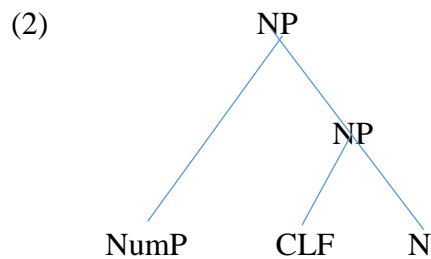
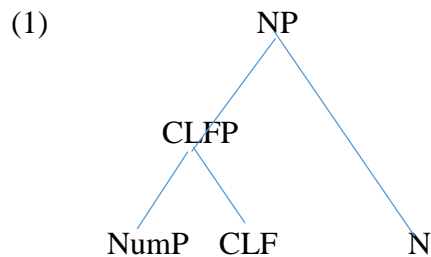


Two types of sortal classifiers and their co-occurrence*

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In the literature on (sortal) numeral classifiers¹ two structures have been attributed to the sequence of a numeral, a classifier, and a noun. In one the classifier forms a constituent with the numeral, (1); in the other it forms a constituent with the noun, (2):



These two structures lead to different expectations with respect to ellipsis if what can delete must be a constituent (as under a movement approach to deletion/non-pronunciation – Cinque 2022). (1) leads one to expect that the classifier cannot be deleted together with the noun as they do not form a constituent to the exclusion of the numeral. (2) leads to the opposite expectation as the classifier and the noun do form a constituent to the exclusion of the numeral, so that deletion can target CLF and N.

*This paper is dedicated to Cecilia, whose scientific work I have been following from her student years to her current international stand.

¹ Sortal classifiers (Lyons 1977, Croft 1994, Gebhardt 2011, Cheng and Sybesma 2012), as opposed to mensural classifiers, have a purely grammatical function in the sense of making the nouns with which they combine countable (Corver 2020: §2). The former occur with count nouns, the latter with both count and mass nouns.

Both expectations appear to be borne out. Under ellipsis of the noun the classifier cannot be deleted in some languages (Japanese, Korean, among others)², but can in other languages (Vietnamese and Thai, among others), thus suggesting that both structures are available: (1) for Japanese and Korean³ and (2) for Vietnamese and Thai.⁴

(3) a. **Japanese:** Tatsumi (2021: 109)

Daiki-wa [hon go-satsu]-o katta. Erika-wa san-*(satsu)-o katta.

Daiki-TOP book five-CLS-ACC bought. Erika-TOP three-(CLS)-ACC bought.

‘Daiki bought five books. Erika bought three books.’

b. **Korean** (So-Young Park 2021: 644, and pers. comm.)

na-nun [twu-phyen-uy nonmun]-ul ilkess-ko, ku-nun [sey-*(phyen)-uy nonmun]-ul

I-Top two-CLF-Gen paper - Acc read-and, he-Top three-CLF-Gen paper-Acc

Ilkessta

read

‘I read two papers and he read three.’

(4) a. **Vietnamese** [Austro-Asiatic]: Tatsumi (2021: 107f, after Thuy Bui, p.c.)

Nguyễn mua năm cuốn sách và Khanh mua [ba (cuốn) ___]

Nguyen bought five CLS book and Khanh bought [three (CLS) ___]

² This is also true of Azeri (Turkic) (Gita Zareikar, pers. comm.) (see (i)) and Mandarin Chinese (see (ii), from Tatsumi (2021: 109 after Shuyan Wang, p.c), confirmed by Yangyu Sun, p.c. (also see Li 2013: 40):

(i)a. Bən iki (dənə) alma ye-dim, sən üç *(dənə).

I two (CLF) apple eat-Past.1sg, you three CLF

‘I ate two apples, (but) you ate three.’

b. Sən beş (nəfər) pəhlivan gör-dün, bən iki *(nəfər).

You five (CLF) hero see-Past.1sg, I two CLF

‘You saw five heroes, (but) I saw two.’

(ii) Zhangsan mai-le wu ben shu. Lisi mai-le san *(ben).

Zhangsan buy-ASP five CLS book. Lisi buy-ASP three CLS

‘Zhangsan bought five books. Lisi bought three.’

³ That Japanese has the structure in (1) is argued for by Fukui and Takano (2000) on the basis of the fact that the sequence [Num CLF] can move stranding the noun. That Chinese has the structure in (1) is controversial. A left-branching structure is defended in Her and Tsai 2020, among others, while Zhang (2013: Chapters 5 and 6) defends a right-branching one for Chinese sortal classifiers.

⁴ That Vietnamese has the structure in (2) is argued for in Simpson and Ngo (2018).

‘Nguyen bought five books and Khanh bought three.’

b. **Thai** [Tai-Kadai]: Tatsumi (2021: 109fn12, after Panat Taranat, p.c.)

Nat sùu nánǔu hâa lêm, lɛʔ Somsak sùu sãam (lêm)

Nat buy book five CLS, and Somsak bought three (CLF)

‘Nat bought five books, and Somsak bought three’

The two constituencies lead to another expectation: that in the case of (1) the requirement on the presence of the numeral classifier cannot change based on the choice of the noun (if anything it may change based on the choice of the numeral, though not necessarily), while in the case of (2) the requirement on the presence of the numeral classifier may change based on the choice of the noun, but not on the choice of the numeral). The latter is indeed the case of Vietnamese (Simpson and Ngo 2018: 214-215; Phan 2019, Tran 2021: 21)⁵, where some nouns require a classifier, other optionally take it, and still others do not take a classifier (with the same numeral), and of the Tai-Kadai language Shan (Little, Moroney, and Royer 2021).⁶

Languages where the presence of a numeral classifier depends instead on the numeral rather than the noun, in conformity with the structure in (1), are Ch’ol (and other Mayan languages) and Mi’gmaq, as described in Bale and Coon (2014); as well as Upper Necaxa

⁵ ‘[...] nouns in Vietnamese can be divided into three basic types: ‘obligatory-classifier nouns’, ‘optional-classifier nouns’, and ‘non-classified nouns’ [...] (Tran 2021: 21).

⁶ Apparent exceptions in languages where the presence of a numeral classifier does not depend on the choice of the noun are nouns denoting time expressions (‘three times’), measures, kinds, currencies, etc., which appear without a classifier as they themselves are classifiers (see Cinque 2006, 2023: §2.7, Cinque and Krapova 2007, where it is argued that the corresponding nouns in non-argument position are also numeral classifiers in languages usually considered not to be numeral classifier languages). “Numeral classifier languages” may have several hundred classifiers (Japanese - Downing 1986: 346), two/three classifiers (Bulgarian – Greenberg 1972, fn.5; Cinque and Krapova 2007) of just one classifier (the Lilitpur dialect of Eastern Tamang – Barrie and Jun 2022).

Totonac⁷, S’gaw Karen⁸, (Lalitpur) Eastern Tamang⁹, and Amazonian languages, where “Numeral classifiers are typically used just with small numbers.” (Aikhenvald 2012: §10.3).

In addition to the differential properties just discussed, and repeated in (I)a.-b., the two types also differ in the properties mentioned in (I)c.-f.:

(I)a. Under ellipsis the noun and the classifier cannot be deleted together in languages entering the structure in (1) (as they do not form a constituent), while they can in languages entering the structure in (2) (where they form a constituent).

b. In languages entering the structure in (1) the presence of the numeral classifier cannot depend on the choice of the noun (if anything it may change based on the choice of the numeral, though not necessarily), while in languages entering the structure in (2) the presence of the numeral classifier may change based on the choice of the noun, but not on the choice of the numeral.

c. Num and CLF can move away from the DP in languages that have the structure in (1) in that they form a constituent, but not in those that have the structure in (2). This is the case in Mi’gmaq, as shown in Bale and Coon (2014) (see the examples in (5)), in Chol, as shown in Bale, Coon and Lopez (2019) (see the examples in (6)), and Japanese, as shown in Fukui and Takano (2000) and Tatsumi (2021) (see the examples in (7)).

⁷ Numerals in Upper Necaxa are obligatorily prefixed with a classifier in counting under 20; greater numbers optionally take a classifier (Beck 2011, 2004). Furthermore they depend on the choice of numeral: classifier *cha:’-* is used for counting one to three people as in (i)a., and the classifier *helha-* is used in constructions for counting more than three humans as in (i)b.

(i)a. cha:’- tín chi’xkú’

CLF:HUMAN– one man

‘one man’

b. helha– tá:’ti’ chi’xkú’

CLF:HUMAN– four man

‘four men’

V. Garcia-Vega (2017).

⁸ When the numeral is below ten the structure is [N [Num CLF]]. When it is above ten the structure is N PL [CLF Num] (v. Olson 2014: 65).

⁹ See Barrie and Jun (2022). For the numbers above ten, which are borrowed from Nepali, no classifier is used (p.121).

- (5) a. Etlenm-ultijig **asugom te's-ijig jinnm-ug**. (Mi'gmaq - Bale and Coon 2014: 704)
 laugh.PRES-PL six CLF-AGR man-PL
 b. **Asugom te's-ijig** etlenm-ultijig **jinnm-ug**.
 six CLF-AGR laugh.PRES-PL man-PL
 c. ***Asugom** etlenm-ultijig **te's-ijig jinnm-ug**
 six laugh.PRES-PL CLF-AGR man-PL
 'Six men are laughing.'
- (6) a. Ta' jul-i-y-ob [**ux-tyikil x'ixik**]. (Ch'ol [Mayan] - Bale et al. 2019: 19)
 PFV arrive-ITV-EP-PL three-CLF woman
 'Three women arrived.'
 b. [**Ux-tyikil**]₁ ta' jul-i-y-ob [**Δ₁ x'ixik**].
 three-CLF PFV arrive-ITV-EP-PL woman
 '[Three]foc women arrived.'
- (7) a. kyoositsu-ni [**zyosei san-nin**]-ga toochaku-sita. (Japanese - Tatsumi 2021: 35)
 classroom-LOC woman three-CLF-NOM arrive-DID
 'Three women arrived at the classroom.'
 b. [**san-nin**]₁ kyoositu-ni [**zyosei Δ₁**]-ga toochaku-sita.
 three-CLF classroom-LOC woman-NOM arrive-DID
 '[Three]foc women arrived at the classroom.'

d. In languages entering the structure in (1) it is possible to have a coordination of numeral and classifier. See the case of Bulgarian ([[Num.CLF] or [Num.CLF]] N] in (8), and that of Eastern Tamang ([[CLF-Num] or [CLF-Num]] N] in (9):

- (8) **trima ili četirima** rabotnici¹⁰
 three.CLF or four.CLF workers
 'three or four workers'

¹⁰ The suffix (*i*)*ma* in Bulgarian is the human masculine plural classifier attached to the first ten digits (obligatorily only to 'two' and 'three').

- (9) Sujan-se **gor-ŋ^{hi} hwa gor-som** ʃav t̃samu-ba.
 Sujan-ERG **CL-two or CL-three** apple eat-PST
 ‘Sujan ate two or three apples.’

e. Little, Moroney and Royer (2021: §3.4) observe that in languages where “the classifier is for the numeral” (entering the structure in (1)) it is expected that the numeral classifier will be obligatory also in the absence of a noun. This is the case in Ch’ol: classifiers are always required, even when counting (as in (10)), or when referring directly to the number, as in (11), which describes a context in which a teacher is pointing to a number on a blackboard.

- (10) CONTEXT: Students are practicing counting.
 jum-*(p’ej), cha’-*(p’ej), ux-*(p’ej)...
 one-CLF two-CLF three-CLF ...
 ‘1, 2, 3,...’

- (11) CONTEXT: A teacher is pointing at the number three and says:
 Ili jin~ ux-*(p’ej).
 this DET three-CLF
 ‘This is three.’

In contrast, in languages where “the classifier is for the noun” (entering the structure in (2)), like Shan, classifiers are not always required with numerals when a noun is not present. For instance, they are optional (though degraded) when counting, as in (12), and are unacceptable when referring to the number itself, as in (13).

- (12) CONTEXT: Students are practicing counting.
 nuŋ (?t̃), s̃ŋ (?t̃), s̃am (?t̃), . . .
 one (CLF), two (CLF), three (CLF),...
 ‘1, 2, 3,...’

- (13) CONTEXT: A teacher is pointing at the number three and says:
 ñaj p̃en m̃aj s̃am (*t̃).
 this COP number three (CLF)
 ‘This is the number three.’

f. In some languages the two numeral classifiers may co-occur (e.g., Akatek, Jakaltek, Bulgarian, and Persian).¹¹ In this case the classifier of (1) occurs closer to the numeral than that of (2). See the case of (14)a. from Akatek Maya¹², that of (14)b. from Bulgarian, and that of (14)c. from Persian:¹³

- (14) a. kaa-(e)b' xoyan 'ixim paat
 two-UnitNumCLF SortalNumCLF(for round objects) nounCLF tortilla
 'two tortillas' (Zavala 2000: 125)
- b. trima dúši rabotnici¹⁴
 three.UnitNumCLFmasc.pl. SortalNumCLFmasc.pl. workers
 'three workers'(Cinque and Krapova 2007: 45)
- c. fæqæt do ta dune so'al dade bud
 only two CL.item CL.seed question give.PSPT be.PST.3SG
 'She has put only two questions.' (Mache 2012: 116)

¹¹ Pace Little, Moroney and Royer (2021: §4), where it is claimed that “no language should feature both kinds of numeral classifiers at the same time, at least semantically.”

¹² The same holds of Kanjobalan (Mayan) languages, for which Grinevald (2000: 70) gives the order Number+ classifier > numeral classifier > Plural > classifier > Noun. Also see Craig (1986,1987).

¹³ In both Akatek Maya and Bulgarian the numeral classifier that occurs closer to the numeral is morphologically combined with it, while the one occurring further away is an independent constituent, intermediate between [Num-CLF] and [(AP) N]. In Persian it is an independent morpheme preceding the second numeral classifier. Gebhardt (2009: 269), where the example in (i) is reported, takes the second to be a modifier of the numeral classifier *ta*, but see Mache (2012: §5.9):

(i) pænj ta jeld ketab
 five CL CL book
 'five books'

¹⁴ Concerning the constituency diagnostic provided by the coordination of Num.CLF or Num.CLF note that it is possible to have the second sortal classifier *dúši* follow the coordination ((i)a.) but not each of the two members of the coordination ((i)b.), which suggests that Num-*ma dúši* does not form a constituent.

(i)a. trima ili četirima dúši rabotnici
 three.CLF or four.CLF person workers
 b. *trima dúši ili četirima dúši rabotnici
 three.CLF person or four.CLF person workers

In Bulgarian the higher (unit) sortal classifier, *-(i)ma*, suffixed to the numeral is dependent on the choice of the numeral, as it is possible only with numerals from two to ten, though normally up to six, (*dvama* ‘two’, *trima* ‘three’, *četirima* ‘four’, *petima* ‘five’, *šestima* ‘six’), much as in Mi’gmaq (where classifiers occur only with 6 and higher numerals), while it is possible with all masculine human plural nouns, with no restrictions. The lower sortal classifier, *dúši*, is on the other hand possible with all numerals but not with all masculine human plural nouns (for example, it is impossible with kinship masculine plural nouns– see (15)b., though the precise set of nouns incompatible with *dúši* needs to be further investigated):

- (15) a. *trima* (dúši) *studenti/rabotnici/prijатели*
 three.CLF (CLF) students/workers/friends
 b. *trima* (*dúši) *bratovčedi/bratja*
 three.CLF (CLF) cousins/brothers

In Persian the general unit sortal classifier, *ta*, closer to the numeral, is sensitive to the choice of numeral (it cannot co-occur with ‘one’ – Mache 2012: §5.7). Like the sortal classifiers of Japanese and Korean this classifier is obligatory in question-answer pairs in which the noun is omitted. See Mache (2012: 5.8.1) for examples with *ta* and *naefær* ‘person’.¹⁵

In Akatek independent classifiers differ from affixed classifiers in the following ways (Zavala 1992: 139-50): first, the inventory of independent classifiers differs from one speaker to another, while the inventory of affixed classifiers does not. Independent classifiers refer to the shape and form of an object; affixed classifiers characterize the referent of the noun in terms of its animacy. There is more freedom in the choice of an independent classifier. One noun can combine with more than one independent classifier depending on a particular, shape-related, property of the referent which is in focus. This is not so for affixed classifiers.

A number phrase may contain both an affixed and an independent numeral classifier followed by a classified PL morpheme followed by a noun classifier, as in [(16)] (Zavala 1992: 144).

¹⁵ For the co-occurrence of numeral classifiers and plural morphology in Persian, and other languages (Paiwan and Itzaj Maya), see Mache (2012: §5.6).

- (16) ʔoʃ-wan k'itan eb' nax winax
 tres-CNum CNI cl3p CN hombre
 [hum.][separado][PLhum.][hombre] hombre
 'Tres hombres (que se encuentran separados)'

Independent classifiers may be omitted (Zavala 1992: §3.8.1.2.1). As to affixed numeral classifiers they can also be omitted; but in this case the independent numeral classifier comes to form a phonological word with the numeral, as seen in (17)b.¹⁶

- (17) a. ʔoʃ-eb' šoyan ʔišim paat
 tres-CNum. CNI. CN:maiz tortilla
 [inan.] [redondo]
 'Tres tortillas'
- b. ʔoʃ-šoyan ʔišim paat
 tres-CNI CN:maiz tortilla
 [redondo]
 'Tres tortillas'

Also see Vietnamese double classifiers (Tran 2021: §2.5.6)¹⁷

- (18) a. một **đứa** **con** gái trong làng (1.29)
 one CL(human) CL(animate) girl in village
 'a girl in the village'
- b. hai **thằng** **kẻ** trộm (p.6)
 two CL(human, male, low s. s.) CL(human, low s. s.) steal

¹⁶ According to Zavala (1992: 144), (17)a. and b. are synonymous. The two classifier sets in Akatek also differ in what numbers they are used with. Suffixal numeral classifiers occur with all numbers except 'one' (Roberto Zavala, p.c.), while the other set is used with all the numbers." (Aikhenvald 2000: 114).

¹⁷ The double classifiers seen so far are qualitatively different from the so-called Multiple-classifier constructions of Chinese, which combine sortal (or mass) classifiers with kind classifiers, in what (Liao and Wang 2011: §1) analyse as a partitive structure. See for example:

(i) san zhi zhe (yi) zhong gou (Liao and Wang 2011: 148)
 three ICL this (one) KindCL dog
 'three dogs of this kind'

‘two male thieves’ (N1.155).

To summarize, there is evidence that numeral classifiers enter two distinct structures, one in which they form a constituent with the numeral, and one in which they do not form a constituent with the numeral, but rather with the noun. Languages differ as to whether they have classifiers of the first type, of the second type, or of both types, occurring in the same nominal phrase. The existence of two types of sortal classifiers is hypothesized in Sybesma (2007) and Cheng and Sybesma (2014: §5) on the basis on certain differences between Mandarin and Cantonese classifiers: what they refer to as “unit-marking” and “count-marking”.¹⁸ It remains to be seen if the two sortal classifier structures discussed above, which can even co-occur in certain languages, can be identified with the two types of classifiers hypothesized in Sybesma (2007) and Cheng and Sybesma (2014).¹⁹

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¹⁸ I report here Cheng and Sybesma’s (2014: 259) own words: “Taking the difference in function between Mandarin and Cantonese classifiers as a starting point, Sybesma (2007) argues that the difference indicates that two completely different notions are involved, which can be reflected in assuming two different functional projections. Considering both to be classifier projections, one playing the role of marking individuality or unit-hood (“unit-marking,” i.e., what the Cantonese classifier does), the other facilitating counting (i.e., what the Mandarin classifier does – “count-marking”), we can postulate two classifier projections below the NumeralP instead of one, as we did in (10), CIP-u and CIP-c (“u” short for “unit-marking,” “c” for “count-marking”):

(30) [_{NumP} Nume [_{CIP-c} Cl-c (c-marking) [_{CIP-u} Cl-u (u-marking) [_{NP} N]]]]”

¹⁹ They take Thai to represent one language where the unit-marking and the count-marking classifiers co-occur. In Thai, however, the low classifier occurs between the noun and the adjectives and does not seem to require a numeral, which could then be taken to correspond to the third classifier of Akatek, the **noun** (rather than **numeral**) classifier present in (16) along with the two numeral classifiers.

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