

CLASSIFIERS ARE FOR NUMERALS, NOT FOR NOUNS:  
EVIDENCE FROM MI'GMAQ AND CHOL

Krifka (1995) and Chierchia (1998) provide two very different accounts of the theoretical distinction between classifier and non-classifier languages. Chierchia links the distinction to the nominal system: non-classifier languages have a mass-count distinction while classifier languages do not. Krifka suggests that the difference lies in the numeral system: classifier languages separate the measure function from the numerals whereas non-classifier languages have a measure function incorporated into the numerals. To account for languages that *optionally* use classifiers (as in Western Armenian (WA), Donabédian 1993), both of these theories need to hypothesize massive ambiguities: Chierchia, ambiguities in the nominal system, Krifka in the numeral system. However, if this type of ambiguity is permitted, according to these theories, the same type of variation that exists across languages could exist within a single language. As a result, the two theories make different predictions with respect to cross-linguistic variation: Krifka predicts idiosyncratic behaviour among the numerals, whereas Chierchia's theory is inconsistent with such a pattern.

This paper brings original data to bear on this question from Chol, a Mayan language spoken in southern Mexico, and Mi'gmaq, an Algonquian language of eastern Canada. We show that both languages demonstrate idiosyncrasies in the numeral system that are uniquely consistent with Krifka's theory. Furthermore, these results have interesting consequences for the mass-count distinction. As discussed in Wilhelm (2008), Krifka's theory, unlike Chierchia's, treats the classifier/non-classifier distinction as being theoretically independent of the syntactic mass-count distinction. We claim, however, that once classifier systems are treated as theoretically separate from the mass-count distinction, the mass-count distinction is more accurately described as a division between singular and non-singular denotations.

**Nouns vs. Numerals:** There are two main theoretical accounts of the contrast between languages with a rich classifier system and those without. One, defended by Chierchia (1998), maintains a uniform interpretation of the numerals but hypothesizes a difference in the nominal system. According to this theory, languages like English have two categories of nouns, one that is directly compatible with numeral modification (so-called *count nouns*) and another that is not (*mass nouns*). Languages like Mandarin have only one category of noun, and this category is not directly compatible with numeral modification. Classifiers are needed to convert nouns into a form that can combine with numerals. See (1), where *liang* is Mandarin for 'two' and *ge* is a classifier.

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| (1) Chierchia-like Numerals (simplified)   | (2) Krifka-like Numerals (simplified)  |
| $\llbracket two/liang \rrbracket = \lambda P : \forall x \in P(ATOM(x)), \mu_{\#}(P) \geq 2$ | $\llbracket two \rrbracket = \lambda P : \forall x \in PATOM(x), \mu_{\#}(P) \geq 2,$                |
| $\llbracket ge \rrbracket$ is a function from kinds to sets of atoms                         | $\llbracket liang \rrbracket = \lambda m \lambda P.m(P) \geq 2, \llbracket ge \rrbracket = \mu_{\#}$ |

The other theory, defended by Krifka (1995) as well as Wilhelm (2008), hypothesizes that there are two different types of numeral interpretations cross-linguistically. There are numerals that have a measure function (or individuation function) as part of their semantic interpretations, and those that do not. The ones that do not, require the introduction of a syntactically independent measure function, see (2). Hence, this type numeral needs to combine with classifiers, whereas the other type does not. As noted by Krifka, there is very little evidence internal to English and Mandarin that would favour one theory over another.

**Ambiguity:** WA presents an interesting case study (Donabédian 1993). Unlike English or Mandarin, the presence or absence of a classifier is completely optional. For example, the numeral *yergu* 'two' can combine with *dəgha* 'boy' directly, see (3), or via a classifier, see (4).

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|-----------------------------------|--|
| (3) <i>yergu dəgha</i><br>two boy | (4) <i>yergu had dəgha</i><br>two CL boy |
|-----------------------------------|--|

If both the noun and numeral have a univocal (unambiguous) interpretation, then neither theory can account for this data. However, if ambiguity is permitted, both theories can explain this optionality, although via completely different means. Chierchia could hypothesize that the noun *dəgha* is ambiguous, having one meaning that permits the noun to combine directly with numerals and another that requires a classifier. Krifka could hypothesize that the numeral *yergu* is ambiguous, having one meaning that

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incorporates a measure/individuation function and another that does not (see Borer 2005 for a similar proposal). Data within WA itself, however, does not conclusively favour one theory over the other.

**Chol and Mi'gmaq:** Although the noun-centred and numeral-centred analyses largely make the same predictions in languages like WA, where classifiers are optional, the two theories make different predictions with respect to other languages. For example, the numeral-centred theory would predict the possibility of idiosyncratic patterns in the numeral domain, where some numerals incorporate a measure function and others do not. The noun-centred theory is inconsistent with such a pattern. Mi'gmaq bears out the predictions of the numeral-centred account: numerals 1–5 do not appear with classifiers, while numerals 6 and higher must. Compare the forms in (5) and (6): in (5a) the numeral *na'n* 'five' combines directly with the noun and even acquires nominal agreement morphology, like other modifiers in the language. The classifier *te's* is impossible (5b). In contrast, the numeral *asugom* 'six' cannot combine directly with a noun (6a) but rather must appear with the classifier *te's* (6b).

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|-----|----|--|-----|----|---|
| (5) | a. | na'n-ijig jinm-ug<br>five-AGR man-PL           | (6) | a. | * asugom-ijig jinm-ug<br>six-AGR man-PL       |
|     | b. | * na'n te's-ijig jinm-ug<br>five CL-AGR man-PL |     | b. | asugom te's-ijig jinm-ug<br>six CL-AGR man-PL |

Chol is another language that demonstrates idiosyncratic behaviour in the numeral system. Although many older speakers still command the full Mayan base-twenty numerical system, Spanish numerals are increasingly used among younger speakers. These younger speakers generally know and use Chol numerals only for numbers 1–6, 10, 20, 40, 60, 80, 100, and 400, the latter used for counting during the corn harvest (Vázquez Álvarez 2011, 180). Otherwise they use number words borrowed from Spanish. As shown in (7), the Mayan numerals, like *cha`* 'two', require a classifier (which morphologically attaches to the numerals). In contrast, the Spanish-based numerals, like *nuebe* 'nine', cannot be used with classifiers, as shown in (8).

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|-----|----|---------------------------------|-----|----|-------------------------------------|
| (7) | a. | cha`-p'ej tyumuty<br>two-CL egg | (8) | a. | * nuebe-p'ej tyumuty<br>nine-CL egg |
|     | b. | * cha` tyumuty<br>two egg       |     | b. | nuebe tyumuty<br>nine egg           |

To account for the ungrammaticality of forms (5b), (6a), (7b) and (8a), Chierchia's theory would need to hypothesize that nouns in Mi'gmaq and Chol, like *jinnug* 'men' and *tyumuty* 'egg' are ambiguous, having one interpretation that requires classifiers and another that does not. However, if these nouns are ambiguous in this respect then the ungrammatical forms are unexpected. Under an ambiguity-in-nominals account either noun interpretation option should be available.

**Consequences:** The numeral systems in Chol and Mi'gmaq provide support for Krifka's account of classifier systems, in which classifiers are required by the numerals, not by the nature of nouns. As noted by Wilhelm, Krifka's account does *not* depend on there being a syntactic mass-count distinction in the nominal system. The need or lack of classifiers instead depends only on whether numerals incorporate their measure function or not. Whether the incorporated or unincorporated measure functions require their nominal argument to denote a *set of atoms* ("count") or a *kind* ("mass") relies on the nature of measurement, rather than on the presence or absence of classifiers. This brings into question how useful it is to identify a language as having or not having a grammatical mass-count distinction in the first place. Traditionally, the mass-count distinction was thought to involve a cluster of properties, including the distribution of numeral and quasi-numeral quantifiers as well as a contrast between singular and plural denotations. We conclude that this distinction instead reduces to whether a noun can be lexically interpreted as singular, *not* to a distinction based on a cluster of properties involving numerals and other quantifier distributions.

**Select References:** Chierchia, G. 1998. Reference to kinds across languages. *NLS* 6:339–405. Krifka, M. 1995. Common nouns: A contrastive analysis of English and Chinese. In *The generic book*, 398–411. U Chicago Press. Wilhelm, A. 2008. Bare nouns and number in Dëne Sųliné. *NLS* 16:39–68.