

Morphological Realization of Focus Head in Hakata Japanese

著者 (英)	Akiko Nagano
journal or publication title	Tsukuba English Studies
volume	35
page range	1-31
year	3016-10-31
URL	http://hdl.handle.net/2241/00158193

Morphological Realization of Focus Head in Hakata Japanese*

Akiko Nagano

1. Introduction

Information structure of a sentence is encoded in various ways. In Nagano (2014, 2015), I proposed that the sentence-final particles *bai* and *tai* in Hakata Japanese, a member of one of the major Japanese dialect groups called Hichiku dialect (Itoyo et al. (1983:7-8), Hirayama (1997:2-6)), are morphological expressions of topic and focus heads, respectively. In this paper, I would like to correct this proposal and present a revised hypothesis that *bai* is a morphological marker of information focus, whereas *tai* is a morphological marker of contrastive focus. Compared to Japanese focus markers called *toritateshi*, the two particles are interesting in realizing the head of Focus Phrase rather than marking its specifier.

Let me start with the following English-Japanese contrasts discussed by Hirose (2013, 2015) in his Three-Tier Model of Language Use:¹

- (1) *Today is Saturday.*
- (2) a. *Kyoo-wa doyoobi-da.*
 Today-TOP Saturday-COP
 ‘Today is Saturday.’
- b. *Kyoo-wa doyoobi-da-yo.*
 Today-TOP Saturday-COP-SFP
 ‘Today is Saturday (I tell you).’
- c. *Kyoo-wa doyoobi-desu.*
 Today-TOP Saturday-COP.POL
 ‘Today is Saturday.’ (polite form of (2a)) (Hirose (2013:3))

The English sentence in (1) can be uttered both as a situation-construal expression, a unit of thought, and as a situation-report expression, a unit of communication. In contrast, Tokyo Japanese formally distinguishes the two modes of utterance, using (2a) as a situation-construal expression and (2b, c) as situation-report expressions.

* I am grateful to my reviewers, Masatoshi Honda and Ryohei Naya, for their careful reading of my original manuscript and giving me valuable suggestions for improvement. Thanks also go to the questions and comments from the audience at Morphology-Lexicon Forum 2015, where a part of this study was presented. All remaining inadequacies are my own. This work is supported in part by JSPS KAKENHI Grant Numbers 16H03428 and 16K02754.

¹ Here, I list the glossing abbreviations used in this paper alphabetically. ACC: accusative, COMP: complementizer, COP: copula, DAT: dative, GEN: genitive, NEG: negative, NOM: nominative, PAST: past, POL: polite, PRES: present, Q: question, QUOT: quotative, REFL: reflexive clitic, SFP: sentence-final particle, SG: singular, STAT: stative, TOP: topic, 3: third person

Turning a situation-construal expression into a situation-report expression, the sentence-final particle *yo* in (2b) and the politeness form *desu* in (2c) are markers of Discourse Modality (D-Mod) (Nakau (1994:ch.4)).

The contrast between (1) and (2) is the one that has got me interested in the present topic in the first place because Hakata Japanese counterparts to (1) involve not *yo* but *bai* or *tai*, as in (3a) below, and crucially they can be used independently of the mode of utterance unless augmented by *desu*, as in (3b).

- (3) a. *Kyo-wa doyobi-{bai/tai}*. (cf. (2a, b))
 Today-TOP Saturday-SFP
 ‘Today is Saturday.’
- b. *Kyo-wa doyobi-desu-{bai/tai}*. (cf. (2c))
 Today-TOP Saturday-COP.POL-SFP
 ‘Today is Saturday.’ (polite form of (3a))

The braces in (3a, b) mean that *bai* and *tai* are used complementarily; they do not occur together (**tai-bai*, **bai-tai*). Whether in *bai* or *tai*, (3a) is used both as a situation-construal expression and as a situation-report expression; that is, it corresponds to both (2a) and (2b). Unlike *da* in (2a), *bai* and *tai* are not copulas; the Hakata Japanese copula is *ya*, which is often covert in present-tense (Kodama (2006)). However, they cannot be seen as D-Mod markers, either, because (3a) can be used as a situation-construal expression in soliloquy; and besides, (3b) has *desu* as the marker of D-Mod. Then, what is the status of *bai* and *tai*? This is the question I would like to address in this paper.

Discussion will proceed as follows. In the next section, I will examine three different approaches to the issue found in the literature, namely D-Mod approach, Force approach, and Topic/Focus approach, and propose to adapt the last one revising it as IFoc/CFoc approach. Section 3 will introduce Cruschina’s (2011) framework and propose three hypotheses on *bai* and *tai* that constitute the basis of IFoc/CFoc approach. Section 4 will develop it by elaborating on the paradigmatic relationship between *bai* and *tai*. Section 5 is a brief conclusion.

A word on dialect data is in order. I will use *bai/tai* sentences found in previous studies as much as possible, but when there is no appropriate data, I will resort to introspection as a native speaker. Cited without source information are my original data. I was raised in a family where all the members use Hakata Japanese in everyday conversation.

2. Three Approaches

The nature of *bai* and *tai* has been a big mystery in traditional historical-descriptive research, including studies on sentence-final particles (Fujiwara (1986)) and studies on Hichiku dialect (Iitoyo et al. (1983), Hirayama (1997)). Kanbe (1967), a paper targeted at *bai* and *tai* in Hichiku dialect, stresses that these particles constitute a hallmark of this dialect group, but does not reach a satisfactorily concrete conclusion about their nature that could be tested against empirical data. It is Sachiyo Tsubo-uchi's works (1995, 2001) that laid the groundwork for synchronic formal investigation of *bai* and *tai*. All recent studies, Hirakawa (2008), Kido (2013, 2014), and Nagano (2014, 2015), have benefitted from them, bringing to the fore three distinct falsifiable hypotheses: (i) *bai* and *tai* as D-Mod, (ii) *bai* and *tai* as Force, and (iii) *bai* as Topic and *tai* as Focus.

2.1. D-Mod Approach

Tsubo-uchi (1995) and Hirakawa (2008) make a painstaking semantico-pragmatic classification of *bai* and *tai* sentences and attempt to draw a generalization that can capture native speakers' automatic, unconscious choice between *bai* and *tai*.² Consider the sentences in (3a, b) again. As mentioned above, the two particles occur complementarily. (3a, b) are uttered with *bai* in some cases and with *tai* in other cases. In Hakata Japanese, one has to choose between them every time she utters these sentences. Thus, Tsubo-uchi and Hirakawa are quite right in considering that any hypothesis about *bai* and *tai* has to capture not only their grammatical nature but also their complementary distribution. To use Nakau's (1994) terminology, their hypotheses can be dubbed "D-Mod approach" because they argue that *bai* and *tai* are modality elements whose common function is encoding the speaker's communicating to her addressee information which is presumed to be new to the latter. *Tai* is used when the speaker is convinced of the correctness of the new information she is providing; otherwise, *bai* is used. For example, in this view, (3a, b) are uttered with *tai* when the speaker is convinced that it is Saturday, but if she does not have such a conviction and merely informs her addressee of the day of the week, *bai* is used.³

I have two objections to Tsubo-uchi's and Hirakawa's D-Mod approach, one conceptual and the other empirical. First, the factor of speaker's (in)conviction they incur in their distinction between *bai* and *tai* is conceptually unclear. It should be different from the speaker's attitude toward the truth of the proposition asserted,

² Of the two papers by Tsubo-uchi, I focus on her 1995 paper here because her 2001 paper, a renewed attempt to make sense of the semantics and pragmatics of *tai* sentences, does not discuss the distinction between *tai* and *bai*.

³ This is a summary of Tsubo-uchi's and Hirakawa's claims in my wording. In their original wording, *tai* differs from *bai* in requiring a speaker to refer to her memory or common sense to verify the information she is going to convey to her addressee.

or Nakau's (1994) S-Mod (Sentence-Modality), because both *bai* and *tai* can follow Hakata Japanese versions of epistemic markers such as *darō/desho* 'will' and *kamoshirenai* 'may, might' and evidential markers such as *rashii* 'it is said,' *yoda* 'it appears,' and *soda* 'it is said,' as follows:

- (4) a. *Kyo-wa doyobi-kamoshiren-{bai/tai}*.⁴
 Today-TOP Saturday-may-SFP
 'It may be Saturday today.'
- b. *Kyo-wa doyobi-gena-desu-{bai/tai}*.
 Today-TOP Saturday-HEARSAY-COP.POL-SFP
 'It is said that Today is Saturday.' (polite form)

In my view, what Tsubo-uchi and Hirakawa intend to capture by the speaker conviction factor is the fact that unlike *bai* sentences, *tai* sentences have a clear implication of *contrast*, presenting the speaker's choice or judgment as the correct one in contrast to the other choices on the table. This view will be elaborated on later.

The second and more serious problem with the D-Mod approach is that *bai* and *tai* sentences are used not only as situation-report expressions but also as situation-construal expressions, and there is no difference of markedness (or naturalness) between the two uses. As mentioned already, the sentences in (3a) and (4a), i.e. those without a politeness marker, can be used in soliloquy as naturally as the sentence in (2a).⁵ At the same time, the same sentences can be used in a dialogue with one's family or friend as naturally as the sentence in (2b). This fact strongly suggests that *bai* and *tai* are not D-Mod elements; (3a) and (4a) are similar to the sentence in (1) in being unspecified for the mode of utterance.

My view against *bai* and *tai* as D-Mod elements is confirmed by a test based on Hirose's (2013:7-9) discussion of reported-clause complementation. In Tokyo Japanese, mental-state verbs (e.g. *omou* 'think') and utterance verbs (e.g. *yu* 'say') both select a reported clause marked by the quotative particle *to*. Hirose observes that while utterance verbs can quote both D-Mod-level sentences (or situation-reports) and below-D-Mod sentences (or situation-construals), as shown in (5), mental-state verbs allow only the former type of quotation, as shown in (6). Notice that square-bracketed quotations contain the D-Mod marker *yo* or *desu*, while angled-bracketed quotations do not:

⁴ *Tai* in this sentence may be preceded by the reduced form of the nominal complementizer *to*, counterpart to the Tokyo Japanese *no* (see section 2.2.).

⁵ Discussing *bai* and *tai* in Kumamoto Japanese, Kodama (2006:85-86) also points out that they can be used with or without an addressee.

- (5) a. *Haruo-wa Akiko-ni <ame-da>-to itta.*
 Haruo-TOP Akiko-DAT rain-COP-QUOT said
 ‘Haruo said to Akiko that it was raining.’
- b. *Haruo-wa Akiko-ni [ame-da-yo]-to itta.*
 Haruo-TOP Akiko-DAT rain-COP-SFP-QUOT said
 ‘Haruo said to Akiko, “It is raining (I tell you).”’
- c. *Haruo-wa Akiko-ni [ame-desu]-to itta.*
 Haruo-TOP Akiko-DAT rain-COP.POL-QUOT said
 ‘Haruo said to Akiko (politely), “It is raining.”’
- (6) a. *Haruo-wa <ame-daroo>-to omotte-iru.*
 Haruo-TOP rain-will-QUOT think-STAT
 ‘Haruo thinks it will be raining.’
- b. **Haruo-wa [ame-da-yo]-to omotte-iru.*
 Haruo-TOP rain-COP-SFP-QUOT think-STAT
 ‘Haruo thinks “It is raining (I tell you).”’
- c. **Haruo-wa [ame-desu]-to omotte-iru.*
 Haruo-TOP rain-COP.POL-QUOT think-STAT
 ‘Haruo thinks (politely) “It is raining.”’
- (Hirose (2013:8); with bracket labels deleted for expositional purpose)

In Hakata Japanese, a reported clause is marked by the quotative particle *te*. Compare the sentences above with their Hakata Japanese counterparts given below.

- (7) a. *Haruo-na Akiko-i ame-{bai/tai}-te yuta.* (cf. (5a, b))
 Haruo-TOP Akiko-DAT rain-SFP-QUOT said
 ‘Haruo said to Akiko that it was raining.’
- b. *Haruo-na Akiko-i ame-desu-{bai/tai}-te yuta.* (cf. (5c))
 Haruo-TOP Akiko-DAT rain-COP.POL-SFP-QUOT said
 ‘Haruo said to Akiko (politely), “It is raining.”’
- (8) a. *Haruo-na ame-yaro-{bai/tai}-te omoiyo.* (cf. (6a))
 Haruo-TOP rain-will-SFP-QUOT think.STAT
 ‘Haruo thinks it will be raining.’
- b. *Haruo-na ame-{bai/tai}-te omoiyo.* (cf. (6b))
 Haruo-TOP rain-SFP-QUOT think.STAT
 ‘Haruo thinks that it is raining.’

- c. **Haruo-na ame-desu-{bai/tai}-te omoiyo.* (cf. (6c))
 Haruo-TOP rain-COP.POL-SFP-QUOT think.STAT
 ‘Haruo thinks that it is raining.’

Of crucial importance is the grammaticality difference between (8a, b) and (8c), which shows that *bai* and *tai* sentences can be quoted by a mental-state verb unless augmented by *desu*. Given Hirose’s discussion on Tokyo Japanese, this fact means that *bai* and *tai* are not D-Mod markers. Their presence is orthogonal to the distinction between situation-construal and situation-report modes of utterance.⁶

In conclusion, although Tsubo-uchi (1995) and Hirakawa (2008) offer important observations on the topic, their analysis of *bai* and *tai* as D-Mod elements as well as their hypothesis about the paradigmatic relationship between the two forms are problematic.

2.2. Force Approach

While the primary concerns of Tsubo-uchi (1995, 2001) and Hirakawa (2008) lie in the semantico-pragmatic classification of *bai/tai* sentences, Kido (2013) pays close attention to their syntax and proposes that *bai* and *tai* are declarative sentence-typers that correspond to the head of ForceP (Rizzi (1997), Saito (2011)).⁷ First, as the grammaticality contrast between (9) and (10) indicates, *bai* and *tai* occur at the periphery of a declarative sentence only; they cannot be used in the other sentence types, such as questions and imperatives.

- (9) a. *Kyudai-no iten-wa mo hajimatteiru-{bai/tai}.*
 Kyushu Univ-GEN relocation-TOP already begin.STAT-SFP
 ‘Relocation of Kyushu University has already begun.’
- b. *Igakubu-no aru byoin-chiku-wa itenshinai-{bai/tai}.*
 Medical school-NOM be hospital-area-TOP relocate.NEG-SFP
 ‘The hospital area and its medical school will not move.’

⁶ One may notice that the Hakata Japanese data in (3), (7), and (8) can be counterexamples to one of the four basic tenets of the Three-Tier Model of Language Use (Hirose (2013:4-6)). The model claims that “[i]n Japanese, a private-self centered language, the situation construal tier is normally independent of the situation report tier and the interpersonal relation tier [...]” (ibid.:5), but (3), (7), and (8) suggest that Hakata Japanese does not distinguish situation-report expressions from situation-construal expressions as long as they are directed to “politeness-free” addressees. One interpretation of this fact is that the private self of Hakata Japanese may not be the speaker herself but her private space, in which her family members and close friends are also included. The following discussion does not hinge on this issue.

⁷ In his 2014 paper, Kido takes an approach similar to the D-Mod approach.

- (10) a. **Kondo-no natsuyasumi-wa itsu fukuoka-ni*
 Next-GEN summer vacation-TOP when Fukuoka-DAT
kaettekuru-{\bai/tai}?
 come back-SFP
 ‘When will you come back to Fukuoka next summer?’
- b. **Hokusu-tte kyonen-wa yushoshita-{\bai/tai}?*
 Hawks-TOP last-year-TOP win.PAST the pennant-SFP
 ‘Did Hawks (a baseball team) win the pennant last year?’
- c. **Tonkotsu-ramen-nandakara benishoga*
 Poke.bone.broth-ramen-COP.so red.pickled.ginger
nosero-{\bai/tai}.
 put.IMP-SFP
 ‘It’s *tonkotsu* ramen. Put some red pickled ginger on it!’
 (Hirakawa (2008:119))

Next, Kido observes that in declarative sentences, *bai* and *tai* attach not only to a TP, as in (9), but also to a CP (FinP), as follows:

- (11) [ForeeP [FinP *Taro-ga mikan-ba tabeta-to*]-{\bai/tai}]
 Taro-NOM orange-ACC eat.PAST-COMP-SFP
 ‘It is that Taro ate the orange.’ (Kido (2013))

The FinP (Finiteness Phrase) head *to* is a counterpart of the Tokyo Japanese nominal complementizer *no* (Saito (2011:sec.3)), so this sentence is a *no-da* construction (*Taro-ga mikan-o tabeta-no-da*).

Also, Kido points out that *bai* and *tai* do not occur within embedded sentences except reported clauses such as (7) and (8). Below, (12a) and (12b) use the particles inside a nominal complement clause of a perception verb and a relative clause, respectively, resulting in ungrammaticality.

- (12) a. **[Taro-no nakiyo-{\bai/tai}-to]-no kikoeta-bai.*
 Taro-NOM cry.STAT-SFP-COMP-NOM hear.PAST-SFP
 (intended as) ‘I heard Taro crying.’
- b. **[Taro-ga san-nen-se-yatta-{\bai/tai}] toshi*
 Taro-NOM third-grade-er-COP.PAST-SFP year
 (intended as) ‘the year when Taro was a third grader’

Both of these sentences become grammatical once the clause-internal particles are

removed.

The syntactic observations above are consistent with Kido's analysis of *bai* and *tai* as the head of ForceP, which must have the value [declarative]. Since *bai* and *tai* are declarative Force heads, they cannot be used in non-declarative main-clause sentences or in non-reportive embedded clauses. They follow the Fin *to* because a FinP is selected by a ForceP in Rizzi's CP system. A question arises, however, concerning the paradigmatic relationship between *bai* and *tai*: How the declarative Force head could alternate between the two forms. It does not seem to exhibit any functional division that might motivate the formal alternation. Although Kido (2013:sec.3.6) discusses certain semantico-pragmatic distinction between the two forms, it is not clear how it is incorporated into his Force analysis.

In my view, Force analysis is not false but coarse; that is, ForceP is indeed involved, but it is not the only ingredient. An additional ingredient is necessary in order to explain the formal distinction between *bai* and *tai* and the concomitant interpretive difference in contrastiveness mentioned in section 2.1.

2.3. Topic/Focus Approach

In Nagano (2014, 2015), I proposed that *bai* and *tai* morphologically realize the heads of Top(ic)P and Foc(us)P, respectively. This proposal was based on my observation that the Tokyo Japanese property predication sentences in (13), under the readings of *Taro* indicated in the parentheses (Kuno (1973)), are translated into Hakata Japanese as in (14). The capitalization of the topic marker in (13c) and (14c) represents contrastive stress (Tomioka (2010)).

- (13) a. *Taro-wa gakusei-da.* (Taro: Topic)
 Taro-TOP student-COP
 'Taro is a student.'
- b. *Taro-ga gakusei-da.* (Taro: Exhaustive listing)
 Taro-NOM student-COP
 'Among the people under consideration, it is Taro who is a student.'
- c. *Taro-WA gakusei-da.* (Taro: Contrastive topic)
 Taro-TOP student-COP
 'At least Taro is a student.'
- (14) a. *Taro-na gakusei-{bai/tai}.* (Taro: Topic)
 Taro-TOP student-SFP.
 'Taro is a student.'

- b. *Taro-ga gakusei-tai.* (Taro: Exhaustive listing)
 Taro-NOM student-SFP.
 ‘Among the people under consideration, it is Taro who is a student.’
- c. *Taro-NA gakusei-tai.* (Taro: Contrastive topic)
 Taro-TOP student-SFP
 ‘At least Taro is a student.’ (Nagano (2015:135); partly corrected)

The sentences in (13a) and (14a) are parallel to the sentences in (2a) and (3a). The two pairs indicate that in the Topic+Comment reading, a property predication sentence can be terminated with either *bai* or *tai*. However, if *Taro* is focused, either as an exhaustively listed item ((13b) and (14b)) or as a contrastive topic ((13c) and (14c)), the same sentence should be terminated with *tai*. In my judgment, *bai* cannot be used in (14b) and (14c).⁸ This fact strongly suggests that *bai* and *tai* are information structure phenomena, morphological encoding of assertive information structure. I believe that Nagano’s (2014, 2015) contribution lies in having revealed this point for the first time in the *bai/tai* research.

The observation above is valid, but I was wrong in its analysis. Using Rizzi’s (1997) framework, which incorporates information structure into syntactic structure in the manner indicated below (for head-first languages), I hypothesized that *tai* is the head of Foc(us)P, while *bai* is the head of Top(ic)P.

- (15) [ForceP ... [TopP ... [FocP ... ([TopP) ... [FinP ... [TP ...]](I)]]]

There are two serious problems with this analysis. First, it cannot explain the complementary distribution of the two particles. If TopP and FocP were hosts of *bai* and *tai*, respectively, the combination *bai-tai* or *tai-bai* should be possible under the structure in (15). However, either combination is totally out. In reality, when a property predication sentence starts with a plain Topic phrase, which occurs in the specifier of TopP, it ends with either *bai* or *tai*, not both, as shown in (3a) and (14a). Thus, my original analysis may account for the exclusive occurrence of *tai* in (14b, c) but cannot deal with the complementarity of *bai* and *tai* in (14a).

The second issue concerns the occurrence of *bai* in declarative sentences which shun a topic. After Nagano (2014, 2015), I noticed that *bai* can be used in what Inoue (2009a) calls *chokusetsu-byosha-bun* (thetic judgment sentences), non-topical sentences that simply affirm the existence of an eventuality of a certain type. They consist of (i) *gensho-bun* (neutral description sentences) such as (16a,

⁸ In (14c), I cannot use *bai* at all due to the contrastive stress on the topic phrase. (14b) might be said with *bai*, but that destroys the Focus+Presupposition articulation and forces a sentence-focus reading.

b) below and (ii) *kankaku-bun* (perceptive-predicate and psychological-predicate sentences) such as (16c, d) below.⁹

- (16) a. *Kaze-{ga/*wa} fuiteiru.*
 Wind-NOM/TOP blow.STAT
 ‘Wind is blowing.’
- b. Announcement at a crosswalk
*Shingoo-{ga/*wa} ao-ni narimashita.*
 Traffic light-NOM/TOP green-DAT turn.POL.PAST
 ‘The light has turned green.’
- c. *Nanika oto-{ga/*wa} kikoeru.*
 Some sound-NOM/TOP hear.PRES
 ‘I hear some sounds.’
- d. *Ureshii.*
 Happy
 ‘I am happy.’
- ((16d) from Hirose (2013:23))

Compare the Tokyo Japanese sentences above with their Hakata Japanese counterparts below.

- (17) a. *Kaze-{no/*na} fukiyoo-{bai/*tai}.*
 Wind-NOM/TOP blow.STAT-SFP
 ‘Wind is blowing.’
- b. Announcement at a crosswalk (if given in dialect)
*Shingoo-{no/*na} ao-i narimashita-{bai/*tai}.*
 Traffic light-NOM/TOP green-DAT turn.POL.PAST-SFP
 ‘The light has turned green.’
- c. *Nanka oto-{no/*na} kikoeru-{bai/*tai}.*
 Some sound-NOM/TOP hear.PRES-SFP
 ‘I hear some sounds.’
- d. *Ureshika-{bai/*tai}.*
 Happy-SFP
 ‘I am happy.’

The data in (17), where a topic phrase is disallowed but *bai* is the only option,

⁹ Inoue (2009a, b) does not give English names for these sentence types. I tentatively translate *chokuseitsu-byoosha-bun* as “thetic judgment sentence” based on her claim that this class expresses thetic judgment (Kuroda (1972)). Also, I tentatively translate *genshoo-bun* as “neutral description sentence” based on Kuno’s (1973) well-known classification of the subject-marking *ga*.

clearly shows that the view of *bai* as the head of TopP is incorrect. Rather, *bai*-closing in (17) corresponds to the sentence-focus (wide-focus) reading. Thetic judgment sentences are uttered without presupposition, and thus each sentence as a whole constitutes new information (Inoue (2009b:91)). In Tokyo Japanese, the neutral description subject and the exhausting listing subject are both marked by *ga* (Kuno (1973)), but they are marked differently in Hakata Japanese, the former by the nominative particle *no* and the latter by the focus particle *ga*. This is why the subjects of the sentences in (17a-d) are marked by *no*, not by *ga*.¹⁰

It is now apparent that Topic/Focus approach is problematic in its association of *bai* with Topic. If *bai* can signal a sentence-focus reading, the relevant functional category should be Focus, not Topic. And if *bai* and *tai* are both Foc heads, there should be some functional distinction in FocP that motivates the formal variation of its head. In my view, underlying the paradigmatic relationship between *bai* and *tai* is the widely accepted distinction between information focus and contrastive focus (e.g. É. Kiss (1998), Selkirk (2002, 2007), Cruschina (2011); see also Zimmermann and Onea (2011:sec.3) for a critical survey). In the next section, I will elaborate on this idea and propose a new analysis which can explain all the data introduced in section 2, including the complementary distribution between the two forms.

3. Proposal

As with many other linguistic phenomena, information structure phenomena are described and analyzed in various terms in the literature. I will follow Cruschina's (2011) framework. Below, I will first give a brief summary of this study and then present the gist of what I will call IFoc/CFoc approach to *bai* and *tai*.

3.1. Cruschina (2011)

Cruschina (2011) is an in-depth cartographic study of information structure phenomena in Sicilian, Italian, and other Romance languages, such as Focus Fronting, Mirative Fronting, *wh*-questions, and yes-no questions. Its theoretical contribution lies in foregrounding the distinction between information focus and contrastive focus in a feature-driven approach to information structure and refining its implementation in the cartographic framework (Rizzi (1997), Belletti (2004)).

To start from his terminology, focus is the assertive and non-presupposed part of the sentence. Depending on the extension of assertion, focus can be

¹⁰ For the same reason, *ga* in (14b) cannot be replaced with *no*. See Yoshimura (1994) and Kato (2005) for the distribution of the nominative *no* and *ga* in Kumamoto Japanese, another member of the Hichiku dialect. They observe that *ga*-marking is forced by factors such as the exhaustive listing reading and word-order scrambling.

predicate-focus, argument-focus, or sentence-focus. Depending on the contrastiveness of assertion, focus can be either information focus or contrastive focus. Contrastiveness of assertion is a gradient concept, which for instance Molnár (2002) proposes to capture by the following hierarchy of relevant properties:

(18) *Hierarchy of contrast*

- i. Highlighting
- ii. Dominant contrast (in the sense that the sentence in question has the Focus-Background articulation)
- iii. Membership in a set
- iv. Limited set of candidates
- v. Explicit mentioning of alternatives

(Cruschina (2011:89); the parenthesis added)

This hierarchy reads incrementally, proceeding from (18i) to (18v), and an assertion becomes more contrastive as it accumulates more of the properties. For example, an assertion with property (18ii) is more contrastive than an assertion with property (18i) because the former satisfies property (18i) also. In Cruschina's view, property (18iv) is the threshold of the linguistic categorization of an assertion as contrastive focus (ibid.:88-89). That is, if an assertion is contrastive enough to reach the level of (18iv) or (18v), it is linguistically categorized as contrastive focus bearing the contrastive feature [contr]; otherwise, an assertion is linguistically categorized as information focus bearing the new information feature [foc]. To put it plainly, an assertion is more or less contrastive, but it needs to possess property (18iv) or property (18v) in order to be endowed with [contr].

The threshold of contrastive focus, property (18iv), is the indication of other options than or alternatives to the option chosen by the speaker. At the threshold level, the alternatives are implicit in discourse. When they are given explicitly, the contrastiveness of assertion reaches the level of (18v). For example, consider (2a) *Kyoo-wa doyoobi-da* 'Today is Saturday,' again. The asserted part of this sentence is the predicate *doyoobi-da*, and crucially, it can be asserted with or without (mental) reference to other days of the week (Sunday, Monday, Tuesday...), i.e. alternatives to the asserted information. If (2a) is uttered with such a reference, or if it is implicitly or explicitly clear that Saturday is chosen in contrast to other days of the week, the relevant focus is of the contrastive type. If (2a) is uttered without such implication of alternatives, its assertion is treated as an information focus. To anticipate a bit, my claim is that Hakata Japanese morphologically distinguishes these two cases, producing (3a) with *tai* in the former case and with *bai* in the latter

case.

Let us move on to Cruschina's (2011) theoretical claims. He employs three discourse-related features [topic], [foc(us)] and [contr(astive)] and distinguishes between FocP with [foc] and FocP with [contr], calling the former IFocP (Information FocusP) and the latter CFocP (Contrastive FocusP). He departs from Rizzi (1997) and Belletti (2004) in positing two structural positions for information focus, a higher IFocP in the left periphery of the sentence and a lower IFocP in the left periphery of the vP. CFocP, on the other hand, sits uniquely in the sentential periphery, as originally proposed by Rizzi (1997). Cruschina's proposal is based on the observation that unlike Italian, where only contrastive focus undergoes syntactic fronting and information focus remains in situ, Sicilian allows Focus Fronting (FF) of information focus, in addition to CFoc-fronting. For example, in Sicilian, the *wh*-question in (19A) below can be answered either with the non-FF form in (19Ba) or with the FF form in (19Bb).

- (19) A: *Chi scrivisti?*
 what write.PAST.1SG
 'What did you write?'
- B: a. *Scrissi n'articulu.* Neutral IFocP
 write.PAST.1SG an article
- b. *N'articulu scrissi!* Emphatic IFocP
 an article write.PAST.1SG
 'I wrote an article.' (Cruschina (2011:58); captions added)

Bold in (19B) shows the stress of information focus. The postverbal focus in (19Ba) corresponds to the lower IFocP while the fronted focus in (19Bb) corresponds to the higher IFocP. Cruschina (2010) calls the former "neutral IFocP" and the latter "emphatic IFocP." As the names imply, while the postverbal focus simply conveys new information, the fronted focus has emphatic and pragmatic effects in addition. Unlike (19Ba), the sentence in (19Bb) can be used not only as an answer to a *wh*-question but also as an exclamative sentence or a yes-no question with special interpretation (*ibid.*:25).¹¹

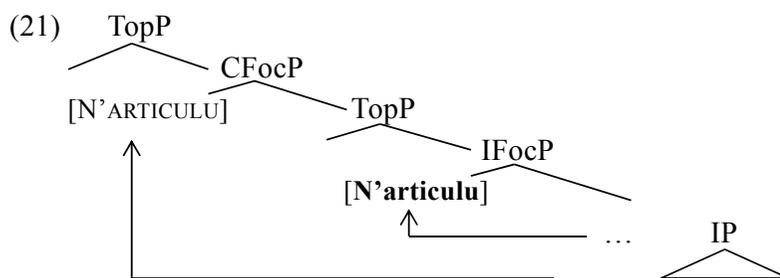
Cruschina also shows that the emphatic IFocP differs from CFocP, hence two distinct focus positions in the sentence periphery. As the following Sicilian

¹¹ Cruschina (2011:sec.2.4) attempts to capture the emphatic and pragmatic effects of fronted information focus by making reference to Relevance Theory (Sperber and Wilson (1995)). A sentence with IFoc-fronting like (19Bb) is "pragmatically appropriate in various contexts, whenever the focus constituent turns out to be 'relevant' for the communicative interaction between the speaker and the hearer" (*ibid.*:25).

example indicates, CFoc-fronting requires an (explicit or implicit) antecedent to contrast, and the fronted focus exhibits a special prosodic properties distinct from the emphatic stress typical of IFoc-fronting:

- (20)
- | | | |
|-------------------------------------|-----------------|---------------------------------|
| $\overbrace{\text{CFoc}}$ | | $\overbrace{\text{antecedent}}$ |
| <i>N'ARTICULU</i> | <i>scrissi,</i> | <i>no na littira.</i> |
| an-article | write.PAST.1SG | not a letter |
| ‘I wrote an article, not a letter.’ | | |
| (Cruschina (2011:25)) | | |

Unlike the fronted focus in (19Bb), the fronted focus in (20) satisfies the property (18v). Two types of fronted focus differ not only prosodically and semantically but also syntactically, in that the emphatic information focus should be syntactically adjacent to the verb, while the contrastive focus allows separation from the verb, admitting a topic in between, for example (ibid.:104-110). This leads Cruschina to associate the two types of FF with distinct projections within the sentence periphery, IFocP and CFocP, separated by a TopP, as schematically shown below (ibid.:25).



The correlation between the syntactic condition of adjacency and the interpretation of focus is summarized as follows:

On the one hand, IFoc identifies an open or contextually closed set of alternates and requires adjacency to the verb. On the other hand, CFoc creates a set from which the alternatives are excluded and is not verb-related, inasmuch as it does not need to be string adjacent to the verb. (Cruschina (2011:110))

Finally, the different types of FocP, though distinct syntactically, do not co-occur in one syntactic structure due to the uniqueness requirement for focus: Only one [foc] feature per sentence can be assigned (ibid.:162; see also sec.4.2.2).

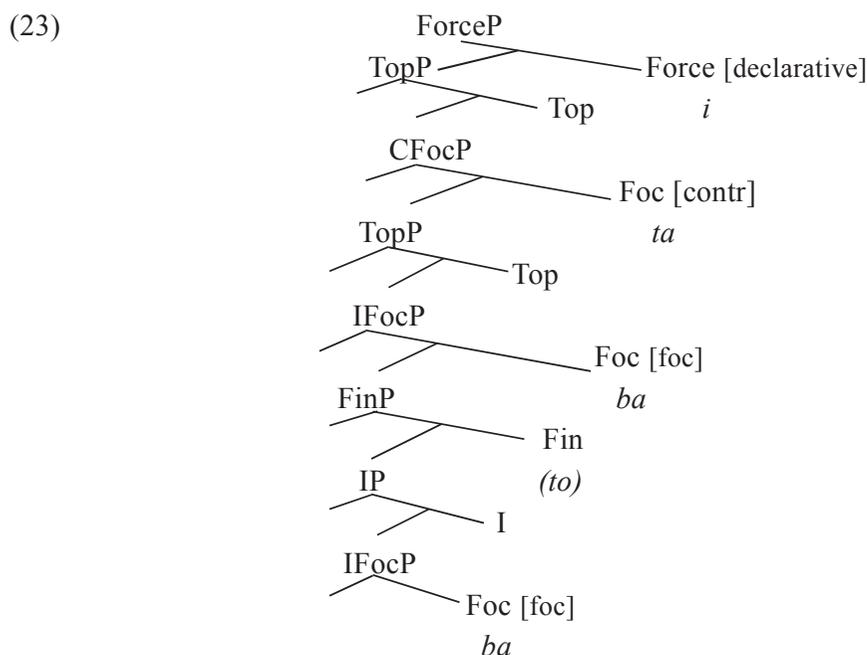
In sum, one of the key findings of Cruschina (2011) lies in the identification

of a higher IFocP, a functional projection distinct either from the lower, IP-internal IFocP (Belletti (2004)) or from the sentence-peripheral position dedicated to contrastive focus, CFocP (Rizzi (1997)).

3.2. IFoc/CFoc Approach

Based on section 2 and section 3.1, I propose the IFoc/CFoc analysis of *bai* and *tai* summarized in (22) and roughly schematized in (23) below. Like the structure in (21), (23) should be read as a makeshift representation accommodating different focus types in one structure for the sake of space economy.

- (22) a. *Ba(i)* and *ta(i)* are morphological realizations of the Foc heads (see (22c) for the parentheses).
 b. *Ba(i)* activates IFocP as its head marker, while *ta(i)* activates CFocP as its head marker.
 c. Force approach (section 2.2) suggests that *bai* and *tai* are morphologically complex, *ba+i* and *ta+i*, with the common element *i* being the morphological realization of the declarative Force head. If this is correct, strictly, it is *ba* in *bai* and *ta* in *tai* that realize the IFoc and CFoc heads, respectively.



(22a) answers the core question of what is the nature of *bai* and *tai*. They are focus markers that morphologically realize a Foc head in the head-final clausal structure in

(23). Following Cruschina (2011), I assume CFocP and a higher IFocP in the CP domain and a lower IFocP in the IP domain. According to Rizzi (1997), while ForceP and FinP are obligatory functional categories, FocP and TopP are optional functional categories. Their projection depends on *activation* via certain formal, i.e. phonological, morphological, or syntactic means (see Kuwabara (2010, 2013) for a typology of such means). In Sicilian, Cruschina shows, FocP is activated via word-order inversion which transports a focused constituent to its specifier position. It can also be activated by a morphological head such as the interrogative particle *chi* (Cruschina (2011:ch.5)). My claim in (22a) means that *ba(i)* and *ta(i)* function as morphological activators of FocP in Hakata Japanese.

(22b) answers the question about their paradigmatic relationship. The two forms do not occur together (**tai-bai*, **bai-tai*, **ba-ta-i*, **ta-ba-i*) because IFocP and CFocP do not occur together due to the uniqueness requirement. When *bai* is used, FocP is activated as the IFoc type, while *tai* activates it as the CFoc type. Take the sentences in (3a, b), for instance. When they are closed with *bai*, IFocP is activated, and the assertion of the sentence, *doyobi-da* ‘(be) Saturday,’ is interpreted as a weakly contrastive assertion that does not imply comparison with the other days of the week. On the other hand, when (3a, b) are closed with *tai*, CFocP is activated, and the same assertion of the sentence is interpreted as a strongly contrastive one that is chosen over the other days of the week (e.g., ‘Today is Saturday, not Sunday’). Thus, in dialogue, I will use *tai* for (3a, b) when I spot an incorrect presupposition about the day of the week in my interlocutor. On the other hand, I will use *bai* for (3a, b) to tell my uninformed interlocutor what day it is today.¹² In soliloquy, I will use *tai* for (3a) when I notice that I am wrong about the day of the week. On the other hand, I will use *bai* for (3a) when I simply notice that it is Saturday. In addition, (3a, b) are usually pronounced with different intonations depending on whether they are closed with *bai* or *tai*. When closed with *tai*, (3a, b) are pronounced with what Kitagawa (2005) calls Emphatic Prosody (EPD), the prosodic pattern used for *wh*-questions in Tokyo Japanese. When

¹² In question-answer pairs, *tai* and *bai* are used at the end of answer sentences:

- (i) A: *Nan-ba ku-na?*
 What-ACC eat-Q
 ‘What will you choose to eat?’
 B: a. *Ramen(-ba) ku-bai.*
 ramen(-ACC) eat-SFP.
 b. *Ramen-tai.*
 ramen-SFP
 ‘I choose ramen.’

See fn. 14 for the distribution of *bai* and *tai* in answers. Details of question formation in Hakata Japanese are discussed in Nagano (to appear).

closed with *bai*, (3a, b) are pronounced without EPD, though there are certain contexts that *bai*-sentences are compatible with EPD.¹³

Finally, (22c) is an attempt to incorporate the insight of Kido's (2013) Force approach into my focus-based approach. If Force approach is not false but coarse, as I concluded at the end of section 2.2, it is because not *bai* and *tai* as a whole but the element *i* only should be seen as Force. The *ba* and *ta* parts, parts which actually distinguish between the two particles, correspond to the different features of the Foc head. In (23), the Force [declarative] head selects either the Foc head [foc] or the Foc head [contr], resulting in the composite marker *bai* or *tai*, respectively.

This section has advanced the gist of my new analysis based on Cruschina (2011). In the next section, I will elaborate and develop the hypothesis in (22b), the central one of the three hypotheses in (22a-c). I would like to stress that (22b) means that if a sentence ends in *bai* or *tai*, it is interpreted as an information-focus or contrastive-focus sentence. It does **not** mean that an information-focus or contrastive-focus sentence always ends in *bai* or *tai*. The relationship between formal means of FocP activation and focus interpretation is not one-to-one (Zimmermann and Onea (2011:sec.2)). Like many other languages, Hakata Japanese uses several formal means to activate FocP, so that focused sentences do not necessarily end in *bai* or *tai*.

4. More on Hypothesis in (22b)

This section will illustrate and develop the view in (22b) using the sentences introduced in sections 1 and 2. They are summarized below with the sentence numbers and the indication of whether the sentence in question inherently allows *bai* and *tai* at the end: (A) *bai/tai* means that both forms can be used, (B) *bai/*tai* means that only *bai* can be used, and (C) **bai/*tai* means that neither of them can be used.¹⁴

¹³ For example, when the *bai*-closed sentences in (3a, b) convey new information unexpected to the speaker, they are likely to be pronounced emphatically. I will return to the prosody of *bai* and *tai* sentences in section 4.2.2.

¹⁴ As mentioned in fn. 12, the particles also close sentences responding to yes-no questions and *wh*-questions. Tentatively, I classify them in (B) in the sense that each answer (not as a class but as a token) is basically either *bai/*tai* or *tai/*bai*. Data I have examined so far on this issue suggest that the choice between *bai* and *tai* at the end of an answer depends on whether the answering involves ellipsis or not. The best generalization I have managed to draw is the one based on Kuno's (1978) two strategies for answering questions in Tokyo Japanese: his verb-repetition strategy induces *bai*-ending, while his 'da' strategy induces *tai*-ending. When a question is answered without verb ellipsis, *bai* is attached to the sentence-final verb. On the other hand, when the verb is not repeated, an answer is formed by using *tai* for *da* in Tokyo Japanese. To the extent that Kuno's strategies can be captured as a matter of syntactic ellipsis, I believe it to be likely that each answer accepts either *bai* or *tai* due to its syntactic structure. One note of caution: There may be answers of the *bai/tai* type when the verb-repetition strategy is unavailable because the question involves a nominal predicate.

A.

Property predication sentences(3) (4) *Kyo-wa doyobi-da* *bai/tai*(7) (8) *Kyo-wa ame-da* *bai/tai*(14) *Taro-wa gakusei-da* *bai/tai*Teiru sentences (9) *bai/tai*No-da sentences (11) *bai/tai*

B.

Thetic judgment sentences (17) *bai/*tai*

C.

Questions and imperatives (10) **bai/*tai*Non-reportive embedded sentences (12) **bai/*tai*4.1. *The Distinction between (A), (B), and (C)*

Let me start with the difference between the three classes above, (A), (B), and (C). The fact that sentences differ in their inherent possibility of allowing *bai* and/or *tai* at the end is a syntactic fact that directly stems from the structure in (23). Non-declarative sentence types such as questions and imperatives and non-reportive embedded sentences refuse both *bai* and *tai* because *i* corresponds to the declarative Force head, which forms main-clause declarative sentences.¹⁵ On the other hand, the different behaviors between (A) and (B) can be explained if one assumes that sentences expressing categorical judgment and thetic judgment (Kuroda (1972)) have different syntactic structures. Concretely, I approach thetic judgment sentences such as (16) and (17) along the line of Inoue's (2009a, b) analysis of *chokusetsu-byosha-bun* (see section 2.3), according to which they are characterized in the IP domain, while categorical judgment sentences are characterized in the CP domain.¹⁶

¹⁵ One of my reviewers asks why *tai* cannot occur in a relative clause (see (12b)) when the contrastive *wa* phrase can. I believe the difference, if valid, can be captured by my claim in (22c).

¹⁶ Although Inoue (2009a) says more, what is significant for our discussion is the IP vs. CP distinction, or her view that unlike categorical judgment sentences, thetic judgment sentences do not project beyond the IP zone.

Inoue (2009a) restricts her *chokusetsu-byosha-bun* to those with root-form predicates, the *-ru* form in the case of verbal predicates. This restriction is related to her view that *chokusetsu-byosha-bun* does not involve a TP. The significance of this restriction remains unclear to me, given the non-topical sentence ending with the *-ta* form such as (16b) and (17b). Masuoka and Takubo (1992:148-149) cite not only (ia) but also (ib) as instances of *gensho-bun*.

(i) a. *Ame-ga futte-iru.*
Rain-NOM fall-STAT
'Rain is falling.'

The difference between (A) and (B) in the combinability with *tai* is a natural consequence of Inoue's syntactic analysis of categorical andthetic judgment sentences. First, as in (B), thetic judgment sentences allow *bai* but refuse *tai* because their syntactic structure remains inside the IP in (23), which automatically eliminates the possibility of activating the higher IFocP and CFocP. On the other hand, the IFocP of the IP-internal, neutral type can be activated by *bai*. Thus, the *bai* sentences in (17) simply convey new information and are pronounced with usual non-emphatic prosody. They differ from *bai* sentences of the CP-internal, emphatic IFocP type, for example, those expressing mirativity (DeLancey (1997, 2001), Ikarashi (2015), Shimada (2015), Shimada et al. (2015)) such as:

- (24) a. *A, saifu- $\{ga/*wa\}$ nai!* Standard Japanese
 Oh, wallet-NOM/TOP missing.PRES
 b. *A, saifu- $\{no/*na\}$ nai- $\{bai/*tai\}$!* Hakata Japanese
 Oh, wallet-NOM/TOP missing.PRES
 'Oh, my wallet is missing!'

These sentences express unexpected new information and concomitant surprise on the part of the speaker. Usually, (24b) is pronounced with emphatic prosody. Cruschina (2011:secs.2.4.3 and 3.5.2) shows that Sicilian resorts to the same construction as (19Bb), IFoc-fronting, to express mirativity, as in:

- (25) a. *Na casa s' accattà!*
 a house REFL buy.PAST.3SG
 'He bought a house!'
 b. *U suli niscì!*
 the sun go-out.PAST.3SG
 'The sun came out!' (Cruschina (2011:70))

This leads me to assume that the *bai* sentence in (24b) also involves the higher IFocP.¹⁷ As a piece of evidence for my distinction between the neutral *bai*

-
- b. *Totsuzen ame-ga furi-dashi-ta.*
 Suddenly rain-NOM fall-start-PAST
 'Suddenly, rain started falling.'

Also, in her 2009b book, Inoue herself cites the following as a *gensho-bun*: *Gakudo-no retsu-ni keitorakku-ga tsukkondekita* (lit. Schoolchildren-GEN line-DAT truck-NOM plowed.into) 'A truck plowed into a line of schoolchildren.'

¹⁷ Details of the derivation of mirative sentences in Hakata Japanese, including (24b), (26b), and (28B), are beyond the scope of this paper. See Shimada (2015) for a cartographic analysis of Tokyo Japanese mirative sentences based on adjectival predicates.

sentences in (17) and the emphatic *bai* sentence in (24b), present-day speakers of Hakata Japanese tend to formally distinguish between the two, using *ga* for the neutral-type *bai*, as in (26a), and *mon* for the emphatic-type *bai*, as in (26b).

- (26) a. *Kaze-{no/*na} fukiyo-ga.* (= (17a)) Neutral IFocP
 Wind-NOM/TOP blow.STAT-SFP
 ‘Wind is blowing.’
- b. *A, saifu-{no/*na} nai-mon!* (= (24b)) Emphatic IFocP
 Oh, my wallet-NOM/TOP missing.PRES
 ‘Oh, my wallet is missing!’

(26a) is synonymous to (17a), while (26b) is synonymous to (24b). Although the sentence-final particles *ga* and *mon* have been ignored in the literature, the fact that they disambiguate the polysemy of *bai* suggests that they correspond to the two IFocPs, *ga* as the lower IFoc head and *mon* as the higher IFoc head.¹⁸

Let us move on to class (A), which comprises various declarative constructions that represent categorical judgment. They can combine with both *bai* and *tai* because categorical judgment sentences fully involve a CP structure; in its full-fledged form, the structure in (23) can accommodate not only IFocP but also CFocP, crucially one at a time. When *tai* is used, CFocP is activated in (23) and the (A) sentences are interpreted at the level of (18iv) or (18v), as Focus+Presupposition sentences whose focus constituents are presented as choices that exclude implicitly or explicitly assumed alternatives. On the other hand, when *bai* is used in (23), IFocP is activated and the same sentences are interpreted at the level of (18ii), as Topic+Comment sentences.

The fact that *tai* and *bai* impose distinct information structures on the same sentence will be further discussed in the next subsection. Let me discuss the difference between two IFocPs first. Given the bipartition of IFocP, there should be two corresponding types of categorical-judgment *bai* sentences. I believe this prediction is on the right track because the nominal predicate of the *bai* sentence in (3a) can be interpreted either as simple new information of the sentence or as unexpected new information. Compare the following two dialogues, where the brackets indicate whether the underlined instance of *bai* can be replaced with *mon*:

¹⁸ Strictly, while *mon* is restricted to the higher IFoc head, it is too strong to say that *ga* is restricted to the lower IFoc head; sometimes, it is used for the higher IFoc realization. As mentioned by Hirayama (1997:52), *bai* is becoming less and less productive in present-day Hakata Japanese, making a stark contrast to the ever active rival *tai*. I believe it to be very likely that the replacement with *ga* and *mon* is one of the main factors for this observation.

- (27) A: *Tokoya-i iko-kaina.*
 Barbershop-to go.will-SFP
 ‘I’m thinking of going to the barbershop.’
 B: *Batten, anta, kyo-wa getsuyobi-bai.* [*-ya-mon]
 But you today-TOP Monday-SFP
 ‘But today is Monday, you know.’
- (28) A: *Tokoya itta-batten, shimattotta-bai.* [*-mon]
 Barbershop go.PAST-though close.STAT.PAST-SFP
 ‘I’ve been to the barbershop, but it’s closed.’
 B: *So-kusa! Kyo-wa getsuyobi-bai!* [^{OK}-ya-mon]
 so-SFP Today-TOP Monday-SFP
 ‘Of course, it is. Today is Monday, you know.’

In a dialogue like (27), the nominal predicate of the *bai* sentence in (3a) simply conveys new information. In this case, the replacement with *-ya-mon* (lit. COP-SFP) is not acceptable for me. In contrast, in a dialogue like (28), the respondent B communicates new information emphatically, and his or her *bai* in (28B) can be naturally replaced with *-ya-mon* (lit. COP-SFP). My assumption that the particle *mon* replaces *bai* of the emphatic IFoc type is supported by the fact that the instance of *bai* in (28A), where it casually opens a dialogue, cannot be replaced by *mon*.

In summary, this section has shown that the combinability of a sentence with *bai* and/or *tai* depends on what type of syntactic structure it projects. Questions, imperatives, and non-reportive embedded sentences refuse both *bai* and *tai* because they do not have the declarative ForceP. Thetic judgment sentences refuse *tai* because they do not project a CP structure. For the same reason, their information focus marked by *bai* is of the neutral type. In contrast, categorical judgment sentences allow both *bai* and *tai* because they project a full-fledged CP structure. Corresponding to the structural separation between the higher IFocP and the lower IFocP, categorical-judgment *bai* sentences can convey new information either in a neutral or emphatic manner.

4.2. The Distinction between Bai and Tai in Class (A)

4.2.1. The Deterministic Characters of Bai and Tai Marking

The next question I have to address is the choice between *bai* and *tai* in (A) sentences, which inherently allow both those forms. As I stressed at the end of section 3.2, the basic idea of the IFoc/CFoc approach on this issue is “form determines interpretation” rather than “interpretation determines form.” This should be so because *bai* and *tai* are activators of IFocP and CFocP, respectively.

Thus, if a categorical-judgment sentence alone is presented out of context, I cannot choose between *bai* and *tai* as its closer, unless its information structure is properly skewed prosodically or by the use of the exhausting listing *ga* or the contrastive topic *WA* (section 4.2.2). This is true even when the sentence in question has a corrective focus adverbial expression such as *not A but B* or when it is a cleft sentence. For example, consider the following *bai* and *tai* sentences based on (3a):

- (29) a. *Kyo-wa* [*nichiyobi-yanakute* *doyobi*]-*bai*.
 Today-TOP Sunday-COP.NEG Saturday-SFP
 ‘Today is not Sunday but Saturday.’
- b. *Kyo-wa* *nichiyobi-yanakute* [*doyobi*]-*tai*.
 Today-TOP Sunday-COP.NEG Saturday-SFP
 ‘Today is not Sunday but Saturday.’

On the surface, these sentences seem to be the same *not A but B* constructions, in which the assertion *B* is presented with the explicit mentioning of its alternative *A*. However, upon introspection, they turn out to have distinct interpretations as indicated by the brackets. In (29a), *bai* scopes over the *not A but B* phrase as a whole, while in (29b), *tai* scopes over the *B* part only. While the assertion of the *tai* sentence in (29b) is restricted to the predicate *doyobi* ‘be Saturday,’ excluding the negated part *nichiyobi-yanakute* ‘not Sunday’ as a presupposition, the assertion of the *bai* sentence in (29a) ranges over both of these elements. That is, whereas (29b) has the property in (18v), (29a) does not. Thus, the latter is an information-focus sentence, while the former is a contrastive-focus sentence. This observation strongly suggests that *bai* and *tai* as focus markers have a *deterministic* character; *bai* imposes a weakly contrastive interpretation upon the host sentence, while *tai* imposes a strongly contrastive interpretation upon it (cf. Zimmermann and Onea (2011:sec.2)).

Similarly, *no-da* sentences and cleft sentences, canonical focus constructions involving FinP (Hiraiwa and Ishihara (2012); see also Otake (2009)), are inherently indeterminate between *bai* closing and *tai* closing. Take the *no-da* sentences in (11), for example. In my analysis, *bai*-closed version has the structure in (30a), while *tai*-closed version has the structure in (30b), respectively.

- (30) a. [ForceP [IFocP [FinP *Taro-ga* *mikan-ba* *tabeta-to*] *ba*] *i*]
 Taro-NOM orange-ACC eat.PAST-COMP-SFP
 ‘It is that Taro ate the orange.’

- b. [ForceP [CFocP [FinP *Taro-ga mikan-ba tabeta-to*] *ta*] *i*]
 Taro-NOM orange-ACC eat.PAST-COMP-SFP
 ‘It is that Taro ate the orange.’

Reflecting the structural difference, the two sentences have clearly distinct information structural interpretations. Thus, (30a) is used in situations like (31a) and (31b), while (30b) is used in a dialogue like (32). Switching the pairing is very difficult for me.

- (31) a. Taro loves oranges. One day, when his mother visits their family Buddhist altar in order to clear away fruits she offered the day before, she finds that the offering has vanished. Surprised, she makes a guess and says to herself, “*Taro-ga mikan-ba tabetato-bai.*”
 b. Jiro hates oranges. But one day, to his mother’s surprise, he picks out one from a fruit basket and eats it with glee before her eyes. Later in the day, when her husband comes home, she reports the incident to him, saying “*Jiro-ga mikan-ba tabetato-bai!*”
- (32) Mother: *Anta-ga mikan-ba tabeta-to?*
 you-NOM orange-ACC eat.PAST-COMP
 ‘Did you eat the orange?’
- Taro: *Iiya, Jiro-ga (mikan-ba) tabeta-to-tai.*
 No, Jiro-NOM (orange-ACC) eat.PAST-COMP-SFP
 ‘No. It’s Jiro who ate it.’

As these examples illustrate, *to-bai* sentences convey the proposition of FinP as the speaker’s new finding, something he or she has observed or something he or she has inferred from his or her observation. In contrast, *to-tai* sentences convey the proposition of FinP as the speaker’s alternative assertion or counter-assertion to the proposition or belief under consideration. Hence, while *to-tai* sentences are usually the speaker’s responses to current presuppositions, *to-bai* sentences are not. Rather, they are spontaneous findings on the part of the speaker.

Such a semantico-pragmatic difference between *to-bai* and *to-tai* sentences makes sense under the IFoc/CFoc approach in that when closed with *bai*, the proposition of the *to*-FinP as a whole is interpreted as the speaker’s Comment on a relevant Topic. Its contrastiveness does not reach the level of (18iv) or (18v). In contrast, when closed with *tai*, the proposition of *to*-FinP is interpreted as the speaker’s choice from a set of alternative propositions explicit or implicit in the

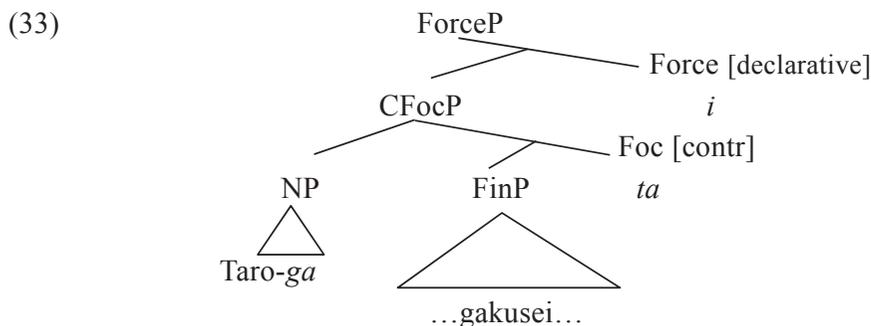
discourse.¹⁹

4.2.2. *Other Determinants of Information Structure Interpretations*

I have shown that focus-related syntactic constructions such as the *not A but B* corrective phase and the *no-da* construction do not inherently choose between *bai* and *tai*. Thus, they should be distinguished from focus-related case particles and prosodic patterns which, as I mentioned above, do correlate with the choice between *bai* and *tai* in class (A). The aim of this last section is to examine (i) the correlation between subject case marking and *bai/tai* closing and (ii) the correlation between sentence prosody and *bai/tai* marking. I do not go into the possible correlation among the three factors.

First, as we observed in (14), the case particle of the subject of a property predication sentence shows the following correlation. When it is the non-contrastive topic marker, i.e., the subject is a Topic, as in (14a), the sentence is closed either by *bai* or *tai*. When it is either the exhaustive listing *ga* or the contrastive topic *WA*, i.e., the subject is a (contrastive) Focus, as in (14b, c), the sentence is closed by *tai*. Under the present analysis, this correlation is captured in terms of the availability of IFocP, in addition to CFocP, in the structure in (23). In a Topic+Comment sentence where the subject is in a TopP, both CFocP and IFocP are freely available for the Comment assertion. Hence, in (14a), *tai*-closing and *bai*-closing can activate CFocP and IFocP, respectively, and the Comment is interpreted as contrastive focus and information focus, respectively. In contrast, when the subject is a contrastive focus, marked either by the exhaustive listing *ga* or the contrastive topic *WA*, it is in the specifier position of a CFocP; that is, in these cases, syntactic fronting of the subject activates CFocP. Such a Focus+Presupposition sentence can be closed only by *tai*, a marker of the CFoc head, because a CFocP and an IFocP cannot be activated simultaneously in one sentence (i.e. the uniqueness requirement). For example, the exhaustive-listing sentence in (14b) has a structure like (33) below, where the fronting of the subject into the specifier position of CFocP harmonizes with the CFoc head marking by *tai* but precludes the activation of IFocP by *bai*.

¹⁹ Selecting a FinP complement, *bai* in (30a) structurally corresponds to the higher IFocP in (23), which is resonant with its semantico-pragmatic character of expressing the speaker's new findings (cf. Ueda (2014)). But I will leave for future research the relationship between *no-da* sentences and the two types of IFocPs, including the replacement with *ga* and *mon*.



In brief, a property predication sentence shows a correlation between its subject case morphology and its sentence-final morphology because both kinds of morphology are realizations of information structural functional categories.

A similar view can be adopted for the correlation between *tai/bai* and sentence prosodic patterns. Depending on whether it is closed with *bai* or *tai*, a single categorical judgment sentence can end up being pronounced with clearly different intonations. My observation is that *tai*-sentences are pronounced with what Kitagawa (2005) calls “Emphatic Prosody (EPD),” while corresponding *bai*-sentences are pronounced with or without EPD. Quite interestingly, EPD is a prosodic pattern that Kitagawa (2005) and other researchers cited therein attribute to *wh*-questions in Tokyo Japanese. They show that (i) Tokyo Japanese *wh*-questions are pronounced with EPD and (ii) the domain of EPD coincides with the semantic scope domain of a *wh*-question. Compare the intonations of the *wh*-question in (34) and the corresponding declarative sentence in (35) in Tokyo Japanese:

(34) **DA**re-ga yoku ohiru-ni ramen-o toru-no ↑
 who-NOM often lunch-for ramen-ACC order-Comp_{wh}
 ‘Who often has ramen noodles delivered for lunch?’

(35) (J)ohn-wa (y)oku o (h)iru-ni (r)amen-o toru.
 John-TOP
 ‘John often has ramen noodles delivered for lunch.’

(Kitagawa (2005:304-305))

In (34), the bold capital and the shading show “focus F_0 -boosting” and “post-focus F_0 -reduction,” respectively, two components of EPD.²⁰ The arrow at the end indicates interrogative rise intonation, which is independent of EPD. To cite Kitagawa’s definition of EPD (2005:304-305):

²⁰ The terms focus F_0 -boosting and post-focus F_0 -reduction are taken from Ishihara (2005). F_0 stands for pitch (fundamental frequency).

EPD consists of, first, an *emphatic accent* on the *Wh*-focus, which consists of sharp rise of F_0 (indicated by **BOLD CAPITALS**) followed by its fall, and second, *post-focal reduction*, which virtually (though not entirely) suppresses all lexical accents up to the end of some clause by compressing their pitch and amplitude ranges (indicated by **shading**).

EPD is not observed in a declarative sentence, where the lexical accent of the head of each phrase is retained, as indicated by the circles in (35).

Then, Kitagawa shows how the phonological domain of EPD coincides with the semantic scope of a *wh*-question. In a matrix *wh*-question like (34), post-focal reduction continues until the end of the scope of the *wh*-question, where the matrix complementizer *no* that binds the *wh*-phrase appears. On the other hand, in an indirect *wh*-question like (36) below, post-focal reduction terminates at the end of the embedded clause, where the subordinate complementizer *ka* appears, and a pitch reset is observed thereafter.

- (36) *John-wa* [*Mary-ga* ***NA****ni-o* ***eranda-ka***] *i**mademo shiranai*
 John-TOP Mary-NOM what-ACC chose-Comp_{wh} still does.not-know
 ‘John is yet to learn what Mary chose.’

(Kitagawa (2005:306))

In the literature (e.g. Jin-nouchi (1996:57-66), Smith (2011)), it is known that *wh*-questions in Hakata Japanese show a scope-prosody correlation in a different manner from Tokyo Japanese. Concretely, a *wh*-question in Hakata Japanese shows emphatic accent on the *wh*-focus (focus F_0 -boosting) but *retains the high pitch set on the wh-focus* until the end of the *wh*-scope, i.e. post-focus F_0 -boosting rather than post-focus F_0 -reduction. What is not known about Hakata Japanese, however, is that Kitagawa’s EPD, the prosodic pattern that consists of focus F_0 -boosting and post-focus F_0 -reduction, is the canonical, probably pre-requisite prosodic pattern of *tai*-closed declarative sentences. As the following illustrations based on (34) and (35) indicate, in a *tai*-sentence, the phrase bearing contrastive focus is pronounced with an emphatic accent and followed by a prolonged monotony due to post-focal reduction that continues up to *tai*.

- (37) a. ***JO****n-ga* ***yoku*** ***ohiru-ni*** ***ramen-ba*** ***toru-to-tai***
 John-NOM often lunch-for ramen-ACC order-Comp_{That-SFP}
 ‘It is John who often has ramen noodles delivered for lunch.’

- b. *Jon-wa yoku oHIRu-ni ramen-ba toru-to-tai*
 John-TOP often lunch-for ramen-ACC order-Comp_{That}-SFP
 ‘It is for lunch that John often has ramen noodles delivered.’
- c. *Jon-wa yoku ohiru-ni RAamen-ba toru-to-tai*
 John-TOP often lunch-for ramen-ACC order-Comp_{That}-SFP
 ‘It is ramen noodles that John often has delivered for lunch.’

As in the case of Tokyo Japanese *wh*-questions (e.g. (34), (36)), the domain of the post-focal reduction indicates the scope of the contrastive-focus interpretation set by *tai*.

On the other hand, EPD is not prerequisite for *bai*-closed declarative sentences; in fact, they allow a pronunciation without EPD quite naturally. Thus, the sentence in (35) can be closed with *bai* as shown below. Here, *tai*-closing is very difficult for me.

- (38) *(Jo)n-wa (yo)ku o (hi)ru-ni (ra)men-o toru-(to)-{bai/*tai}*.
 John-TOP often lunch-for ramen-ACC order-(Comp_{That})-SFP
 ‘John often has ramen noodles delivered for lunch.’

The sentence in (38) is an ordinary Topic+Comment declarative sentence in which the Comment part conveys new information about the Topic. As a broad generalization, *(to)-bai*-sentences that simply convey new information are pronounced without EPD, while mirative *bai*-sentences and *to-bai* sentences whose new information is localized to a particular argument within the *to*-clause can be pronounced emphatically.

Returning to the theme of this section, the preceding discussion based on Kitagawa (2005) shows that not only case morphology but also prosody correlates with the choice between *tai* and *bai* in class (A). In particular, I have argued that *tai*-closing goes hand in hand with EPD, unlike *bai*-closing which is perfectly natural on declarative sentences without EPD.

To summarize section 4, I have shown that the IFoc/CFoc approach proposed in section 3 can explain the distribution of *bai* and *tai* and the interpretative differences between *bai*-sentences and *tai*-sentences. Thetic judgment sentences allow only *bai*-closing because they do not project a CP structure. In categorical judgment sentences, where a CP structure is fully available, it is the choice between *bai* and *tai* that determines the information structural interpretation of the sentence. The *bai* vs. *tai* choice may be affected by case morphology and prosody because these two factors are also activators of FocP.

5. Conclusion

The sentence-final particles *bai* and *tai* are hallmarks of Hichiku Japanese, but their nature and paradigmatic relationship have been a mystery for a long time. In this paper, I have shown that they are assertive focus markers that signal information focus and contrastive focus, respectively. Also revealed is their composite morphological makeup: The common element *-i* corresponds to the declarative Force head, while *ba-* and *ta-* correspond to the IFoc head and CFoc head, respectively. I have shown that this IFoc/CFoc approach is empirically superior to Mod approach, Force approach, and Topic/Focus approach.

REFERENCES

- Belletti, Adriana (2004) "Aspects of the Low IP Area," *The Structure of IP and CP: The Cartography of Syntactic Structures, Vol.2*, ed. by Luigi Rizzi, 16-51, Oxford University Press, Oxford.
- Cruschina, Silvio (2010) "Fronting as Focalisation in Sicilian," *Syntactic Variation: The Dialects of Italy*, ed. by Roberta D'Alessandro, Adam Ledgeway, and Ian Roberts, 247-260, Cambridge University Press, Cambridge.
- Cruschina, Silvio (2011) *Discourse-Related Features and Functional Projections*, Oxford University Press, Oxford.
- DeLancey, Scott (1997) "Mirativity: The Grammatical Marking of Unexpected Information," *Linguistic Typology* 1, 33-52.
- DeLancey, Scott (2001) "The Mirative and Evidentiality," *Journal of Pragmatics* 33, 369-382.
- É. Kiss, Katalan (1998) "Identification Focus versus Information Focus," *Language* 74 (2), 245-273.
- Fujiwara, Yoichi (1986) *Hogen Bunmatsushi <Bunmatsujoshi> no Kenkyu (Ge)* (A Study of Dialectal Sentence Particles), Shunyodo, Tokyo.
- Hiraiwa, Ken and Shinichiro Ishihara (2012) "Syntactic Metamorphosis: Clefts, Sluicing, and In-situ Focus in Japanese," *Syntax* 15 (2), 142-180.
- Hirakawa, Kimiko (2008) "Fukuokashihogen ni okeru Bunmatsushi *Bai* to *Tai* (Sentence Particles *Bai* and *Tai* in Fukuoka Japanese)," *Handai Shakaigengogaku Kenkyunoto* 8, 116-131.
- Hirayama, Teruo (ed.) (1997) *Fukuokaken no Kotoba* (Language of Fukuoka Prefecture), Meijishoin, Tokyo.
- Hirose, Yukio (2013) "Deconstruction of the Speaker and the Three-Tier Model of Language Use," *Tsukuba English Studies* 32, 1-28.
- Hirose, Yukio (2015) "An Overview of the Three-Tier Model of Language Use," *English Linguistics* 32 (1), 120-138.
- Itoyo, Ki-ichi, Sukezumi Hino, and Ryoichi Sato (eds.) (1983) *Koza Hogen-gaku 9: Kyushu Chiho no Hogen* (Lectures in Dialectology 9: Dialects in the Kyushu District), Kokushokankokai, Tokyo.

- Ikarashi, Keita (2015) *A Functional Approach to English Constructions Related to Evidentiality*, Doctoral dissertation, University of Tsukuba.
- Inoue, Kazuko (2009a) "Genshobun to Sono Shuhen (Thetic Judgment Sentences and Related Issues)," *Scientific Approaches to Language* 8, 43-68, Kanda University of International Studies.
- Inoue, Kazuko (2009b) *Seiseibunpo to Nihongokenkyu: 'Bun-bunpo' to 'Danwa' no Setten* (Generative Grammar and Japanese Linguistics: An Interface between Sentence Grammar and Discourse), Taishukan, Tokyo.
- Ishihara, Shinichiro (2005) "Prosody-Scope Match and Mismatch in Tokyo Japanese *Wh*-questions," *English Linguistics* 22 (2), 347-379.
- Jin-nouchi, Masataka (1996) *Hokubu Kyushu ni okeru Hogenshingo Kenkyu* (A Study on Dialectal Neologisms in Northern Kyushu), Kyushu University Press, Fukuoka.
- Kanbe, Hiroyasu (1967) "Kyushuhogen ni okeru Bunmatsushi *Bai Tai* ni tsuite (Sentence-Final Particles *Bai* and *Tai* in Kyushu Dialects)," *Kumamotojoshidai Kokugokokubungaku Ronbunshu* 5. [Reprinted in *Nihonretto Hogenshoshu* 23, ed. by Fumio Inoue, Koichi Shinozaki, Takashi Kobayashi, and Takuichiro Onishi, 242-254, Yumani Shobo, Tokyo.]
- Kato, Sachiko (2005) "Kumamotohogen ni okeru 'Ga' to 'No' no Tsukaiwake ni kanshite (On the Distribution of 'Ga' and 'No' in Kumamoto Japanese)," *Gengokagakuronshu* 9, 25-36, Tohoku University.
- Kido, Yasuhito (2013) "Fukuokahogen ni okeru 'Bai' 'Tai' no Togotekibunpu (Syntactic Distribution of 'Bai' and 'Tai' in Fukuoka Japanese)," paper presented at the 147th Conference of the Linguistic Society of Japan.
- Kido, Yasuhito (2014) "On the Syntactic Structure of *Bai* and *Tai* in Hichiku Dialect," *Kyushu Daigaku Gengogaku Ronshu* 35, 173-196.
- Kitagawa, Yoshihisa (2005) "Prosody, Syntax and Pragmatics of *Wh*-questions in Japanese," *English Linguistics* 22 (2), 302-346.
- Kodama, Nozomi (2006) "Kumamotohogen no Shiteijodoshi (The Copula in Kumamoto Dialect)," *Ari-ake: Kumamotodaigaku Gengogakuronshu* 5, 71-90.
- Kuno, Susumu (1973) *Nihon Bunpo Kenkyu* (A Study of Japanese Grammar), Taishukan, Tokyo.
- Kuno, Susumu (1978) *Danwa no Bunpo* (Grammar of Discourse), Taishukan, Tokyo.
- Kuroda, S.-Y. (1972) "The Categorical and Thetic Judgments," *Foundations of Language* 9, 153-185.
- Kuwabara, Kazuki (2010) "Nihongogimonbun ni okeru Hobunhyoshiki no Sentaku to CPryoiki no Koozoo (Complementizer Selection in Japanese Questions and Syntax of the CP Domain)," *Togoron no Shintenkaiki to Nihongokenkyu: Meidai o Koete* (Japanese Linguistics in a New Theoretical Universe of Syntax: Beyond Propositions), ed. by Nobuko Hasegawa, 95-127, Kaitakusha, Tokyo.
- Kuwabara, Kazuki (2013) "Peripheral Effects in Japanese Questions and the Fine Structure of CP," *Lingua* 126, 92-119.
- Masuoka, Takashi and Yukinori Takubo (1992) *Kiso Nihongobunpo Kaiteiban* (Basic Japanese

- Grammar: Revised Version), Kurosio, Tokyo.
- Molnár, Valeria (2002) “Contrast in a Contrastive Perspective,” *Information Structure in a Cross-Linguistic Perspective*, ed. by Hilde Hasselgård, Stig K. A. Johansson, Bergljot Behrens, and Cathrine Fabricius-Hansen, 147-161, Rodopi, Amsterdam.
- Nagano, Akiko (2014) “Nchieigo ni okeru Goyoron to Keitairon no Sokan: Hakatahogen no *Bai* to *Tai* ni Motozuku Kosatsu (How Morphology Reflects Pragmatics in English and Japanese: A Case Study Based on *Bai* and *Tai* in Hakata Japanese),” paper presented at the symposium “Bunpo kara Mita Goyoron, Goyoron kara Mita Bunpo (Pragmatics from Grammar, Grammar from Pragmatics)” in the 69th Conference of the English Literary Society of Japan, Tohoku Branch.
- Nagano, Akiko (2015) “Nchieigo ni okeru Goyoron to Keitairon no Sokan: Hakatahogen no *Bai* to *Tai* ni Motozuku Kosatsu (How Morphology Reflects Pragmatics in English and Japanese: A Case Study Based on *Bai* and *Tai* in Hakata Japanese),” *The Proceedings of the 69th Conference of the English Literary Society of Japan, Tohoku Branch*, 134-135.
- Nagano, Akiko (to appear) “Hakatahogen no Gimonbunmatsushi no Heni to Henka no Kansatsu (On Variation and Change of Question Markers in Hakata Japanese),” *Kopasu kara Wakaru Gengo Henka-Heni to Gengo Riron*, ed. by Yoshiki Ogawa, Akiko Nagano, and Akira Kikuchi, Kaitakusha, Tokyo.
- Nakau, Minoru (1994) *Ninchi Imiron no Genri* (Principles of Cognitive Semantics), Taishukan, Tokyo.
- Otake, Yoshio (2009) *‘No(da)’ ni Taiosuru Eigo no Kobun* (English Constructions Corresponding to ‘No(da)’), Kurosio, Tokyo.
- Rizzi, Luigi (1997) “The Fine Structure of the Left Periphery,” *Elements of Grammar: Handbook of Generative Syntax*, ed. by Lilian Haegeman, 281-331, Kluwer, Dordrecht.
- Saito, Mamoru (2011) “Sentence Types and the Japanese Right Periphery,” *Research in Comparative Syntax on Movement and Noun Phrase Structure (Interim Research Report for Grant-in-Aid for Scientific Research)*, 55-77, Nanzan University.
- Selkirk, Elisabeth (2002) “Contrastive FOCUS vs. Presentational Focus: Prosodic Evidence from Right Node Raising in English,” *Speech Prosody 2002: Proceedings of the First International Prosody Conference*, ed. by Bernard Bel and Isabelle Marlin, 643-646, Laboratoire Parole et Language, Aix-en-Provence.
- Selkirk, Elisabeth (2007) “Contrastive Focus, Givenness and the Unmarked Status of ‘Discourse-New’,” *Interdisciplinary Studies on Information Structure (ISIS)* 6, ed. by Caroline Féry, Gisbert Fanselow, and Manfred Krifka, 125-146, Universitätsverlag Potsdam, Potsdam.
- Shimada, Masaharu (2015) “Apparent Omission of Inflectional Endings in Japanese Adjectives,” paper presented at the International Workshop on Syntactic Cartography 2015.
- Shimada, Masaharu, Akiko Nagano, Keita Ikarashi, Masatoshi Honda, and Ryohei Naya (2015) “The Rise of Mirative Markers in Japanese via Grammaticalization Processes,” paper presented at the 22nd International Conference on Historical Linguistics (ICHEL22).

- Smith, Jennifer L. (2011) “[+Wh] Complementizers Drive Phonological Phrasing in Fukuoka Japanese,” *Natural Language & Linguistic Theory* 29, 545-559.
- Sperber, Dan and Deidre Wilson (1995) *Relevance: Communication and Cognition, Second edition*, Blackwell, Malden, MA.
- Tomioka, Satoshi (2010) “Hatsuwakoi to Taishoshudai (Speech Act and Contrastive Topic),” *Togoron no Shintenkai to Nihongokenkyu: Meidai o Koete* (Japanese Linguistics in a New Theoretical Universe of Syntax: Beyond Propositions), ed. by Nobuko Hasegawa, 301-331, Kaitakusha, Tokyo.
- Tsubo-uchi, Sachiyo (1995) “Fukuokashi Hakatahogen no Fuhenkashi *Tai Bai* no Imikijutsu (Semantics of the Particles *Tai* and *Bai* in Fukuoka Hakata Japanese),” *Kyudai Gengogaku Kenkyushitsu Hokoku* 16, 75-103.
- Tsubo-uchi, Sachiyo (2001) “Fukuokashi Hakatahogen no Shujoshi *Tai* no Tayosei ni tsuite (Various Functions in the Sentence-Final Particle *Tai* in Hakata Dialect),” *Fukuokakyoikudaigaku Kiyo* 50 (1), 47-58.
- Ueda, Hiroshi (2014) *Chugokugo no Hakkenhyogen ni kansuru Kenkyu* (A Study on Chinese Expressions of On-the-Spot Recognition), Doctoral dissertation, University of Tsukuba.
- Yoshimura, Noriko (1994) “‘Ga’ no Mondai (The Issue of ‘Ga’),” *Henyosuru Gengobunkakenkyu*, 13-28, Shizuoka Prefectural University.
- Zimmermann, Malte and Edgar Onea (2011) “Focus Marking and Focus Interpretation,” *Lingua* 121, 1651-1670.

Graduate School of Information Sciences
 Tohoku University
 e-mail: nagano@ling.human.is.tohoku.ac.jp