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# Classifiers and class terms: how to have your subkind and count it too

MIKE PHAM

(University of Chicago)

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**Introduction.** Vietnamese is commonly considered an obligatory classifier language, requiring a classifier (Clf) between a numeral and a (count) noun (1) – though new survey data show that classifiers can often be omitted from counting contexts when the noun being counted is a compound (2) headed by a class term (CT), such as *máy*. Class terms thus appear to have classifier semantics: the restriction of the nominal denotation to the set of atomic individuals within a complete atomic join-semilattice (Chierchia, 1998; Nomoto, 2013). This standard analysis cannot apply, however, because non-CT elements of CT compounds are not always nouns, and do not necessarily denote semilattices.

**Proposal:** Given a ClfP, [Clf NP], or CT compound, [CT X] where X indicates lack of categorical restriction on the second compound element, Clfs and CTs refer to kinds, with NPs and Xs specifying that reference to certain subkinds; the singular individuals denoted by Clfs and CTs are of these subkinds, rather than those denoted by just the rightmost element.

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|-----------------------|-------------------------|
| (1) mười *(cuốn) sách | (2) mười <b>máy</b> bay |
| ten CLF:VOLUME book   | ten machine fly         |
| ‘ten books’           | ‘ten airplanes’         |

**Class terms** are nouns, such as *máy* in (2), that head compounds that comprise a taxonomy of the CT: airplanes are a type of machine. If a noun denotes a kind, then a CT compound derived from it denotes a subkind. Like bare nouns, CT compounds allow generic readings and are number-neutral (3), which Kirby (2006) shows to be impossible for true ClfP’s, which are singular and never generic (4).

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|--|-------------------------------------|
| (3) <b>Máy</b> <b>báy</b> lẹ <b>lắm!</b> | (4) <b>Cuốn</b> sách rẻ <b>quá!</b> |
| machine fly quick very                   | CLF:VOLUME book cheap extremely     |
| ‘(The) Airplane(s) are/is very fast!’    | ‘A/The book is really cheap!’       |

**Survey data** show that many CT compounds can combine directly with numerals with no intervening classifier (2). The fill-in-the-blank survey asked 32 participants for classifier (or lack of) preference for 23 bare nouns and 67 total compounds with those nouns as class terms. In (5), the vertical axes indicate classifier obligatoriness for bare

nouns (Yes/No) while the horizontal axes indicate classifier obligatoriness for CT compounds derived from these nouns.

(5) a. Overall totals

totals	Y	N
Y	1125	489
N	51	301

b. Overall percentages

totals	Y	N
Y	57	25
N	3	15

**Compounds provide an environment for classifier omission.** In an obligatory classifier language, we would expect all results to be in the top-left cell, where all nouns, bare or compound, require classifiers. The orange cell is interesting and unexpected as it shows that in a significant number of cases, classifiers were required for bare nouns but not for the compounds they headed as class terms; this implies that the compound construction itself is influencing classifier obligatoriness, rather than some [+count] feature of the nominal head that is inherited by the derived compound.

**Classifiers make nouns countable** by restricting their denotations to singular individuals. In countable compounds, CTs must also make individuals available for counting. However, while *cuốn* in (1) restricts the denotation of the ClfP to individual books, the verb *bay*, ‘fly’, in (2) does not denote a semilattice for *máy* to restrict to individuals. Instead, the individuals that comprise the semilattice are airplanes, which are denoted by the entire compound *máy bay* rather than the rightmost element.

**Classifiers have semantic criteria** for nouns they combine with; I follow Nomoto (2013); McCready (2009) in analyzing these criteria as conventional implicatures. An NP argument of *cuốn* should satisfy the implicated meaning that it is a type of volume. Similarly, because CTs have a taxonomic relationship to the compounds they head, any compound headed by *máy* should satisfy the implicated meaning that it is a type of machine. The crucial difference is that for [Clf NP], the conventional implicature seemingly applies only to NP, while for [CT X], the implicature applies to the entire [CT X] constituent.

**CTs are nouns that acquire classifier properties within the context of compounds**, assuming a N>CT>Clf grammaticalization cline (DeLancey, 1986). Specifically, while bare nouns do not have the singularizing semantics of classifiers, this meaning is incorporated into the CT during grammaticalization (von Stechow, 1995), motivating a uniform semantic analysis for both Clfs and CTs.

**ClfPs and CT compounds both denote the individuals of the entire constituent**, rather than just the rightmost member. Clfs and CTs refer to kinds – *cuốn* to volumes and *máy* to machines – and their modifiers, NP or X, restrict this reference to a subkind: *cuốn sách* refers to book-volumes; *máy bay* to flying-machines (airplanes). While the subkind denoted by ClfPs is entirely predictable by looking at just the NP, the subkind denoted by CT compounds is lexicalized – i.e. compounds commonly have idiomatic meaning. I notate this subkind via compounding function as

MODIFIER(HEAD), where the modifier returns a subkind of the head: e.g. FLY(MACHINE) returns the subkind AIRPLANE.

**The semantics of Clfs and CTs** is shown in (6), modifying the classifier semantics proposed by Nomoto (2013), where precedes conventionally implicated criteria, CLASS.

$$\begin{aligned} \text{6) a. } & [[\text{Clf}]] = \lambda P \lambda z . (\text{P}(\text{CLASS}))(z) \wedge [\neg \exists y \in (\text{P}(\text{CLASS})) . y < z] \blacklozenge \lambda P \\ & . \text{P}(\text{CLASS}) \subseteq \text{CLASS} \end{aligned}$$

$$\begin{aligned} \text{7) b. } & [[\text{CT}]] = \lambda X \lambda z . (\text{X}(\text{CLASS}))(z) \wedge [\neg \exists y \in (\text{X}(\text{CLASS})) . y < z] \blacklozenge \\ & \lambda X . \text{X}(\text{CLASS}) \subseteq \text{CLASS} \end{aligned}$$

These semantics unify the meaning of both Clfs and CTs: both restrict denotations to singularities of the subkind denoted by the entire constituent. CT compounds differ in having lexically specified subkinds, which can be idiomatic (thus making the conventionally implicatures non-trivial); furthermore, they have no apparent restriction on the syntactic category of their modifier, indicated by ‘X’. This modification of classifier semantics allows us to capture the Vietnamese CT compound facts without losing the generalizations captured by current analyses of classifiers.

### References

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