The Modification Puzzle of Mandarin Numeral Phrases[1]

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Abstract. It has been observed in the literature that the nominal-internal word order influences the specificity in Mandarin Chinese (Huang, 1982; Tang, 1990; Yang, 2005; Partee, 2006; Zhang, 2006). In this paper, we concentrate on numeral phrases that contain modifiers and show how their interaction displays the interpretational difference. We propose a semantic solution that consists of two resources, namely (i) the semantics of classifiers from Japanese (Sudo, 2016), and (ii) the semantics of relative clauses from Turkish (Sağ, 2019). We show that this specificity contrast is pervasive in Mandarin nominal constructions that deserve a uniform account.

Keywords: numeral constructions, specificity, modification, (in)definiteness, cardinality

1. Introduction

When a Mandarin nominal contains a numeral and a modifier, the relative word order between the numeral and modifier controls the specificity and uniqueness of the nominal. Consider specificity first. The effect of nominal-internal word order on specificity has been noted in the literature (Huang, 1982; Tang, 1990; Yang, 2005; Partee, 2006; Zhang, 2006). Zhang (2006) observes that numeral phrases with prenumeral modifiers (Mod-Num phrases) are unambiguously specific. For instance in (1a), the relative clause *lai shang ke (de)* 'that/who attended class' precedes the numeral (and the classifier) *san (ge)* 'three (CL)', and the nominal receives a specific interpretation. On the other hand, numeral phrases with postnumeral modifiers (Num-Mod phrases) are usually nonspecific (1b); a specific interpretation is forced by an anaphoric use of the nominal.

(1)　　a.　*Modifier-Numeral-Classifier-Noun (Mod-Num phrases)*
　　　　　lai　shang ke　de san　ge xuesheng
　　　　　come attend class DE three CL student
　　　　　'the three students who regularly attended class'　　　　　　　[specific]
　　　b.　*Numeral-Classifier-Modifier-Noun (Num-Mod phrases)*
　　　　　san　ge lai　shang ke de　　xuesheng
　　　　　three CL attend class　DE student
　　　　　'three students who regularly attended class'　　　　　　　[non-specific]

The specificity contrast can be diagnosed using various constructions. For example, existential constructions of the form "*lai le* + nominal + predicate" require the nominal part to be a nonspecific indefinite (Li and Thompson, 1981; Huang, 1987, among others). As expected, Num-Mod phrases can appear in this construction (2a), while Mod-Num phrases cannot (2b).

(2)　　*Existential construction* (Zhang, 2006)
　　　a.　*Num-Mod phrase*
　　　　　Lai-le　　san　ge dai　yanjing de xuesheng hen　haoxiao.
　　　　　come-PFV three CL wear glasses DE student　very funny

'Three students who wear glasses have come. They are very funny.'
b. *Mod-Num phrase*
∗ Lai-le   dai   yanjing de san   ge xuesheng hen   haoxiao.
  come-PFV wear glasses DE three CL student   very funny
Intended: 'The three students who wear glasses have come. They are very funny.'

Extractions are allowed from non-specific nominals, but not from specific nominals (Enç, 1991; Diesing, 1992). Zhang (2006) shows that Mod-Num nominals (3b), but not Num-Mod nominals (3a), pattern like specific nominals in this regard.

(3)   *Topicalisation* (Zhang, 2006)
a. *Num-Mod phrase*
Lishi-shu   Akiu (xingkui)   du-guo-le   liang ben guanyu Xizang de *t*.
history-book Akiu fortunately read-EXP-PRF two   CL   about   Tibet   DE
'Akiu has (fortunately) read two history books on Tibet.'
b. *Mod-Num phrase*
∗ *Lishi-shu*   Akiu (xingkui)   du-guo-le   guanyu Xizang de liang ben *t*.
  history-book Akiu fortunately read-EXP-PRF about   Tibet   DE two   CL
Intended: 'Akiu has (fortunately) read the two history books on Tibet.'

Another diagnostic comes from scope interactions. A universal quantifier shows scope ambiguity with a Num-Mod phrase: the universal quantifier may take wide or narrow scope (4a). A universal quantifier does not show scope ambiguity with a Mod-Num phrase (4b). The contrast shows that Mod-Num phrases are not quantificational, and do not take scope; this is in line with their obligatorily specific interpretations.

(4)   a. *Num-Mod phrase* $[\forall > 3 : \checkmark; 3 > \forall : \checkmark]$
Mei   ge ren   dou renshi san   ge lai   shang ke   de xuesheng.
Every CL people DOU know three CL attend take   class DE student
'Everyone knows the three students who came to class.'
OR: 'Everyone knows three (possibly different) students who came to class.'
b. *Mod-Num phrase* $[\forall > 3 : \#; 3 > \forall : \checkmark]$
Mei   ge ren   dou renshi lai   shang ke   de san   ge xuesheng.
Every CL people DOU know attend take   class DE three CL student
'Everyone knows the three students who came to class.'
Not available: 'Everyone knows three (possibly different) students who came to class.'

Nominal-internal word order also controls uniqueness, a novel observation. Consider the two scenarios described in (5), which crucially differ by the number of groups of individuals in the context that satisfy the predicate described by the nominal. In Scenario 1 (5a), there is one and only one group of three students who regularly attended class. In Scenario 2 (5b), there are multiple such groups, $\binom{10}{3}$-many to be exact.

(5)   a. *Scenario 1 (unique)*:
There was a semantics class. Three students regularly attended. These three students all passed the final exam.
b. *Scenario 2 (non-unique)*:

> There was a semantics class. Ten students regularly attended. Among these ten students, only three passed the final exam.

A prenumeral modifier is preferred in Scenario 1, the unique scenario (6a), while postnumeral modifier is preferred in Scenario 2, the non-unique scenario (6b). The postnumeral modifier example (6b) interprets as an assertion that the set of students who regularly attended class and passed the final exam has a cardinality of 3.

(6)   a.   *Mod-Num phrase*   [*Scenario 1*: ✓; *Scenario 2*: #]
           lai shang ke de san   ge xuesheng tongguo le.
           attend class DE three CL student   pass   PFV
           'Three students who regularly attended class passed.'

        b.   *Num-Mod phrase*   [*Scenario 1*: #; *Scenario 2*: ✓]
           san   ge lai shang ke de xuesheng tongguo le
           three CL attend class DE student   pass   PFV
           'Three students who regularly attended class passed.'

2. Classifiers with a partitive semantics

2.1. A semantics for pluralities

We first describe the necessary ingredients to work with pluralities. These are typical notions in a Link (1983)-style analysis of pluralities. First, the sum operator $\oplus$ is an idempotent, commutative and associative binary operation over entities. For any set of entities X, $\bigoplus X$ denotes the sum of all entities in X. The subpart relation $\sqsubseteq$ is defined over entities as $x \sqsubseteq y$ iff there is some entity z such that $x \oplus z = y$. We say two entities *overlap* if they have a common subpart, and write $x \circ y$ to mean "x overlaps with y". An entity is said to be *atomic* iff it has no subparts other than itself. We write $\mathsf{Atom}(x)$ to mean "x is atomic." For any set of entities X, $^*X$ denotes the transitive closure of X under $\oplus$. A partition over an entity x is a set P of entities such that $\bigoplus P = x$ and elements of P are pairwise non-overlapping.

2.2. Why is postnumeral modification possible?

Before addressing the core question of how nominal internal word order influences the specificity feature of the noun, we take a detour to revisit an old puzzle: why can Mandarin nominals be modified before combining with a numeral classifier? This problem arises from a popular analysis (Chierchia, 1998a, b) of Mandarin nominals, which explains why classifiers are obligatory for numeral quantification in Mandarin, as shown in (7).

(7)   san   *(ge) xuesheng
       three   CL student
       'three students'

Chierchia (1998a, b) proposes that Mandarin bare nouns like *xuesheng* 'student' express kinds and have denotations of type $\langle s, e \rangle$. A bare noun that expresses a kind K denotes a function that maps each world to the sum of all instances of K in that world (8a). Modifiers, including numerals like *san* 'three', denote entity predicates and not kind predicates (8b), and thus cannot combine with bare nouns. Classifiers like *ge* 'CL' effectively convert kinds to entities (8c), allowing classifier-bare noun combinations to further combine with modifiers.

(8)   a. $[\![\textit{xuesheng} \text{ 'student'}]\!] = \lambda s.\, \iota x_e.\, \mathsf{student}(s)(x)$
       b. $[\![\textit{san} \text{ 'three'}]\!] = \lambda x_e.\, |x| = 3$

c. $[\![ge\ \text{'CL'}]\!] = \lambda x_e.\ \lambda y_e.\ y$ is an instance of the kind x.

This system does not allow modifiers to combine with bare nouns that have not combined with a classifier yet, thus predicting postnumeral modifiers to be impossible in Mandarin. However, postnumeral modification is common, grammatical and productive (Krifka, 1995):

(9) *Postnumeral adjective*
san ge qinfen de xuesheng
three CL diligent DE student
'three diligent students'

(10) *Postnumeral relative clause*
san ge lai   shang ke   de xuesheng
three CL attend take   class DE student
'three students who came to class'

In fact, these kinds of modifiers do not even require classifiers:

(11) *Adjective*
qinfen   de xuesheng
diligent DE student
'students'

(12) *Relative clause*
lai   shang ke   de xuesheng
attend take   class DE student
'students who came to class'

This leaves us with the puzzle stated earlier: why can Mandarin nominals be modified before combining with a numeral classifier?

2.3. Numerals need classifiers; modifiers do not
Sudo (2016) provides a different analysis of classifiers. His analysis targets Japanese, another obligatory classifier language like Mandarin. According to his proposal, it is numerals, rather than modifiers, that require classifiers; in other words, a numeral needs to combine with a classifier first in order to combine with a bare noun, but modifiers do nott.

Sudo's proposal is as follows. Numerals have been argued to be abstract entities (Rothstein, 2010; Scontras, 2014); in Sudo's system, numerals have their own type, namely *n*. In addition, the semantics of classifiers involves a sortal presupposition, which encodes various idiosyncratic ontological requirements that classifiers impose on the nouns they combine with. For example, Japanese *rin* is a classifier that can only be used with flowers. This requirement is encoded as a presupposition in (13).

(13) $[\![rin]\!] = \lambda s.\ \lambda n_n.\ \lambda x_e : {}^*\mathsf{flower}(x)(s).\ |\{y \sqsubseteq x : \mathsf{flower}(y)(s) \wedge \mathsf{Atom}(y)\}| = n$

The classifier takes a situation, a numeral, and a sum denoted by a bare noun. The number phrase states that there exists a part of the sum with *n*.

2.4. Our semantics for classifiers

We now describe a partitive semantics of classifiers, which is based on Sudo's system. To model the ontological requirement each classifier enforces on the bare noun it combines with, we propose that each classifier c defines a set of partitions Parts_c over sums. For example, *duo*, the Mandarin classifier for flowers, just like Japanese *rin*, might define Parts_{duo} to be the set of atomic partitions over sums of flowers. This proposal should work for mass noun classifiers as well; for example, *pin* 'bottle(s) of' might define Parts_{pin} to be the set of partitions over sums of liquid individuals, where the members in each partition are sums that occupy distinct bottles. We expect there to be more precise definitions of Parts_c for each classifier c we have described so far, but this doesn't affect the validity of our overall proposal.

(14) a. $\text{Parts}_{duo} = \{P \subseteq \text{flower} : \forall z \in P.\ \text{Atom}(z) \land \forall z_1, z_2 \in P.\ z_1 \not\sqsubseteq z_2\}$
      b. $\text{Parts}_{pin} = \{P \subseteq \text{liquid} : \forall z_1, z_2 \in P.\ z_1 \not\sqsubseteq z_2\ \land$
$$\forall z \in P.\ \exists b \in \text{bottle}.\ \text{contains}(z)(b)\ \land$$
$$\forall z_1, z_2 \in P.\ \exists b \in \text{bottle}.\ \text{contains}(z_1)(b)\ \land$$
$$\text{contains}(z_2)(b) \to z_1 = z_2\}$$

Our classifier semantics needs to be restricted by one principle in order for it to work with numeral quantification. This is stated formally in (15), and it requires that no two partitions defined by the same classifier give rise to different counts over the same sum.

(15) If c is a classifier, then for all sum x, it must be the case that for any two partitions $P_1, P_2 \in \text{Parts}_c$ that cover x, we have $|P_1| = |P_2|$.

The denotation for the Mandarin classifier *ge* is given in (16).

(16) $[\![ge]\!] = \lambda s.\ \lambda n_n.\ \lambda x_e.\ \lambda y_e : \exists P.\ P \in \text{Parts}_{ge} \land y \sqsubseteq x \land y = \bigoplus P$
$$.\ \exists P.\ P \in \text{Parts}_{ge} \land y \sqsubseteq x \land y = \bigoplus P \land |P| = n$$

The classifier takes a situation s, a numeral n, and a sum x denoted by a bare noun, and returns an entity quantifier. The returned quantifier carries a presupposition which requires the existence of a *ge*-style partition $P \in \text{Parts}_{ge}$ that carves up x. The returned quantifier is a predicate true of a sum y iff a P that satisfies the presupposition carves y into n sums.

The proposal disassociates the presence of classifiers with the modification of bare nouns. As languages like English, Mandarin bare nouns can freely be either predicative or argumental. We now have a semantics for a numeral phrase that consists of a numeral, a classifier and a bare noun, illustrated in (17). The denotation function on the first line is parametrized with respect to a world or situation s.

(17) $[\![\text{three CL student}]\!]^s$
$= [\![[[3\ [\text{CL}\ s]]\ \text{student}]]\!]^s$
$= [\![\text{CL}]\!](s)(3)(\text{student})$
$= \lambda y_e.\ \exists P.\ P \in \text{Parts}_{ge} \land y \sqsubseteq \text{student} \land y = \bigoplus P \land |P| = 3$

As seen in (17), *three students* in Mandarin has an existential meaning, roughly paraphrased as "there exists a sub-plurality in the total sum of students with a cardinality of 3". This phrase can combine with a prenumeral modifier via Predicate Modification (Heim and Kratzer, 1998).

This is illustrated for the relative clause lai shangke de 'who regularly attended class; lit. attend class DE' in (18).

(18) $[[[\text{attend class DE}] [\text{three CL student}]]]$
$= \lambda y_e.\ [[\text{attend class DE}]](y) \wedge [[\text{three-CL-student}]](y)$
$= \lambda y_e.\ \text{attend-class}(y) \wedge \exists P.\ P \in \text{Parts}_{ge} \wedge y \sqsubset \text{student} \wedge y = \bigoplus P \wedge |P| = 3$

As for postnumeral modifiers, we propose that they still denote entity predicates of type $\langle e,t \rangle$, but they can modify kinds denoted by bare nouns via the help of a pair of operators known as *up* ($^\cup$) and *down* ($^\cap$; Chierchia (1998a, b)). These operators transfer meanings between the types $\langle s,e \rangle$ and $\langle s, \langle e,t \rangle \rangle$. These operators are defined in (19), and an example derivation for postnumeral modifiers is given in (20).

(19) $^\cup = \lambda x_{\langle s,e \rangle}.\ \lambda s_s.\ \lambda y_e.\ y \sqsubseteq x$
$^\cap = \lambda x_{\langle s,\langle e,t \rangle \rangle}.\ \lambda s_s.\ \bigoplus \{y : x(s)(y)\}$

We write $x^\cup$ for $^\cup(x)$ and $x^\cap$ for $^\cap(y)$.

(20) $[[[\text{three CL [attend class DE] student}]]]^s$
$= [[\text{CL}]](s)(3)((\lambda s'_s.\ \lambda y_e.\ [[\text{attend class DE}]](y) \wedge \text{student}^\cup(s')(y))^\cap(s))$
$= \lambda y_e.\ \exists P.\ P \in \text{Parts}_{ge} \wedge y \sqsubset \text{attend-class} \cap \text{student} \wedge y = \bigoplus P \wedge |P| = 3$

This kind of postnumeral modification is similar to a proposal by Krifka (1995), who suggests that Mandarin bare nouns are modifiable concepts, because concepts are of type *e*.

Compare the Mod-Num example (18) and the Num-Mod example (20). The Mod-Num case describes a predicate that is true iff there is a strict sub-plurality *y* of students such that *y* attended class and has a cardinality of 3. This predicate can be satisfied no matter if there are exactly three or more than three students who attended class. On the other hand, the Num-Mod case describes a predicate that is true iff there is a strict sub-plurality *y* of students that attended class such that *y* has a cardinality of 3. This predicate can only be satisfied if there are more than three students who attended class. This correctly predicts a pattern we described in Section 1 that only the Mod-Num example can be used in Scenario 1 (5a), a "unique" scenario where there are exactly three students who attended class.

This leaves unexplained two contrasts. The first is the grammaticality contrast between the Mod-Num case and the Num-Mod case in Scenario 2 (5b), the "non-unique" scenario. The second, which in fact subsumes the first, is the specificity contrast between the two nominal-internal orders. So far, our proposal predicts that unmodified numeral phrases are always non-specific in Mandarin. This is a correct prediction, as confirmed below by the flexible opacity and scope ambiguity of Mandarin numeral phrases (Carlson, 1977).

(21) wo xiang jian san   ge xuesheng.
       I   want see three CL present   student
       'I want to meet three students.'
       Or: 'There are three specific students that I want to meet.'

(22) # Wo fanfu   shadiao san   ge xuesheng.
        I   repeatedly kill   three CL student

Intended: 'I killed students repeatedly.'

We return to an explanation of the specificity contrast in Section 3.

2.5. Ruling out a non-restrictive relative clause analysis

A potential alternative analysis of the semantic contrast between pre- and post-numeral relative clauses is to reduce it to a restrictivity difference between the two relative clauses: pre-numeral relative clauses might be non-restrictive, while post-numeral ones might be restrictive. We do not pursue this direction in this paper, mostly because it is difficult to diagnose whether relative clauses that co-occur with numerals are restrictive or non-restrictive. Del Gobbo (2003, 2005) proposes certain diagnostics, but their validity has been questioned by Lin and Tsai (2015). Further syntactic diagnostics proposed by Del Gobbo (2010) as well as semantic ones proposed by Lin and Tsai (2015) work well with relative clauses modifying proper names, but not those modifying numerally quantified nominals, which exclusively constitute the examples of relative clauses we deal with in this paper. Thus, we leave exploring this alternative direction to future research. For now, we assume with Del Gobbo (2010) and Lin and Tsai (2015) that these prenominal relative clauses are not like English non-restrictive relative clauses, and we will stick to treating these as restrictive relative clauses denoting non-presuppositional, non-supplementary content.

3. High and Low Modifiers

What remains to be explained is why Mod-Num phrases have specific interpretations. Before sketching out our analysis, we first point out a crucial structural difference between Num-Mod and Mod-Num phrases. The difference is concerned with the position of the demonstrative within the nominal configurations. As shown in (23), demonstratives are only able to appear ahead of numerals rather than modifiers.

(23)   a.   <na> san   ge   <*na> lai   shang ke   de xuesheng
            that three CL   that come attend class DE student
            'the three students who came to class'   [Dem-Num-Mod]
   b.   <*na> lai   shang ke   de   <na> san   ge xuesheng
            that come attend class DE   that three CL student
            'the three students who came to class'   [Mod-Dem-Num]

In (23a), which is a Num-Mod phrase, the demonstrate *na* 'that' can occur before the numeral-classifier sequence, but cannot stay in-between. In its Mod-Num counterpart (23b), the demonstrative occupies the position between the modifier and the numeral, which still allows it to precede the numeral in that position. However, putting the demonstrative in the nominal-initial position right before the relative clause is ungrammatical within the same configuration.

What this distinction shows to us can also be interpreted in a different way with respect to the position of modifiers. Here we term the relative clause in (23a) a low modifier due to its nominal-internal position. By contrast, we term the relative clause in (23b) a high modifier because it is external to the DP. This position-based dichotomy among nominal modifiers is reminiscent of what Sağ (2019) proposes for Turkish modified nominals.

In Turkish, nominal phrases with the classifier *tane* show similar specificity difference as what we see in Mandarin noun phrases. When the nominal modifiers are relative clauses, they can also appear in two different positions, either preceding the determiner (as well as the nominal)

or intervening between the determiner and the nominal. Sağ (2019) differentiates the former from the latter, respectively dubbing them outer and inner relative clauses. Crucially, when Turkish noun phrases with classifier (e.g., *tane*) co-occur with outer relatives, they can be interpreted as definites, but not when they are modified by inner ones. It is evident that such a contrast is similar to what we have seen in Mandarin throughout the paper, namely that numeral nominals with low modifiers (i.e., Num-Mod phrases) are non-specific, whereas those with high modifiers (i.e., Mod-Num phrases) are specific. As already given in (23), in the former situation, the modifier follows both the demonstrative and the numeral; but in the latter situation, the modifier is linearly before the demonstrative and the numeral at the same time.

Returning to Turkish modified nominals, Sağ (2019) proposes that classifiers like *tane* has a built in choice function variable, and that numeral phrases are indefnites of type *e*. Outer relative clauses are merged directly above expressions of type *e* through nominalization, giving rise to the specificity effect.

(24) $[\![\text{tane}_f]\!] = \lambda n_n.\lambda P.\, f(\lambda x_e.\, \exists S.\, \Pi(S)(x) \wedge |S| = n \wedge \forall s \in S.\, P(s))$ (Sağ, 2019)

Following Sağ (2019), we propose a same line of analysis of the specificity effect that the Mod-Num phrases display. Instead of assuming relative clauses to merge directly above expressions of type *e* via nominalization, we suggest that the relative clause provides domain restriction for the existential choice function. In this sense, the specificity interpretation comes from the domain restriction.

(25)   *Structures for Mod-Num and Num-Mod phrases*
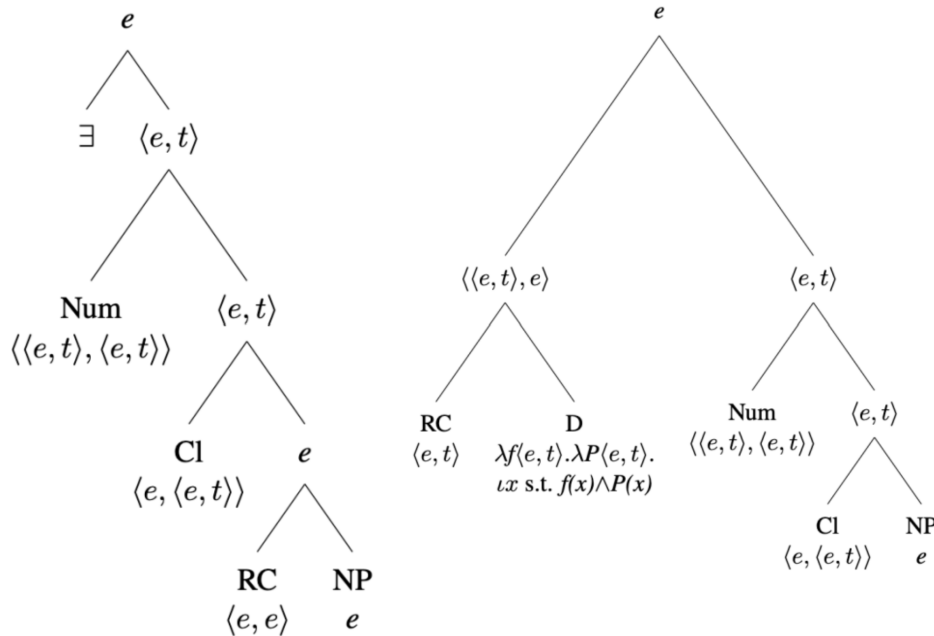
4. Mandarin possessives

It is worth mentioning that the specificity contrast that we observe among numeral phrases is not unique to those involving modifiers like relative clauses. We show that the same difference regarding specificity is also found in other numeral constructions that contain possessors. For example in (26), the nominal *maoxianyi* 'sweater' is preceded by both a possessor *Zhangsan*

and a numeral-classifier sequence *san jian* 'three CL'. The surface difference lies in the word order between these two elements: the possessor precedes the numeral-classifier sequence in (26a), whereas their word order is reversed in (26b).

(26) a. Zhangsan de san   jian maoxianyi
          Zhangsan DE three CL   sweater
          Zhangsan's three sweaters.   [Poss-Num]
      b. san   jian Zhangsan de maoxianyi
          three CL   zhangsan DE sweater
          Lit.: three Zhangsan's sweaters   [Num-Poss]

Interpretation-wise, these two numeral constructions also behave differently. According to Yang (2005), (26b) is used when there are more than three contextually salient sweaters that belong to the possessor *Zhangsan* (that is, there are actually five sweaters belonging to *Zhangsan*, and only three of them are salient in the context). By contrast, (26a) is preferred over (26b) when there are exactly three contextually salient sweaters and they all belong to *Zhangsan* (that is, in the same context another person *Lisi* may also have three sweaters, but they are not as salient as *Zhang*'s) (also see Huang (1982) and Tang (1990) for similar discussion).

The contrast above suggests that, as with Mod-Num phrases, the so-called Poss-Num phrases are also specific in nature; whereas those Num-Poss phrases are non-specific just like Num-Mod ones. This idea seems to be on the right track, since it is further borne out by the specificity diagnostics such as existential construction (27).

(27) a. *You Zhangsan de san   jian maoxianyi xiaoshi-le.
          YOU Zhangsan DE three CL   sweater   disppear-PFV
          Lit.: 'Zhangsan's three sweaters disappeared.'   [Poss-Num]
      b. You san   jian Zhangsan de maoxianyi xiaoshi-le.
          YOU three CL   Zhangsan DE sweater   disappear-PFV
          'There are three Zhangsan's sweaters that disappeared.'   [Num-Poss]

If the Poss-Num phrases are specific, we predict that they cannot occur in the existential construction. This is corroborated by the ungrammatical result in (27a). By contrast, as to the Num-Poss phrases, since they are assumed to be non-specific, we do not hold the same prediction regarding their occurrence in the same existential configuration. It follows that (27b) is grammatical.

Since the numeral constructions involving possessors lead to the same result of specificity as their counterparts containing modifiers, we generalize the nominal configurations in (28) with respect to specificity: if a numeral (plus a classifier) is preceded by some constituent (e.g., adjective, relative clause, possessor, etc.), the resulting nominal phrase is specific; reversely, if the same constituent follows the numeral (plus a classifier), the nominal phrase becomes non-specific.

(28) a. X-Num-CL-NP   [specific nominals]
      b. Num-CL-X-NP   [non-specific nominals]

The templatic configurations above capture all the specificity contrast among numeral phrases that we have seen in this paper. It is very likely that our proposed analysis of the numerals with

modifiers can be extended to those with possessors.For the sake of space, we leave the detailed extension of our analysis in future research.

5. Conclusion

In this paper we offered a semantic account for the interpretational differences that are observed among nominal phrases with different internal word order. We demonstrate that when a modifier and a numeral co-occur within a nominal, the relative word order between these two pre-nominal elements gives rise to the specificity contrast (as well as the uniqueness of the nominal). We build on the semantics of classifiers proposed by Sudo (2016) to explain the non-specificity of Num-Mod phrases, and adapt Sağ (2019)'s analysis of high/low modifiers to account for the specificity that arises from Mod-Num phrases. Though our discussion throughout the paper is mostly confined to the interaction between numerals and modifiers, we point out the potentiality of extending our analysis to other nominal constructions that also display the same specificity contrast, e.g., those involving possessors.

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