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On the Locus of Tense

Abstract
In this study, I provide an argument in favor of Chomsky's (2021) claim that tense is a feature of v, not of INFL. First, I show that the Japanese Gapping construction (JGC) can involve the coordination that I call "continuative form coordination (CFC)," as well as another type of coordination, referred to as "finite form coordination (FFC)." I argue then that what are conjoined in CFC are constituents smaller than IP. And finally, I argue that the view that tense is a feature of v receives support from a contrast between the JGC and its non-elliptical counterpart with CFC with respect to whether the non-final conjuncts can contain a temporal adverb that is incompatible with the tense indicated by the sentence-final verb.
On the Locus of Tense
Takaomi Kato*

1. Introduction

In the generative syntax literature, it has been widely assumed that the tense of a clause is featurally represented on the functional head INFL (or its variant T). However, Chomsky (2021) has recently claimed that tense is a feature of \(v\), not of INFL. In this study, I provide an argument in favor of this claim, based on observations concerning gapping constructions and certain types of coordination in Japanese.

The remainder of this paper is organized as follows: Section 2 shows that the Japanese gapping construction (JGC) can involve the coordination that I call “continuative form coordination” (CFC), as well as another type of coordination, referred to as “finite form coordination” (FFC). Section 3 argues that what is conjoined in CFC are constituents smaller than IP. Section 4 argues that the view that tense is a feature of \(v\) receives support from a contrast between the JGC and its non-elliptical counterpart CFC with respect to whether the non-final conjuncts can contain a temporal adverb that is incompatible with the tense indicated by the sentence-final verb. Section 5 concludes the paper.

2. Japanese Gapping Constructions

(1) is an example of so-called gapping (or Right Node Raising) in Japanese.

(1) Ken-ga ringo-o tabe-ta (sosite) Mari-ga banana-o tabe-ta.
Ken-NOM apple-ACC eat-PST and Mari-NOM banana-ACC eat-PST
‘Ken ate an apple and Mari ate a banana.’

I will refer to the coordination where the conjunct-final verb in the non-final conjuncts appears in an \(X\) form if it is not elided as “\(X\) form coordination.” Thus, the types of coordination involved in (2a-c) will be referred to as “finite form coordination (FFC),” “gerundive form coordination (GFC),” and “continuative form coordination (CFC),” respectively.

That the JGC can involve FFC is shown by the following examples:

Ken-NOM apple-ACC eat-PST and Mari-NOM banana-ACC eat-PST
Ken-NOM apple-ACC eat-TE and Mari-NOM banana-ACC eat-PST
Ken-NOM apple-ACC eat and Mari-NOM banana-ACC eat-PST

I would like to thank the audience at the 46th Penn Linguistics Conference for their questions and comments.
As illustrated in (3a), the JGC can contain the disjunctive coordinator *matawa*. This fact would be mysterious if the JGC could not involve FFC because, among the three types of coordination seen above, only FFC is acceptable with *matawa*, as shown in (3b).

While the data in (3) indicate that the JGC can involve FFC, there is evidence showing that it can also involve CFC. Consider the following example:

(4) Tīgau  zyosei-ga  Ken-ni  hon-o  (sosite)  Mari-ni  pen-o  
  different  woman-NOM  Ken-DAT  book-ACC  and  Mari-DAT  pen-ACC  
ge-age-ta.  
give-PST  
‘Different women gave a book to Ken and gave a pen to Mari.’

This example, where Gapping occurs, allows a sentence-internal reading of *tīgau* ‘different’, under which what are compared are the woman who gave a book to Ken and the woman who gave a pen to Mari, not the woman who gave things to Ken and Mari and the woman who has already been contextually defined (cf. Carlson 1987). Crucially, among the three alleged non-elliptical counterparts to (4), only the one with CFC is as acceptable as (4) under the sentence-internal reading of *tīgau*, as shown in (5), where *tīgau* is intended to be interpreted sentence-internally (cf. Takano 2004).

(5) Tīgau  zyosei-ga  Ken-ni  hon-o  *age-ta/?age-te/age  (sosite)  
  different  woman-NOM  Ken-DAT  book-ACC  give-PST/give-TE/give  and  
  Mari-ni  pen-o  age-ta.  
  Mari-DAT  pen-ACC  give-PST

The examples in (6), where *onazi* ‘same’ is intended to be interpreted sentence-internally, make the same point; however, in these examples, the contrast between the JGC and the structure with CFC on the one hand and the structure with GFC on the other seems to be clearer (note that a clause that ends with the gerundive (or -te) form of a verb can function as a reason adjunct; note also that under the intended reading, what are compared are the man who proposed to the speaker’s elder sister and the man who proposed to his younger sister, not the man who proposed to the speaker’s sisters and the man who has already been contextually defined).

(6)  a. [Onazi  siriai-ga  kinoo  ane-ni  (sosite)  kyoo  
  same  acquaintance-NOM  yesterday  elder.sister-to  and  today  
  imooto-ni  puropoozusi-te],  watasi-wa  odoroi-ta.  
  younger.sister-to  propose-TE  I-TOP  be.surprised-PST  
‘Because one and the same acquaintance of mine proposed to my elder sister yesterday and proposed to my younger sister today, I was surprised.’

b. [Onazi  siriai-ga  kinoo  ane-ni  
  same  acquaintance-NOM  yesterday  elder.sister-to  
  *puropoozusi-ta/*puropoozusi-te/puropoozusi  (sosite)  kyoo  imooto-ni  
  propose-PST/propose-TE/propose  and  today  younger.sister-to  
  puropoozusi-te],  watasi-wa  odoroi-ta.  
  propose-TE  I-TOP  be.surprised-PST

3. The Size of CFC

Since the conjunct-final verb in non-final conjuncts is not inflected in CFC, it seems quite plausible to assume that what are conjoined in this type of coordination are constituents smaller than IP, which I take to be vPs here merely for the sake of discussion (cf. Takano 2004, Kato 2006, Hirata 2011). Under this assumption (and the assumption that the subject does not have to raise to SpecIP in Japanese (cf., e.g., Fukui 1986, Kuroda 1988)), (2c), repeated below, has a structure as in (7).
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(2c) Ken-ga ringo-o tabe (sosite) Mari-ga banana-o tabe-ta.
Ken-NOM apple-ACC eat and Mari-NOM banana-ACC eat-PST
‘Ken ate an apple and Mari ate a banana.’

(7) [IP [vP Ken-ga ringo-o tabe] (sosite) [vP Mari-ga banana-o tabe]] [INFL -ta]]

The tense suffix -ta, which occupies the head of IP, attaches to the adjacent verb in the phonological component, which is why only the verb in the second conjunct is inflected in (2c) (cf. Takano 2004).

One might claim that CFC is an instance of IP (or larger) coordination, by assuming that the non-final conjuncts contain a null tense morpheme, as shown in (8) (ϕ = null tense morpheme; cf. Tomioka 1993, Mihara 1997).

(8) [IP [IP Ken-ga ringo-o tabe ϕ] (sosite) [IP Mari-ga banana-o tabe -ta]]

However, there is reason to believe that the IP coordination analysis of CFC is not plausible (the following discussion is adapted from Kato 2006; for further discussions on the size of CFC, see Kato 2006 and Hirata 2011). Consider (9).

(9) Ken-ga ringo-o tabe-masi-ta.
Ken-NOM apple-ACC eat-FORMAL-PST
‘Ken ate an apple.’

As illustrated by this example, the formal speech level suffix -mas appears between a verbal stem and a tense morpheme. Since Japanese is a head-final language, this fact suggests that -mas occupies a head position lower than INFL. Thus, the IP coordination analysis of CFC predicts that this suffix can appear in the conjuncts of a CFC. However, this is contrary to fact, as shown by the unacceptability of (10) (note that tabe-masi is a continuative form).

(10) *Ken-ga ringo-o tabe-masi (sosite) Mari-ga kooihii-o
Ken-NOM apple-ACC eat-FORMAL and Mari-NOM coffee-ACC
nomi-masi-ta.
drink-FORMAL-PST
‘Ken ate an apple and Mari drank coffee.’

In contrast, the ill-formedness of this example can be explained under the vP coordination analysis of CFC by assuming that the position occupied by -mas is outside of vP. Note that the vP coordination analysis, combined with the assumption that -mas occupies a vP-external position, predicts that the appearance of this suffix outside of a CFC does not cause a problem. That this prediction is borne out is shown by the well-formedness of (11), which has a structure as in (12) under the assumptions adopted here.

Ken-NOM apple-ACC eat and Mari-NOM coffee-ACC drink-FORMAL-PST
‘Ken ate an apple and Mari drank coffee.’

(12) [IP [masϕ [vP [IP Ken-ga ringo-o tabe] (sosite) [vP Mari-ga kooihii-o nomi]] -masi] -ta]

4. The Locus of Tense

As observed by Mihara (1997), the non-final conjuncts in the JGC cannot contain a past time adverb when the sentence ends with a verb in a nonpast tense form. Consider the following example:

(13) *Ken-ga kinoo ringo-o ___ (sosite) Mari-ga asu
Ken-NOM yesterday apple-ACC and Mari-NOM tomorrow
banana-o tabe-ru.
banana-ACC eat-NPST
‘Ken ate an apple yesterday and Mari will eat a banana tomorrow.’
As revealed by the discussion in Section 2, this example may involve FFC as in (14a) or CFC as in (14b) (strike-through indicates ellipsis).

(14) a. *Ken-ga kinoo ringo-o be-ru (sosite) Mari-ga asu
    Ken-NOM yesterday apple-ACC eat-NPST and Mari-NOM tomorrow
    banana-o be-ru.
    banana-ACC eat-NPST

b. *Ken-ga kinoo ringo-o be (sosite) Mari-ga asu banana-o
    Ken-NOM yesterday apple-ACC eat and Mari-NOM tomorrow banana-ACC
    be-ru.
    eat-NPST

The variant of (13) in (14a) is not problematic, because its non-elliptical counterpart in (15) is also unacceptable.

(15) *Ken-ga kinoo ringo-o be-ru (sosite) Mari-ga asu
    Ken-NOM yesterday apple-ACC eat-NPST and Mari-NOM tomorrow
    banana-o be-ru.
    banana-ACC eat-NPST
    ‘Ken will eat an apple yesterday and Mari will eat a banana tomorrow.’

In contrast, (14b) gives rise to a potential problem because its non-elliptical counterpart in (16) is acceptable (cf. Tomioka 1993, Mihara 1997, Lee and Tonhauser 2010).

(16) Ken-ga kinoo ringo-o be (sosite) Mari-ga asu
    Ken-NOM yesterday apple-ACC eat and Mari-NOM tomorrow
    banana-o be-ru.
    banana-ACC eat-NPST
    ‘Ken ate an apple yesterday and Mari will eat a banana tomorrow.’

Why is it that the gapping construction in (14b) is ruled out although its non-elliptical counterpart in (16) is well-formed? Note that since CFC is an instance of vP coordination, the structure of (14b) is as in (17).

(17) [p [v [p Ken-ga kinoo ringo-o be] (sosite) [v Mari-ga asu banana-o be]] [INFL -ru]]

Suppose, following Chomsky (2021), that tense is a feature of v, rather than of INFL. Then the ill-formedness of (14b) can be attributed to a violation of the identity condition on ellipsis by assuming, for Japanese, that V raises to v to form a complex head and that this complex head is realized as a verbal root (which can be used as a continuative form as it is or with the addition of -i to its end depending on whether it ends with a vowel or a consonant). This is because, under the

1. A contrast parallel to the one between (13) and (16) is found in the following examples, where the non-final conjunct contains a future time adverb and the sentence-final verb takes a past tense form (for the observation that the non-final conjuncts of a CFC (and those of a GFC) can have a nonpast tense interpretation when the sentence-final verb takes a past tense form, see Lee and Tonhauser 2010):

       Ken-TOP tomorrow Tokyo-to and Mari-NOM yesterday Kyoto-to go-PST
       ‘Ken will go to Tokyo tomorrow and Mari went to Kyoto yesterday.’
      Ken-TOP tomorrow Tokyo-to go and Mari-TOP yesterday Kyoto-to go-PST

2. Note that under this assumption, the tense morpheme on INFL is not a realization of a tense feature.

3. For example, the continuative forms corresponding to the verbal roots *be ‘eat’ and nomi ‘drink’ are *be and nomi, respectively. I assume that the addition of -i to the root that ends with a consonant occurs in the phonological component to avoid the root-final closed syllable.
above assumptions, both the elided verb and its antecedent bear a tense feature in (14b), and these features must be distinct from each other, or one must be [+past] and the other [-past], due to the temporal adverbs in the conjuncts (cf. Mihara 1997).4,5

(18) [IP [IP Ken-ga kinoo ringo-o tabe[+past]] (sosite) Ken-NOM yesterday apple-ACC eat and [IP Mari-ga asu banana-o tabe[+past]] [INFL -ru]] Mari-NOM tomorrow banana-ACC eat -NPST

In contrast, it is not clear how we can deal with the ill-formedness of (14b) under the assumption that tense features are located on INFL (note that under this assumption the elided verb and its antecedent in (14b) are not distinct from each other, so that the ill-formedness of this example cannot be explained in terms of the identity requirement on ellipsis). Thus, I claim that the contrast between the JGC in (13) and its non-elliptical counterpart with CFC in (16) provides support for the view advanced by Chomsky (2021) that tense is a feature of v.6,7

5. Conclusion

In this study, I have provided an argument in favor of Chomsky’s (2021) claim that, contrary to what has long been assumed, tense is a feature of v, rather than of INFL. I have first shown that the JGC can involve CFC as well as FFC. I have then argued that the conjuncts of a CFC are smaller than IP. And finally, I have argued that the fact that the non-final conjuncts of a CFC can contain a temporal adverb, which is incompatible with the tense indicated by the sentence-final verb, whereas those in the JGC cannot, lends support to the view that tense is a feature of v.

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4 If the identity between tense features is semantic in nature, the explanation of the ill-formedness of (14b) proposed here is consistent with the observation noted by Mukai (2003) (which she attributes to Hajime Hoji) that Japanese gapping is subject to a semantic identity requirement.

5 Note that (i), which differs from (16) only in that the sentence-final verb takes a past tense form rather than a nonpast tense form, is unacceptable.


‘Ken ate an apple yesterday and Mari ate a banana tomorrow.’

To explain the contrast between (16) and (i), I assume that the tense suffix has no phonological content in syntax and its realization is determined in the phonological component in accordance with the tense feature of the verb to which it is attached.

6 Mihara (1997) also draws the conclusion from contrasts between examples as in (13) and (16) that the conjuncts of a CFC contain tense; however, he claims that the non-final conjuncts of a CFC contain a null tense morpheme (cf. (8)), not that v bears a tense feature, as argued here. It should also be noted that Mihara assumes, without any argument, that the JGC involves CFC.

7 One might claim that the acceptability of examples such as (16) suggests that vP contains tense because it shows that the conjuncts of a CFC, which are vPs, can have different tense interpretations. However, this claim does not seem to be plausible, because it seems to be possible to account for the acceptability of examples such as (16) even under the view that tense is on INFL. It is suggested in Munn 1999, 2000 that in coordinate structures in head-final languages, a non-final conjunct and a conjunction form a conjunction phrase (ConjP), and that this ConjP adjoins to the immediately following conjunct (see also Kasai and Takahashi 2001). Suppose that this is true at least for Japanese. Then, for example, a clause involving a binary CFC has a structure as in (i) (where vP1 is the first conjunct and vP2 is the second conjunct).

(i) ... [v [vP2 [ConjP [vP1 ... ] Conj] [vP2 ... ]] INFL] ...

Note that under the above assumption, a coordinate structure in Japanese is a projection of its final conjunct. Given this, it does not seem implausible to assume, under the view that tense is a feature of INFL, that among the conjuncts of a CFC, only the final conjunct is affected by the tense feature on INFL, and that the temporal interpretation of the other conjuncts is determined independently of the feature, for instance, by a temporal adverb (cf. Lee and Tonhauser 2010, Kang 2014).
References


