Semantic Incorporation and Non-canonical Object Constructions in Chinese

Qiongpeng Luo

1. Introduction

One of the classical theses in the syntax-semantics interface inspired by Montague Grammar (Montague 1974) is that if an expression forms a syntactic complement to a verb, it will also be its semantic argument. While this view is in general "elegant, and well supported in natural language" (Espinal & McNally 2011: 88), it is challenged by a wide range of phenomena involving noun incorporation across languages. In this study, I consider such a challenge to the classic wisdom, and show how the classic thesis can be salvaged in an enriched semantics of incorporation based on mediating functions (McKenzie 2022). The primary data come from Mandarin non-canonical object constructions (NCOCs), which allow oblique arguments expressing location, instrument, manner, purpose, time, path, source, etc. rather than theme as the direct complements to the verbs at the surface syntax, as exemplified in (1) (Lin 2001; Barrie & Li 2015; Huang 2015; Zhang 2018).

(1) a. *chi* *kuaizi* ⇢ INSTRUMENT
eat chopstick
'eat with a chopstick'
b. *chi* *shitang* ⇢ LOCATION
eat canteen
'eat at the canteen'
c. *jiao* *wanshang* ⇢ TIME
teach evening
'teach at the evening'
d. *chi* *fumu* ⇢ SOURCE
eat parent
'live off the parents'
e. *cun* *dingqi* ⇢ MANNER
deposit fixed-term
'make a fixed-term deposit'

The phenomenon has gained much attention in Chinese linguistics (see Zhang (2018) for an overview). Despite the many proposals on the market, the compositionality issue of NCOCs has remained largely neglected in the literature. In the present paper, I provide fresh observations in a cross-linguistic perspective to demonstrate that NCOCs are best treated as instances of semantic incorporation, in which a nominal element is backgrounded and forms part of the institutionalized activity described by the incorporating verb. The composition between the nominal element and the verb is mediated by a pragmatically-regulated mediating function (McKenzie 2022).

The rest of the paper is structured as follows. In §2, I briefly review the existing accounts. In §3, I show that NCOCs share a constellation of properties which are typically associated with semantic

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incorporation (pseudo-noun incorporation, PNI) in other languages, despite the fact that Mandarin lacks overt case morphology. §4 demonstrated how the compositionality issue of NCOCs can be resolved in an enriched semantics involving mediating functions. §5 concludes.

2. Existing accounts

In previous studies, in particular in generative approaches, NCOCs have been taken as variants of canonical VPs and are analyzed either as preposition dropping or a side effect of the productive uses of light verbs in Mandarin (Lin 2001). In this section, I briefly go over these accounts and point out their difficulties.

The P-drop approach. At first sight, it seems very appealing to take NCOCs to be resulted from the dropping of prepositions (the P-drop approach). For instance, in the structuralist tradition, (1b) is presumably derived from (2a). Two syntactic operations, namely, the dropping of the preposition plus successive raising of the verb (via head movement) from V to *v,* result into the surface word order of (2b), as shown in (3).

(2) a. [$_{PP}$ [$_{P}$ *zai*] [*shitang*]] [$_{VP}$ V *chi*] →
at canteen eat
b. *chi shitang*

(3) [$_{vP}$ *v* [$_{VP}$ [$_{PP}$ <$_{P}$~~AT~~> canteen] [$_{V}$ eat]]]

Despite its appeal, the P-drop approach face difficulties. First, in most cases, the NCOC and the canonical VP involving a preposition are by no means semantically identical. The former expresses a stereotypical, institutionalized activity, which is lacking for the latter. Consider (4) below.

(4) a. *Jinwan* *zai* *nali* *chi?*
tonight at where eat
'Where to eat this evening?'
b. *Zai* *shitang chi / #Chi* *shitang*.
at canteen eat /#eat canteen

As shown in (4), while the nominal complements of prepositions in a canonical VP can be questioned, this is not the case for the oblique arguments in NCOCs.

Second, many canonical VPs involving PPs do not have corresponding NCOC counterparts. Consider (5).

(5) a. *he* *Zhangsan pao* a'. **pao* *Zhangsan*
with Zhangsan run run Zhangsan
b. *zai* *Nanjing* *bing le* b'. **bing* *Nanjing*
at Nanjing sick LE sick Nanjing
c. *ju* *zhuanjia* *shuo* c'. **shuo* *zhuanjia*
according-to expert say say expert

In the meanwhile, in many NCOCs, the purported preposition is by no means to be recovered. For instance, it is extremely difficult to insert a preposition into *chi fumu* 'eat parent' to render it to mean to live off one's parents.

The Light verb approach (LvA). Many researchers take NCOs to be a side effect of the productive uses of light verbs (Lin 2001). The basic assumption is that the lexicon of Mandarin does not specify the argument selection information for verbal roots, and, as a result, light verbs such as AT, FOR, USE, etc., can be freely projected during the syntactic derivation, which results into thematic freedom of objects at the surface syntax. The process is illustrated in (6). Please note that the oblique arguments occupy the adjunct (specifier) positions of VPs.

(6) $[_{vP}\ v\text{-}\{\text{USE, AT, FOR}\}\boxed{+V}\ [_{VP}\ [\text{NP}\ \boxed{\sqrt{}}]]]$

While I do agree that LvA provides a theoretically interesting means to exploring the syntax of Chinese, it is not suitable for NCOCs. NOCOs are of a different sort and require separate treatment.

First, NCOCs are not fully productive; rather, they display limited productivity. Not all NCOs are equally acceptable, for example, *chi kuaizi* 'eat chopstick' might sound much more natural to a native speaker's ear than *chi chazi* 'eat fork' (Barrie & Li 2015).

Second, unlike canonical VPs which are strongly compositional, NCOCs are weakly compositional in the sense that the verbs semantically coalesce with the objects and form a tight semantic knit. Many NCOs have some closer-than-usual semantic relationship with the verbs, for example, *cun dingqi* 'deposit fixed-term' does not only mean a particular depositing event, but also refers to a stereotypical, conventionalized means of depositing money; likewise for *ken lao* 'eat old', which does not (literally) refer to an event of eating the elders, but instead refers to living off the parents (boomerang kids). Such weak compositionality is unexpected in LvA.

Third, NCOCs are fundamentally different from canonical VPs. For example, NOCs in general are non-specific, non-definite and lack discourse transparency, while objects in canonical VPs are always definite/specific. One subtle but important semantic difference between them is illustrated in (7). While *shitang* in (7a) is specific/definite, it is non-specific/non-definite in (7b).

(7) a. *Jinwan zai shitang chi*. (SPECIFIC)
tonight in canteen eat
b. *Jinwan chi shitang*. (NON-SPECIFIC)
tonight eat canteen

Despite the superficial similarity, NCOCs are not variants of canonical VPs. In the following, I provide fresh observations in a cross-linguistic perspective to argue that NCOCs are best treated as instances of semantic incorporation.

3. NCOCs as semantic incorporation

In this section, I draw from fresh observations to show that NCOCs share a constellation of properties typically associated with semantically incorporated structures (pseudo-noun incorporation) in other languages (van Geenhoven 1998; Massam 2001; Farkas and de Swart 2003; Dayal 2011, 2015; Espinal and McNally 2011; Schwarz 2014; Borik and Gehrke 2015; Luo 2022).[1] These properties include (to de detailed below): (i) the incorporated nominals receive obligatory narrow scope; (ii) NCOCs name institutionalized, well-established, name-worthy activities and events; (iii) the modification of the incorporated nominal is restricted; (iv) the incorporated nominals exhibit reduced discourse capacity; (v) the incorporated nominals are number-neutral, and (vi) the incorporating verbs in NCOCs show a strong bias towards light, monomorphemic verbal roots. NCOCs are not fully productive, compared to canonical VPs. These striking commonalities between NCOCs and incorporated structures in other languages indicate that NCOCs should be treated as instances of semantic incorporation.

[1] The distinction between noun incorporation (NI) and pseudo-noun incorporation (PNI) is understood to be merely morphological: in NI, the incorporated nominal is morphologically fused to the verbal complex and typically appears with very little nominal morphology (case/person/number/gender/etc.) (Mithun 1984; Massam 2009), while in PNI, the incorporated nominal enjoys more syntactic freedom than its counterpart in NI. For example, in PNI, nominals which are structurally more complex than nominal roots can be incorporated and the incorporation is not subject to strict adjacency (Massam 2001). Recent studies have shown that the size of the incorporated nominal does not appear to be a decisive factor in determining whether a structure is PNI or not, since some languages, say, English, seem to allow DP incorporation (cf. Carlson et al. 2006; Schwarz 2014). Because NCO constructions allow NP-dependent modification, and do not fall within the expectation of LIH, I concur with Barrie & Li (2015) that they are better classified as instances of PNI. However, not to invite further controversy, I will not touch on the exact distinction between NI and PNI in this paper; instead, following Carlson (2006), I will use the more neutral tone-sounded term "semantic incorporation" throughout the article as a cover term for such phenomena.

(i) Obligatory narrow scope of incorporated nominals. One well-attested and cross-linguistically stable property of incorporated structures is that incorporated nominals receive obligatory narrow scope interpretations (van Geenhoven 1998; Farkas and de Swart 2003). Consider the following Hungarian example (due to Farkas and de Swart 2003: 7).

(8) a. *Mari kell olvasson egy verset.*
Mary must read.SUBJ a poem.ACC
'Mary must read a poem.'
i) ✓MUST > ∃; ii) ✓∃ > MUST
b. *Mari verset kell olvasson.*
Mary poem.ACC must read.SUBJ
'Mary must read a poem.'
i) ✓MUST > ∃; ii) ×∃>MUST

In (8a), the direct object *egy verset* contains a determiner and is in canonical object position. It is liable to a *de re*/*de dicto* ambiguity: it can either mean there is a specific poem that Mari must read (the *de re* reading) or Mari has the obligation to read any poem whatsoever (the *de dicto* reading). By contrast, (8b) features an incorporated nominal, *verset* 'poem', which is signaled by two factors: first, the nominal lacks any definiteness specification; second, it appears in the preverbal position which hosts predicative elements in Hungarian. According to Farkas and de Swart, the only interpretation available for (8b) is the one where Mari's obligation is fulfilled by reading any poem, i.e., the interpretation where the incorporated nominal receives narrow scope.

Exactly the same is observed for NCOs. Consider example (9) below, which involve the NCOC *ken fumu* 'live off parents':

(9) *Henduo nianqing-ren dou zai ken fumu.*
most young-person all at eat parent
'Most young people are eating their parents (i.e., living off parents)'
(i) ✓MOST>∃; (ii) ×∃>MOST

The only reading available for (9) is that the object *fumu* 'parent' receives a co-varying interpretation with the subject NP 'most young people', namely, for different young person, s/he lives off his/her own parents. It is not possible for (9) for mean that there are specific parents such that most young people are living off them.

(ii) Institutionalized meaning. Mithun (1984) notes that incorporated structures often describe "name-worthy", institutionalized events or activities, thus "he is off mountain-climbing" sounds much more natural than "he is off ladder-climbing" in a neutral context. The same is true for NCOCs. (10a) sounds much more natural to the native speakers' ears than (10b).

(10) a. chi kuaizi b. #chi chazi
eat chopstick eat fork

(iii) Restricted modification. NCOCs allow NP-dependent modification; however, the modification of NOCs is restricted: only kind modifiers that preserve the stereotypical relationship between verbs and objects are allowed, witness the contrast between (11a) and (11b):

(11) a. *chi [haohua canting]* b. *#chi [Zhangsan tuijian de canting]*
eat luxurious canteen eat Zhangsan recommend REL canteen

As shown in (11a), *haohua canting* 'luxurious canteen' is a well-established kind term, and is suitable as an NCO; this is not true for (11b), where "the canteen that Zhangsan recommended" does not constitute a stereotypical, conventionalized kind term.

(iv) Reduced discourse transparency. Like the incorporated nominals in other languages, NCOs also exhibit reduced discourse capacity. They are in general discourse opaque and lack specificity such that

they cannot serve as the objects of the disposal marker *ba*, cannot be topicalized, and cannot function as the antecedents of anaphors in subsequent discourse. Consider (12), which shows that an NCO cannot be anaphorically referred back to by anaphors in subsequent sentences, in contrast to canonical objects.

(12) a. *Zhangsan xihuan chi canting$_i$. $^{??}$Na$_i$ shi Guangzhou Jiujia.*
Zhangsan like eat canteen$_i$ that$_i$ be *Canton Restaurant*
Lit.: 'Zhangsan like eating canteen$_i$. That$_i$ is Canton Resteraunt.'
b. *Zhangsan zuotian qu le [yi jia canting]$_i$. Na$_i$ shi Guangzhou Jiujia.*
Zhangsan yesterday go ASP one CL canteen that be Canton Restaurant
'Zhangsan went to a restaurant$_i$ yesterday. That$_i$ is Canton Restaurant.'

(v) Number neutrality. Previous studies (Farkas & de Swart 2003; Dayal 2011) point out that number neutrality of incorporated nominals is another important hallmark that allows us to identify instances of incorporated structures. For example, morphologically singular, caseless incorporated nominals in Hindi can receive plural interpretations, in contrast to canonical indefinites. Consider (13) (Dayal 2011: 131).

(13) *anu puure din cuuhaa pakaRtii rahii.*
Anu whole day mouse catch-IMF PROG
'Anu kept catching mice (different ones) the whole day.'

Similarly, NCOs are number neutral. Depending on context, an NCO can receive either a plural interpretation or a singular one. (14) below can mean Zhangsan went to the same or different restaurants.

(14) *Zhangsan guoqu dou chi shitang.*
ZS past all eat canteen
Plural reading available: different canteens

(vi) Monomorphemic verbal roots. Typically, the incorporating verbs in NCOCs are light, monomorphemic ones that often describe activities or events in ordinary life.

(15) a. *Zhangsan jingchang chi canting.*
ZS usually eat canteen
b. **Zhangsan jingchang jinshi canting.*
ZS usually at-meal canteen

Mithun (1984) observes that cross-linguistically, the incorporating verbs are often stage-level ones which express activities in ordinary life, e.g., DO, HAVE, USE, HIT, etc. NCOCs are no exception in this case.

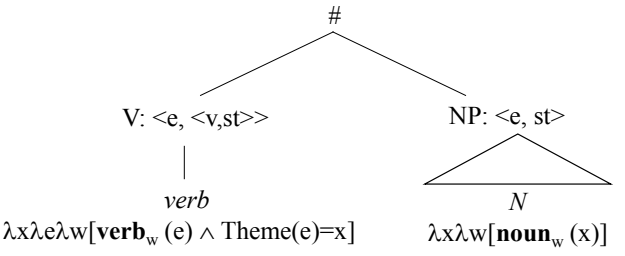
In a nutshell, NCOCs exhibit a cluster of properties such as obligatory narrow scope, restricted modification, reduced discourse capacity, institutionalized meanings, weak compositionality, etc. and are not fully productive. These properties are typically associated with semantic incorporation structures in other languages (Mithun 198; van Geenhoven 1998; Massam 2001; Farkas and de Swart 2003; Dayal 2011; Borik and Gehrke 2015; Luo 2022). NCOCs thus adds further weight to the thesis that incorporation covers a wider range of phenomena in natural language than is typically assumed. Semantic incorporation, as an independent phenomenon, applies to both morphologically incorporated structures (polysynthetic languages) and morphologically unincorporated structures (analytic languages) (Carlson 2006). Semantic incorporation calls for an independent treatment in the grammar of natural language.

4. The syntax and semantics of NCO constructions

To begin with, NCOCs pose both a syntactic issue and a semantic issue. Syntactically, as I have demonstrated previously, the incorporated nominals lack specificity and exhibit reduced discourse capacity, which means the incorporated objects cannot be a referentially full DP, supposing that DPs

always refer to specific entities and are of type *e*. Following ven Geenhoven (1998) and Massam (2001), I assume the incorporated nominals are NPs which have the type <e, st>. This leads to the semantic issue: how an incorporating verb of the type <e, <e, st>> composes with an NP, which are of type <e, st> rather than *e*? The issues are illustrated below (I assume a Neodavidsonian semantics framework).

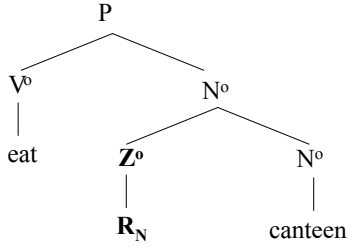
(16)



(17) a. ⟦V_t⟧= λxλeλw[**verb**$_w$ (e) ∧ Theme(e)=x]: <e, <v, st>>
b. ⟦chi⟧= λxλeλw[**eat**$_w$(x)(e) ∧ Theme(e)=x]: <e, <v, st>>
c. ⟦shitang⟧= λxλw.**canteen**(x)(w)： <e, st>
d. ⟦chi⟧(⟦shitang⟧) =
FA (λxλeλw[**eat**$_w$(x)(e) ∧ Theme(e)=x]: <e, <v, st>>)(λxλw.**canteen**(x)(w)： <e, st>) =#

To resolve the syntactic issue, I assume, following McKenzie (2022), that incorporating verbs do not combine with NCOs directly; rather, NCOs, as unfledged referential expressions, combine with a silent head $Z^o$to form N^o, some phase-like constituent, which in turn combine with the incorporating verbs. This is illustrated in (18) below.

(18)



Assuming a silent head sitting between the incorporating verb and the oblique argument also resolves the compositionality issue: the incorporating verb does not compose with the oblique argument directly; rather, the composition is mediated by the mediating function R_N contributed by the silent head Z^o. The lexical entry of R_N is provided in (19) below (McKenzie 2022).

(19) ⟦R_N⟧= λP_{est}λeλw.∃y[P(y)(w)=1 ∧ ROLE(y)(e)(w)=1]

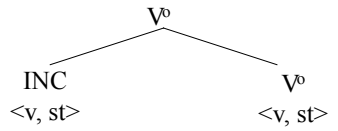
In (19), ROLE is a pragmatically regulated choice function over the set of thematic roles participated in events (20a). Its regulation is governed by the Aboutness Condition (20b).

(20) a. ROLE(w) = $f_{w, c}$({INSTRUMENT, PURPOSE, TIME, LOCATION, ……})
b. **Aboutness Condition**: An oblique argument is licensed as long as it describes some pragmatically appropriate participant roles of a certain event in a speech community.

Since ROLE is regulated by pragmatically-determined aboutness condition, the thematic freedom of NCOs follows naturally.

To capture the institutionalized meaning of NCOCs, I modify McKenzie's (2022) analysis. I assume incorporating verbs can be type-adjusted to the verb types that express highly conventionalized, institutionalized activities or events. Following Dayal (2011) (see also Luo 2022), I dub this as **appropriately classificatory** (AC), shown in (21). The composition of INC and V^o is done via Predicate Modification (PM).

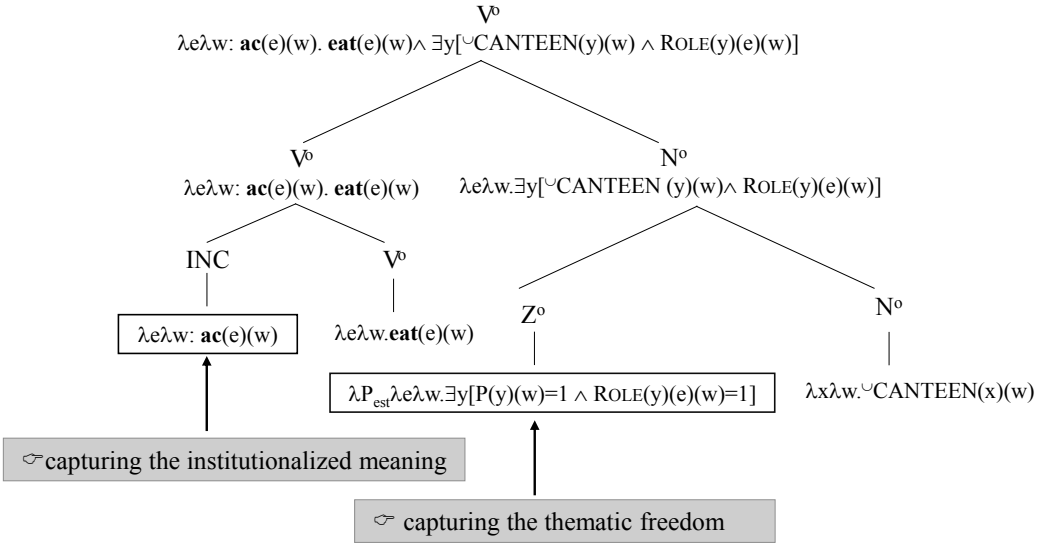
(21) a.



b. ⟦INC⟧ = λeλw. **appropriately-classificatory** (e)(w)
c. PM(INC, Vº) = λeλw. **verb**(e)(w) ∧ **appropriately-classificatory** (e)(w)

With the above theoretical tools at hand, I am now in a position to deal with the compositionality issue of NCOCs. To illustrate, consider the internal composition of *chi shitang* 'lit. eat canteen', shown in (22).

(22)



In addition to providing a principled solution to the compositionality issue, the present treatment yields three additional welcome results. First, it captures the constellation of properties related to incorporation. NCOCs are analyzed as instances of semantic incorporation, and, as a result, the incorporation-related properties follow naturally on the present account.[2] Second, the hallmark property of NCOCs, namely, the thematic freedom of oblique arguments, is also desirably captured on the present account via the pragmatically regulated choice function ROLE. Third, the institutionalized meaning of NCOCs follows naturally on the present analysis. The limited productivity of NCOCs is thus explained.

5. Conclusion

Luo (2022) argues that, despite the wide-spread impression that (pseudo-)noun incorporation is a distinctive feature of polysynthetic languages (partly due to Baker's (1996) *Polysynthesis Parameter*), isolating languages such as Mandarin do have rich incorporating phenomena, albeit in semantic sense. By analyzing NCOCs as instances of semantic incorporation, the present study adds further weight to this thesis, and more:

(a) Incorporation is ubiquitous in natural language. There are both morphologically incorporated structures (P/NI in polysynthetic languages) and morphologically unincorporated structures (in analytic languages like Chinese).

[2] Limitation of space prevents me from providing a detailed account of them. Interested readers are referred to Luo (2022).

(b) The morphologically incorporated structures and the morphologically unincorporated structures share a constellation of semantic effects, hence the name of semantic incorporation (cf. Carlson 2006).
(c) Semantic incorporation provides a simpler solution to the compositionality of NCOCs.
(d) No further burden should be placed on syntax, a welcome consequence for discourse-prominent languages such as Chinese.

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