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Topicalization in Adverbial Clauses: Toward Parameterization of Embedded Root Effects

Norio Nasu

1. Introduction

A distinction has been made since Emonds's pioneering work (1970, 1976) between transformations that apply virtually in any type of clause and those that are applicable largely in root clauses. The latter are called root transformations. Among them is topicalization. Although it is root-oriented, it is also known to be applicable in a subset of subordinate clauses.

- (1) a. Each part John examined carefully.
 b. *I fear (that) each part John examined carefully.
 c. The inspector explained that each part he had examined very carefully.
 ((1a, b) from Emonds (1970: 31), (1c) from Hooper and Thompson (1973: 474))

An NP *each part* can be topicalized in the root clause in (1a) and in the complement clause of a verb like *explain* (see (1c)), whereas topicalization is blocked in the complement clause of a verb like *fear* (see (1b)). The focus of investigation in this domain of research has been placed on identifying types of subordinate clauses that tolerate root transformations and that do not.

There are two major syntactic approaches to this issue, the truncation approach and the operator movement approach, so to speak. In the former, it is argued that a constituent affected by a root transformation such as topicalization is moved to a particular domain within the peripheral part of a clause. A clause without such a projection cannot offer a landing site for a preposed constituent, and hence, blocks the relevant transformation (see Haegeman (2003, 2006a, b, c), Munaro (2005), Bocci (2007), Julien (2008)). On the other hand, according to Haegeman (2007, 2010a, b) and Haegeman and Ürögdi (2010), who argue for the operator movement analysis, a subordinate clause that resists a root transformation involves movement of an empty operator to its CP domain. This operator and a preposed constituent intervene with each other, and the relevant transformation is ruled out as a minimality violation.

The purpose of this paper is to examine these approaches. I will argue that while embedded topicalization is banned in English due to null operator movement, its inapplicability in Japanese has nothing to do with operator movement but is correlated

with non-occurrence of an epistemic modal. This difference is ultimately reduced to a parametric difference between the two languages with respect to the mechanism of feature inheritance.

This paper is organized as follows. Section 2 argues that the operator movement analysis cannot capture (in)applicability of embedded topicalization in Japanese. It demonstrates that some adverbial clauses in Japanese do not involve operator movement despite their incompatibility with embedded topicalization. Section 3 examines the truncation analysis. It will be shown that having a full CP structure does not always guarantee applicability of topicalization. Section 4 offers an alternative view. I will point out that topicalization in Japanese is contingent on the involvement of an epistemic modal, whereas topicalization and epistemic modality are not necessarily correlated in English.

2. Absence of Operator Movement in Adverbial Clauses in Japanese

2.1 Operator Movement Analysis

Haegeman (2007, 2010a, b) proposes that an adverbial clause is derived by movement of an operator to a clause-initial position. She further argues that a topicalized argument occupying a peripheral position intervenes between the base and the surface positions of the moving operator, giving rise to a minimality violation. Consider the following sentence and its schematic representation.

- (2) a. *John left when the office Sheila left.
 b. *John left [_{CP} when_i the office_j [_{IP} Sheila left t_j t_i]]
-

Here, the topicalized NP *the office* blocks operator movement. According to Haegeman, the minimality violation induced by this intervention effect underlies the unavailability of topicalization inside an adverbial clause.

Haegeman bases her operator movement analysis on Geis's (1970, 1975) observation that a sentence involving a complex temporal clause like (3) is ambiguous between a high construal (i) and a low construal (ii).

- (3) John left when Sheila said he should leave.
 (i) high construal: John left at the time of Sheila's statement about his departure.
 (ii) low construal: John left at the time of departure requested by Sheila.

Larson (1987, 1990) observes that this ambiguity is associated with different base positions of the operator. The high construal is obtained if the operator originates in

the higher clause and modifies the verb *said*, whereas the low construal results from the operator being generated in the complement clause *he should leave*. Adopting Larson's observation, Haegeman argues that the ambiguity indicates the involvement of operator movement.

However, as Endo (2012) points out, the ambiguity in question is not observed in complex temporal clauses in Japanese. Note that (4) allows only the high construal. Still, the temporal clause also resists topicalization, as illustrated in (5).

- (4) John-wa [Sheila-ga kare-ga dekakeru-bekida to itta toki] dekaketa.
 -Top -Nom he-Nom leave-should C said when left
- (5) John-wa [Sheila{-ga/*-wa} kita toki] dekaketa.
 -Top {-Nom/*-Top} came when left

Endo suggests that Japanese temporal clauses are not derived by operator movement and that the unavailability of topicalization needs an account independent of operator movement. I will show in a later section that this observation can be supported by independent evidence, namely, absence of weak island effects in some of the adverbial clauses in Japanese.

2.2 Topicalization in Adverbial Clauses

Before discussing weak islandhood of adverbial clauses in Japanese, let us examine whether topicalization is possible in the relevant contexts. Adverbial clauses are divided into two groups: those resisting topicalization and those tolerating it. The former include: temporal clauses (6a, b), conditional clauses (6c, d, e, f), a concessive clause (6g), and a reason clause (6h). In the examples below, topicalized phrases are underlined and subordinators are bold-faced.

- (6) a. *Hon-o yonde-ita no-wa [John-wa koohii-o nomi-**nagara**] da.
 book-Acc reading-was C-Top -Top coffee-Acc drink-while is
 'It is while John was drinking coffee that he was reading a book.'
- b. * [John-wa uti-ni iru-**tokini**] zisin-ga okotta.
 -Top home-at is-when earthquake-Nom occurred
 'An earthquake occurred when John was at home.'
- c. * [John-wa kaettek-i-**tara**] denwasite-kudasai.
 -Top come.back-if call-please
 'Please call me if John comes back.'
- d. * [Tingin-wa agare-**ba**] keeki-ga uwamuku hazuda.
 wage-Top rise-if economy-Nom turn.up should

‘The economy should turn up if wages rise.’

e. *[John-wa sanseesuru-**nara**] boku-mo sanseesi-yoo.

-Top agree-if I-also agree-will

‘I will agree if John agrees.’

f. A: Kaisya-wa tikai syoorai akazini naru-daroo.

company-Top near future in.debt get-will

‘The company will get in debt in the near future.’

B: *[Kaisya-wa akazini naru-**nara**] yakuin-no kyuuryoo-o

company-Top in.debt get-if executive-Gen salary-Acc

imasugu sageru bekida.

right.now cut should

‘If the company gets in debt, executives’ salaries should be cut right now.’

g. *[Iriguti-de okyakusan-wa matte-iru-**noni**] daremo ootaisi-nai.

entrance-at visitor-Top waiting-is-though anyone attend.to-not

‘Though visitors are waiting at the entrance, no one attends to them.’

h. *[Kodomotati-wa kabe-ni rakugaki-o kaita-**node**]

children-Top wall-on graffiti-Acc wrote-because

John-wa totemo haraotateta.

-Top very got.angry

‘Because the children wrote graffiti on the wall, John got very angry.’

Although conditional clauses in (6e, f) share the same subordinator *-nara*, they have different interpretative properties. The *nara*-clause in (6e) denotes a condition for the realization of the event the main clause expresses, whereas the *nara*-clause in (6f) takes on the previous utterance made by the speaker A and presents it as the discourse background for the proposition expressed in the main clause. The former type will be called *nara*₁, and the latter *nara*₂ hereafter for the sake of expository convenience.

In contrast to the concessive clause with *-noni* (6g), other variants of concessive clause are compatible with topicalization.

(7) [Sono ie-wa daibu hurukatta{-**kedo** / -**ga**}] boku-wa tittomo

the house-Top fairly was.old-though I-Top at.all

kinisi-naka-tta.

care-not-Past

‘Though the house was fairly old, I didn’t care at all.’

A class of reason clause, *kara*-clause, exhibits ambivalent behavior.

- (8) a. *[Tingin-wa agatta-**kara**] keeki-ga uwamuita no-da.
 wage-Top rose-because economy-Nom turned.up C-is
 ‘The economy turned up because wages rose.’
- b. *[Kao-wa harete ita-**kara**] John-wa nagurareta-nitigainai.
 face-Top swollen was-because -Top have.been.punched-must
 ‘John must have been punched, because his face was swollen.’
- c. [John-wa paatii-ni iku daroo-**kara**] issyoni it-tara doo ka?
 -Top party-to go will-because together go-if how Q
 ‘John will go to the party, so how about going with him?’

Kara-clauses are used either restrictively as in (8a) or non-restrictively as in (8b, c). Furthermore, a conspicuous difference between (8b) and (8c) is that while the former does not contain an epistemic modal, the latter does. For ease of exposition, *kara*-clauses in (8a-c) will be called *kara*₁, *kara*₂, and *kara*₃, respectively. Notice that topicalization is possible only in the *kara*₃-clause. I will return to this issue later in section 4. To sum up the discussion so far, we have the following classification of adverbial clauses.

(9) Classification of adverbial clauses

compatible with topicalization	NOT compatible with topicalization
<i>kara</i> ₃ , <i>kedo</i> , <i>ga</i>	<i>nagara</i> , <i>tokini</i> , <i>tara</i> , <i>ba</i> , <i>nara</i> ₁ , <i>nara</i> ₂ , <i>noni</i> , <i>node</i> , <i>kara</i> ₁ , <i>kara</i> ₂

2.3 Weak Island Effects

Bearing this classification in mind, let us now return to weak islandhood of adverbial clauses. Below is an example of a *wh*-island, one of the weak islands in English. A notable property is that while it allows argument extraction, it resists adjunct extraction.

- (10) a. Which problem_i do you wonder [whether John will solve t_i]?
 b. *How_i do you wonder [whether John will solve the problem t_i]?


The extraction of a *wh*-adjunct is blocked by the intervening operator *whether*. A factive complement clause in English also forms a weak island.

- (11) a. Which car_i did you notice [that Mary had fixed t_i]?
 b. *Why_i did you notice [that Mary had fixed the car t_i]?


(Haegeman and Ürögdi (2010: 120))

Haegeman and Ürögdi (2010) observe that the extraction of *why* in (11b) is blocked by a null operator in the left periphery of the complement clause in much the same

way as the extraction of *how* in (10b) is blocked by the operator *whether* (see also Munsat (1986), Melvold (1991), Hegarty (1992), among many others for similar observations).

- (12) *Why_i did you notice [that OP Mary had fixed the car t_i]?


They further argue that this null operator is associated with the failure of topicalization inside the factive complement. More specifically, the topicalized element would prevent the null operator from moving to the peripheral position.

- (13) *John regrets [that OP_i this book Mary read t_i].


A corollary of the operator movement analysis is that weak islandhood and anti-topicalization are correlated: a null operator is involved in both cases. This means that weak islandhood can be used as a diagnostics for finding out whether anti-topicalization is associated with the involvement of a null operator.

The b-examples in (14)-(22) below involve extraction of an adjunct phrase out of an adverbial clause.

- (14) a. John-wa [donna kappu-de koohii-o nomi-**nagara**] sinbun-o
 -Top what cup-with coffee-Acc drink-while newspaper-Acc
 yonde-ita no?
 reading-was Q
 ‘John was reading a newspaper while drinking coffee with what cup?’
 b. Donna kappu-de_i John-wa [t_i koohii-o nomi-**nagara**]
 which cup-with -Top coffee-Acc drink-while
 sinbun-o yonde-ita no?
 newspaper-Acc reading-was Q
- (15) a. John-wa [donna hucusoo-de aruiteiru-**tokini**]
 -Top what clothes-in walking-when
 syokumusitumon-o uketa no?
 police.questioning-Acc got Q
 ‘John got questioned by the police when he was walking in what clothes?’
 b. Donna hucusoo-de_i John-wa [t_i aruiteiru-**tokini**]
 what clothes-in -Top walking-when
 syokumusitumon-o uketa no?
 police.questioning-Acc got Q

- (16) a. John-wa [Mary-ga nankai syoo-o tot-**ta**ra]
 -Top -Nom how.many.times award-Acc receive-if
 kanozyo-o itininmaeno sakka to mitomeru no daroo ka?
 her-Acc respectable writer as acknowledge C will Q
 ‘John will acknowledge Mary as a respectable writer if she receives awards
 how many times?’
- b. Nankai_i John-wa [Mary-ga t_i syoo-o tot-**ta**ra]
 how.many.times -Top -Nom award-Acc receive-if
 kanozyo-o itininmaeno sakka to mitomeru no daroo ka?
 her-Acc respectable writer as acknowledge C will Q
- (17) a. Anata-wa [donokurai nemure-**ba**] tukare-ga
 you-Top how.long sleep-if tiredness-Nom
 tore-masu ka?
 go.away-Polite Q
 ‘You feel refreshed if you sleep how long?’
- b. Donokurai_i anata-wa [t_i nemure-**ba**] tukare-ga
 how.long you-Top sleep-if tiredness-Nom
 tore-masu ka?
 go.away-Polite Q
- (18) a. Anata-wa [John-ga dooyatte ayamaru-**nara**1] kare-o
 you-Top -Nom how apologize-if him-Acc
 yurusite-yatte-mo ii to omotteiru no?
 forgive-give-even good C think Q
 ‘You intend to forgive him if he apologizes how?’
- b. Dooyatte_i anata-wa [John-ga t_i ayamaru-**nara**1] kare-o
 how you-Top -Nom apologize-if him-Acc
 yurusite-yatte-mo ii to omotteiru no?
 forgive-give-even good C think Q
- (19) a. John-wa [dokonimo kane-o kakusitei-nai-**nara**2]
 -Top anywhere money-Acc hide-not-if
 motto doodootosite-iru-hazuda.
 more confident-be-must
 ‘John must be more confident if he does not hide money anywhere.’
- b. Dokonimo_i John-wa [t_i kane-o kakusitei-nai-**nara**2]
 anywhere -Top money-Acc hide-not-if

motto doodootosite-iru-hazuda.

more confident-be-must

- (20) a. Sensee-wa [John-ga dono siken-de-mo gookauten-o
teacher-Top -Nom any exam-in-even pass.mark-Acc
tor-e-naka-tta-**noni**] kare-o sinkyuusasetta.
get-can-not-Past-though him-Acc promoted
'The teacher promoted John though he could not get a pass mark in any
exam.'

- b. Dono siken-de-mo_i sensee-wa [John-ga t_i gookakuten-o
any exam-in-even teacher-Top -Nom pass.mark-Acc
tor-e-naka-tta-**noni**] kare-o sinkyuusasetta.
get-can-not-Past-though him-Acc promoted

- (21) a. John-wa [Mary-ga dono daigaku-ni-mo ukara-naka-tta-**node**]
-Top -Nom any university-to-even pass-not-Past-because
totemo odorosite-iru.
very surprised-is

'John is very surprised that Mary was not admitted to any university.'

- b. Dono daigaku-ni-mo_i John-wa [Mary-ga t_i ukara-naka-tta-**node**]
any university-to-even -Top -Nom pass-not-Past-because
totemo odorosite-iru.
very surprised-is

- (22) a. John-wa [Mary-ga dare-to-mo hanasi-o si-tagara-nai-**kara1**]
-Top -Nom anyone-with-even talk-Acc do-want-not-because
sinpaisiteiru no da.
is.worried C is

'John is worried because Mary does not want to talk with anyone.'

- b. Dare-to-mo_i John-wa [Mary-ga t_i hanasi-o si-tagara-nai-**kara1**]
anyone-with-even -Top -Nom talk-Acc do-want-not-because
sinpaisiteiru no da.
is.worried C is

These adverbial clauses all tolerate extraction of an adjunct phrase. This indicates that they do not form weak islands and therefore do not contain an (empty) operator which would block adjunct extraction. Although they resist topicalization (see (6a-h) and (8a)), their anti-topicalization property cannot be reduced to a minimality viola-

tion induced by operator movement, but calls for an alternative explanation.¹

3. Truncation Analysis

3.1 Predicate Form and Clause Size

Under the truncation analysis, inapplicability of embedded topicalization is ascribed to defectiveness of an embedded clause: A clause that lacks a topic position due to its impoverished left periphery does not allow topicalization. Versions of truncation analysis have been proposed by descriptive Japanese grammarians in their studies of adverbial clauses. Minami (1974), which is an influential work in this domain of research, classifies adverbial clauses into three groups, A, B, and C. His classification is based on types of elements that can be contained in each group of clauses. For instance, *nagara*-clause, which belongs to group A, is able to contain elements such as an argument, an instrumental PP, a manner adverb, and so on. However, it lacks positions for sentential adverbs and topics.

- (23) [(**John-wa*) (**tabun*) teineini enpitu-de nooto-o tori-nagara]
 -Top probably carefully pencil-in note-Acc taking-while
 John-wa Bill-no enzetu-o kiite-ita.
 -Top -Gen speech-Acc listening.to-was
 ‘John was listening to Bill’s speech while probably carefully taking notes in pencil.’

On the other hand, a concessive clause, an adverbial clause belonging to Minami’s group C, is equipped with positions for these elements.



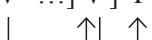
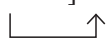
1 One exception is *kara2*-reason clause. It resists not only adjunct extraction but also argument extraction.

- (i) **Nanimo_i John-wa [osyaberina Mary-ga t_i i-ootosi-nai-no-da-kara2] sazokasi*
 anything -Top talkative -Nom say-would-not-C-is-because very
guai-ga warui-nitigainai.
 health-Nom bad-must
 ‘John must be in very bad health because Mary, who is talkative, wouldn’t say anything.’
- (ii) **Dono kaigi-de-mo_i John-wa [ano osyaberina buka-tati-ga t_i hatugensi-tagara-nai*
 any meeting-at-even -Top those talkative staff-PI-Nom speak-want-not
-no-da-kara2] kanari wanmanna zyoosi-nan-daroo.
 -C-is-because fairly autocratic boss-be-may
 ‘John may be a fairly autocratic boss because those talkative staff members don’t want to speak at any meeting.’

The ungrammaticality of (i) and (ii) indicates that *kara2*-clause is a strong island, which resists extraction of any item. Although it is not clear whether this type of adverbial clause is derived by the operator movement, section 4 will offer an account for its incompatibility with topicalization without appealing to operator movement.

- (24) [John-wa tabun hagesiku hantaisuru-daroo-kedo] kamawa-nai.
 -Top probably strongly disagree-will-though care-not
 ‘Though John probably will strongly disagree, I won’t care.’

Mihara (2011, 2012) attempts to develop descriptive grammarians’ insight from the perspective of generative syntax, particularly from that of cartographic approaches to syntactic structures (see Rizzi (1997, 2004) among many others). Similarly to Minami (1974), he considers that clause sizes vary in accordance with clause types. He further argues that the form of the predicate reflects the size of the clause where it occurs. Adopting the split-CP model of clause structure, he assumes that a clause whose predicate appears in the end form (‘syuusikei’ in Japanese) is a full CP, that is, ForceP. Clauses with non-end forms have truncated structures. For instance, a clause with an adnominal form (‘rentaikai’) predicate projects up to FinP but does not project any further. Mihara attempts to capture the correlation between predicate forms and clause sizes by means of verb raising. The verb stem base-generated in V undergoes movement to higher functional heads, as illustrated below.

- (25) a. [_{ForceP} [_{TopP} [_{FocP} [_{FinP} [_{TP} [_{vP} [_{vP} ... V⁰ ...] v⁰] T⁰] Fin⁰] Foc⁰] Top⁰] Force⁰]

 b. [_{FinP} [_{TP} [_{vP} [_{vP} ... V⁰ ...] v⁰] T⁰] Fin⁰]

 c. [_{TP} [_{vP} [_{vP} ... V⁰ ...] v⁰] T⁰]

 d. [_{vP} [_{vP} ... V⁰ ...] v⁰]


If a clause consists of ForceP, the verb moves up to the Force head and manifests itself in the end form as in (25a). A clause consisting of FinP allows the verb to move as far as the Fin head, where it manifests itself in the adnominal form as in (25b). A clause as large as TP has an infinitival form² (see (25c)), and a clause as large as vP, a continuative form (‘renyookai’) (see (25d)).

According to Mihara (2011, 2012), the form of a predicate is a hallmark of clause size. This accords with Minami’s (1974) observation that a smaller clause can-

2 The terminology ‘infinitival form’ used in Mihara (2011, 2012) refers to the non-finite form that typically precedes the conjunction *to* ‘if/when’.

(i) John-wa kaki-o tabe-ru-to yoku hara-o kowasu.
 -Top oyster-Acc eat-Infinitive-if/when often stomach-Acc damage

‘John often has a stomach trouble if/when he eats oysters.’

The predicate in this form shows no past-nonpast distinction in much the same way as an infinitival predicate in English.

not contain an element that occurs in a larger clause. Consider the following examples.

- (26) a. [Enpitu-de nooto-o tor{-i /*-u /*-ta}-nagara]
 pencil-in note-Acc take{-Continuative/*-Present/*-Past}-while
 John-wa Bill-no enzetu-o kiite-ita.
 -Top -Gen speech-Acc listening.to-was
 ‘While {taking/*take/*took} notes in pencil, John was listening to Bill’s speech.’
- b. [Enpitu-de nooto-o (*kinoo) tor-i-nagara]
 pencil-in note-Acc yesterday taking-while
 John-wa Bill-no enzetu-o kiite-ita.
 -Top -Gen speech-Acc listening.to-was

(26a) indicates that the predicate in a *nagara*-clause cannot appear in the tensed form but only in the tenseless form (i.e. continuative form). According to Mihara, this means that the *nagara*-clause consists of vP and lacks higher projections. Similarly, as pointed out by Minami (1974), a temporal adverb like *kinoo* ‘yesterday’ is also excluded from the *nagara*-clause (see (26b)). Being a tense-related expression, it is adjoined to a projection located higher than vP (for instance, TP).

3.2 Lack of Correspondence between End Forms and Topicalization

As mentioned earlier, the common assumption in the truncation approach is that the failure of topicalization is associated with impoverished clause structure. Topicalization is banned if a clause is not large enough to provide a topic position. Then a question is whether topicalization is possible in a clause with full-fledged left structure. Recall that the occurrence of an end-form predicate is a hallmark of the completeness of a clause: it appears only in ForceP. The occurrence of a non-end form indicates that the relevant clause consists of FinP or a smaller projection.

As illustrated below, an end-form predicate occurs in *kara1*-, *kara2*-, *kedo*-, and *ga*-clauses respectively. Non-end forms like an adnominal form are not allowed in those clauses.

- (27) a. [Sizuka{-da /*-na}-kara1] otitute sigoto-ga dekiru.
 quiet{-End /*-Adnominal}-because calmly work-Nom can
 ‘Since it is quiet, I can work calmly.’
- b. [Ituninaku zyoozetu{-da /*-na}-kara2]
 unusually talkative{-End /*-Adnominal}-because

- John-wa siken-ga yoku dekita no daroo
 -Top exam-Nom well did C may
 ‘John may have done well in the exam because he is unusually talkative.’
- c. [Kono kikai-wa syuuri-ga hituyoo{-da /*-na}-{kedo/ga}]
 this machine-Top repair-Nom necessary{-End /*-Adnominal}-though
 watasi-wa okane-ga nai.
 I-Top money-Nom absent
 ‘Though this machine needs repair, I don’t have money.’

However, while the concessive clause is compatible with topicalization (see (27c)), *kara1*- and *kara2*-clauses are not, as illustrated by (28a, b).

- (28) a. *[Tingin-wa agatta-kara1] keeki-ga uwamuita no da.
 wage-Top rose-because economy-Nom turned.up C is
 ‘The economy turned up because as for wages, they rose.’
- b. *[Denwa-wa natteiru-kara2] hayaku de-nasai.
 telephone-Top ringing-because quickly answer-Imperative
 ‘The telephone is ringing, so answer it quickly.’

This means that topicalization can be banned even in an adverbial clause with a full CP structure (i.e. ForceP). In other words, applicability of embedded topicalization is not totally governed by clause size.³

4. The Licensing Condition on Topicalization

The previous sections have pointed out shortcomings of the operator movement analysis and the truncation analysis. The former fails to explain why topicalization is blocked in the context where operator movement is not involved. The latter cannot

3 Still, there are cases where clause size does matter. In contrast to *kara1*- and *kara2*-clauses, other anti-topicalization adverbial clauses discussed in this paper are all incompatible with an end-form predicate, as illustrated below.

- (i) a. tabe -{ nagara / tara / reba }, ...
 eat.Continulative-{ while / if / if }
- b. *tabe-ru -{ nagara / tara / reba }, ...
 eat-End-{ while / if / if }
- (ii) a. Syuuri-ga hituyoo-na -{ tokini / nonara / node / noni }, ...
 repair-Nom necessary-Adnominal-{ when / if / because / though }
- b. *Syuuri-ga hituyoo-da -{ tokini / nonara / node / noni }, ...
 repair-Nom necessary-End-{ when / if / because / though }

Nagara-, *tara*-, and *(re)ba*-clauses have a predicate in the continuative form, and *tokini*-, *(no)nara*-, *node*-, and *noni*-clauses have a predicate in the adnominal form. In the truncation analysis, the former group involves vP, and the latter group FinP. Since they both have a structure without TopP, the truncation analysis correctly predicts that topicalization does not take place in them.

account for inapplicability of topicalization in some clauses with full CP structure. One common aspect of these approaches is that although they discuss what may *block* topicalization, they do not explicitly state what *licenses* it. This section explores the licensing condition on topicalization. The core assumption is that epistemic modality plays a crucial role, particularly in Japanese.

4.1 Epistemic Modality

As mentioned in section 2.2, the *kara*-type reason clause exhibits peculiar behavior with respect to embedded topicalization. Topicalization is possible only in a non-restrictive *kara*-clause that is able to contain an epistemic modal. This type of reason clause (called *kara3* type) exhibits a striking contrast with *kara2*-clause, a non-restrictive reason clause that is compatible with neither topicalization nor epistemic modality.

- (29) a. *[Denwa-wa natteiru-kara2] hayaku de-nasai.
 telephone-Top ringing-because quickly answer-Imperative
 ‘The telephone is ringing, so answer it quickly.’
- b. [Denwa-ga natteiru-(*daroo)-kara2] hayaku de-nasai.
 telephone-Nom ringing-(*may)-because quickly answer-Imperative
- c. [John-wa 2-zi-ni kaettekuru-(daroo)-kara3] soremade
 -Top two-o’clock-at come.back-(may)-because until.then
 kokode mattei-nasai.
 here wait-Imperative
 ‘John will come back at two o’clock, so wait here until then.’

As a first approximation, it may be generalized and stated that the potential occurrence of an epistemic modal licenses topicalization.

This generalization, however, requires some elaboration. As illustrated below, topicalization is impossible even in the presence of an epistemic modal.

- (30) A: Kaisya-wa akazini naru hazuda.
 company-Top in.debt become should
 ‘The company should get in debt.’
- B: [Kaisya{-ga /*-wa} akazini naru hazu-nara2],
 company{-Nom/*-Top} in.debt get should-if
 yakuin-no kyuuryoo-o imasugu sageru bekida.
 executive-Gen salary-Acc right.now cut should
 ‘If the company should get in debt, executives’ salaries should be cut right

now.’

Still, this fact alone does not undermine the validity of the generalization above. While the *nara2*-clause in (30B) is able to have a modal like *hazuda* ‘should’, replacement of this modal with another like *daroo* ‘may/will’ makes the sentence ungrammatical.

- (31) *[Kaisya-ga akazini naru daroo-nara2], ...
 company-Nom in.debt get will-if

A similar contrast emerges in other types of adverbial clause.

- (32) [Zisin-ga okoru {kamosirenai /*daroo}-node],
 earthquake-Nom happen {may /*will}-because
 hizyoosyoku-o yooisite-arimasu.
 emergency.food-Acc prepared-have
 ‘I have prepared emergency food because an earthquake may happen.’

- (33) [Zisin-ga okoru {kamosirenai /*daroo}-noni],
 earthquake-Nom happen {may / *will}-though
 John-wa zenzen kinisitei-nai.
 -Top at.all care-not

‘Though an earthquake may happen, John does not care at all.’

Remember that adverbial clauses in (30)-(33) are all incompatible with topicalization. On the other hand, a clause tolerating topicalization is compatible with the modal *daroo*.

- (34) [John-wa okoru-daroo{-kedo / -ga}], boku-wa kamawa-nai.
 -Top get.angry-will-though I-Top care-not
 ‘Though John will get angry, I do not care.’

These facts suggest that there is a striking parallelism between topicalization and the modal *daroo*.⁴

Nitta (1991) classifies Japanese modals into two categories, genuine and quasi-

4 Adverbial clauses involving *-nagara*, *-tokini*, *-(re)ba*, and *-tara* are not able to have any epistemic modal including *daroo*.

- (i) a. *[Kooonii-o nomu{-kamosirenai / -daroo}-nagara], ...
 coffee-Acc drink{-may / -will} -while
 b. *[John-ga tazunete-kuru{-kamosirenai / -daroo}-tokini], ...
 -Nom visit-come{-may / -will} -when
 c. *[Ame-ga huru{-kamosirenakere / -daroo}-ba], ...
 rain-Nom drop{-may / -will} -if
 d. *[John-ga kuru{-kamosirenaka / -daroo}-ttara], ...
 -Nom come{-may / -will} -if

As mentioned in the text, these adverbial clauses do not allow topicalization either.

modals (see also Inoue (2007) and Ueda (2007) for this distinction). The modal *daroo* belongs to the former group and the modal *hazuda* belongs to the latter. They are distinguished by means of the following criterion. A genuine modal does not have a past tense form and a negative form, and it cannot co-occur with another genuine modal. By contrast, all of these options are available for a quasi-modal. This is illustrated by the contrast below.

(35) John-wa kuru {daroo /*daroo-ta /*daroo-nai /*daroo-mai}.

-Top come {will /*will-Past /*will-not /*will-can't}

(36) John-wa kuru {hazuda / hazuda-tta / hazuga-nai / hazunan-daroo }.

-Top come {should / should-Past / should-not / should-will}

Given the difference between genuine and quasi-modals, a more desirable generalization is that it is a genuine epistemic modal that licenses topicalization.

The close link between topicalization and a genuine epistemic modal is not restricted to adverbial clauses. Nitta (1991) points out that topicalization is impossible in the contexts listed below.

(37) a. Omae{-ga/*-wa} ike!

you{-Nom/-Top} go.Imperative

'You go!'

b. Watasitai{-ga/*-wa} ikoo.

we{-Nom/-Top} go.let's

'Let's go.'

c. Sorenara boku{-ga/*-wa} sokoni ikoo.

then I{-Nom/-Top} there will.go

'I will go there then.'

d. Hora, denwa{-ga / *-wa} natteiru yo.

listen telephone{-Nom/-Top} ringing Prt

'Listen. The telephone is ringing.'

(37a) is an imperative sentence, and (37b) is an exhortative sentence. (37c) denotes volition of the speaker. (37d) is what Kuno (1973) calls a neutral description. In contrast to nominative marking, topicalization is impossible in all of these contexts.⁵ Notice that these are not embedded sentences. Their anti-topicalization behavior suggests that topicalization is ruled out even in root contexts. In other words, it is not a

5 It must be noted here that a *wa*-marked phrase can be ambiguous: it may be a thematic topic or a contrastive topic. It is a thematic topic, not a contrastive topic, that cannot occur in the contexts listed in (37).

root phenomenon in the strict sense. Interestingly, the contexts listed in (37) is not compatible with epistemic modality either.

- (38) a. Imasugu iku(*-daroo)-nasai!
 right.now go(-may)-Imperative
 b. Imasugu iku(*-daroo)-yoo.
 right.now go(-may)-let's
 c. Sorenara boku-ga iku(*-daroo)-oo.
 then I-Nom go(-may)-will
 d. Hora, denwa{-ga / *-wa} natteiru(*-daroo) yo.
 listen telephone{-Nom/-Top} ringing(-may) Prt

The correlation between topicalization and genuine epistemic modality is not restricted to adverbial clauses but applies to larger contexts, and in this sense, it is a general condition operating in Japanese grammar.

On the other hand, occurrence of a genuine epistemic modal does not seem to be a robust precondition for topicalization in English. For instance, a modal of this type can occur in the complement clause of a factive predicate. Nevertheless, the factive complement is not compatible with topicalization.

- (39) Tildi knew, as though she could read on a page, that the wizardess was angry, frightened, and overwhelmed. She regretted that she **might** be the cause of any of Serafina's pain, but she could not help it.

(Jody Lynn Nye, *A Forthcoming Wizard*)

- (40) *John regretted that *Gone with the Wind* he never went to see.

(Haegeman & Ürögdi 2010: 113)

These facts suggest that topicalization and epistemic modality does not have a direct relationship in English, though they may be indirectly related.⁶ In Japanese, by con-

6 For instance, they are both excluded from the central adverbial clauses but they appear in the peripheral adverbial clauses (see Haegeman (2003 et seq.) among others for this dichotomy of adverbial clauses).

- (i) a. *[If these exams you don't pass] you won't get the degree.
 b. *John will do it [if he may/must have time].
 (ii) a. [If some precautions they have indeed taken], many other possible measures they have continued to neglect.
 b. [If Le Pen will probably win], Jospin must be disappointed.

(examples quoted from Haegeman (2010b: 599, 603, 616))

A central adverbial clause is more closely integrated into the main clause. The conditional clause in (ia, b) is this type of adverbial clause in that it expresses a condition for the realization of the event expressed in the main clause. On the other hand, a peripheral conditional clause like those in (iia, b) has an independent proposition that reflects the speaker's thought. It serves as the discourse background for the proposition expressed in the main clause. As illustrated above, only the latter tolerates ↗

trast, a direct correlation is observed as expected. Neither epistemic modal and topicalization can occur in the factive complement.

- (41) John-wa [Bill-ga ko-nai (*daroo) koto]-ni haraotateteiru.
 -Top -Nom come-not may C-Dat resent
 ‘John resents that Bill does not come.’
- (42) *John-wa [Bill-wa ko-nai koto]-ni haraotateteiru.
 -Top -Top come-not C-Dat resent

A question to be answered is how the difference between Japanese and English in this respect can be accounted for.

4.2 Language Variations

The set of assumptions adopted in this paper is as follows. Let us postulate that there is a projection EModalP between TopP and FocP, which is intended to host elements encoding epistemic modality (see Koizumi (1993) for evidence in favor of a modal phrase above TP).

- (43) ... [_{TopP} ... Top [_{EModalP} ... EModal [_{FocP} ... Foc [...]]]] ...

As discussed above, while topicalization in Japanese is dependent on epistemic modality, topicalization in English is not. I propose that the contrast in question can be reduced to a typological difference between the two languages. Depending on and further developing observations made by É. Kiss (1995), Miyagawa (2010) proposes that languages are divided into two major groups, subject-verb agreement languages and discourse-configurational languages. He argues that this distinction is made on the basis of the kind of grammatical features inherited from C to T (see Chomsky (2008) for the details of the feature-inheritance machinery). According to Miyagawa, all languages have ϕ -features and discourse-related features (such as topic/focus features) and these features are initially carried by C. In subject-verb agreement languages like English, ϕ -features are inherited by T, whereas in discourse-configurational languages including Japanese, ϕ -features are left in the CP domain.

Adopting and slightly modifying the feature-inheritance machinery advocated by Miyagawa (2010), I propose that topicalization-EModal dependency is a reflex of ϕ -feature checking in the CP domain. Suppose that the Top head carries uninterpret-

\topicalization and epistemic modality. Haegeman (2006a) observes that since reflection of the speaker's thought is a characteristic of epistemic modality (i.e., epistemic modality is “anchored to the speaker” (p.30), to use her phrase), it is fully compatible with a peripheral adverbial clause. She extends the notion of speaker-anchoring to topicalization. Epistemic modality and topicalization, therefore, are indirectly related to each other via speaker-anchoring.

able ϕ -features [$u\phi$] and that the EModal head is equipped with interpretable ϕ -features [$i\phi$].⁷ They enter into Agree, as schematically illustrated below.

$$(44) \quad \dots [{}_{\text{TopP}} \text{NP-wa } [{}_{\text{EModalP}} \dots [{}_{\text{TP}} \dots] \dots \text{EModal}_{[i\phi]}] \text{Top}_{[u\phi]}] \dots$$

└──────────┘ Agree

This machinery captures dependence of topicalization on epistemic modality. A sentence where an epistemic modal cannot occur lacks EModalP. Consequently, even if the Top head were introduced into the derivation, it could not have its [$u\phi$] checked off. (46) is a partial structure of (45a).

- (45) a. *Hora, denwa-wa natteiru yo.
 listen telephone-Top ringing Prt
 b. Hora, denwa-ga natteiru(*-daroo) yo.
 listen telephone-Nom ringing(*-may) Prt

$$(46) \quad \dots [{}_{\text{TopP}} \text{denwa-wa} \dots [{}_{\text{TP}} \text{natteiru}] \dots \text{Top}_{[u\phi]}] \dots$$

Since the modal cannot occur (see (45b)), this sentence lacks EModalP. The [$u\phi$] carried by Top will be left unchecked, and consequently, the derivation will crash.

On the other hand, since [$u\phi$] carried by C is inherited by T in English, Top does not retain this feature. This means that it does not require the presence of an epistemic modal. It is then predicted that English has a construction that involves TopP but lacks a modal. Culicover and Levine (2001) point out that a gerundive clause, which is not able to have an epistemic modal, marginally tolerates topicalization, though they admit that it does not sound perfectly normal to some speakers.

- (47) That solution Robin having already explored and rejected, she decided to see if she could mate in six moves with just the rook and the two pawns.

(Culicover and Levine (2001: 297, n. 14))

4.3 Spec vs. Head

The previous section dealt with dependence of topicalization on epistemic modality. Japanese abounds instances of similar dependence. This section shows that they also reflect another aspect of typological characteristics of Japanese.

As illustrated below, epistemic adverbs appear with particular forms of predi-

7 It is not inconceivable to postulate a valued and hence interpretable ϕ -feature set on the EModal head. It is reported that epistemic modals show person restrictions (see Inoue (2007), Ueda (2007), among others). For instance, *daroo* chooses only first and third person subjects.

(i) Kitto { watasi / *anata / John }-wa iku-daroo.
 certainly {I/you/John}-Top go-will

This indicates that the modal has a person feature intrinsically valued as [1st/3rd].

cate.

- (48) a. **Tabun** John-wa okotteiru { **daroo** / * \emptyset / ??**kamosirenai** / ***yooda** }.
 probably -Top angry { may / \emptyset / might / seem }
- b. **Hyottositara** John-wa okotteiru { ***daroo** / * \emptyset / **kamosirenai** / ***yooda** }.
 perhaps -Top angry { may / \emptyset / might / seem }
- c. **Dooyara** John-wa okotteiru { ***daroo** / * \emptyset / ***kamosirenai** / **yooda** }.
 presumably -Top angry { may / \emptyset / might / seem }

These adverbs differ from each other in the form of predicates they co-occur. *Tabun* ‘probably’, for example, co-occurs with the epistemic modal *daroo*, but is incompatible with other modals. What is particularly worth noting is that high adverbs listed above cannot occur in a sentence that lacks an epistemic modal. In other words, they require an overt markers attached to the predicate.

A similar restriction is can be found in the focus construction. Consider the following examples.

- (49) a. Kono tokei-wa **PARI-de** ka-tta **no desu** ka?
 this watch-Top Paris-in buy-Past Fin Foc Q
 ‘Did you buy this watch in PARIS?’
- b. ??*Kono tokei-wa **PARI-de** kai-masi-ta ka?
 this watch-Top Paris-in buy-Polite-Past Q

Similarly to an epistemic adverb requiring a particular epistemic modal, a focused phrase must co-occur with the form *noda*, which is analyzed as a combination of Fin and Foc heads in the CP domain (see Hiraiwa and Ishihara (2012), Kuwabara (2013)). The same restriction applies to declarative sentences involving an in-situ focus.

- (50) a. Tokyo-zyanakute OSAKA-ni itta no desu ka?
 -rather.than -to went Fin Foc Q
 ‘Did you go to OSAKA rather than Tokyo?’
- b. A: Hai, **OSAKA-ni** itta **no desu**.
 yes -to went Fin Foc
 ‘Yes, I went to OSAKA.’
- B: ??*Hai, **OSAKA-ni** iki-masi-ta.
 yes -to go-Polite-Past

Rizzi (2006) argues that phenomena related to scope-discourse semantics (such as question, focus, topic, etc.) must be licensed via specifier-head agreement with respect to the features of the relevant class such as Q, Topic, Focus, and so on.

- (51) XP_F and X_F must be in a specifier-head configuration, for $F = Q, \text{Top}, \text{Foc}, R, \dots$

(Rizzi (2006: 102))

The dependency we have observed above may also be captured by this requirement. However, the following data show that the agreement relation between the element in the specifier (e.g. an epistemic adverb) and the one in the head (e.g. an epistemic modal) is not bidirectional in Japanese.

- (52) a. Tabun John-wa okotteiru *(daroo).
 probably -Top angry may
 ‘John may probably be angry.’
 b. (Tabun) John-wa okotteiru daroo.
 probably -Top angry may

Overt realization of the head (i.e. an overt modal) is a prerequisite for the occurrence of an epistemic adverb in the specifier, but the opposite is not the case: an epistemic modal can occur without the specifier occupied by an epistemic adverb.

A possible alternative may be that the licensing of the phenomena related to scope-discourse semantics is carried out primarily by means of an overt X^0 item in Japanese. The occupation of the specifier position is contingent on the satisfaction of this requirement. By contrast, overt realization of the head is not an essential requirement in English.

- (53) a. John has **probably** read the book.
 (cf. John **may probably** have read the book.)
 b. Did you buy this watch **in PARIS**?

The epistemic adverb does not have to co-occur with an epistemic modal, though it may. Likewise, focalization in English does not require an item like *noda*. This indicates that merger of a phrasal category in the specifier of the relevant projection is the primary method for marking discourse-semantic phenomena in English.

This difference is reminiscent of Alexiadou and Anagnostopoulou’s (1998) parameterization of the EPP (Extended Projection Principle) satisfaction. They argue that languages are divided into two major groups with respect to how the EPP is satisfied: those which satisfy the EPP by merging a phrasal category in Spec-TP, and those which employ head movement to T for this purpose. English belongs to the former group. I would like to propose that Alexiadou and Anagnostopoulou’s analysis applies not only to the EPP checking but can be generalized and extended to phenomena related to scope-discourse semantics. English employs merger of a phrasal category in the specifier position in the relevant construction, whereas in Japanese, merger of an overt X^0 plays a crucial role.

5. Conclusion

This paper critically reviewed two major approaches to topicalization in adverbial clauses, namely, the operator movement analysis and the truncation analysis. It was demonstrated that adverbial clauses in Japanese that resist topicalization do not exhibit weak island effects, suggesting that they are not derived via operator movement and that their anti-topicalization property calls for an account without appealing to operator movement. It was also shown that topicalization can be blocked even in a clause with full-fledged CP structure. This indicates that structural defectiveness is not the sole reason for anti-topicalization. As an alternative observation, this paper pointed out that topicalization is licensed by epistemic modality. If a clause is capable of hosting a genuine epistemic modal, it tolerates topicalization as well. Although Japanese exhibits close correlation between topicalization and epistemic modality, their distribution does not necessarily overlap in English. I suggested that the difference between the two languages reflects a parametric difference between agreement-based languages like English and discourse-configurational languages like Japanese in terms of ϕ -feature inheritance.

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