

PART 2

*Case Studies: The Role of Case
and the Discourse Properties of
Pseudo-Incorporated Nominals*

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The Semantics of (Pseudo) Incorporation and Case*

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1 Introduction

The study of noun incorporation (NI) and pseudo noun incorporation (PNI) has benefitted greatly from a vast empirical foundation, which has highlighted the lack of uniformity in either form or meaning in NI and PNI constructions from one language to the next. Rather, it appears as though a general set of properties for NI and PNI exists, and different languages make use of different subsets of these properties. We discuss several semantic properties of non-canonical object constructions in Mandarin Chinese (hereafter Chinese)—constructions with objects not typically selected by verbs, and argue that they, too, can inform the discussion on NI and PNI. The property we focus on here is the variety of thematic relations a (pseudo) incorporated noun (P)NI can have. What is unique about non-canonical objects from the perspective of (P)NI is that they are not structurally deficient. Nevertheless, they still exhibit some of the semantic properties of PNI. We argue that the semantic properties of (P)NI in Chinese fall out from the lack of morphological case in Chinese. Our main claim is that morphologically differentiated Case is required to assign the lexical theta-role associated with verbs. In the absence of morphologically differentiated Case (or in the absence of Case altogether) the thematic relations an object has is much freer. We speculate that this analysis can be applied to NI and PNI constructions in other languages. In particular, we discuss NI in Northern Iroquoian and touch on English compounds and denominal verbs. Ultimately, this proposal impinges on semantic incorporation in a very fundamental way. As noted, a clear, universal set of defining properties of semantic incorporation does not exist. If we wish to maintain semantic incorporation as a definable phenomenon, the facts here strongly suggest that it should be reduced to the lack of morphologically differentiated Case. On the other hand, if we wish to keep a more traditional notion of semantic incorporation with all its typical properties, then it may not be reducible to a single underlying

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ing cause. Rather, different properties of semantic incorporation fall out from different causes, one of which is the lack of morphologically differentiated Case.¹

To illustrate our proposal, consider the following examples.²

- (1) a. Honathahidákhe[?] [Onondaga, N. Iroq.]
hon- at- hah- idakhe -[?]
 3.PL.M.AG- SRFL- path- run -PUNC
 ‘They are walking on a path.’
- b. *Ni xie zhe-zhang zhi* [Mandarin]
 you write this-CL paper
 ‘You write on this sheet of paper.’

The incorporated noun (IN) in (1)a and the direct object in (1)b (what we call below a non-canonical object) are both locations rather than canonical thematic direct objects. We propose that this thematic freeness is a defining property of (P)NI (and of non-canonical objects). Our proposal in a nutshell runs as follows. As we discuss below, INs do not value Case as they are structurally deficient and DPs in Mandarin do not have morphologically undifferentiated Case. In both situations, there is a lack of differentiated Case, which, we argue below,

¹ Note that we use the terms pseudo noun incorporation and semantic incorporation interchangeably here.

² The Iroquoian examples used in this work are taken from various sources as cited and from the first author’s own field work (with the speakers’ names cited). The morpheme glosses in some examples have been changed to be made consistent with current practices among Iroquoianists. Iroquoian examples are typically glossed with four lines, unless the source document does not provide such. Glosses from other languages are left as in the source documents. The following abbreviations are used here: ABS—absolute, ACC—accusative, AG—agent, BEN—benefactive, C—complementizer (= common noun in Nieuwenhuis examples), CAUS—causative, CIS—cislocative, CL—classifier, DE—Mandarin grammatical marker ‘de’, EMPH—emphatic, EPEN—epenthetic, ERG—ergative, F—feminine, FACT—factive (a type of mood), F/I—feminine/indefinite, FUT—future, HAB—habitual, IND—indicative, INSTR—instrumental, JOIN—joiner vowel, LE—Mandarin ‘le’, M—masculine, M/A—mode/aspect, NE—a nominal particle in Northern Iroquoian languages of unclear function, NEG—negative, NFS—noun forming suffix, NT—neuter, NPREF—nominal prefix, NZLR—nominalizer, OBJ—object, P—proper noun, PAT—patient, PERF—perfective, PST—past, PURP—purposive, PUNC—punctual (akin to perfective aspect), Q—question particle, SFP—sentence final particle, SG—singular, SRFL—semireflexive, STAT—stative (akin to perfect aspect), SUBJ—subject, TLOC—translocative, TR—transitive, VCL—verbal classifier.

gives rise to a relatively unconstrained thematic interpretation. We show below that Chinese non-canonical objects and (P)INs cannot be recipients, benefactives or comitatives. In the latter section of the paper, we tentatively relate the lack of these three thematic relations in non-canonical objects and (P)NIs to their obligatory sentience. The semantic facts related to their sentient properties are introduced by a special (often null) preposition, as discussed by Landau (2009) for experiencers.

This paper is structured as follows. Section 2 provides the relevant background on NI and PNI, focussing on the semantic aspects of these two constructions. Section 3 introduces the non-canonical object construction in Chinese and discusses its semantic properties. Section 4 presents our proposal. Section 5 discusses the ramifications of our proposal in other domains. Section 6 is a brief summary.

2 Background

This section lays out our background assumptions. We start with basic definitions of incorporation and pseudo incorporation as they pertain to our discussion. The papers in this volume make clear that a uniform cross-linguistic definition of (P)NI is elusive, as evidenced by debates that go back over one hundred years (Kroeber, 1909, Sapir, 1911). Nevertheless, we eschew this discussion and concentrate on those properties of NI relevant here. We then discuss Case very briefly and its relation to semantic properties. Finally, we delineate several semantic properties of (P)NI that have been discussed extensively in the literature, which we compare to Chinese non-canonical objects later in the discussion.

2.1 (*Pseudo*) Incorporation

The distinction between NI and PNI is understood to be morphological. In NI, the IN is morphologically fused to the verbal complex, while in PNI it is not. Consider the following Onondaga example of NI (Woodbury, 1975). The IN is italicized.

- (2) *Pat wa?-ha-hwist-ahtu-?t-a?*
 Pat FACT-3.M.SG.AG-money-lost-CAUS-PUNC
 'Pat lost money.'

The IN is morpho-phonologically fused with the verbal complex and typically appears with very little nominal morphology, if any. The following Niuean

examples illustrate PNI (Massam, 2001, citing Seiter, 1980). Here, the pseudo IN (also italicized) is not morpho-phonologically fused with the verb. Again, pseudo INs typically have a reduced structure in terms of the extended nominal projection, but they largely appear to be able to host more material than an IN. Example (3) contrasts a non-PNI construction with a PNI construction. In example (4), the pseudo IN is modified by an adjective.

- (3) a. *Takafaga tūmau nī e ia e tau ika*
 hunt always EMPH ERG he ABS PL fish
 ‘He is always fishing.’ (Seiter, 183a:69)

- b. *Takafaga ika tūmau nī a ia*
 hunt fish always EMPH ABS he
 ‘He is always fishing.’ (Seiter, 183a:69)

- (4) *Ne holoholo kapiniu kiva fakaeneene a Sione*
 PST wash dish dirty carefully ABS.P John
 ‘John washed dirty dishes carefully.’

Whether the pseudo IN in PNI constructions is obligatorily adjacent to the verb or has a slight degree of freedom in where it appears in the sentence appears to differ cross-linguistically (Dayal, 2011); however, we will not touch on this aspect here. In this section, we identify various semantic properties of NI and PNI, which will form the foundation of the discussion. Before we delve in to the specifics of the semantics of (P)NI, we first present some background on Case.

2.2 Background on Case

The distribution of DPs is generally thought to be governed by Case theory (Chomsky & Lasnik, 1977, Chomsky, 1980, 1981, Vergnaud, 2008). Even in languages with no overt case morphology, it has been argued that Case still plays a role in the grammar (see Li, 1990 for Chinese). It has been generally assumed that INs, given their reduced structure, are not assigned Case and are not constrained by the Case Filter. This can be extended to pseudo incorporated nouns (PIN) along the lines of Chung & Ladusaw (2004), where saturation is understood to be available only to Case marked DPs (though see López, 2012 where he suggests that nominals no matter how small are Case marked, at least in Spanish).³ To be specific, Chung and Ladusaw propose that the PIN in Māori and

³ If López is right for reduced Spanish nominal, then we do not expect to find non-canonical

Chamorro (two Austronesian languages related to Niuean, discussed above) do not saturate the internal argument of the predicate. Rather, it merely restricts the range of possible entities that can saturate the verbal predicate. Evidence in Niuean that the PIN does not check Case is provided by the fact that the external argument in the PNI construction in (4) surfaces with absolutive Case, rather than with ergative Case in the non-PNI alternant.

The traditional wisdom on Case/case (at least structural Case such as nominative and accusative) is that it does not correlate to semantic distinctions. Thus, in passive and ECM constructions a given argument with a particular theta-role surfaces with nominative Case in one environment and accusative Case in another. Nevertheless, there are many instances where Case/case does seem to correlate to semantic distinctions. Differential object marking in numerous languages and partitive case in Finnish and others suggest that a complete dissociation of case from thematic distinctions is not warranted. We will argue below that the lack of morphologically differentiated case plays a crucial role in the semantic properties of (P)NI that we present here.

2.3 *Semantic Properties of PNI/NI*

Like INs, PINs are typically functionally reduced, although PINs may be larger than INs. We review here some of the semantic properties that have been implicated in incorporated constructions (Bittner, 1994, Dayal, 2011, Massam, 2001, 2009, Mithun, 1984, van Geenhoven, 1998).

- i. idiosyncratic meanings
- ii. institutionalized readings
- iii. number neutrality
- iv. narrow scope
- v. lack of thematic restriction

A well-documented property of NI is its role in idiosyncratic meanings. Consider the following Onondaga example.

- (5) Wa^ʔgɔya^ʔdahdó^ʔda^ʔ [Onondaga]
 wa^ʔ- kɔ- ya^ʔt- ahtɔ- ʔt- a^ʔ
 FACT- 1.SG.AG:2.SG.PAT- body- disappear- CAUS- PUNC
 'I lost you (e.g. in a crowd).'

objects in the positions where López reports obligatory NumPs (or #Ps in his notation). Whether this prediction holds we leave to future research.

To make someone's body disappear is interpreted idiomatically to mean to lose someone. Numerous such examples can be found in NI constructions around the world. Of course idiomatic readings can be found in non-NI constructions such as *kick the bucket* etc. The following Dëne Sųłiné (Dene-Yeniseian) example shows that the idiomatic reading is available to both the incorporated and non-incorporated forms (Cook & Wilhelm, 1998).⁴

- (6) a. *na-jéth-the-Ø-Ø-da*
 ITER-hook-M/A-3.SG-VCL-sit
 'S/he is fishing again.' (lit: sitting with a hook)
- b. *jéth għa the-Ø-Ø-da*
 hook with M/A-3.SG-VCL-sit
 'S/he is fishing again.' (lit: sitting with a hook)

A related property to idiosyncratic readings is what Mithun (1984: 856) describes as institutionalized readings, in which the incorporated noun loses its 'salience', and the N+V complex refers to a unitary, culturally-identified activity. Consider the following Yucatec Mayan example (Bricker, 1978). When *čé'* ('tree') is incorporated, the verbal complex refers to the general concept of chopping wood as opposed to the event of chopping a specific tree or trees in general.

- (7) a. *tinč'akah čé'*
t- in- č'ak- Ø- ah čé'
 COMP- 1.SG- chop- it- ASP tree
 'I chopped a tree.'
- b. *č'akčé'nahen*
č'ak- čé'- n- ah- en
 chop- tree- APASS- ASP- 1.SG.ABS
 'I chopped wood.'

4 Of course (P)NI is neither necessary nor sufficient for idiosyncratic readings to hold. There is merely a strong correlation between the two phenomena. The data discussed here, however, do suggest the following potential implicational universal. If the form V + DP has an idiosyncratic reading, then the incorporated form V + N (or pseudo incorporated form V + NP) does, too. We leave the verification of the implicational universal to future research.

Institutionalized readings are not obligatory with incorporated constructions, but they are far more likely found with the incorporated variant than with the unincorporated variant. Dayal (2011, see also this volume) discusses institutionalized readings in PNI constructions in Hindi. Consider example (8) (adapted from Dayal's ex (21)). This example does not simply refer to the act of seeing girls, but rather it refers to the act of considering girls for prospective brides. Anticipating the forthcoming discussion, Chinese can but need not have an identical reading in (9).

- (8) *laRkii-dekhanāa*
 girl-see
 'girl-seeing'
- (9) *Ta yao qu kan (yi ge) nühaizi*
 he will go see (one CL) girl
 'He is going to see a girl.'

Another property associated with incorporation constructions is number neutrality. As mentioned, number morphology by and large is absent on incorporated nominals. Nevertheless it is widely reported in the literature that incorporated nominals are not obligatorily interpreted as singulars. Thus, an apple-picker does not normally pick just one apple; however, an elephant-washer could easily be interpreted as someone who is responsible for washing a single elephant (though not obligatorily so). The following Onondaga example (Gloria Williams, Nora Carrier, speakers) could refer to either a single bed or several beds.

- (10) *Wa[?]genakdahninó.*
wa[?]k-nakt-a-hning-?
 FACT-1.SG.AG-bed-JOIN-buy-PUNC
 'I bought a bed/some beds.'

Note that Dayal (2011) has shown that, at least in Hindi, number neutrality is a by-product of the aspectual properties of the predicate and are not related to the IN *per se*.

The next property we discuss is narrow scope. It is often reported in the literature that an incorporated nominal obligatorily has narrow scope with respect to higher operators. Consider the following Inuit example (van Geenhoven, 1998).

- (11) *arnajaraq aalisaga-si-nngi-l-a-q*
 Arnajaraq.ABS fish-buy-NEG-IND-[TR]-3.SG
 ‘Arnajaraq did not buy any fish.’

The incorporated noun in the example above must be interpreted within the scope of negation. That is, the example above cannot refer to a specific fish that Arnajaraq did not buy. As Dayal and van Geenhoven discuss, morphological incorporation is not a prerequisite for these kinds of narrow scope readings as they are often found in PNI constructions.⁵ We will have little to say about this property of (P)NI here. As we will see below, non-canonical objects in Chinese are represented by full DPs and have the same quantificational properties as other full DPs in the language.

Finally, we note that incorporated nominals are much more thematically unconstrained than their unincorporated counterparts. This claim is not uncontroversial, as Baker (1996, 2009) contends that the incorporation of non-direct objects is quite limited and is essentially lexically generated. Others, however, have noted that the incorporation of instruments, locations, and paths is quite productive (Mithun, 1984, 2004, Muro, 2009, Spencer, 1995). We illustrate with the following examples from Onondaga (Woodbury, 2003, p. 282, 928, respectively), (12); Chukchi (Spencer, 1995, ex (58a)), (13); and Southern Nahuatl (Merlan, 1976, ex (10)), (14).⁶

- (12) a. Honathahidákhe?
hon- at- hah- idakhe -ʔ
 3.PL.M.AG- SRFL- path- run -PUNC
 ‘They are walking on a path.’

5 Note, though, that Baker (2009) reports that incorporated nouns in Mapudungun can take wide scope with respect to negation.

- (1) *Juan ngilla-pullku-la-y.* ĩche ngilla-ft-ñ 
 Juan buy-wine-NEG-IND.3SG.SUBJ I buy-3.OBJ-IND.1.SUBJ
 ‘Juan didn’t buy the wine. I bought it.’

This is an exceptional property, indeed, worthy of much further discussion. Virtually all other discussions of NI report that the IN cannot scope above negation. Since these scope properties do not figure in this chapter, we leave it to future research.

6 Note that Chukchi can also undergo adverb incorporation. This interesting fact is orthogonal to the current discussion, so we leave it aside for now. We have no reason to believe that it undermines the analysis presented here.

b. Wa[?]hage[?]nhyayé[?]hda[?].

wa[?]- hak- [?]nhya- a- yéht- a[?]
FACT- 3.SG.M.AG:1.SG.PAT stick- JOIN- hit- PUNC
'He hit me with a stick.'

(13) gətg=əlqət-gʔe walwəŋən
lake=go-3.SG.SUBJ raven.ABS.SG
'Raven went to the lake.'

(14) ya[?] kikočillotete[?]ki panci
3.SG 3.SG-it-knife-cut bread
'He cut the bread with the knife.'

Examples like the ones above abound in numerous languages with NI and do exhibit some degree of productivity in Northern Iroquoian (contra Baker). For instance, *hit* can incorporate almost any appropriate instrument in Onondaga and in Cayuga (both Northern Iroquoian).

In addition, Massam (2001: pp. 177–178, ex (30a, b)), citing data from Seiter (1980) provides the following examples of PNI of instruments in (15), as well as examples of PNI of locations in (16) from Massam (2013), citing data from Sperlich (1997). Observe further that the sentences in (16) have idiosyncratic meanings, typical of (P)NI.

(15) a. To kai titipi mo e huki e tautolu e vala povi
FUT eat knife and ABS fork ERG we ABS piece beef
'We will eat the beef with fork and knife.'

b. Fano motokā a ia ke he taone
go car ABS he to town
'He went to town by car.'

(16) a. Kua hola-vao e puaka
PERF run-bush ABS.C pig
'The pig ran wild.'

b. Kua ho-poko tūmau nī a ia
PERF hide-room always EMPH ABS.P 3.SG
'He is always isolated.'

As Baker notes, however, there are certain elements that cannot undergo NI. It is nearly universally accepted that agents and recipients cannot undergo NI in any language. We have also observed that comitatives cannot undergo NI. Consider the following Onondaga (example (17), Gloria Williams and Nora Carrier, speakers) and Cayuga (example (18), Barb Garlow, speaker) data.

- (17) a. $\text{\textasciix{E}khewihsa:tha:s ne? Meri.}$

$\text{\textasciix{e}-khe-wihsa:th-aR-s-\emptyset}$ $ne? Mary$
 FUT-1SG.AG:3F/I.PAT-butter-apply-BEN-PUNC NE Mary
 'I will butter it for Mary.'

- b. Wa?hetcihsa?hgwa?

$wa?-he-$ $atci-$ $hsR-$ $a-$ $k?hkw -a?$
 FACT-1SG.AG:3.SG.M.PAT- friend- NZRL- JOIN- hit -PUNC
 'I hit my friend.'

- c. * $\text{\textasciix{E}khetcihsa:s ne? owihsa?}$

$\text{\textasciix{e}-khe-atci-hsR-aR-s-\emptyset}$ $ne? o-wihs-a?$
 FUT-1SG.AG:3F/I.PAT-friend-NZLR-apply-BEN-PUNC NE butter
 ('I will butter it for my friend.')

- d. * $\text{\textasciix{E}khetcihsa:k ne? owihsa?}$

$\text{\textasciix{e}-khe-atci-hsR-aR-k}$ $ne? o-wihs-a?$
 FUT-1SG.AG:3F/I.PAT-friend-NZLR-apply-PUNC NE butter
 ('I will butter it for my friend.')

- (18) a. $\text{John toh ha?he:? Gan?thae:?}$

$John\ toh\ he-a?-ha-e?$ $Gan?thae:?$
 John there TLOC-FACT-3.SG.M.AG-go-PUNC Brantford
 'John went to Brantford.'

- b. $\text{John ne? hni? honatsih Gan?thae:? toh ha?h?ne?}$

$John\ ne?\ hni?\ honatsih\ Gan?thae:?\ toh\ he-\ a?$
 John NE and his.friend Brantford there TLOC- FACT-
 $h?n-$ $-e?$
 3.SG.PL.AG- go -PUNC
 'John went to Brantford with his friend.'

- c. * John tóh hahatsihɛːʔ Ganáthaeːʔ
John toh he-aʔ-ha-tsih-ɛːʔ *Ganáthaeːʔ*
 John there TLOC-FACT-3.SG.M.AG-friend-go-PUNC Brantford
 ('John went to Brantford with a friend.')

From the discussion above it is clear that a completely uniform semantics for PNI and NI constructions does not exist. Rather, there are tendencies and points of variation. We adopt the claim here that many of these facts fall out from the structure of the incorporated nominal. In other words, some of the properties of NI and PNI can be attributed to the amount of functional structure present in the incorporated nominal, a claim familiar in many works. Van Geenhoven (1998), for instance, relates many semantic properties of incorporated nouns strictly to their size and not to the fact that they are morphologically incorporated. The novel claim, discussed below, is that the lack of thematic restriction falls out from the absence of differentiated Case. Next we discuss non-canonical objects in Chinese and relate these to (P)NI constructions.

3 Chinese Non-Canonical Objects

In Mandarin Chinese, an oblique argument is typically introduced with a preposition. Li (2010) showed that some apparent oblique arguments can occur in the position of the direct object without the associated prepositions (see also Guo, 1999, Lin, 2001, among others)—referred to as non-canonical objects. Interestingly, the set of elements that can appear as non-canonical objects is nearly identical to the set of elements that can undergo NI. This includes instruments, paths, and locations, as with NI, as well as temporal expressions. As with NI, benefactives, comitatives and recipients are excluded. Consider the following examples.

- (19) a. *Ta xihuan zai da canting chi (fan)*
 he like at big restaurant eat (meal)
 'He likes to eat at big restaurants.'
- b. *Ta xihuan chi da canting*
 he like eat big restaurant
 'He likes to eat at big restaurants.'
- (20) a. *Ta xihuan yong zhe zhi maobi xie (zi)*
 he like use this CL brush.pen write (word)
 'He likes to write with this brush pen.'

- b. *Ta xihuan xie zhe zhi maobi* 
 he like write this CL brush.pen
 'He likes to write with this brush pen.'

Li (2010) argues at length that these non-canonical objects are not merely prepositionless adjuncts, but actually occupy the structural object position and are assigned structural accusative Case. We discuss a few lines of evidence here. First, canonical objects and non-canonical objects are in complementary distribution, strongly suggesting that they compete for the same spot. Furthermore, the non-canonical object must be a DP, not an AdvP or PP, thus supporting the claim that they occupy a structural Case position.

Another line of argumentation concerns a kind of headless relative clause. The head of an argument relative clause can be replaced by a null proform [... *de* \emptyset], which is not available to adjuncts. As expected, non-canonical objects can be replaced by a null proform when they are relativized. Li discusses the following examples.

- (21) a. [*Ta chi de*] (*dongxi*) *dou shi hao dongxi*.—argument relativization
 he eat DE thing all be good thing
 'All he eats are good things.'
- b. [*Ta chi fan de*] *(*liyou*) *dou shi hao liyou*. —adjunct relativization
 he eat meal DE reason all be good reason
 ('The reasons why he eats meals are all good reasons.')

As the following example shows, non-canonical objects pattern with arguments.

- (22) *Ta chi de (cating) dou shi haohua cating*
 he eat DE (restaurant) all be fancy restaurant
 '(The restaurants) where he ate were all fancy restaurants.'

Li mentions several other aspects in which non-canonical objects pattern with arguments. Thus, we adopt her conclusion that these DPs are in object position and receive accusative Case, a point we return to shortly.

Non-canonical objects are subject to productivity constraints and have the same semantic property of idiosyncratic and institutionalized meanings as described for NI/PNI above. Consider the following minimal pair.

- (23) a. *Ni chi zhe-shuang kuaizi ba!*
 you eat this-CL chopsticks SFP
 'You eat with this pair of chopsticks!'
- b. * *Ni chi zhe-ba chazi ba!*
 you eat this-CL fork SFP
 ('You eat with this fork!')

Eating with chopsticks is an institutionalized activity in Chinese culture. Thus the non-canonical object construction in (23)a is acceptable; however, eating with forks is a borrowed concept, and much more recent, so the similar construction in (23)b is not.

Many kinds of DPs can appear as non-canonical objects, including instruments, paths, locations and temporal expressions; however, not all DPs are free to take up this position. As with NI, benefactives, comitatives and recipients cannot. Consider the following data.

- (24) a. *Wo gei ta/kehu zuo dangao*
 I BEN him/customer make cake
 'I make cake for him/customers.'
- b. * *Dangao, wo zuo ta/kehu* 
 cake I make him/customer
 ('Cake, I make for him/customers')
- (25) a. *Wo wei ta/guangzhong tiao-wu*
 I BEN him/audience dance-dance
 'I dance for him/an audience.'
- b. * *(Wu), wo tiao ta/guangzhong*
 cake I make him/customer
 ('I dance for him/an audience.')

We turn now to the other properties of (P)NI such as number neutrality, and frozen scope. We believe these are related to the reduced functional structure in INs and semantically incorporated bare nouns. Since non-canonical objects in Mandarin Chinese are full DPs, these properties are not expected in the construction under consideration. Consider the following examples.

- (26) a. *Ta bu xihuan xie zhe-zhi maobi ... tai jiu le*
 he not like write this-CL brush.pen ... too old LE
 'He does not like to write with this brush pen ... It's too old.'
- b. *Ta xihuan xie zhe-san-zhi maobi*
 he like write this-three-CL brush.pen
 'He likes to write with these three pens.'
- c. *Ta xihuan xie maobi*
 he like write brush.pen
 'He likes to write with a brush pen/brush pens.'
- d. *Quanbude maobi, ta dou bu xihuan xie*
 all brush.pens, he all not like write
 'All the brush pens, he does not like to write (with).' ($\forall > \neg$)
- e. *Ni bu xie na liang-zhi maobi?*
 you not write which two-CL brush.pen
 'Which two brush pens don't you write (with)?' (which two brush pens
 $> \neg$)

Example (26)a shows that the non-canonical object can introduce a discourse referent, which is not surprising given the presence of the demonstrative. Furthermore, examples (26)a and b show that number is obligatorily interpreted when a fully realized DP structure containing number and classifier expressions is present, but not when a reduced structure is found as in (26)c., a property mirrored with canonical objects (Cheng & Sybesma, 1999). Example (26)c shows number neutrality. Of course, when the bare noun is a canonical object, it also exhibits number neutrality. The absence of number neutrality in the first two examples is due to the presence of the full DP structure including the presence of a NumP. Finally, example (26)d and (26)e show that the non-canonical object can take scope over negation.

Note that even though most of the examples with non-canonical objects are inanimate, such an object can be animate as well, as long as a conventional or institutionalized meaning can be established. For instance, it is possible to imagine utterances like (27)a-d in the scene for the movie *How to Train your Dragon*, where each of the Viking kids is flying on a dragon. In this context, dragon flying becomes an institutionalized activity.

- (27) a. *Ni fei zhe-zhi long, wo fei na-zhi long*
 you fly this-CL dragon, I fly that-CL dragon
 'You fly on this dragon; I fly on that dragon' 
- b. *Women yi-ge ren fei yi-zhi long ba!*
 we one-CL person fly one-CL dragon SFP
 'Let us each fly on a dragon.'
- c. *Ni fei da long, wo fei xiao long*
 you fly big dragon, I fly small dragon
 'You fly on big dragons; I fly on small dragons.'
- d. *Ni fei-guo na-zhi xiao long ma?*
 you fly-ASP that-CL small dragon Q
 'Have you flown on that small dragon?'

In an upside down world where kids are riding on witches, rather than being eaten by them, the dragons 'long' in (27)a-d can all be replaced by 'wupo' for witches (with a change in the classifier *zhi*, for animals, to *ge*, for humans) In addition, kids love to ride on the back of their parents or sit on them. The following sentence is possible:

- (28) *Ni qi/zuo baba, wo qi/zuo mama!*
 you ride/sit father I ride/sit mother
 'You ride/sit on father; I ride/sit on mother.'

To conclude this section, we have seen the following properties of non-canonical objects in Chinese.

Present	Not present
– institutionalized/idiomatic readings	– number neutrality
– some freedom in availability of thematic relations	– narrow scope
	– lack of discourse reference

The lack of the properties in the right-hand column, we argue, boils down to the syntactic structure of the non-canonical object. Indeed, we have pointed out that these semantic properties are far from universal in unequivocal cases

of NI and PNI. In the next section we focus on the lack of thematic restrictions in (P)NI constructions and with non-canonical objects and relate this to morphological case.

4 Proposal: The Semantic Import of Morphological Case

In this section we propose that morphologically distinguished Case is responsible for constraining the thematic interpretation of objects. Lack of such visible Case marking allows the object to receive any thematic interpretation compatible with the speaker's real world knowledge, including idiomatic usages and institutionalized activities. We speculate that the lack of recipients, experiencers and comitatives is due to the fact that these sentient thematic relations must be introduced by a special preposition, with its own Case assigning properties. We expand upon this proposal here, but first give a brief discussion on Case in Chinese and in Northern Iroquoian.

We adopt the notion that Chinese does indeed have Case (Li, 1990), but that it has *undifferentiated Case*. Unlike Northern Iroquoian and English, there is no morphological reflex of accusative versus nominative Case in Chinese.⁷

- (29) a. *Wo kan ni*
 I see you
 'I see you.'
- b. *Ni kan wo*
 you see me
 'You see me.'

More specifically, we propose that *differentiated Case* (that is accusative versus nominative versus partitive, etc.) is correlated with particular semantic properties (Kiparsky, 1998, Kratzer, 2004, Mithun, 1991). That is, we adopt the idea that Case is necessary to make a nominal expression visible for theta-role assignment (Chomsky, 1981). We propose, though, that undifferentiated Case is not associated with any particular semantic property. It functions purely to license the presence of DPs. Furthermore, the semantic properties associated

⁷ English, of course, has rather impoverished morphological case in that it is found only on pronouns. We assume this is sufficient to exclude the possibility of non-canonical objects in English.

with accusative Case discussed in the literature (Karimi, 1996, Kiparsky, 1998, Kratzer, 2004, Megerdooian, 2008) do not play a role in Chinese syntax, suggesting the absence of a distinct accusative Case.⁸

Before proceeding, we must give a brief explanation of Case in Iroquoian. Northern Iroquoian languages are typically described as head-marking languages (in the sense of Nichols, 1986). We interpret case liberally to mean any kind of morphological reflex that distinguishes arguments from adjuncts, regardless of whether it is marked on the DP or on the verb. Consider the following examples. These examples show morphologically distinct agreement for subject versus object. Note that there is no agreement for 3rd person neuter.

(30) a. Hgéha?
k-kɛ-ha?
 1.SG.AG-see-HAB
 'I see it.'

b. Wahgéha?
wak-kɛ-ha?
 1.SG.PAT-see-HAB
 'It sees me.'

Furthermore, we mentioned above that incorporated nouns, being structurally deficient, do not require Case. This is reflected in the lack of agreement with incorporated nouns as discussed by Baker (1996). Observe in the following examples that there is agreement with the non-incorporated object, but not with the incorporated object.

(31) a. *Wá?* *shagó-* *gɛ-* *?* *ne?* *Rosie*
 FACT- 3.SG.M.AG:3.F/1.SG.PAT- see- PUNC NE Rosie
 'He saw Rosie.'

b. *Wá?* *ha/*sahgo-* *ksa?t-* *ohae-* *?*
 FACT- 3.SG.M.AG/*:3.F/1.SG.PAT - child- wash- PUNC
 'He washed the child.'

⁸ Of course, properties such as passive appear problematic for this view. If we assume that nominative Case is purely a structural Case and does not dictate thematic relations, then this issue is not so crucial. We must simply assume that nominative does not interfere with thematic relations already assigned. ECM cases remain to be an issue, which requires further research.

Accordingly, our core proposal is this. Morphologically differentiated case correlates to semantic distinctions. In environments where morphologically differentiated case is not found, a wider variety of thematic distinctions can be found.⁹

In addition to the non-canonical objects and NI discussed in greater detail above, we also find similar effects in English compounds that are structurally N+V, where the nominal portion is prototypically the direct object of the underlying verb. Crucially, the nominal portion is structurally deficient and is typically assumed not to have Case. In the following examples the nominal portion is a prototypical direct object of the verb.

- (32) truck-driver, apple-picker, stamp-collector, dishwasher, lawn mower, ice-breaker

In a number of compounds, however, the nominal portion represents an oblique role with respect to the verb. Consider the following examples.

- (33) axe-murderer, street-walker, Sunday driver, bed-hopper, church-goer, etc.

Here, the nominal portion can be an instrument, path, location or temporal; however, again, benefactives, recipients and comitatives are excluded.¹⁰

- (34) *child-giver; *friend-goer (someone who goes places with friends); *elderly-worker (someone who does work for the elderly), etc.

As we observed with NI and non-canonical objects, these forms are somewhat less productive and typically have an institutionalized meaning. Thus, a church-goer does not simply go to a church to admire the architecture, but rather goes to attend mass. A bed-hopper does not literally hop from one bed

9 The astute reader will note that one of the examples of PNI in Niuean contains an absolutive case marker on the second conjunct of a conjoined pseudo IN. One possibility Diane Massam (p.c.) suggests is that the second conjunct is the complement of a comitative preposition. This PP modifies the caseless head noun of the pseudo IN. Thus, we can maintain an analysis in which the pseudo IN in Niuean is still caseless (for more details, see Gorrie, Kellner & Massam, 2010).

10 A reviewer asks about compounds such as *team-player*, suggesting that the 'team' is a benefactive since the individual plays for the benefit of the team. We think this is really a kind of locative (to play on/for a team), and that the benefactive implication is pragmatic or part of our encyclopedic knowledge of what it means to be a team-player.

to another, but rather engages in frequent sexual relationships with different people. Furthermore, whether the act happens in a bed or not does not matter. Here are some naturally occurring examples showing that the forms do exhibit some degree of productivity.

- (35) a. ... Is that the kind of mother you want? Some boring, old, normal, old *toilet-goer*? [heard on a British sitcom]
 b. The gear necessary *for night hunting* is often cumbersome and it is sometimes awkward to carry afield. [from a website for a hunting club in the US]

Another facet of English grammar that illustrates the thematic freedom of caseless nouns is denominal verbs. Consider the following examples.

- (36) butter (= spread with butter), knife (= stab with a knife), bag (= put into a bag), winter (to spend the winter somewhere), etc.

Again, these examples show that this kind of denominal verb can be formed with a prototypical theme, instrument, location, or temporal—but not with a benefactive, recipient, or comitative. Thus, forms such as **baby the food* meaning ‘get the food for the baby’ or ‘give the food to the baby’ are not possible.

In this section we showed that the properties in common to NI, PNI and non-canonical objects are the following: (i) they typically describe an institutional or cultural activity, and (ii) they can be found with a wide variety of thematic relations, including themes, paths, temporals, and instruments. Frozen scope and number neutrality are typically restricted to NI and PNI, with exceptions noted above. The lack of frozen scope and number neutrality in Chinese non-canonical objects is linked to the large functional supra-structure present in these constructions (i.e., they are not functionally reduced). Thus, we propose that these two properties are not defining characteristics of semantic incorporation. This is bolstered by the observation that frozen scope is a general property of reduced nominal expressions and not just INs or PINs (van Geenhoven, 1998).

5 Further Discussion

In this section we discuss some extensions of our proposal above. We start with a discussion of how thematic distinctions arise in the absence of morphologically differentiated Case. We then proceed to make some speculative remarks

as to why benefactives, recipients and comitatives cannot be non-canonical objects or be incorporated.

5.1 *Thematic Distinctions in Chinese*

We discuss here how thematic distinctions arise in the absence of differentiated case. Consider first the following data from Mandarin showing that localizers are necessary to give the semantic meaning of the path.

- (37) a. Lai (dao) wo *(zher). b. Qu (dao) mama *(nar).
 come arrive me here go arrive mom there
- a'. Dao wo *(zher) lai. b'. Dao mama *(nar) qu.
 to me here come to mom there go
 'Come to me.' 'Go to mommy.'

Noun phrases with localizers denote locative expressions; but some nouns can be locatives inherently. Such inherently locative nouns do not need co-occurring localizers, such as *gongyuan* 'park', *xuexiao* 'school'. If locative nouns occur as objects of directional verbs, then, they are paths. If they are objects of activity verbs such as running, walking, then, they express locations of activities. Compare the following.

- (38) a. *Ta xihuan pao gongyuan*
 he likes run park
 'He likes to run in the park.'
- b. *Ta xihuan qu gongyuan*
 he likes go park
 'He likes to go to the park.'

Qu 'go' and *lai* 'come' are directional verbs. *Dao* 'to, arrive' can also be a directional verb: *women dao xuexiao le*. 'We arrived at the school.' The need to have localizers 'here' and 'there' in the examples in (37) is due to the fact that localizers are required to make common nouns locative expressions to express locations of activities or destinations of directional verbs.

Similarly, to obtain instrument or temporal readings, the non-canonical objects are nouns that can denote instruments or temporals, such as 'pen' for writing, 'chopsticks' for eating, 'daytime' for work or sleep, in addition to using specific verbs such as 'use' for instruments.

5.2 *Thematic Distinctions in Northern Iroquoian*

Along the same lines as Chinese, Northern Iroquoian languages employ locative morphology to express different kinds of direction. Consider the following examples.

- (39) a. *Dáhe?* [Onondaga]
ta- ha- e- ?
 CLOC.FACT- 3.SG.M.AG- walk- PUNC
 ‘He’s coming this way.’
- b. *Gaę nq:h hwá?he?*
kaę nq:h h-wa?-ha-e-?
 which place TLOC.FACT-3.SG.M.AG-go/be-PUNC
 ‘Where is he going?’

Consider now the following Mohawk examples (Mithun, 2004). Observe that the unincorporated example in (40)a requires an instrumental applicative marker, which is absent in the following example.

- (40) a. *o-nieht-’ khok ron-onnhe-hkw-en*
 NPREF-SNOW-NFS only 3.PL.PAT-live-INSTR-STAT
 ‘They were surviving on snow.’
- b. *ka-hseriie’t-aneren-’*
 3.NT.AG-cord-tie.up-STAT
 ‘It [was] tied up with a cord.’

We adopt the basic premise of the Case Filter and assume that all overt DPs require Case (Vergnaud, 1977).¹¹ Baker (1988) has argued that applicatives are incorporated prepositions, hence Case assigners. Accordingly, we take the presence of applicatives as indications of the presence of differentiated Case and argue that if the oblique object can occupy the direct object position, it is eligible to undergo NI and no longer needs the Case licensing properties of the instrumental applicative. Often, adjuncts such as instruments can be intro-

¹¹ As a reviewer points out, the universality of Case has been challenged. Specifically, it has been suggested that Bantu does not make use of Case at all (Diercks, 2012). We tentatively assume that the existence of distinct applicative markers is sufficient to ensure that non-canonical objects are excluded from Bantu. We leave this issue to future research.

c. Honathahidákhe?

hon- at- hah- itakhe -[?]
 3.PL.M.PAT- SRFL- path- run -PURP
 ‘They are walking/running on a path.’

To summarize, nominals in the context of differentiated case indicated by morphological case markings including applicatives are interpreted as canonical arguments. In the absence of a context in which differentiated case is found (Chinese undifferentiated case, incorporated nominals, compounds, etc.) no morphological marking is present, and the appropriate thematic meaning is supplied pragmatically.

5.3 *Benefactives, Comitatives, and Recipients*

We now consider why benefactives, comitatives, and recipients cannot appear in the environments discussed above. An obvious suggestion is that this set of elements is usually human, while themes, locations, temporals, instruments and paths are not. We believe, however, that this is not quite the right distinction, since there are numerous examples of non-canonical objects, incorporated nouns, and compounds in which the nominal component is human.

(43) baby-stealer, child-abductor, purple-people-eater

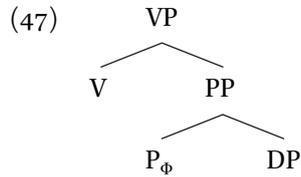
(44) *Wá[?] ha- ksa[?]t- ohae- [?]* [Onondaga]
 FACT- 3.SG.M.AG- child- wash- PUNC.
 ‘He washed the child.’

(45) *Ni fei zhe-zhi long, wo fei na-zhi long*
 you fly this-CL dragon, I fly that-CL dragon
 ‘You fly on this dragon; I fly on that dragon.’

(46) *Ni qi/zuo baba, wo qi/zuo mama!*
 you ride/sit father I ride/sit mother
 ‘You ride/sit on father; I ride/sit on mother!’

What is different, we believe, is the obligatory sentience or ability to experience with benefactives, comitatives and recipients. Landau (2009) argues persuasively that experiencers are introduced by a special locative preposition. Thus, he proposes the following structure for experiencers.¹²

¹² Landau actually discusses three structurally different kinds of experiencers. Example



If we assume that such a special preposition, P_{Σ} , is required for benefactives, comitatives and recipients, that is the sentient arguments, they will never appear in the environments described above. Specifically, they cannot be incorporated because they contain the functional material of the extended nominal domain up to and including the special preposition. In Chinese, the presence of this special preposition means that it will be assigned Case by P_{Σ} or an overt preposition, limiting the range of thematic interpretation to one of the sentient thematic relations discussed (benefactive, comitative, recipient).¹³

That benefactives and recipients are necessarily sentient is uncontroversial; however, the claim that comitatives are necessarily sentient demands some discussion. Not all *with*-phrases are comitatives. A true comitative has the same role as the subject. Consider the following data.

- (48) a. John went to the movies with Mary.
 b. John and Mary went to the movies.
 c. John went to the movies with a warm coat.
 d. #John and a warm coat went to the movies.

In (48)a Mary is understood as a co-agent with John in the event of going to the movies; however, in (48)c the warm coat is not—hence the paraphrases in (48)b and d, respectively. Furthermore, in the context of a non-agentive subject, the comitative construction is not available.

(47) shows an example of an object experiencer as in *Lightning frightens children*. The important point here is that experiencers are always introduced by a special preposition.

13 A reviewer raises the concern that Chinese has very few prepositions as it is, so positing a null preposition seems unlikely. We disagree, however, and see no necessary connection between the lack of an abundance of prepositions in a language and the presence of null prepositions. Specifically, the reviewer mentions experiencer verbs with resultatives such as *daxin-si* ‘to worry’ (lit. worry-dead). Such complex predicates take an experiencer object without an overt preposition. This is exactly the situation Landau discussed, which led him to propose the obligatory preposition analysis. In both English and Chinese, the direct object of *worry/daxin-si* is introduced by a null preposition. We carry the same analysis over to sentient arguments.

- (49) a. The blue key and the red key open the door at the end of the hall.
 b. *?The blue key opens the door at the end of the hall with the red key.

Landau (2009) argues extensively that object experiencers do not behave as usual objects because they are obligatorily introduced by a special (possibly null) preposition that assigns inherent Case. By and large, benefactives and comitatives always appear with an overt adposition or applicative marker in many languages. Recipients do appear as core arguments of the verb, but often retain inherent Case upon passivization.

Evidence that the benefactives, comitatives and recipients (the sentient arguments) have the same locative syntax as experiencers as Landau proposes is furnished by the following observations about Northern Iroquoian. As in many languages, causatives in Northern Iroquoian introduce and Case mark an additional argument. Consider the following Oneida example (Michelson & Doxtator, 2002: 325), where the CAUS morpheme introduces the external argument. This is a fairly typical example of a causative construction found in many languages, where we assume that the external argument is introduced by a causative ν and receives Case from finite T. The internal argument then receives accusative Case from this causative ν . (Note that object agreement is not visible here since neuter objects do not trigger agreement in Iroquoian languages.)

- (50) uʔtalíhahteʔ
 u- aʔtalíh -ʔt -eʔ
 3.SG.F/I.AG- be.hot -CAUS -PUNC
 ‘She heated it up.’

By way of contrast, object experiencer verbs in Northern Iroquoian typically require a causative marker as well as a benefactive marker, as illustrated in (51). While the causative introduces the extra argument the object experiencer must be introduced by a special “preposition”, which we take to be the benefactive marker. Thus, we propose that the benefactive marker serves as the special locative “preposition” to introduce experiencers in Landau’s terms and, of course, to introduce sentient benefactives and recipients. Comitatives in Northern Iroquoian are typically only introduced by conjoined phrases. The idea here is that the direct object of a causative verb cannot receive accusative Case from ν , but rather must be introduced by a special morpheme—the same morpheme that introduces benefactives and recipients.

(51) a. *Waʔkheyatetshahnihtaʔ.*

waʔ- khe- at- tshahni -ht -a -ʔ
 FACT- 1.SG.AG.3.SG.F/1.PAT- SRFL- be.scared -CAUS -BEN -PUNC
 'I frightened her.' (Michelson & Doxtator, 2002: 166)

b. *Taskwatuʔnéktaʔ.*

t- waʔ- skw- at- uʔnék -ht -a -ʔ
 CLOC- FACT- 2.SG.AG.1.SG.PAT- SRFL- move -CAUS -BEN -PUNC
 'You startled me.' (Michelson & Doxtator, 2002: 290)

The difference is that the benefactive marker is not a preposition in the traditional sense. Rather, it is a special marker on the verbal complex. We assume uncontroversially, however, that the preposition has incorporated into the verbal complex (Baker, 1988).

Note that this proposal is in line with some anecdotal evidence about compounding and noun incorporation. Noun incorporation often has the effect of trivializing or objectifying the object incorporated. Speakers of North Baffin Inuktitut, for instance, find it "rude" to incorporate human names (Johns, 2009).

We suggest, then, the following properties for the constructions discussed.¹⁴ A full DP object in English appears with differentiated accusative case marking and is thematically restricted to meaning defined by the verbal root. Compound and denominal verbs in English, on the other hand are caseless and are thematically free, except that they cannot be benefactives, comitatives or recipients. INs are also caseless and have the same thematic freedom and restrictions. Finally, non-canonical objects have no differentiated case marking and are also thematically free to an extent. We tentatively suggested that benefactives, recipients and comitatives are introduced by a special preposition, which assigns these sentient thematic relations.

14 While this work does not discuss subjects, the claim that non-restriction of thematic relations is correlated with undifferentiated case suggests that Chinese should also allow non-canonical subjects, which is true (see Lin, 2001). Such thematic freedom is not found with subjects in Northern Iroquoian since subjects cannot incorporate, losing their need for Case (Baker, 1996).

6 Summary

We have proposed that semantic incorporation is a property not only of NI and PNI, but also of non-canonical objects in Chinese. We argued that the defining properties of semantic incorporation include the following.

- (i) institutionalized or cultural activities, and
- (ii) availability to incorporated themes, paths, instruments, locations, and temporals.

We related the second of these to the lack of differentiated morphological case in NI, PNI and non-canonical objects. We suggested that overtly distinguished case is responsible for thematic distinctions. Specifically, the lack of such morphologically distinguished case allows the nominal in question to take on pragmatically available interpretations, except benefactives, comitatives and recipients. We suggested that these exceptions are due to the fact that they are restricted to sentient entities capable of experiential feelings. Such elements are introduced by a special locative preposition for experiencers following Landau.

We end this discussion with some brief comments on the nature of semantic incorporation. As the papers in the volume attest, it is difficult if not impossible to pin down a precise definition of semantic incorporation. Rather, it seems to entail a cluster of properties, the presence of the individual members of which varies from one language to the next. Furthermore, the presence of one of these properties does not necessarily mean that semantic incorporation has taken place. If properties such as number neutrality and frozen scope arise solely as a result of the reduced functional structure in nominals, then it is unclear what exactly the label semantic incorporation does. We have argued here that the lack of morphologically differentiated Case gives rise to one property of semantic incorporation, namely thematic freedom. Since lack of Case is typically found on structurally deficient nominals, we expect to find thematic freedom on such nominal, giving rise to the correlation between reduced nominals and semantic incorporation. If these remarks are on the right track, then semantic incorporation boils down to the absence of morphologically differentiated Case.

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