construction, where the classifier is a functional projection of the noun, indicating that (1) is its structure.}\]

\[\text{QN languages allow QF, indicating that Q-Clf is a constituent in these languages to the exclusion of the noun, as in (2).}\]

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