The semantics of White Hmong (in)definiteness

In this paper, I show that Hmong[1] *cov* is a classifier that generates a set of entities (a cover), and the indefinite article *ib* is a choice function. The choice function indefinite *ib* in combination with either of the classifiers here (singular *tus* and plural *cov*), presents a clear picture of the interaction between (in)definiteness and number in basic Hmong DPs.

1. Data.
Fact 1: Bare classifier phrases with *cov* have a maximal definite reading (1b) and bare classifier phrases with *tus* are unique definites (1a).
Fact 2: Indefinite phrases with *cov* have a non-specific indefinite reading (2b) and refer to a random subgroup of that noun in the context.
Fact 3: Indefinite phrases with *tus* can refer to any random singular entity in the context (2a).

(1) a. Keng pom **tus** aub
Keng see **CLF.SG** dog
"Keng sees the dog."

b. Keng pom **cov** aub
Keng see **CLF.PL** dog
"Keng sees the dogs."

(2) a. kuv pom **ib** **tus** aub
1SG see **INDEF CLF.SG** dog
"I see a dog." (non-specific)

b. kuv pom **ib** **cov** aub
1SG see **INDEF CLF.PL** dog
"I see some dogs."

2 Proposal.
The lexical contribution of a classifier in Hmong is to convert a type *e* bare noun (a kind) into a property (Chierchia 1998). In addition to this, the classifier *tus* returns an atomic entity, and the classifier *cov* generates a cover of entities that fit the noun's descriptive content in the context. A formal definition is shown in (3), and an example of this is shown in (4).

(3) **Cov** *covers* A if: (Schwarzschild 1996)
a. **Cov** is a set of subsets of A
b. Every member of A belongs to some set in **Cov**
c. $\emptyset$ is not in **Cov**
d. $\mathbf{Cov}(A) = \wp(A)$, *without* $\emptyset$

(4) $[\![\text{cups}]\!]^g =$
a. $\{ \{c_1 \oplus c_2 \oplus c_3\},$
b. $\{c_1 \oplus c_2\}, \{c_1 \oplus c_3\}, \{c_2 \oplus c_3\},$
c. $\{c_1\}, \{c_2\}, \{c_3\} \}$
d. $cups = \wp(cup)$, *without* $\emptyset$

While I do not represent the $\cup$ operator in my denotations here, I assume it operates over the bare noun before it combines with the classifier (Chierchia 1998). The following are the proposed denotations for singular *tus* (5) and plural *cov* (6).

(5) $[\![tus]\!]^g = \lambda P.\lambda x.[P(x) \wedge AT(x)]$

(6) $[\![cov]\!]^g = \lambda P.\lambda x.x \in \mathbf{Cov}(P)$

In (6), the "**Cov**" portion generates a cover of entities that are of the property P. This includes all atomic and non-atomic entities, while *tus* (5) only returns atomic entities.

These ingredients give us the ClfP, but we still need to define the two options for D^0 to build the full DPs. One D^0 is a phonetically null ι (7), and the other is *ib* (8), which gives a non-specific indefinite reading. I adopt the standard formulation of ι, and the indefinite article *ib* is best formalized as a choice function (Winter 1997) rather than simply an existential quantifier. A choice functional definition for *ib* more clearly explains the fact that Hmong indefinite *ib cov*

[1] All data in this project comes from two White Hmong speakers from Wisconsin: one is 25 (KX), one is 35 (YX), and they are siblings. The Hmong examples are all written in the Romanized Popular Alphabet (RPA) as it is the most-utilized orthography by Hmong speakers in the US.

DPs have a non-specific meaning and they select a random non-maximal and non-atomic entity from the cover generated by *cov*.

(7) $[\![\iota]\!]^g = \lambda P : \exists!x[P(x)].\iota x[P(x)]$

(8) $[\![ib]\!]^g = \lambda P = f_{cf}(\lambda y.P(y) = 1)$

When the classifier phrase combines with the ι determiner, it picks out an atomic or maximal entity in the context, depending on whether the classifier is *tus* or *cov*. When the indefinite determiner combines with a *tus* classifier phrase, the choice function applies to pick a random atomic entity in the context. But, when *ib* combines with a plural classifier phrase with *cov*, semantically it seems the choice function would choose a random atomic or non-atomic entity.

The data indicates that *ib cov N* should only pick out a random non-atomic and non-maximal entity from the cover. Here we introduce the concept of antipresupposition (9). Pragmatically, the maximal and atomic entities are excluded, because if the speaker intended to refer to the maximal entity, they would have uttered *cov N*. Similarly, if they meant to refer to an atomic entity, they would have used the *tus N* construction.

(9) **Antipresupposition** (Percus 2006)
   a. imposes the condition that the interlocutors not take the truth of a certain proposition for granted

(10) AUB_C: {Apollo, Mars, Copper}
   a. *tus aub* = A
   b. *ib tus aub* = A or M or C
   c. [[cov aub]]^g = AMC or AM or AC or CM or A or M or C
   d. *cov aub* = AMC
   e. *ib cov aub* = AM or MC or AC

Once these options are ruled out by antipresupposition, the only pragmatically sound meaning for *ib cov N* phrases are the non-maximal and non-atomic entities.

At the end of composing these four types of DP structures, the corresponding semantic representations are as follows.

(11) **Plural definite:** $[\![cov\ aub]\!] = \exists!x[x \in \mathbf{Cov}(\textsc{dog})].\iota x[x \in \mathbf{Cov}(\textsc{dog})]$

(12) **Plural indefinite:** $[\![ib\ cov\ aub]\!] = f_{cf}(\lambda y.y \in \mathbf{Cov}(\textsc{dog}) = 1)$

(13) **Singular definite:** $[\![tus\ aub]\!] = \exists!x[\textsc{dog}(x) \wedge AT(x)].\iota x[\textsc{dog}(x) \wedge AT(x)]$

(14) **Singular indefinite:** $[\![ib\ tus\ aub]\!] = f_{cf}(\lambda y.\textsc{dog}(y) \wedge AT(y) = 1)$

3. Discussion & Implications

Some theoretical implications of this work are as follows. First, the only defining characteristic of a classifier in Hmong (and likely other Chinese-type languages) is to convert a kind into a property.

Second, we expect plural classifiers in any language to have this cover property, so long as the classifier is the sole morphological contributor to the plural meaning of the noun phrase. The Mandarin classifier *xie* (Wu 2019) may have a similar pattern that the present analysis could explain. It's also possible that combining covers and choice function analyses could explain definiteness and number interactions in Persian differential object marking, as well (Jasbi 2016). I suspect there are all kinds of patterns to which my analysis could extend.

Finally, there is minimal semantic work on Hmong, and any previous discussion of classifiers is brief, descriptive, and focused on classifier choice (Bisang 1993). My analysis is unique in that it explains definiteness facts as well as the number facts of definite and indefinite Hmong DPs.

References

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