

1. Overview

1.1 Subject of study: counting phrases compatible with semelfactive event predicates in Mandarin Chinese: Numeral-event.classifier (vCl).

1.2 Main Claims:

1.2.1 a Num-vCl phrase and any following thematic nominal form a meaningful constituent, henceforth vCIP.

1.2.2 vCIP is a complement of the verb, instead of an adverbial adjunct or a verbal functional projection.

1.2.3 The internal/external syntax of event and individual classifier phrases are identical; semantics minimally different.

2. Basic Facts

2.1 Linear position of [Num-vCl]: It’s linearly to the right of the verb, but its order relative to an object is not fixed, varying with different kinds of nominals. (Huang Li and Li, 2009; Huang 2018).

- (1) 张三打了 李四/每个沙袋/*沙袋 三下
Zhangsan da-le Lisi/mei-ge shadai/ *shadai **san xia**
Zhangsan hit-ASP Lisi/every-iCl sandbag/ sandbags **three vCl**
a. “Zhangsan hit Lisi three times.”
b. “Zhangsan hit every sandbag three times.”
c. Int: “Zhangsan hit sandbags three times.”

- (2) 张三打了 三下 *李四/*每个沙袋/沙袋
Zhangsan da-le san xia *Lisi/*mei-ge shadai/. shadai
Zhangsan hit-ASP three vCl Lisi/every-iCl sandbag/ sandbags
a. Int: (1a); b. Int: (1b); c. “Zhangsan hit sandbags three times.”

2.2 “Non-adverbial” use of vCIP: vCIP + an event noun can appear as the subject of a predicate (Deng 2013).

- (3) [那三下咳嗽_{<v,t>}]很响
[na san xia kesou_{<v,t>}] hen xiang.
DEM_{DIST} three vCl cough very loud.
“Those three coughs were very loud.” (Deng 2013:102)

3. Previous analyses

3.1 Verbal functional head analysis (Zhang 2017): vCls head a functional projection in the clausal spine, selecting for VP as complement; Surface order in (1) derived by obligatory VP movements; (2) unexplained; (3): verbal classifier distinct from event classifier.

3.2 Adverbial adjunct analysis (Huang Li and Li, 2009; Huang 2018): [Num-vCl] is a V’-level adjunct i.e. adjoined to V-Complement, lower than SpecVP; Only non-referential/pseudo-incorporated nouns can be the complement of V.

3.3 V-Complement analysis (Deng 2013): vCl always selects for an event nominal (like cough_{<v,t>}), and sometime covert (*e*_{<v,t>}), explaining (3); (1): double object construction; (2): vCIP incorporated with V and raised above VP.

4. New observations/ generalizations

The following generalizations challenge previous analyses

4.1 Num-vCl and a following thematic nominal behave like a constituent, having a similar distribution as individual classifier (iCl) phrases (Not the case for NP_θ-Num-vCl).

4.1.1 Num-vCl-NP_θ and iCIP occupying the same A positions:

-Subject in a complex Ba-construction

- (4) [五十 下/个 沙袋]把张三打累了
wushi xia/ge shadai ba Zhangdan da lei le
fifty vCl/iCl sandbag BA Z. hit tired ASP
with vCl: “hitting sandbags fifty times made ZS tired.”
with iCl: “Fifty sandbags made ZS tired from hitting them.”

-Subject in a complex Bei-construction

- (5) [五十 下/个 沙袋]被张三打得很响
wushi xia/ge shadai bei ZS da de hen xiang
fifty vCl/iCl sandbag BEI ZS hit DE very loud
with vCl: “fifty hittings of sandbags were done loudly by Lisi”
with iCl: “fifty sandbags were hit by Lisi such that they created loud sounds”

4.1.2 Both can be topicalized and relativized (omitted)

4.2 It seems that what nominals can follow vCl and iCl are subject to the same constraints: Compare (2) with the following.

- (6) 张三打了 [三个 *李四_{<e>}/*每种沙袋/沙袋]
Zhangsan da-le san ge *Lisi_{<e>}/*mei-zhong shadai /shadai
Zhangsan hit-ASP three iCl L. every-Cl_{kind} sandbags sandbag
a. nonsensical
b. Int: “Zhangsan hit three of every kind of sandbags”
c. “Zhangsan hit three sandbags”

4.3 The counting semantics of Num-vCl-NP_θ isn’t necessarily related to the matrix event predicate.

- (7) 张三听见了三下沙袋 (some speakers like this more with quán, vCl for punching events)
Zhangsan tingjian-le san xia shadai
Zhangsan hear-ASP three vCl sandbag
“Zhangsan heard three actions done to sandbags.”
(8) *张三听见了李四三下
Zhangsan tingjian-le Lisi san xia
Zhangsan hear-ASP L. three vCl
Int: “Zhangsan heard three actions done to Lisi.”

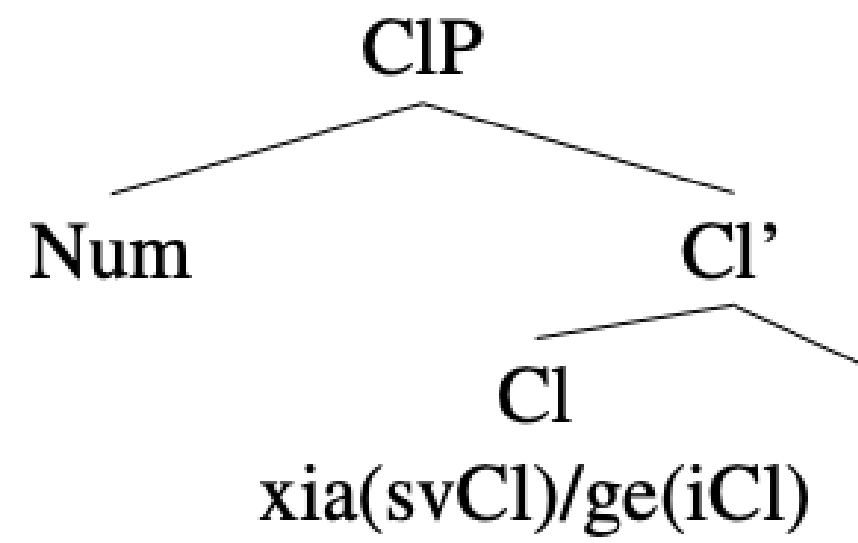
4.4 Num-vCIP-NP_θ may describe events of mixed types.

- (9) [那三下沙袋]很响
na san xia shadai hen xiang
DEM_{DIST} three vCl sandbag very loud
“Those three actions done to sandbags were loud”
(3 punches; 1 punch ⊕ 2 kicks; 2 kicks ⊕ 1 punch etc....)
-The meaning of Num-vCIP-NP_θ is now inferred: ...

5. Proposal

Part 1: vCls and iCls are different lexical items of the same category.

-Therefore, their syntactic properties are the same. I adopt the analysis by Jiang (2012) as in (10)

- (10)  (11) $\llbracket N \rrbracket = \lambda P_{\alpha t} . \lambda \phi_{\alpha} . P(\phi) \wedge |\phi| = n$
(12) a. $\llbracket ge \rrbracket = \lambda P_{et} . \lambda N_{<\alpha t, \alpha t>} . N(At(P))$
b. $\llbracket xia \rrbracket = \lambda P_{vt} . \lambda N_{<\alpha t, \alpha t>} . N(At(P))$
(Note: At(P) returns the atomic subset of P)

-The semantic proposal by Jiang (2012) is also applicable to vCls with a minor and crucial difference: $\llbracket iCl \rrbracket$ applies to predicates of individuals and $\llbracket vCl \rrbracket$ applies to predicates of events. This aligns with Deng (2013)’s insight, and accounts for cases like (3).

-How does vCl compose with a thematic nominal as in (4)-(9)?

Part 2: The semantic composition of Num-vCl-NP_θ follows from **full thematic separation** (Krifka, 1992; Schein, 1993):

-Verbs denote one place predicates of events ($\llbracket hit \rrbracket = \lambda e . hit'(e)$), and nominals are **θ-marked** before composing with the verb.
-Implementation of nominal **θ**-marking: **a feature approach** (Hornstein, 2002; LaTerza, 2014).

(13): $\llbracket NP_{[\theta]} \rrbracket = \lambda e . (\exists x) [\llbracket NP \rrbracket (x) \wedge \theta(e, x)]$ (LaTerza, 2014:ex. 2.34, modified)
-e.g. $\llbracket NP_{[theme]} \rrbracket_{<v,t>}$ denotes a set of events whose themes are in $\llbracket NP \rrbracket$.
-(13) allows (12b) to compose with e.g. $\llbracket sandbags_{[\theta]} \rrbracket$; This explains why (3) and (9) are both possible: even noun and NP_θ both are $<v,t>$.

- (14) $\llbracket Three \text{ } xia \text{ } sandbag \rrbracket = \lambda e . (\exists x) [sandbag'(x) \wedge theme(e, x)] \wedge |e| = 3$

Explaining empirical generalizations:

-(14) is essentially a CIP as defined in (10), explaining **4.1** and **4.2**.
-(14) can compose with the verb through pred.mod., deriving (2)
-As a nominal, (14) can also be θ-marked, entering a relation with other events denoted by the verb, explaining **4.3**.
-(14) can also combine with demonstratives like other CIP, thus (9)
-Note that with a general vCl *xia*, semantics of (14) itself doesn’t specify the event type, explaining **4.4**.
-Finally, for cases like (1), I agree with Deng (2013) that it’s a kind of DOC.

5. Implications

-reflects a closer parallelism between vCls and iCls, and therefore between counting in the individual/event domain, echoing Bach (1986).
-suggests a typologically interesting case of counting events with participants (c.f. Krifka, 1989; Nakanishi, 2007), where semantics for such a counting has been composed even before V is merged.
-Future work: this analysis could apply to other vCls: cì, biàn etc. though idiosyncratic properties should be separately considered.