(Pseudo) Noun Incorporation and Its Kin[*]

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1 Introduction

In this paper, I will explore some implications of noun incorporation (NI) and pseudo noun incorporation (PNI) for an apparently unrelated phenomenon. I will first provide an overview of certain types of (P)NI reported in several languages. I will suggest that case drop found in Japanese exhibits properties that can be taken to parallel PNI in Niuean discussed by Massam (2001), based on introspective judgements and a preliminary investigation into a corpus of (Kansai) Japanese. This particular analysis of case drop promises to present both typological and theoretical consequences because (P)NI and case drop have existed as a separate domain of inquiry and Japanese has been outside a list of languages with (P)NI (Gerdts, 1998, Massam, 2009). The analysis also potentially sheds new light on PNI, a Case-licensing system that has been argued to exist as an alternative to Case-licensing by Agree (in the sense of Chomsky 2000, 2001; see also Massam 2001, Imanishi 2014, Levin 2015 among others).

The remainder of the paper is organized as follows. Section 2 overviews (P)NI and its analyses, based on a survey of languages such as Mohawk, Mapudungun, Kaqchikel and Niuean. I focus on a set of restrictions that have been shown to hold for the (pseudo) incorporated direct object. In section 3, I address several distributional properties of case drop in Japanese and suggest that these properties can be analyzed on a par with PNI found in Niuean. I conclude in section 4.

2 Types of Noun Incorporation

2.1 Overview of Noun Incorporation

This section will present a brief overview of NI and analyses that have been proposed to capture its morphosyntactic properties (see Chung and Ladusaw 2004 and the references cited therein for semantic analyses of NI). While several definitions of NI are available in the literature, let us

adopt the following broad definition of NI: "...a grammatical construction where a nominal that would canonically (either in the given language, or in languages in general) be expressed as an independent argument or adjunct is instead in some way incorporated in the verbal element of the sentence, forming part of the predicate" (Massam, 2009:1078). While I will be unable to provide a detailed overview of the previous analyses of NI in this paper, I refer the reader to Baker (2009) and Massam (2009) for extensive discussion on various approaches to NI.

NI has been one of the central issues of linguistics chiefly because it has triggered intense discussions about the relationship between morphology, syntax and the lexicon. One set of analyses of NI proposes that NI is formed in the lexicon via compounding (Mithun, 1984, Di Sciullo and Williams, 1987, Rosen, 1989). In contrast, Baker (1988, 1996) is a proponent of a syntactic approach to NI. Under this approach, the sentence with NI is derived from its original structure via head movement in the syntax. Consider the following example of Mohawk. The object is morphophonologically incorporated to the verb as in (1). Baker (1988) argues that this is derived via head movement of N to V.[1]

(1)   Yao-wir-aʔa   ye-**nuhs**-nuhweʔ-s
        PRE-baby-SUF 3FS/3N-house-like-ASP
        'The baby house-likes.'

                                                                                    (Baker, 1988:81-82)

The head movement analysis can also provide a principled account of the fact that only the theme or direct object, but not the agent (or the goal/benefactee in ditransitives), can be incorporated due to the Head Movement Constraint (Baker 1988; see also Travis 1984 and Chomsky 1986).[2] In the following discussion, we will focus on the syntactic approach to NI and mainly discuss a set of restrictions on the object undergoing incorporation.

The head movement analysis of NI is consistent with the fact that only a bare noun may be incorporated. The Mohawk example in (1) suggests that the determiner cannot appear with the incorporated noun. Furthermore, the incorporated object cannot be modified, as seen in the example of Mapudungun given in (2).

(2)   Pedro ngilla-(*küme)-pulku-pe-y.
        Pedro buy-good-wine-PAST-IND.3sS
        'Pedro bought (*good) wine.'

                                                                                    (Baker, 2009:153)

These facts follow if we assume that determiners occupy a D head and adjectives are adjoined to an NP. Since incorporation involves the movement of an N, elements outside an N such as determiners

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[1]The following abbreviations will be used: ABS = absolutive agreement morpheme; ACC = accusative case marker; AP = antipassive voice suffix; ASP = aspect marker; COMTV = comitative; DEMON = demonstrative; DET = determiner; EMPH = emphatic; ERG = ergative agreement morpheme; IMPF = imperfective aspect; IND = indicative; NOM = nominative case marker; NOML = nominalizing suffix; NONFUT = non-future (embedded); PAS = passive voice (suffix); PL = plural; PRE = nominal inflectional prefix; PREP = preposition; PRFV = perfective aspect; PROG = progressive aspect; PST = past; SUF = nominal inflectional suffix; Q = question particle; TOP = topic marker

[2]Some counterexamples to this restriction have been reported: subject and adjunct incorporation are argued to exist in several languages (see Massam 2009 for a summary of works on the counterexamples).

and modifiers such as adjectives cannot be incorporated along with the noun.[3]

Besides the type of NI found in Mohawk and Mapudungun, some languages display cases of NI in which the verb and the incorporated object are separate phonological words, unlike in typical instances of incorporation. This type of NI is called *composition by juxtaposition* (Mithun, 1984). According to Mithun (1984), this type of incorporation has the following property: "The V and N remain separate words phonologically; but as in all compounding, the N loses its syntactic status as an argument of the sentence" (Mithun, 1984:849). As I have discussed in Imanishi (2014), Kaqchikel exhibits this type of NI in certain part of the grammar. I have also shown that the same restrictions as observed in Mohawk and Mapudungun hold for NI in Kaqchikel. Kaqchikel thus suggests that the instances of NI classified as *composition by juxtaposition* display the morphosyntactic properties that parallel regular NI and are consistent with the head movement analysis (see Imanishi 2014 for more details on this type of NI in Kaqchikel).

2.2 Pseudo Noun Incorporation

Massam (2001) shows that Niuean presents a set of puzzling properties for the analyses of NI. In particular, the cases analyzed as NI in Niuean reveal that the incorporated noun may be phrasal rather than a head. It is obvious that a head movement analysis such as Baker (1988, 1996) does not extend straightforwardly to NI in Niuean because in this analysis only a head, not anything above it like NP or DP, can be incorporated. Massam calls the cases of NI in the language *pseudo noun incorporation* (PNI). In what follows, I will overview Niuean PNI.

Consider the Niuean examples in (3). Example (3-a) is a normal transitive sentence with VSO word order. Each nominal must be preceded by an (ergative or absolutive) case marker (= *e*) as in (3-a). The nominal may also be preceded by functional elements such as articles denoting number and specificity.

(3) a. Takafaga tumau ni   e   ia e   tau ika.
         hunt   always EMPH ERG he ABS PL fish
         'He is always fishing.'
     b. Takafaga ika tumau ni   a   ia.
         hunt   fish always EMPH ABS he
         'He is always fishing.'

(Massam, 2001:157)

Example (3-b) is a PNI sentence in which the object is incorporated. In contrast to (3-a), the object lacks both a case marker and a functional element. The object appears adjacent to the verb, yielding VOS word order. In addition, the subject in (3-b) bears absolutive case, whereas it is marked with ergative case in (3-a). These properties constitute diagnostics for PNI in Niuean.

PNI in Niuean may come close to the type of NI attested in Kaqchikel, namely composition by juxtaposition in the sense of Mithun (1984), as Massam notes: the verb and the incorporated nominal are separate words, unlike in regular NI. However, Niuean PNI displays striking properties that distinguish Niuean from other languages. In contrast to NI found in Mohawk, Mapudungun and Kaqchikel, Niuean allows nouns modified by adjectives to be incorporated in PNI, as seen

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[3]With respect to modifiers in incorporated sentences, languages differ as to whether modifiers can be stranded. Mohawk allows modifiers such as demonstratives to appear outside the incorporated noun, whereas Mapudungun does not. NI in Mapudungun allows the stranding of a possessor, as Baker (2009) notes.

in (4) (see Massam 2001 for examples of more complex incorporated nouns such as the ones appearing with comitatives).

(4)   Ne inu **kofe kono** a   Mele.
        PST drink coffee bitter ABS Mele
        'Mary drank bitter coffee.'

(Massam, 2001:158)

The example in (4) clearly presents a strong counterexample to the head movement analysis of NI and whatever analysis ties Niuean PNI to NI. Under the head movement analysis (Baker, 1988, 1996), N adjoins to V via head movement, forming N-V (or V-N) complex (see Baker 2009 for discussion on the directionality of head adjunction). A lexicalist analysis of NI would combine a noun root with a verb root in the lexicon just like compounding (Mithun, 1984, Di Sciullo and Williams, 1987, Rosen, 1989). Both types of analysis meet difficulties with (4) because in this case the incorporated element is larger than N or a noun root.

Alongside nouns modified by adjectives, Niuean PNI disallows the noun appearing with a relative clause, as seen in (5). Massam also notes that the sentence remains ungrammatical when the relative clause is stranded.

(5)   *Ne inu   kofe ne   taute e   au a   Sione.
         PST drink coffee NONFUT make ERG I   ABS Sione
        'Sione drank coffee that I made.'

(Massam, 2001:168)

Massam further observes that nouns preceded by functional categories such as case markers, number articles and possessors are disallowed in PNI (see the reference for details).

Massam argues that Niuean PNI derives from the base generation of an NP in the complement position of a V, followed by the movement of the minimal predicate (= VP) to Spec-IP for the purpose of a Pred feature on Infl. The predicate fronting gives rise to VOS word order in PNI sentences. The derivation of PNI can be schematized as in (6): the subject occurs in specifier position of a functional projection found between IP and VP under Massam's analysis.

(6)   [$_{IP}$ [$_{VP}$ V NP]$_i$ Infl t$_i$]]

In other words, Niuean PNI does not involve actual syntactic or lexical incorporation of an N in Massam's analysis. The merge of a direct object NP with a V gives the impression of incorporation. Since the pseudo incorporated noun is a phrasal NP, it may host modifiers such as adjectives and adjuncts (= comitatives) on the assumption that these modifiers are adjoined to an NP. This can capture the grammatical cases of (4). Furthermore, since the pseudo incorporated nominal does not contain any (extended) functional categories such as a DP in Massam's analysis, it follows that (number) articles and case markers cannot appear with the object in PNI sentences: Massam posits that (abstract) Case resides on an extended functional head (= K/Abs in her system), which appears above VP. Assuming with Kayne (1994) among others that relative clauses appear high in DPs, Massam's analysis can explain why the pseudo incorporated object cannot cooccur with a

relative clause, as shown in (5).[4]

To summarize, Massam's analysis of Niuean PNI not only explains the phrasal nature of the pseudo incorporated noun but correctly predicts the contrast between adjectives/adjuncts and relative clauses/functional categories regarding their (in)compatibility with PNI (see Massam 2001 for discussion on its semantic properties and other types of PNI).

3 Pseudo Noun Incorporation and Its Kin: Case Drop in Japanese

In this section, I will address several issues about case drop found in Japanese. With the characteristics of Niuean PNI at hand, I will suggest that Japanese case drop, a seemingly unrelated phenomenon, reveals properties that can be taken to parallel PNI.[5]

Japanese, a case-marking language or dependent-marking language in the sense of Nichols (1986), allows case markers to be omitted in colloquial speech, though this phenomenon is subject to dialectal variation, as Saito (1983) notes.[6] It has been observed since Kuno (1973) and Saito (1983) that case drop displays a subject/object asymmetry: the nominative marker for subject cannot be omitted, whereas the accusative marker for object can be dropped, as seen in (7) (see Kuroda 1988, 1992 and Fukuda 1993 for discussion on some exceptional cases).[7] [8]

(7) a. dare-*(ga) kita no?
         who-NOM came Q
         'Who came?'
     b. nani-(o)   yonderu no?
         what-ACC reading Q
         'What are you reading?'

                                                                    (Saito, 1983)

However, there are cases in which accusative case cannot be dropped. As shown by the contrast in (8), *-o* cannot be omitted when the object is separated from the verb by another argumental nominal such as the subject. Saito (1983) argues, based on the facts such as the one in (8), that the adjacency condition on Case assignment holds in Japanese: under Saito's analysis, the case-less object must receive abstract accusative Case from the verb (see also Kuroda 1988, 1992 for extensive discussion on case-less nouns in Japanese).

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[4]However, the pseudo incorporated noun in Niuean may occur with a subjunctive relative clause (Massam, 2001:160). Massam assumes that subjunctive relative clauses are structurally different from true relative clauses in that they appear inside an NP.

[5]Mohanan (1995) argues that the object with no accusative case (= unmarked nominative) in Hindi undergoes noun incorporation to the verb. I thank an anonymous reviewer for bringing this work to my attention.

[6]I use the term "case drop" simply to describe the surface phenomenon in which the argument does not bear an overt case marker: I do not intend to suggest that an actual operation of deleting a case marker is operative in Japanese.

[7]Kuno (1973) and Saito (1983) carefully observe that what is sometimes omitted from the subject is not a nominative marker, but a topic marker (= *wa*).

[8]The object in stative and potential predicates may be marked with nominative in Japanese. As Kuno (1973) notes, the nominative marker for the object can be omitted, unlike in (7-a).

(8)   a.   John-ga   dare nagutta no?
             John-NOM who hit   Q
             'Who did John hit?'
       b.   ?*dare John-ga   nagutta no?
              who John-NOM hit   Q

<div align="right">(Saito, 1983:254)</div>

In contrast, the case-marked object can be freely scrambled, as shown by the minimal pair of (8-b) given in (9).

(9)   dare-o   John-ga   nagutta no?
       who-ACC John-NOM hit   Q
       'Who did John hit?'

While the focus of the previous generative research on case drop such as Saito (1983, 1985) and Kuroda (1988, 1992) has centered on the position of the case-less object, the grammatical features of the object have escaped theoretical attention.[9] Once these features are taken into account, Japanese case drop displays puzzling distributional properties.[10] First, when the object is modified by an adjective, it allows case omission, as shown in (10), irrespective of whether the adjective is a canonical adjective (10-a) or a nominal adjective (10-b).[11]

(10)   a.   Mary-ga   **takai**   hon-(o)   katta.
             Mary-NOM expensive book-ACC bought
             'Mary bought an expensive book.'
       b.   John-ga   **kireina**   hana-(o)   katta.
             John-NOM beautiful flower-ACC bought
             'John bought beautiful flowers. '

As (11) shows, furthermore, the determiner *sono* 'the' and demonstratives such as *ano* 'that' may appear with the case dropped object.

(11)   Mary-ga   **sono/ano**   hon-(o)   yonda.
       Mary-NOM DET/DEMON book-ACC read
       'Mary read the book.'

However, the case dropped object appearing with a relative clause is degraded, as seen in (12).

(12)   Watashi-ga [**John-ga   kinoo   katta**] hon-?*(o) yonda.
       I-NOM   John-NOM yesterday bought book-ACC read
       'I read the book that John bought yesterday.'

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[9]Matsuda (2000) provides a quantitative analysis of case drop in Tokyo Japanese and confirms that the adjacency condition holds for the relation between the case-less object and the verb (see the reference for more discussion and Kibe 2015 for an insightful survey of case drop, or zero case marking found in various Japanese dialects).

[10]To ensure that the omitted marker is an accusative case marker (but not a topic marker), the nominative-marked subject precedes the object in the following examples. I thank a reviewer for helpful discussion.

[11]The animacy of the object does not seem to affect case drop in (10) and the examples to be discussed below.

As should be clear by now, these distributional patterns of case drop in Japanese bear some resemblance to PNI in Niuean discussed in §2.2. Note also that the case dropped object and the verb are separate phonological words as in the case of Niuean and Kaqchikel, unlike regular NI. I suggest that the case dropped object in Japanese is a pseudo incorporated noun (at least) for some speakers (see below): the object with no accusative marker is Case-licensed under strict adjacency to the verb, just as in the case of Niuean PNI, though predicate fronting does not apply to Japanese. Following the insights of Koizumi (1995) and Ura (2000) among others, I assume, contra Kuroda (1988, 1992) and Aoyagi (2004), that an overt morphological case in Japanese reflects syntactic Case-licensing by a functional head via Agree (Chomsky, 2000, 2001, Pesetsky and Torrego, 2004, 2007), and that PNI serves as an alternative method of Case-licensing (cf. Levin, 2015). This is consistent with the fact that the verb and the case-less object must be adjacent as we saw in (8). The PNI analysis can also capture the fact that the subject nominative marker cannot be omitted, as we saw in (7-a). This is because only the direct object, but not the subject, can form a strict adjacency relation to the verb via Merge and thus satisfies the condition for PNI.

If we follow Massam (2001) in that the pseudo incorporated object is an NP without extended nominal categories, we can account for the fact that the case-less object with a relative clause is degraded as in (12), on the assumption that relative clauses appear as a dependent of a DP.[12] It also follows that the case dropped object may be modified by an adjective since it is phrasal (= NP), as observed in (10). However, (11) poses a problem for the PNI analysis of case drop. The pseudo incorporated object should disallow elements belonging to extended nominal categories such as a determiner and a demonstrative, as observed in Niuean PNI. I posit that determiners and demonstratives in Japanese may adjoin to an NP, though this requires more clarification. If this speculation turns out to receive independent support, the grammaticality of (11) follows.

While the discussion on the examples (10)-(12) is based on introspective judgements, these judgements may be subject to speaker variation, as pointed out by an anonymous reviewer. I show, based on a preliminary investigation into a corpus of (Kansai) Japanese developed by Kevin Heffernan (see Heffernan 2012 for its introduction), that there are interesting distributional patterns of accusative case drop that may be taken as (at least indirect) evidence for the PNI analysis. A note of caveat is in order, however. What I will suggest below is that accusative case drop in colloquial speech of Japanese shows *gradient trends* that mirror *categorical patterns* of Niuean PNI. In other words, the survey of the corpus data only points to the tendency or frequency of case drop correlating with particular grammatical features of the direct object. Nevertheless, as I will point out, the trends of accusative case drop found in the corpus, which would otherwise remain unaccounted for, can receive a natural account by arguing that accusative case drop involves PNI at least for some speakers. I leave it for my future research how to capture and predict speaker variation regarding accusative case drop (see Adger 2006 for a feature-based analysis of intra-speaker morphosyntactic variation found in a Scottish dialect).

The corpus consists of 113 hours of conversational interviews between university students and 125 speakers. The corpus is designed to investigate morpho-syntactic variation and change in spoken Japanese. It has been parsed into approximately 1.4 million morphemes and each morpheme is tagged with parts of speech information. The following analysis reports only the

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[12]This seems incompatible with a line of analysis such as Fukui (1988), which argues that Japanese, which does not have articles comparable to the ones in English, lacks a DP-layer (see Chierchia 1998, Bošković 2009 and the references cited therein for a No-DP analysis of a wide variety of article-less languages). I leave this issue for further research.

data from the targeted speakers; the speech data of the university students was omitted in order to maintain a representative speech sample across age groups.

We identified 908 examples of sentences containing transitive verbs and their direct objects in colloquial speech, using the programming language Perl.[13] When we broke down the examples into the types of direct object, a striking pattern emerged. We distinguished these types, on the basis of whether the object in preverbal position is preceded by any lexical item or appears as a bare form. We classified the type of lexical items into canonical adjectives (also known as *i*-adjectives), relative clauses, determiners/demonstratives, possessors, nominal adjectives (also known as *na*-adjectives). Table 1 shows the frequencies of accusative case omission for each type of modifier.[14] The preliminary study suggests that the type of element preceding the object has a statistically significant effect on accusative case drop, using the chi square test ($\chi^2 = 34.381$, df = 5, $p < .001$).

Table 1: Token counts by preceding constituent and accusative case omission

What is in front of the object	accusative case (= -*o*)	case drop (= ø)	Total
no modification	43 (20.5%)	167 (79.5%)	210
canonical adjectives (*i*-adjectives)	12 (14.5%)	71 (85.5%)	83
relative clauses	75 (41.7%)	105 (58.3%)	180
determiners/demonstratives	65 (32.5%)	135 (67.5%)	200
nominal adjectives (*na*-adjectives)	13 (38.2%)	21 (61.8%)	34
possessors	72 (35.8%)	129 (64.2%)	201

The rate of accusative case marker omission is the largest when the direct object is bare (79.5%). What is remarkable is the contrast in the accusative case omission rate between objects modified by adjectives and objects modified by relative clauses. The rate of accusative marker omission is smaller when the object is preceded by a relative clause (58.3%) than when it is preceded by an *i*-adjective (85.5%). This result is consistent with the PNI analysis of case drop discussed above. Since the pseudo incorporated object is an NP in this analysis, the object is expected to bear a morphological case marker, which reflects syntactic Case-licensing via Agree, more frequently when it appears with a relative clause.

The rate of accusative marker omission is also smaller than that for bare objects when the object is preceded by a determiner/demonstrative (67.5%), possessors (64.2%) or a *na*-adjective (61.8%). Regarding determiners/demonstratives and possessors, I suggest that these elements adjoin to a DP as well as an NP in Japanese. When they adjoin to a DP, the object requires Case-licensing via Agree, not PNI, and hence is expected to occur with an accusative marker. On the other hand, when determiners/demonstratives adjoin to an NP, the object can undergo PNI and does not bear -*o*, which is consistent with the judgements in (11).

I suggest that the pattern of *na*-adjectives (= nominal adjectives) shown in Table 1 might also be captured by structural differences they display. Yamakido (2005) argues that prenominal adjectives in Japanese, including canonical adjectives and nominal adjectives, may have relative clause structure as well as genuine attributive adjective structure. Building on her insights, I posit

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[13]I am grateful to Kevin Heffernan for his assistance with analyzing the corpus data.

[14]Further inquiry is necessary to ensure that the dropped particle of the object found in the corpus data is an accusative case marker, but not a topic marker (= *wa*). I thank a reviewer for pointing this out to me.

that nominal adjectives involve relative clause structure more frequently than canonical adjectives. When they do so, the object must occur with *-o* since it cannot be pseudo incorporated: relative clauses presuppose the presence of a DP, as we have assumed.

4 Conclusion

I have suggested that the PNI analysis of case drop in Japanese leads us to a new view of the phenomenon and its otherwise puzzling distributional patterns, based on the overview of the characteristics of (P)NI found in several languages. By unifying the two phenomena, we can also add to the picture new observations of PNI: PNI may be observed in a wider range of languages including Japanese than previously reported and display (somewhat) uniform behaviors across languages. While this analysis requires further inquiry and may be buttressed by judgement experiments targeted for a large sample of speakers, it promises to shed new light on PNI, an alternative Case-licensing system made available by UG (Massam 2001, Imanishi 2014, Levin 2015 among others).

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