EPP Effects under TP*

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Abstract

The standard generalization concerning the traditional EPP (Extended Projection Principle) is that Spec, TP must always be filled by some element, even when no apparent semantic or Case-related reason is detected.   Recent research reveals that EPP effects are observed in a language, like Japanese, that lacks expletive subjects (Kishimoto 2001, Miyagawa 2001, Miyagawa & Arikawa 2007).   Hirata (2006b) further demonstrates that the alleged EPP effects in the language do not disappear in tenseless conjuncts in predicate coordination structures, from which it is claimed that the EPP in Japanese works in a projection under TP.   The present article yields additional support for this claim by examining an example of Case alternation in Japanese.   Evidence is provided that the tenseless coordination construction at issue cannot be analyzed as a case of TP coordination and thus that EPP effects can definitely be detected under TP.

1.   Introduction

The EPP is not a theory of language but a generalization that demands a principled account of it.   The commonly held view is that some element must occupy Spec, TP, independently of theta-saturation and Case assignment.[1]   Thus, in the English examples in (1), *it* and *there* are in Spec, TP, though they do not make any semantic contribution and though no Case filter violation is caused without them:

(1)   a.   It was believed that the Japanese people are industrious.

b.   There are some industrious people in Japan.

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Recent studies have discovered the same effect in Japanese (Kishimoto 2001, Miyagawa 2001, Miyagawa & Arikawa 2007). Kishimoto (2001) points out, for example, that the subject/object asymmetry exhibited in (2) can be accounted for by the EPP:

(2)   a.   *Dare-ga   warai-mo si-nakat-ta.
             anyone-NOM laugh-Q   do-NEG-PAST
            'Anyone did not laugh.'

      b.   Taroo-wa nani-o   kai-mo si-nakat-ta.
           Taroo-TOP anything-ACC buy-Q do-NEG-PAST
           'Taroo did not buy anything.'

Indeterminate Japanese pronouns, like *dare* 'who' and *nani* 'what', have to be bound by the Q particle *mo* 'too'. In (2a), the subject indeterminate pronoun fails to be bound by *mo* attached to the lexical verb, while *mo* in the same configuration licenses the object indeterminate pronoun in (2b). Given that Japanese lacks V-to-T raising and that nominative-marked elements are potentially allowed to stay in VP in overt syntax (which Kishimoto independently proves), the contrast in (2) serves as evidence for the EPP in Japanese: nothing other than the EPP would force the nominative subject in (2a) to evacuate VP to Spec, TP, so that it fails to be bound by *mo*, which arguably occurs within VP.[2] In (2b), on the other hand, *mo* properly binds the object indeterminate pronoun within VP. Thus, there is reason to believe that the EPP is at work in Japanese.

Kishimoto merely shows, however, that subjects leave VP, not that their destination is Spec, TP. Subjects might land somewhere above VP and under TP, if such a position is available in phrase structure. This is the analysis put forward by Hirata (2006b), based on cases of predicate coordination such as (3):

(3)   a.   *[Dare-ga   warai-mo se-zu] (sosite) [dare-ga   naki-mo
             anyone-NOM laugh-Q   do-NEG   and   anyone-NOM cry-Q
             si-nakat]-ta.
             do-NEG-PAST
   'Anyone does not laugh and anyone does not cry.'

b. [Taroo-ga nani-o kai-mo se-zu] (sosite) [Ziroo-ga nani-o

Taroo-NOM anything buy-Q do-NEG and Ziroo-NOM anything-ACC

uri-mo si-nakat]-ta.

sell-Q do-NEG- PAST

'Taroo did not buy anything and Ziroo did not sell anything.'

In (3), no tense element is found (in particular in the left conjunct) in the coordination structures, yet the alleged subject/object asymmetry is observed.   One could argue that there should be some projection (AgrP) between TP and VP and that the EPP effect might be attributable to that projection.

The argument is not conclusive.   Obviously, no tense morpheme is involved in the left conjuncts in (3), but the tense marker originally generated there might be affected by operations like Right Node Raising or Gapping, as shown in (4):

(4) a. [$_{TP}$ subject object V t] & [$_{TP}$ subject object t] T
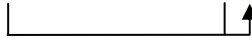
Right Node Raised

b. [$_{TP}$ subject object V t̲] & [$_{TP}$ subject object T]

Gapped

Alternatively, a phonetically null element might occupy the T position in the left conjunct:

(5) [$_{TP}$ subject object V [$_{T}$ e]] & [$_{TP}$ subject object T]

In either case, TP must be projected in the left conjuncts in (3), and the argument for the EPP in Japanese (in the standard sense) can be maintained.[3]

The purpose of this article is to show that such TP analyses of (3) are impossible and that we must conclude that EPP effects are seen under the projection of TP.[4]   The main body of data comes from the so-called *Ga/No* Conversion in Japanese, where the nominative Case can, under certain conditions, be replaced by the possessive Case.   Based on Hiraiawa's (2002) observation that the morphology on T plays a crucial role in *Ga/No* Conversion, I will demonstrate that no tense element or tense-related projection is involved in the left conjuncts in (3), from which follows the fact that EPP effects are not confined to Spec, TP.   The

theoretical implications of this assertion will be discussed.

2.   *Ga/No* Conversion and the predicate coordination construction

This section introduces some peculiarities of *Ga/No* Conversion and the predicate coordination construction, a discussion of which is necessary to this paper's thesis.

Ga/No Conversion is a term referring to a case of Case alternation on NPs in Japanese, where nominative *ga* is replaced by possessive *no*, prototypically in noun-modifying tensed clauses (Harada 1971, Miyagawa 1993, Watanabe 1996, Ochi 2001, Hiraiwa 2002, among many others):

(6)   a.   [Taroo-ga/-no   wara-u]   riyuu

Taroo-NOM/-POSS laugh-PRES reason

'the reason that Taroo laughs'

       b.   [Taroo-ga/-no   nai-ta]   riyuu

Taroo-NOM/-POSS cry-PAST reason

'the reason that Taroo cried'

Only certain kinds of subordinate clauses allow this alternation, and thus *Ga/No* Conversion does not operate in matrix clauses:

(7)   a.   Taroo-ga/*-no   wara-u.

Taroo-NOM/-POSS laugh-PRES

'Taroo laughs.'

       b.   Taroo-ga/*-no   nai-ta.

Taroo-NOM/-POSS cry-PAST

'Taroo cried.'

Hiraiawa (2002) discovers that the morphology on T, not the modified noun, plays the crucial role in the conversion.   He provides a number of cases where *Ga/No* Conversion applies in subordinate clauses with no head nouns to be modified:

(8)   a.   John-wa [ame-ga/-no   yam-u   made] ofisu-ni i-ta.

John-TOP rain-NOM/-POSS stop-PRES until   office-at be-PAST

'John was at his office until the rain stopped.'

b. [Sengetu   ikkai denwa-ga/-no at-ta   kiri] John-kara nanimo

　　　last month once call-NOM/-POSS be-PAST since John-from any

　　　renraku-ga na-i.

　　　call-NOM   be.not-PRES

　　　'There has been no call from John since he called me up once last
　　　month.'

In the clauses introduced by *made* 'until' and *kiri* 'since' in (8), the subjects can surface either as nominative or possessive, though no recognizable modified noun is found.

　　　Hiraiawa also observes that T should be realized as ad-nominal (but not as conclusive) for *Ga/No* Conversion to be applicable in a clause.　Japanese predicates inflect to be morphologically consistent with the following elements: the conclusive form appears at the end of a matrix clause or a subordinate clause introduced by the declarative complementizer *to*, while the ad-nominal form is employed in noun-modifying clauses.　In (8), we cannot tell which inflectional form the tense markers assume by looking at their morphological realizations, since the tense markers (*r*)*u* 'Pres' and *ta* 'Past', used for verbal predicates, double as conclusive and ad-nominal forms.　Nominal-adjectives have different inflections for ad-nominal (*na*) and conclusive (*da*), however, and *Ga/No* Conversion takes place only where ad-nominal endings are required, as in a noun-modifying clause (ad-nominal and conclusive are abbreviated as ADN and CON respectively in glosses here and in what follows):

(9)　a.　karada-ga/-no zyoobu-na   hito

　　　　　body-NOM/-POSS strong-PRES.ADN person

　　　　　'the person who has a strong body'

　　　b.　kokoro-ga/-no kenzen-na   hito

　　　　　mind-NOM/-POSS sound-PRES.ADN person

　　　　　'the person who has a sound mind'

In matrix clauses, where declarative forms are mandatory, the conversion is prohibited:

(10)　a.　Taroo-wa karada-ga/*-no zyoobu-da.

　　　　　Taroo-TOP body-NOM/-POSS strong-PRES.CON

　　　　　'Taroo has a strong body'

　　　b.　Taroo-wa kokoro-ga/*-no kenzen-da

　　　　　Taroo-TOP mind-NOM/-POSS sound-PRES.CON

　　　　　'Taroo has a sound mind'

Thus, we know that only the ad-nominal T allows the application of *Ga/No* Conversion.

　　　　Let us investigate some properties of the predicate coordination construction, as exemplified in (3), in the context of noun-modifying subordination. Tense-related elements are usually disallowed in the left conjunct of a coordination structure of this kind, causing one of the major obstacles to understanding this construction (native speakers of Japanese have a strong intuition that each of (11) is a pair of independent sentences rather than a single conjoined sentence):

(11)　a.　*[Taroo-ga wara-u]　　　(sosite) [Ziroo-ga nak-u].

　　　　　　Taroo-NOM laugh-PRES.CON and　　Ziroo-NOM cry-PRES.CON

　　　　　'Taroo laughs and Ziroo cries.'

　　　b.　*[Taroo-ga nai-ta]　　　(sosite) [Ziroo-ga warat-ta].

　　　　　　Taroo-NOM cry-PAST.CON and　　Ziroo-NOM laugh-PAST.CON

　　　　　'Taroo cried and Ziroo laughed.'

However, one sentence reading becomes possible when sentences like these are used as noun-modifiers:

(12)　a.　[Taroo-ga wara-u]　　　(sosite) [Ziroo-ga nak-u]　　riyuu

　　　　　　Taroo-NOM laugh-PRES.ADN and　　Ziroo-NOM cry-PRES.ADN reason

　　　　　'the reason that Taroo laughs and Ziroo cries'

　　　b.　[Taroo-ga nai-ta]　　　(sosite) [Ziroo-ga warat-ta]　　riyuu

　　　　　　Taroo-NOM cry-PAST.ADN and　　Ziroo-NOM laugh-PAST.ADN reason

　　　　　'the reason that Taroo cried and Ziroo laughed'

Unlike the sentences in (11), those in (12) can be taken as single sentences because the tense markers in the left conjuncts should be ad-nominal (since they are

noun-modifiers), giving us the impression that the sentences do not end there.   This is corroborated by looking at the paradigm of nominal-adjectives:

(13)   a.   *karada-ga zyoobu-da   (sosite) kokoro-ga kenzen-da   hito

body-NOM strong-PAST.CON and   mind-NOM sound-PAST.CON person

'the person who has a strong body and a sound mind'

b.   karada-ga zyoobu-na   (sosite) kokoro-ga kenzen-na   hito

body-NOM strong-PAST.ADN and   mind-NOM sound-PAST.ADN person

The conclusive version in (13a) is unacceptable, while the ad-nominal one in (13b) sounds perfect.   Thus, noun-modifying clauses provide an ideal vehicle for an examination of the predicate coordination construction in terms of T and *Ga/No* Conversion.

3.   Right Node Raising/Gapping and *Ga/No* Conversion

I will show in this section that the interaction of *Ga/No* Conversion and the predicate coordination construction yields intriguing evidence against TP analyses of sentences like (3).

To begin, let us observe that Japanese has an operation like Right Node Raising or Gapping, which produces a coordination sentence whose left conjunct lacks the elements possessed by the right conjunct (Ross 1967, Kuno 1978, Saito 1987, Abe & Hoshi 1997):

(14)   a.   Taroo-ga   ~~Ziroo-ni   kooen-de at-ta~~   (sosite) Saburoo-ga

Taroo-NOM Ziroo-DAT park-in   meet-PAST and   Saburoo-NOM

[Ziroo-ni   kooen-de at-ta].

Ziroo-DAT park-at   meet-PAST

'Taroo and Saburoo met Ziroo in the park.'

b.   Taroo-ga   Ziroo-ni   ~~kooen-de at-ta~~   (sosite) Ziroo-ga

Taroo-NOM Ziroo-DAT park-in   meet-PAST and   Ziroo-NOM

Saburoo-ni [kooen-de at-ta].

Saburoo-DAT park-in   meet-PAST

'Taroo met Ziroo and Ziroo (met) Saburoo, in the park.'

c. Taroo-ga Ziroo-ni kooen-de ~~at-ta~~ (sosite) Ziroo-ga

Taroo-NOM Ziroo-DAT park-in meet-PAST and Ziroo-NOM

Saburoo-ni gakkoo-de [at-ta].

Saburoo-DAT school-at meet-PAST

'Taroo met Ziroo in the park and Ziroo (met) Saburoo at the school.'

In (14a), the shared part consists of the dative object, the locative adjunct, the lexical verb, and the tense marker (bracketing indicates the common elements). The shared elements in (14b) are the sequence of adjunct-verb-T; the lexical verb and T are the targets of the operation in (14c). By extension, we could argue that (15), where the nominative subject occurs in the left conjunct with no tense marker, is derived by affecting the tense element originally generated there:

(15) Taroo-ga Ziroo-ni kooen-de ai ~~ta~~ (sosite) Ziroo-ga Saburoo-ni

Taroo-NOM Ziroo-DAT park-in meet-PAST and Ziroo-NOM Saburoo-DAT

gakkoo-de at[-ta].

school-at meet-PAST

'Taroo met Ziroo in the park and Ziroo (did) meet Saburoo at the school.'

The same analysis applies to (3). We apparently lose the argument for EPP effects under TP, since projecting the left conjuncts up to TP becomes an option in this analysis.

We may now evaluate this type of TP theory in terms of *Ga/No* Conversion. I intend to show that (15) is not produced by the mechanism that derives the sentences in (14). First, let us ensure that *Ga/No* Conversion applies to both the conjuncts of examples like (12), where full-fledged tensed clauses constitute a coordination structure:

(16) a. [Taroo-ga/-no Ziroo-ni kooen-de at-ta] (sosite)

Taroo-NOM/-POSS Ziroo-DAT park-at meet-PAST.ADN and

[Ziroo-ga/-no Saburoo-ni gakkoo-de at-ta] riyuuu

Ziroo-NOM/-POSS Saburoo-DAT school-at meet-PAST.ADN reason

'the reason that Taroo met Ziroo at the park and Ziroo met Saburoo at the school'

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b. [Taroo-ga/-no   Ziroo-ni itumo sinsetu-na]   (sosite)

   Taroo-NOM/-POSS Ziroo-to always kind-PAST.PRES   and

   [Ziroo-ga/-no   Saburoo-ni tokidoki   sinsetu-na]   riyuu

   Ziroo-NOM/-POSS Saburoo-to sometimes kind-PRES.ADN reason

   'the reason that Taroo is always kind to Ziroo and Ziroo is sometimes

   kind to Saburoo'

This is never a matter of surprise, because both conjuncts have ad-nominal tense morphemes in them, a prerequisite for the conversion.

     Notice that all the sentences in (14), when functioning as noun-modifying clauses, allow the application of *Ga/No* Conversion, suggesting that the account given above is fundamentally correct: the tense elements are contained in the left conjuncts at a certain level of derivation:

(17) a. Taroo-ga/-no   (sosite) Saburoo-ga/-no   [Ziroo-ni

       Taroo-NOM/-POSS and   Saburoo- NOM/-POSS [Ziroo-DAT

       kooen-de at-ta]   riyuu

       park-in   meet-PAST.ADN reason

       'the reason that Taro and Saburoo met Ziroo in the park'

    b. Taroo-ga/-no   Ziroo-ni (sosite) Ziroo-ga/-no   Saburoo-ni

       Taroo-NOM/-POSS Ziroo-DAT and   Ziro-NOM/-POSS Saburoo-DAT

       [kooen-de at-ta]   riyuu

       park-in   meet-PAST.ADN reason

       'the reason that Taroo met Ziroo and Ziroo (met) Saburoo, in the park'

    c. Taroo-ga/-no   Ziroo-ni kooen-de (sosite) Ziroo-ga/-no

       Taroo-NOM/-POSS Ziroo-DAT park-in   and   Ziroo-NOM/-POSS

       Saburoo-ni   gakkoo-de [at-ta]   riyuu

       Saburoo-DAT school-at   meet-PAST.ADN reason

       'the reason that Taroo met Ziroo in the park and Ziroo (met) Saburoo at

       the school'

If the same operation were responsible for the derivation of (15), the conversion could be possible in this example as well, which it clearly is not:

(18) Taroo-ga/*-no   Ziroo-ni   kooen-de ai   (sosite) Ziroo-ga/-no

Taroo-NOM/-POSS Ziroo-DAT park-in   meet and   Ziroo-NOM/-POSS

Saburoo-ni   gakkoo-de at[-ta]   riyuu

Saburoo-DAT school-at   meet-PAST.ADN reason

'the reason that Taroo met Ziroo in the park and Ziroo (did) meet Saburoo at the school'

(18) is crucial in our discussion.   The subject in the left conjunct in (18) should necessarily be nominative, and the possessive version is patently inappropriate. See additional examples of the same kind of process:[5]

(19) a.   Taroo-ga/*-no   manabi (sosite) Ziroo -ga/-no

Taroo-NOM/-POSS learn   and   Ziroo-NOM/-POSS

asob-u/ason-da   kyoositu

play-PRES.ADN/play-PAST.ADN classroom

'the classroom where Taroo learns/leant and Ziroo plays/played'

b.   Taroo-ga/*-no   Koobe-e iki   (sosite) Ziroo-ga/-no   Kyooto-e

Taroo-NOM/-POSS Koobe-to go   and   Ziroo- NOM/-POSS Kyooto-to

ik-u/it-ta   riyuu

go-PRES.ADN/go-PAST.ADN reason

'the reason that Taroo goes/went to Koobe and Ziroo goes/went to Kyooto'

c.   karada-ga/??-no zyoobude (sosite) kokoro-ga/-no   kenzen-na

body-NOM/-POSS strong   and   mind-NOM/-POSS sound-PAST.ADN

hito

person

'the person who has a strong body and a sound mind'

This indicates that (15) and (14) cannot be analyzed analogously, and the fact that *Ga/No* Conversion is impossible in (15) strongly suggests that no tense element is involved in the left conjunct of (15) at any stage of derivation.   The deviance of the possessive variants of (18) and (19) is intuitively attributable to the fact that no tense marker is found in the left conjuncts, though its theoretical articulation is not as easy

as appearances suggest, as we will discover.

4.   A null T that licenses *Ga/No* Conversion

Another possible TP theory that is potentially compatible with (3) is that a phonetically null T is generated in the left conjunct, as illustrated in (5).   In fact, the existence of such a null category can be assumed for a subordinate construction in terms of *sidai* 'the moment'.   As Shibatani & Kageyama (1988) point out, the complement clause of *sidai* can contain a nominative subject, but no tense element is allowed to occur within it:

(20)   a.   [[Taroo-ga   gakkoo-e iki] sidai]   denwa   site kudasai.

          Taroo-NOM school-to go moment telephone do please

          'Please call me the moment Taroo goes to school.'

        b.   *[[Taroo-ga   gakkoo-e ik-u/it-ta]   sidai]   denwa   site kudasai.

              Taroo-NOM school-to go-PRES/go-PAST moment telephone do   please

Sidai is a complementizer presumably originating from a noun and means, roughly, 'as soon as'; it functions rather like 'the moment' in English, as a subordinate conjunction (as indicated in the translation).   The tense morphemes are excluded in its complement clause in (20b), while a nominative subject is licensed without them in (20a).   In contrast, the complementizers *mae* 'before' and *ato* 'after', also derived from nouns, take complement clauses ending with ad-nominally inflected tensed predicates:

(21)   a.   [[Taroo-ga/-no   gakkoo-e ik-u]   mae] zisin-ga

              Taroo-NOM/-POSS school-to go-PRES.ADN before earthquake-NOM

              at-ta.

              be-PAST

          'There was an earthquake before Taroo went to school.'

        b.   [[Taroo-ga/-no   gakkoo-e it-ta   ato] zisin-ga   at-ta

              Taroo-NOM/-POSS school-to go-PAST.ADN after earthquake-NOM be-PAST

          'There was an earthquake after Taroo went to school.'

Ga/No Conversion is applicable here, as is shown.   A possible (but not necessarily

conclusive) analysis of (20a) is, therefore, to assume that a phonetically null tense element is generated in T in the subordinate clause of *sidai*; the construction can be schematized as in (22).

(22)　　[TP subject…V [T e]] sidai

There is thus some plausibility to the argument that a null T of this kind heads the left conjuncts in (3), in which case the argument for EPP effects under TP based on the examples would lose credibility.

　　　Ga/No Conversion is once again instructive in evaluating this version of TP theory.　The operation applies, somewhat surprisingly, to a sentence like (20a), indicating that an empty T inflected for ad-nominal is in fact involved in the subordinate clause:

(23)　a.　[[TP Taroo-ga/-no　　gakkoo-e iki [T e]] sidai]　denwa　　site kudasai.

　　　　　　Taroo-NOM/-POSS school-to go　　　moment telephone do　please

　　　　　'Please call me the moment Taroo goes to school.'

　　　b.　[[TP Taroo-ga/-no　　ie-ni　　kaeri [T e]] sidai]　denwa　　site

　　　　　　Taroo-NOM/-POSS home-to back　　　moment telephone do

　　　　　kudasai.

　　　　　please

　　　　　'Please call me the moment Taroo comes back home.'

Here we have a case of null T in the ad-nominal form that triggers *Ga/No* Conversion.　It follows that such an empty T is not contained in the left conjuncts in (3), (18), and (19), simply because the conversion is not applicable there. Observe an additional example below:

(24)　[Taroo-ga/*-no　gakkoo-e iki] sosite [Ziroo-ga/-no　　kooen-e it] ta

　　　　Taroo-NOM/-POSS school-to go　and　　Ziroo- NOM/-POSS park-to　go PAST

　　　　riyuu

　　　　reason

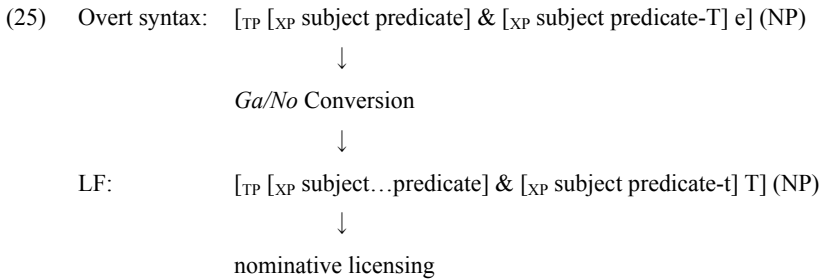　　　　'the reason that Taroo went to the school and Ziroo went to the park'

The conversion is excluded in the left conjunct in (24), indicating that no null tense element analogous to the one in (23) occurs in the left conjuncts in (24).

Thus far, we have seen that the predicate coordination construction, as exemplified in (3), (18), (19), and (24), cannot be produced by dislocating or deleting the base-generated tense elements in the left conjuncts. It is also quite improbable, as shown above, that the left conjuncts are headed by a phonetically null tense element that could project them up to TP. The only remaining plausible TP analysis of (3), (18), (19), and (24) is that the left conjuncts contain a phonetically null T that is distinct from the one in the complement of *sidai* in its inability to license *Ga/No* Conversion. This analysis, though compatible with the data, is not very appealing from the viewpoint of language acquisition. How can a learner know that there are two different kinds of null T in a given language, one that can license *Ga/No* Conversion and another that cannot? These considerations lead us to conclude that no tense element is involved in the left conjuncts in (3), (18), (19), and (24) and that EPP effects manifest themselves within projections smaller than TP in (3).
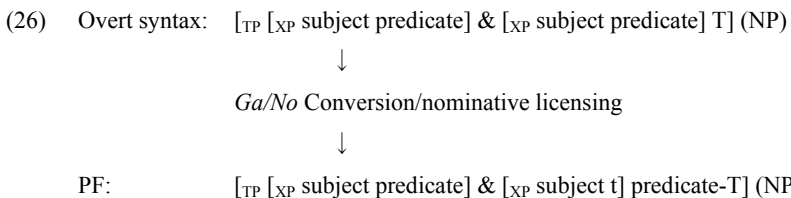
5. Case licensing

As suggested, it is not easy to account for the reason why *Ga/No* Conversion is excluded in the left conjunct in a predicate coordination structure. The intuitive idea to be sharpened is, needless to say, that the left conjunct lack a tense morpheme. Two factors complicate this picture: nominative Case is licensed in the left conjunct, and the conversion is possible in the right conjunct (I have asserted this fact only implicitly for ease of exposition, but it is illustrated in the examples). The facts are somewhat contradictory: the former posits that T is outside the coordination structure, so that T checks/licenses nominative Case in both the conjuncts Across-the-Board; contrariwise, the latter suggests that the tense element is completely embedded in the right conjunct, rejecting the access from the left conjunct for conversion.

There are two ways to resolve this problem. One is to assume that a tense morpheme is amalgamated with a lexical predicate in the lexicon, putting the amalgam into a relevant slot in the right conjunct[6]:

(25) Overt syntax: [$_{TP}$ [$_{XP}$ subject predicate] & [$_{XP}$ subject predicate-T] e] (NP)

$\downarrow$

Ga/No Conversion

$\downarrow$

LF: [$_{TP}$ [$_{XP}$ subject…predicate] & [$_{XP}$ subject predicate-t] T] (NP)

$\downarrow$

nominative licensing

If *Ga/No* Conversion applies at this stage of derivation (i.e., in overt syntax), we can explain the asymmetry of its applicability between the conjuncts, because the tense element is exclusively contained in the right conjunct. T could be later excorporated from the amalgam at LF in the spirit of Kitagawa (1986), and Across-the-Board nominative licensing is performed there.

Alternatively, following Fukui & Sakai (2003) and Takano (2004), we can claim that T stands outside the coordination construction of this type in overt syntax, wherein non-Across-the-Board Merger relates the right predicate and T at PF:

(26) Overt syntax: [$_{TP}$ [$_{XP}$ subject predicate] & [$_{XP}$ subject predicate] T] (NP)

$\downarrow$

Ga/No Conversion/nominative licensing

$\downarrow$

PF: [$_{TP}$ [$_{XP}$ subject predicate] & [$_{XP}$ subject t] predicate-T] (NP)

In this analysis, the asymmetry of conversion calls for special treatment, while nominative licensing is properly taken care of by T in an Across-the-Board format, because the conjuncts are in the same structural configuration in relation to T.

I would like to purse the latter possibility, namely the analysis exemplified in (26), as the paradigm under discussion is very much consistent with the typological generalization made in Johannessen (1998).[7] Johannessen examines a large number of languages for unbalanced coordination (i.e., conjuncts in a coordination structure showing asymmetrical properties). She finds that there is a surprisingly consistent typological tendency among them. When the basic word order is O-V in a given language, the first conjunct shows deviant properties that cannot be detected

in the second conjunct. The pattern of *Ga/No* Conversion we have seen fits this generalization neatly: the basic word order in Japanese is O-V, and the first (left) conjunct does not show the conversion.   In a language with the opposite basic word order, such as English, the second conjunct can be deviant.   A candidate for the realization of this pattern in English (taken from Niinuma & Park 2003:149-150) would be:

(27) a. There was [a man in the bathroom and a cat in the kitchen].

  b. *There were [a man in the bathroom and two cats in the kitchen].

  c. There was [a man in the bathroom and two cats in the kitchen].

  d. *There were [a man in the bathroom and a cat in the kitchen].

The paradigm in (27) shows that only the first conjunct agrees with the copula in number and that the second (right) conjunct is blind to inflections on the copula. Of the 25 languages Johannessen examines, 24 follow this pattern, a number sufficient to suggest that this phenomenon is prevalent and to give credibility to the view that *Ga/No* Conversion is an instantiation of this general tendency.

Incidentally, morphological/phonological consistencies between predicates and T also support this approach.   In a coordination configuration like (28), it is the second predicate, not the first, that inflects with (or makes morphological/phonological adjustments to) the following tense morphemes:

(28) […predicate] & […predicate] T

When the tense is present, the second predicate is realized as a bare stem with no inflectional morphology, while the first predicate is inflected as adverbial (which is supposedly required by the following coordination conjunction *sosite* 'and'):

(29) […hasiri] sosite […hasir] u

    run.ADV and   run   PRES

Before the past tense, the adverbial form appears on the right predicate, as well as on the left one, yet the situation is complicated by morphological subcategories of verbs. In the case of vowel-ending verbs, the morphological realizations of both the conjuncts become identical:

(30) […ake]   sosite […ake]   ta

open.ADV and   open.ADV PAST

Consonant-ending verbs show roughly three varieties of euphony in the right conjunct, however, depending on the word-final consonants involved:

(31)   a.   […hasiri] sosite […hasit]   ta

run.ADV and   run.ADV.EU PAST

b.   […tobi]   sosite […ton]   da

fly.ADV and   fly.ADV.EU PAST

c.   […naki]   sosite […nai]   ta

cry.ADV and   cry.ADV.EU PAST

The final consonants in the right predicates in (31a-b) change from *r* and *b* to *t* and *n*, with the deletion of the adverbial marker *i*, while the stem-final *k* drops in (31c). The precise formulation of the euphony is much more complicated, but it suffices for our present purpose to note that morphological/phonological modifications are made only in the right conjuncts.[8]

We must conclude that the first predicate is not morphologically restricted by T, always assuming the adverbial form, while the second predicate consistently makes morphological/phonological adjustments in accordance with T.[9] Hiraiwa (2002) claims that a head amalgam of (C)-T-V, formed by Agree, licenses *Ga/No* Conversion. [10]   By interpreting the morphological/phonological consistency between the second predicate and T as the realization of Agree in the sense of Hiraiwa, we can illustrate the whole state of affairs as in (32):

(32) [nominative/*possessive…predicate] & [nominative/possessive…predicate-AGR] T-AGR

We may now account for the asymmetry.   The left conjunct, being devoid of AGR, cannot make access to T, the ultimate licenser of *Ga/No* Conversion, rendering the operation impermissible there.   The right conjunct, on the other hand, can see the morphology on T through AGR on the predicate, resulting in the proper licensing of *Ga/No* Conversion.

As for the nominative Case in the left conjunct, we have only to say that T, independently of the realization of AGR, can check/license nominative Case on the

subjects in both the conjuncts in an Across-the-Board way, just as the lexical verb in (33) can check/license accusative on the embedded subjects in English:

(33)   I believe [him to be sincere and her to be smart].

In this explanation, therefore, possessive is more restricted than nominative, as not only T but also V need to inflect for its licensing.   This is basically an extension of the analysis given by Hiraiwa (2002), whereby the asymmetry of *Ga/No* Conversion in coordination is taken to be a piece of supporting evidence for it.

6.   Concluding remarks

Tenseless projections containing nominative subjects can be conjoined in Japanese. EPP effects are also found in those tenseless conjuncts, suggesting that the EPP is not a property peculiar to TP but a more general requirement.   A possible objection to the claim is that tense elements, originally contained in those seemingly tenseless clauses, are later displaced or deleted.   One can also argue that a phonetically null element occupies the position of T in a tenseless conjunct.   In either case, TP projections are necessarily involved in tenseless conjuncts, and the EPP effects detected there could be attributed to TP.   In this article, I attempted to show that these TP theories of coordination are not tenable based on a restriction on *Ga/No* Conversion.   Japanese does have a syntactic operation that dislocates/deletes some elements in a (non-final) conjunct of a coordination structure, but the operation does not block *Ga/No* Conversion.   In tenseless (left) conjuncts the conversion is disallowed, however, indicating that they are not derived by the dislocation/deletion operation.   It is true that nominative subjects occur in the complement clause of *sidai* 'the moment', where tense-related elements are excluded.   Thus, we have reason to believe that Japanese has a phonetically null T that can license nominative Case.   The complement clause, however, allows *Ga/No* Conversion to apply within it, in contrast to tenseless left conjuncts, casting doubt on the null T approach to the coordination construction.

        The final section addressed why *Ga/No* Conversion is impossible in the left (first) conjunct of a predicate coordination structure.   The issue is complicated by

the fact that nominative is still licensed in the left conjunct and that the right (second) conjunct allows the conversion.　The key to the solution is the observation that only the predicate in the right conjunct shows an agreement-like property with T. Relying on Hiraiwa's (2002) contention that a (C)-T-V amalgam formed by Agree licenses *Ga/No* Conversion, I have claimed that the impossibility of *Ga/No* Conversion in the left conjunct is attributable to the lack of agreement on the left predicate.

　　　The overall conclusion is that not only TP but also some projection under it can be the target of the EPP requirement that Spec be filled by some element.　This conclusion has implications for the theory of syntax.　The EPP has not yet received any unanimously accepted and theoretically satisfactory explanation.　More generally, the reason why a lexical element has to be displaced at all has not been thoroughly addressed.　The issue of dislocation becomes particularly controversial in the framework with a mechanism like Move-F/Agree at its disposal, which can reasonably dispense with movement of full categories; Chomsky (1995:265) speculates that PF convergence might be responsible for this.　The core systems of language (syntactic devices) might be constructed to meet the conditions imposed by PF convergence, which is considered extraneous to the computational principles. The benefit of parsing and the separation of theme-rheme structures have been argued as possible conditions of that kind (Chomsky 1995:317).　Suppose that those PF convergence conditions are ignorant of syntactic structures, as seems quite plausible; the requirement could then be that one element should be salient in a given sentence.　The syntactic translation of the requirement would then be that Spec, XP be filled after theta-saturation in VP.[11]　It would then follow that TP, AgrP, or NegP is a potential candidate for XP in the requirement.　As long as one element is pronounced separately from the other cluster of words, the condition can be met. These are, of course, merely speculative, but the data presented in this article suggest that they deserve further exploration.

Notes

[1] Chomsky (2000) and subsequent works conducted within the same framework extend this notion to other categories, such as v and C.   A comprehensive survey of the theories and linguistic resources they intend to cover is found in Landau (2007).   We will confine our discussion to the traditional case of EPP.

[2] Dative subject structures, as in (i), are discussed in Kishimoto (2001) as cases where nominative-marked elements (i.e., nominative objects) stay within VP:

(i)   *Dare-ni   sono-uta-ga   uta-e-mo   si-na-i.

           anyone-DAT that-song-NOM sing-can-Q do-NEG-PRES

           'Anyone cannot sing that song.'

We note in (i) that the dative subject fails to be bound by the Q particle attached to the lexical verb, which suggests that it is the dative subject that occupies Spec,TP, with the nominative object remaining in VP.

[3] The same criticism applies to Takano (2004), who claims that the inflectional (tense) morpheme in Japanese resides in T in syntax based on coordination structures like (i):

           (i)   John-ga   sono ronbun-o [kopiisi fairusi] ta

                    John-NOM that paper-ACC copy   file   PAST

                    John copied and filed the paper.

In (i), the verbs *kopiisi* 'copy' and *fairusi* 'file' are conjoined under T, indicating that the past tense marker *ta* is outside the V-V structure.   Nevertheless, Right Node Raising or Gapping might be responsible for the derivation of (i).   Alternatively, one could argue that a null T follows the preceding verb and that its true structural analysis is (ii):

           (ii)   ...[kopiisi-e fairusi-ta]

[4] Refer to Hirata (2006a) for another attempt of this kind.   See also Hirata (2005), which shows that most of the empirical data alleged to be in favor of subject and verb raising to the TP area in Japanese can be embedded in tenseless predicate coordination structures.

[5] When predicates involved are adjectives or nominal-adjectives, as in (19c), the degradation of the possessive versions is not as serious as in the case of verbal predicates.   While I do not have a ready explanation for this, the possessive versions still sound worse than the nominative

ones.

6 An analysis of this kind is proposed by Fukushima (1999), who assumes that semantic operators in the right conjunct and an underspecified functor in the left conjunct conspire to yield a relevant interpretation for a predicate coordination structure.

7 The main point of this paper, that no tense-related element or projection is involved in coordination structures like (3), is not contingent on the choice. My claim remains valid, insofar as the exclusion of *Ga/No* Conversion in left conjuncts cannot be explained if we assume that TP is projected there.

8 See Shibatani (1990:234-235) for more details.

9 Note that it is impossible to maintain TP analyses by claiming that a phonetically null T, which requires adverbial endings on predicates, and which lacks the ability to license *Ga/No* Conversion, is contained in the left conjuncts. The predicates in complements of *sidai* 'the moment', though assuming adverbial inflections, can trigger the conversion, indicating that the null T of this kind does have such an ability:

(i)　　a.　[ressya-ga/-no　hasiri e] sidai…

　　　　　　train-NOM/-POSS run.ADV moment

　　　　　　'the moment the train runs…'

　　　　b.　[yo-ga/-no　　ake e]　sidai…

　　　　　　night-NOM/-POSS break.ADV moment

　　　　　　'the moment the day breaks…'

　　　　c.　[hikooki-ga/-no　tobi e] sidai…

　　　　　　plane-NOM/-POSS fly.ADV moment

　　　　　　'the moment the plane flies…'

　　　　d.　[Taroo-ga/-no　　naki e] sidai…

　　　　　　Taroo-NOM/-POSS cry.ADV moment

　　　　　　'the moment Taroo cries…'

10 This insight is finely elaborated in his later work (Hiraiwa 2005). Unfortunately for us, however, he drops V from (C-)T-V amalgams in accounting for *Ga/No* Conversion. Hence, we follow Hiraiwa's (2002) analysis here.

11 Analogous reasoning is found in Landau (2007:519-520). See Kiss (2002) as well in this regard, who argues that the EPP is understood to be the requirement that sentences realize a predication relation.

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