

Classifiers for nouns, classifiers for numerals

Two approaches to (non-)classifier languages: Krifka (1995) suggests that classifier (CL) and nonclassifier (non-CL) languages differ in the semantics of their numerals. Bare nouns are cross-linguistically names of kinds. In non-CL languages numerals have a “built-in” classifier, so they can directly combine with bare NPs. In CL languages numerals and CLs are not bundled together this way, thus a separate overt CL is required to mediate between the NP and the numeral. Chierchia (1998) defends the opposite view: CL and non-CL languages differ in the semantics of their NPs. In CL languages all nouns are mass nouns. Mass nouns are inherently plural, but counting operates on atoms. Thus NPs must be mapped onto discrete atomic cells by a CL before they can interact with numerals. In non-CL languages there are both mass and count nouns. The latter denote atoms and can combine with numerals directly.

CLs for numerals: As discussed in Bale and Coon (2014), Krifka predicts the existence of CL languages in which it depends on the numeral whether a CL can appear or not ((1), where N is the same in (a) and (b)). Chierchia predicts languages in which the occurrence of the CL will depend on the choice of the noun ((2), where the Num is the same in both cases.)

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| (1) | a. | Num ₁ CL N, *Num ₁ N | b. | *Num ₂ CL N, Num ₂ N | Krifka |
| (2) | a. | Num N ₁ , *Num CL N ₁ | b. | *Num N ₂ , Num CL N ₂ | Chierchia |

Bale & Coon show that Krifka’s predictions are borne out in Mi’gmaq (1-5 disallow CL; other numerals require it) and Chol (Mayan numerals require CL; Spanish-based ones disallow it).

CLs for nouns: I show that a range of genetically and areally unrelated classifier languages bear out Chierchia’s predictions. In colloquial Khmer (Austroasiatic) most Ns are classifiable (3), but there are also nonclassifiable Ns (4). Bangla (Indo-European) has a similar pattern: most Ns are obligatorily classified, but a few resist CLs (Dasgupta, 1983; Chacón, 2011).

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| (3) | ba:rɣy pì:(r) (daəm) | (4) | siəvphəu pì:(r) |
| | cigarette two CL _{trunk} | | book two |
| | ‘two cigarettes’ | | ‘two books’ (data from Jacob, 1968) |

There are languages with a 3-way distinction between obligatorily classified, optionally classified and nonclassifiable Ns: Vietnamese (Austroasiatic, Emeneau, 1951; Simpson and Ngo, 2018), Nùng (Tai, Kra–Dai, Saul, 1965; Saul and Wilson, 1980) and Hungarian (Finno-Ugric). Most Hungarian Ns optionally take CLs (5), but a handful require (6) and some resist CLs (7).

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| (5) | három (szem) mogyoró/gyógyszer | (6) | három *(szem) kávé/bors |
| | three CL hazelnut/pill | | three CL coffee/pepper |
| | ‘three hazelnuts/pills’ | | ‘three coffee beans, eight peppercorns’ |
| (7) | három (*darab) csoda/kormány | (8) | bɣy thɣay |
| | three CL wonder/government | | three day |
| | ‘three wonders/governments’ | | three days (Khmer, Jacob, 1968, 84) |

Against a CL analysis of non-classifiable nouns: Words for temporal or monetary units commonly do not take CLs even in textbook classifier languages, e.g. Mandarin (Her et al., 2015), Thai (Simpson, 2005), Korean and Japanese (T’sou, 1976). Typologists (Greenberg, 1975; Allan, 1977) and theoreticians (Simpson, 2005; Kayne, 2005; Chacón, 2011; Her et al., 2015) agree that these lexemes are classifiers of a covert N rather than unclassified nouns, or have both nominal and classifier uses (Cinque, 2006; Cinque and Krapova, 2007). Evidence for this comes from languages in which N and CL are on opposite sides of the numeral, eg. Khmer, with its ‘N Num CL’ word order (3). Khmer employs the ‘Num N’ order for temporal units (8). As this is the position for CLs, the CL analysis of temporal units is supported. Critically,

nonclassified nouns appear in the pre-numeral position (4). (4) vs (8) show that ordinary non-classifiable Ns cannot be analyzed as CLs of covert nouns. This is corroborated from Bangla, too. Bangla has a ‘Num-CL N’ basic word order in NP (*pãc-jøn kormi*: lit. ‘five CL employee’). Approximatives comprise a preposed classifier followed by the numeral, the approximative particle *-ek* and the noun (9). In approximatives lexemes for temporal units occupy the classifier position (10). But ordinary nonclassified nouns appear after the numeral, in the N position, and the pre-numeral position now licenses a classifier (11) (data from Chacón, 2011).

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| (9) | <i>jõna-pãc-ek kormi</i> | (10) | <i>sõptahi tin-ek</i> | (11) | <i>goða tin-ek caka</i> |
| | CL-five-APPR employee | | week three-APPR | | CL three-ek wheel |
| | ‘five employees or so’ | | ‘three weeks or so’ | | ‘three wheels or so’ |

Implications for constituency In the ‘classic’ structure of NPs CL forms a constituent with N to the exclusion of Num (12). Building on Mi’gmaq and Chol, however, Bale and Coon (2014) argue that CL forms a constituent with the numeral (13).

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| (12) | $[_{NumP} Num [_{CLP} CL [_{NP} N]]]$ | (13) | $[[_{NumP} Num [_{CLP} CL]] [_{NP} N]]$ |
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(13) does not accommodate “CLs for nouns”: with CL embedded in a left branch, it cannot be captured that the choice of N can influence whether CL will appear or not ((3)-(6)). (12) can account for both “CLs for numerals” and for “CLs for nouns”: with a direct selectional dependency between Num and CL and between CL and N, either the choice of the numeral or the choice of the noun may potentially influence the appearance of CL. (12) is thus appropriate as the cross-linguistically underlying structure for NumPs, while (13) is not.

Unifying the types: I adopt Borer’s (2005) approach to syntactic architecture. The mass vs. count distinction is entirely grammatical; mass vs. count characterizes nouns, and nouns only arise in syntax, via merging a categoryless formative (root) with a functional head. The interpretation of NP defaults to mass, so it is not the right type of semantic input to a numeral. Mass NPs can be partitioned/divided by a CL, creating the proper input to a numeral (which counts the number of units that came about via the division). It is the very projection of CLP that yields the count interpretation to the structure, so all count NPs, whether they contain a numeral or not, involve a CLP. CLs are thus for count NPs; not “for nouns” or “for numerals”. The heads of functional projections, including CLP and NumP, are categorially labelled open values, which must be assigned range. Critically, a formative may assign range to more than one open value (i.e more than one functional head). **A)** CL languages: There is no formative that can assign range to both Num and CL, so these heads always have separate range assigners (exponents), regardless of which particular numeral is chosen. **B)** Non-CL languages: All numerals can assign range to both Num and CL. Functional heads cannot be assigned range twice, so a separate classifier is blocked regardless of which numeral is chosen. **C)** Mi’gmaq and Chol: Certain numerals are range assigners only to Num. These require a separate overt range assigner (classifier) for CL. There are also numerals which are specified in the lexicon as range assigners to both CL and Num. These block a separate classifier. The appearance of the classifier thus depends on the choice of the numeral. **D)** Khmer, Bangla, Hungarian: All numerals are range assigners to Num only. CL and the categorizer *n* are also mostly assigned range separately, resulting in an overt classifier. A few instantiations of *n* can assign range to CL as well: these nominalize the root and divide NP, turning it into a countable NP in one-fell-swoop. The classifier is thus contingent on the choice of the noun (root/lexical formative+*n*). Whether a numeral or a grammatical formative corresponding to *n* can also assign range to CL is a matter of featural specification in the lexicon. The syntax of languages with “classifiers for numerals” and “classifiers for nouns” are identical. The attested surface variation can be placed in the lexicon, in conformity with the Borer-Chomsky Conjecture (Baker, 2008).

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