

Boundary Tones or Prominent Particles? Variation in Japanese Focus-Marking Contours*

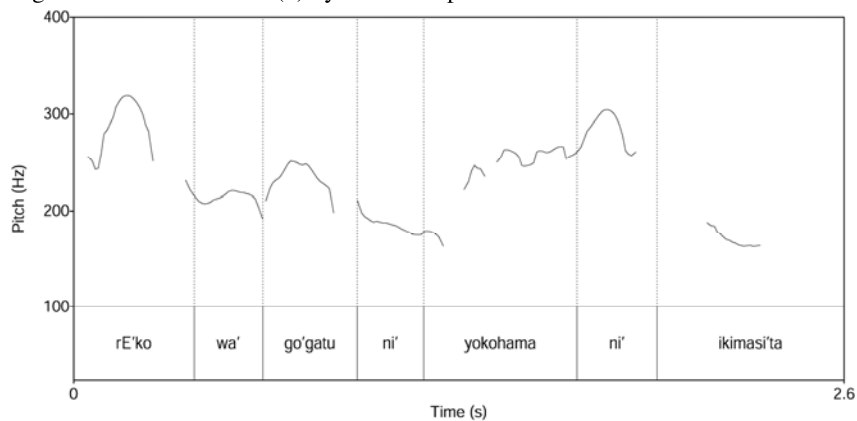
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0. Introduction

In standard Japanese, the final mora of a (sentence-medial) syntactic phrase sometimes accompanies a pitch rise (prominence-lending rise; PLR), when the phrase is in information-structural focus (Kori 1997).

- (1) rE'ko wa' go'gatu ni' [_Fyokohama ni'↑] ikimasi'ta.
Reiko TOP May DAT Yokohama DAT go.POLITE.PAST
'Reiko went [_Fto Yokohama] in May.'
(' = pitch accent nucleus)

Figure 1: An utterance of (1) by a female speaker



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In the literature, it has been assumed/suggested that a PLR occurs only or typically on a phrase that ends with a particle (Kori 1989, 1997; Taniguchi and Maruyama 2001; Muranaka and Hara 1994). If the occurrence of PLRs is indeed restricted or conditioned by the presence of a particle, however, the assumption in the current J_ToBI framework that PLRs are boundary tones (e.g. Venditti 2005, 1997) will be questioned, as a boundary tone must be largely insensitive to the lexical content of the phonological phrase.

The goal of this study is two-fold. First, I demonstrate, through experimental data, that some speakers use a PLR only on focus phrases with a particle, while some others use it on focus phrases both with and without a particle. Second, based on this observation, I argue that there are two distinct processes (“early phrasal accents” and “boundary tones”) through which PLRs are generated, and that speakers differ with respect to which of these processes they use. In passing, I also suggest certain modifications to the current J_ToBI model; namely, I propose to add to the inventory of tones “weakened pitch accent” (wH*+L) and “weakened phrasal accent” (wH⁻), and to revise the assumption that the placement of pitch accents and phrasal accents is fully determined by (phonological) phrasing.

The organization of the present paper is as follows. In Section 1, I briefly review the basics of the J_ToBI system. In Section 2, I discuss how focus-background structure is tonally encoded in Japanese, drawing on Kori (1997). In Section 3, I demonstrate the results of an experiment, which show that PLRs occur more frequently on a phrase with a particle. In Section 4, I propose an account of the observed asymmetry between phrases with and without a particle.

1. Preliminaries: Basic Tonal Structures of Japanese

This section reviews the basics of the Japanese Tone and Break Indices system (J_ToBI; Venditti 2005, 1997), which I adopt as a background theory of Japanese tonal structures. (I will later suggest certain modifications.)

1.1. Accentual Phrase

According to the current J_ToBI system, Japanese has two levels of phonological grouping above the word level, which are defined both tonally and by the degree of disjuncture: accentual phrase (AP) and intonation phrase (IP).

An accentual phrase (AP) consists of one or more words. Within an AP, only the leftmost accent nucleus¹ is realized (i.e. the nucleus of the leftmost accented word) and all others are *suppressed* (not realized). Also, within an AP, there is a rise after the first mora (phrasal accent), unless the first mora is an accent nucleus.

In the J_ToBI system, qualitative pitch movements within an AP are described as a pitch accent (H*+L), a phrasal accent (H⁻), and initial and final boundary

¹ In Japanese, each word is associated with a pitch accent pattern (including the “unaccented” pattern). A word has zero or one accent nucleus (i.e. the mora followed by a precipitous pitch fall), which is often transcribed with <^>.

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tones (%L, %wL, L%, wL%).² A paradigm of accent patterns of three-mora words followed by the nominative case particle *ga*' is illustrated below; curly brackets {...} indicate AP-boundaries:

- (2) a. {sa ka na ga'}
- %L H⁻ L% (or in the traditional transcription, LHHH)
- 'fish-NOM'
- b. {i' no ti ga'}
- %wLH*+L L% (or HLLL)
- 'life-NOM'
- c. {so ba' ya ga'}
- %L H⁻ H*+L L% (or LHLL)
- 'noodle.shop-NOM'
- d. {o to ko' ga'}
- %LH⁻ H*+L L% (or LHHL)
- 'man-NOM'

When an accent nucleus is on the first mora of an AP (e.g. (2b)), the phrasal accent (H⁻) is indistinguishable from H*+L and is not transcribed (but see below).

1.2. Intonation Phrase

An intonation phrase (IP) is a phonological unit that consists of one or more AP. Tonally, it is the domain within which pitch range is specified and downstep takes place; it is also characterized by an optional phrase-final tonal movement (IP-boundary tone). The inventory of IP-boundary tones includes:³

- H%: (Utterance-medial) prominence-lending or (utterance-final) insisting rise; continuation (?) (Kori's (1997) emphatic rise intonation; ↑)
- LH%: Question rise (Kori's question rise intonation; ↗)
- HL%: Explanatory rise-fall (Kori's rise-fall intonation; ↑↓)

The boundaries of IPs are indicated with square brackets ([...]):

- (3) a. [{rO'ma ni'} {itta' no'}] 'I went to Rome.'
- H%
- b. [{rO'ma ni'} {itta' no'}]
- LH%
- c. [{rO'ma ni'}] [{itta' no'}]
- HL%

² Labeling of AP-initial boundary tones (%L, %wL) is sometimes omitted in the rest of the paper.
³ Kori (1997) remarks that there are two other types of intonations: "plain" (no marking) and "fall"(↓). The "plain" pattern corresponds to the absence of an IP-boundary tone in J_ToBI; there is no counterpart of the "fall" pattern, but it is infrequent anyway.

1.3. Disjunctures

APs and IPs are also characterized by the degree of perceived disjuncture between them. A tonally-defined AP is typically followed by a medium disjuncture, which is transcribed with break index 2; a tonally-defined IP is typically followed by a strong disjuncture, which is transcribed with break index 3.

2. Phonological Focus-Marking in Japanese

In Japanese, the focus-background structure of a sentence is encoded by various phonological and morphosyntactic means.⁴ Tonally, foci are marked by one or more of the following means (Kori 1997):

- (i) Deaccenting of the following phrases (obligatory): the pitch movements (phrasal rises/pitch accent falls) within the phrases following the focus phrase are weakened.⁵
- (ii) Deaccenting of the preceding phrases (optional): the pitch movements (phrasal rises/pitch accent falls) within the phrases preceding the focus phrase are weakened.
- (iii) Emphasized accent (optional): the pitch movements (phrasal rise/pitch accent fall) within a focus phrase often have a wider range than those within a non-focus phrase.
- (iv) Emphatic rise (PLR) (optional): the final mora of a focus phrase sometimes accompanies a pitch rise.

To illustrate, let us consider how the following sentence is uttered differently depending on where the focus is:

- (4) [{k_yo'ne_n wa' } {deN_sya de' } {rO'ma ni' } {ikimasi'ta' }]
 last.year TOP train by Rome DAT go.POLITE.PAST
 'Last year, (I) went to Rome by train.'

When the phrase *deN_sya de'* is the focus, the phrases following it, i.e. *rO'ma ni* and *ikima'sita* are obligatorily deaccented (here indicated by index p), the phrase preceding it (*k_yo'ne_n wa*) is optionally deaccented, and the focus phrase itself optionally has wider pitch movements within it (indicated by index f) and accompanies a prominence-lending rise:

- (5) A: How did you go to Rome last year?
 B: [_(p) {k_yo'ne_n wa' } _(f) {deN_sya de' (↑)} _p {rO'ma ni' } _p {ikimasi'ta' }]

⁴ Morphosyntactic means include: (i) word order, (ii) constructions like the passive, cleft, and multiple nominative constructions, and (iii) choice of particles, e.g. thematic *wa* (see Kuno 1978; Hiraiwa and Ishihara 2002, among others).

⁵ By "focus phrases", I refer to syntactic units such as noun phrases and adverbial phrases, rather than phonological phrases (APs or IPs).

When *rO'ma ni* is the focus, only the final phrase (*ikima'sita*) is obligatorily deaccented:

- (6) A: Where did you go by train last year?
 B: [_(p){kyo'neN wa'}]_(p){deNsyā de'}_(f){**rO'ma ni'** (↑)}_p{ikimasi'ta}

“Accent weakening” (deaccenting) in Kori’s (1997) system overlaps but does not directly match “accent deletion” in the current J_ToBI. First, in the J_ToBI system, a lexical accent pitch fall is either realized or not (i.e. deleted). No intermediate status is transcribed. Since “weakening” subsumes complete suppression, “weakened accents” in Kori’s system sometimes correspond to H*+L and sometimes to the absence thereof. Second, Kori argues that not only lexical accents (H*+L), but also phrasal accents (H⁻) can (and sometimes must) be weakened.⁶

Kori’s observations also challenge the assumption in the current J_ToBI system that the placement of pitch accents and phrasal accents are fully determined by phrasing (into IPs/APs; deviation from this general rule is treated as a mismatch and transcribed with index m). Namely, in the current J_ToBI system, lexical accents are deleted only when they follow another accent *within an AP*. Taking (5B) as an example, the accents of the phrases following the focus phrase *deNsyā de'* can be suppressed only when the last three phrases form a single AP. This is problematic, as in (5B) it is possible (i) for a medium or strong disjuncture to follow *deNsyā de'* (in fact, a focus phrase is often followed (“set off”) by a strong disjuncture), and (ii) for the accents of the following two phrases to be suppressed. Also, the first phrase in (5B) can be optionally deaccented. This of course cannot be described in the current J_ToBI system.

To integrate Kori’s observations into the J_ToBI system, I add to the inventory of tones “weakened lexical accent fall” (wH*+L) and “weakened phrasal accent rise” (wH⁻), and assume that weakening/suppression of accents have a certain independence from phrasing. In the revised system, an AP is tonally characterized by a phrasal accent (H⁻ or wH⁻), a pitch accent (H*+L or wH*+L), and initial and final boundary tones (%L or %wL, and L% or wL%).

3. Experiment: Are PLRs Boundary Tones or Prominent Particles?

In the J_ToBI literature, PLR (emphatic rise) has been analyzed as a kind of IP-boundary tone (H%). Kori (1997), similarly, considers it a kind of “intonation.” On the other hand, it has been assumed/suggested that a PLR occurs only or typically on a phrase that ends with a particle.⁷ If indeed PLRs occur only on phrases with a particle, the boundary tone analysis will be questioned. Even if the

⁶ Kori adopts the view that the so-called phrasal accent rise is a phenomenon at the lexical level (i.e. is part of the lexical accent pattern). In the present paper, I do not subscribe to this view.

⁷ Kori (1989:325): “A particle attached to a focus word is sometimes raised in pitch;” Muranaka and Hara (1994:365): “Some particles are occasionally uttered with higher tone in Japanese discourse;” Taniguchi and Maruyama (2001:56): “The particle within a noun phrase (noun+particle) sometimes receives prominence (acute increase in F0).”

association of PLRs and particles is a matter of tendency, such an asymmetry would still have to be explained. The questions to be addressed are thus the following: (i) Does the asymmetry between phrases with and without a particle exist? and (ii) If the asymmetry exists, how can it be explained?

In order to determine whether PLRs occur only or more frequently with *focus phrases with a particle*, I conducted a production experiment with 25 speakers of standard Japanese (12 males and 13 females; the dialect background of the subjects was not controlled as long as they were competent in the standard dialect).

3.1. Design

The experiment consists of four sessions, plus one warm-up session.⁸ In each session, the subject is asked to read a set of six sentences (Stimulus A) written in the standard Japanese orthography:

- (7) Samples from Stimulus A
- a. ke'N wa' ao'yama de' sukiyaki o' tabema'sita
Ken TOP Aoyama LOC sukiyaki ACC eat.POLITE.PAST
'Ken ate sukiyaki in Aoyama.'
- b. ke'N wa' aka'saka de' unagi o' tabema'sita
Ken TOP Akasaka LOC eel ACC eat.POLITE.PAST
'Ken ate broiled eel in Akasaka.'

Then the subject is asked to answer eight *wh*-questions which are pre-recorded and reproduced by an audio device (Stimulus B), using one of the sentences from Stimulus A.

- (8) Samples from Stimulus B
- a. ke'N wa' ao'yama de' na'ni o' tabema'sita ka?
Ken TOP Aoyama LOC what ACC eat.POLITE.PAST Q
'What did Ken eat in Aoyama?'
- b. ke'N wa' aka'saka de' na'ni o' tabema'sita ka?
Ken TOP Akasaka LOC what ACC eat.POLITE.PAST Q
'What did Ken eat in Akasaka?'

Thus, for example, the subject is expected to utter (7a) to answer (8a); when the subject does not pick the correct answer sentence, the question is repeated. This experimental design makes it possible to predict which phrases in the answers will be foci/non-foci.

The pre-verbal phrase in each answer (e.g. *sukiyaki o'* in (7a)) is selected as a target phrase, and its tonal features are analyzed (some target phrases are foci,

⁸ The full set of the experimental material (Stimulus A and Stimulus B) is given in the Appendix.

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some are not). In two of the sessions, the target phrases are with a particle (e.g. *na'goya ni* 'Nagoya-DAT', *ho'Ndana o* 'bookshelf-ACC'); in the other two sessions, the target phrases are without a particle (adverbs, including so-called floating quantifiers; e.g. *asat'te* 'the day after tomorrow', *sa'Nbai* 'three cups'). In each session, four of the target phrases are foci, and the other four are non-foci. Two each of the foci/non-foci phrases are lexically accented, the other two are unaccented. In other words, the target phrases in each session consist of two accented focus phrases, two unaccented focus phrases, two accented non-focus phrases, and two non-accented non-focus phrases.

3.2. Results

The results of the experiment largely endorsed Kori's remark that PLRs (optionally) mark foci. PLRs on phrases without a particle were found, but were less frequent than those on phrases with a particle. The interaction of PLRs and lexical accent patterns was not attested.

Table 1: Overall results

Conditions	# of occurrences of PLR/200	# of subjects who used PLR/25
Focus, w/ particle	51	13
Focus, w/o particle	17	5
Non-focus, w/ particle	10	2
Non-focus, w/o particle	10	2

Table 2: Instance-wise results

Conditions	Occurrences of PLR	Non-occurrences of PLR	Total
Focus, w/ particle	51	149	200
Focus, w/o particle	17	183	200
Total	68	332	400

$\chi^2 = 20.482, p < 0.001, df = 1$

Table 3: Subject-wise results

Conditions	Subj. who used PLR	Subj. who did not use PLR	Total
Focus, w/ particle	13	12	25
Focus, w/o particle	5	20	25
Total	18	32	50

$\chi^2 = 5.556, p < 0.05, df = 1$

12 speakers did not use a PLR at all (Type 1), 8 speakers used a PLR only on phrases with a particle (Type 2), and 5 speakers used a PLR on both phrases with and without a particle (Type 3); no speakers used a PLR only on phrases without a particle.

Part of the collected data is represented below (in each utterance, the phrase preceding the verb accompanies a PLR):

Figure 2:
An utterance with a PLR on a phrase without a particle by a male speaker

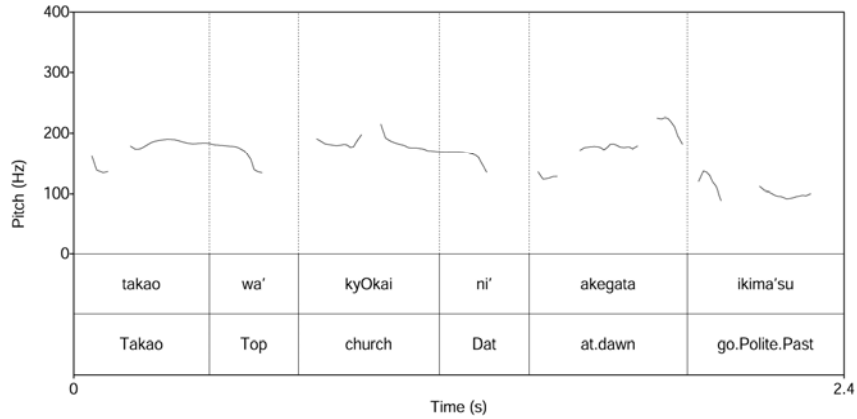
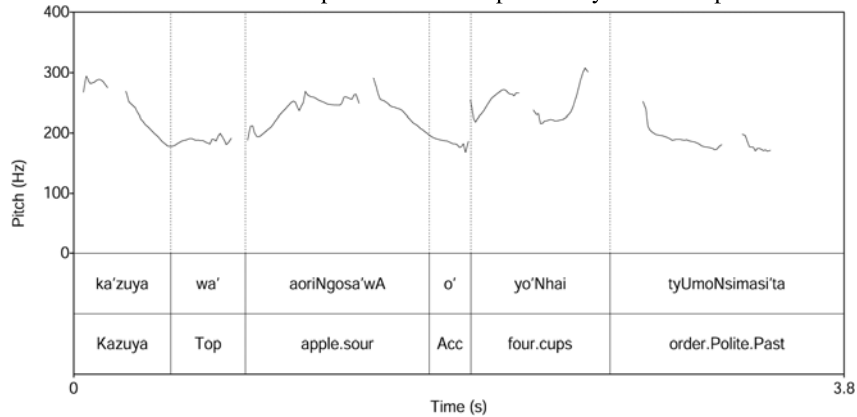


Figure 3:
An utterance with a PLR on a phrase without a particle by a female speaker



4. Discussion and Proposals

The experimental results suggest that some speakers use PLRs only on phrases with a particle (Type 2), while some others use PLRs on both phrases with and without a particle (Type 3). Independently of the question of what specific phonological analysis PLR (or two kinds of PLR; see below) should be given, we can conceive of two possible explanations for this variation among speakers, which I call exclusive and inclusive:

- (i) **Exclusive (“two grammars”) account:** For Type 2 and Type 3 speakers, PLRs are generated through distinct processes (rules). The dialect of Type

2 speakers has only Process A that generates PLRs only on phrases with a particle, while the dialect of Type 3 speakers has only Process B that generates PLRs on focus phrases in general.

- (ii) **Inclusive (co-existential) account:** The dialects of both Type 2 and Type 3 speakers have Processes A and B. For some reason (e.g. stylistic preference), Type 2 speakers rarely use Process B, while Type 3 speakers use both Process A and B, or only Process B.

Below I discuss phonological analyses of “Process A” and “Process B,” without being committed to either the exclusive or inclusive position.

4.1. Process A: PLRs on Phrases with a Particle

I propose that some instances of PLRs on phrases with a particle are *left-dislocated phrasal tones*. Uwano (1989) argues that when a phrase has an accent nucleus on its first mora (e.g. (2b)), the phrasal accent is “pushed” leftward, by one mora (rather than simply disappears).

Although this idea has not been widely accepted, there is solid evidence for it. Consider the following (labeling of initial boundary tones is omitted):

- (9) a. *samurai no' si* ‘teacher of samurai’
 (i) [{samurai no' si}] OR
 H⁻ L%
 (ii) [{samurai no'} {si'}]
 H⁻ wL% H⁻(L%)
- b. *samurai no si* ‘poetry of samurai’
 (i) [{samurai no' si}] OR
 H⁻ L%
 (ii) [{samurai no'} {si}] (but *[{samurai no'} {si }])
 H⁻ L% L% H⁻ L% H⁻(L%)

The head noun *si* ‘teacher’ in (9a) is accented, while *si* ‘poetry’ in (9b) is not. There can be a high tone over *si*’ in (9a) as shown in (9a-ii), i.e. *si*’ can be pronounced higher than the preceding mora, but not over *si* in (9b). The rise over *si*’ in (9a), and the contrast between (9a) and (9b), cannot be dealt with in the current J_ToBI system.

The key point here is that in the configuration [_{IP}...{AP1}{AP2}...], if the first mora of AP2 is accented, then there is a rise (a displaced phrasal rise, according to Uwano) between AP1 and AP2. A PLR on a particle can be accounted for without a special rule, if: (i) monomoraic particles are accented (e.g. *ga*’ rather than *ga*), and (ii) a syntactic phrase of the form “Noun (or NP)+Particle” may have an AP boundary before the particle (e.g. [{*rO'ma*}{*ni*'}] ‘Rome-DAT’).

Although (i) contradicts the common assumption, there is independent evidence for it. First, when a particle is preceded by an unaccented noun and followed by another particle (e.g. *koko ni' wa'* 'here-DAT-TOP'), there is a pitch fall between the two particles. Second, when particles are referred to as linguistic entities (as in a linguistic discussion), they behave like accented one-mora words (e.g. *ni' no' sEsitu* 'the property of (the particle) *ni'*'). As for (ii), given that particles are lexical items with their own accent patterns, it is natural to assume that they can form separate APs on their own.

4.2. Process B: PLRs on Phrases With and Without a Particle

PLRs of the second kind, which occur on both phrases with and without a particle, can be simply analyzed as a boundary tone (H%); I suggest treating it as an AP-boundary tone (rather than IP-boundary tone), as it does not seem to be generally followed by pitch-resetting or a long pause (cf. Taniguchi and Maruyama 2001). It seems plausible to hypothesize that PLRs of the second kind developed from the first kind by metanalysis.

Kori (1989, 1994) observes that sometimes (though not frequently) a PLR also occurs on the mora *preceding the particle* of a focus phrase (e.g. *nuiguru↑mi o moratta* '(I) received a stuffed toy'). This can be understood as the second kind of PLR (AP-boundary tone), which is associated with the AP preceding the particle that forms a separate AP by itself, as illustrated in (12):

- (10) Process A (the head noun and the particle belong to separate APs):
 [{nuigurumi} {o'} {moratta}] (stuffed.toy-ACC receive.PAST)
 H⁻ wL% H⁻ (L%) wH⁻ L%
 '(I) received a stuffed toy.'
- (11) Process B (the head noun and the particle form a single AP):
 [{nuigurumi o'} {moratta}]
 H⁻ H% wH⁻ L%
- (12) Process B (and A) (the head noun and the particle belong to separate APs):
 [{nuigurumi} {o'} {moratta}]
 H⁻ H% H⁻(L%) wH⁻ L%

5. Summary

There are two processes through which prominence-lending rises are generated. One type of PLR is a special case of left-dislocated phrasal tone; no extra rule or tone needs to be postulated to account for it. The other type of PLR, which is presumably developed from the first type by metanalysis, is a kind of AP-boundary tone. The variation among speakers suggests that some speakers use only the first type of PLR, but not the second type.

Appendix: The Experimental Material

(The *wh*-questions in Stimulus B were presented to the subjects in randomized order, except that (2), (4), (6), and (8) always immediately followed (1), (3), (5), and (7) respectively.)

Session 0 (warm-up): Stimulus A: (1) *hirosi wa' siNzyuku de' karE o' tabemasi'ta.* (2) *hirosi wa' akasa'ka de' udoN o' tabemasi'ta.* (3) *ke'N wa' ao'yama de' sukiyaki o' tabemasi'ta.* (4) *ke'N wa' akasa'ka de' unagi o' tabemasi'ta.* (5) *e'riko wa ikebu'kuro de karE o' tabemasi'ta.* (6) *e'riko wa' siNzyuku de' karE o' tabemasi'ta.*; Stimulus B: (1) *ke'N wa' ao'yama de' na'ni o' tabemasi'ta ka?* (2) *sorede'wa ke'N ga' akasa'ka de' ta'beta no' wa' na'N de'su ka?* (3) *e'riko wa' ikebu'kuro de' na'ni o' tabemasi'ta ka?* (4) *sorede'wa e'riko ga' si'Nzyuku de' ta'beta no' wa' na'N de'su ka?* (5) *hi'rosi wa' do'ko de' karE o' tabemasi'ta ka?* (6) *hi'rosi wa' do'ko de' udo'N o' tabemasi'ta ka?* (7) *ke'N wa' do'ko de' sukiyaki o' tabemasi'ta ka?* (8) *ke'N wa' do'ko de' unagi o' tabemasi'ta ka?*

Session 1: Stimulus A: (i) *akira wa' gi'Nza de' ho'ndana o' kaimasi'ta.* (ii) *akira wa' ao'yama de' tukue o' kaimasi'ta.* (iii) *na'oya wa' si'Nzyuku de' ho'ndana o' kaimasi'ta.* (iv) *na'oya wa' sibuya de' sOziki o' kaimasi'ta.* (v) *manami wa' gi'Nza de' tukue o' kaimasi'ta.* (vi) *manami wa' si'Nzyuku de' torikago o' kaimasi'ta.*; Stimulus B: (1) *na'oya wa' sinzyuku de' na'ni o' kaimasi'ta ka'?* (2) *sorede'wa na'oya ga' sibuya de' katta no' wa' na'N de'su ka'?* (3) *manami wa' gi'Nza de' na'ni o' kaimasi'ta ka'?* (4) *sorede'wa manami ga' si'Nzyuku de' katta no' wa' na'N de'su ka'?* (5) *a'kira wa' do'ko de' ho'ndana o' kaimasi'ta ka'?* (6) *sorede'wa a'kira ga' tukue o' katta no' wa' do'ko de'su ka'?* (7) *na'oya wa' do'ko de' ho'ndana o' kaimasi'ta ka'?* (8) *manami wa' do'ko de' tukue o' kaimasi'ta ka'?*

Session 2: Stimulus A: (1) *sa'tosi wa' ni'gatu ni' na'go ya ni' ikimasi'ta.* (2) *sa'tosi wa' sa'N gatun i' okinawa ni' ikimasi'ta.* (3) *kyO'ko wa' itigatu ni' huku'oka ni' ikimasi'ta.* (4) *kyO'ko wa' sa'Ngatu ni' na'goya ni' ikimasi'ta.* (5) *rE'ko wa' sa'Ngatu ni' sapporo ni' ikimasi'ta.* (6) *rE'ko wa' gogatu ni' yokohama ni' ikimasi'ta.*; Stimulus B: (1) *kyO'ko wa' itigatu ni' do'ko ni' ikimasi'ta ka'?* (2) *sorede'wa kyO'ko ga' sa'Ngatu ni' itta no' wa' do'ko de'su ka'?* (3) *rE'ko wa' sa'Ngatu ni' do'ko ni' ikimasi'ta ka'?* (4) *sorede'wa rE'ko ga' go'gatu ni' itta no' wa' do'ko de'su ka'?* (5) *sa'tosi wa' i'tu na'goya ni' ikimasi'ta ka'?* (6) *sorede'wa sa'tosi ga' okinawa ni' itta no' wa' i'tu de'su ka'?* (7) *kyO'ko wa' i'tu hu'kuoka ni' ikimasi'ta ka'?* (8) *rE'ko wa' i'tu sapporo ni' ikimasi'ta ka'?*

Session 3: Stimulus A: (1) *kO'zi wa' tosyoka'N ni' asat'te ikima'su.* (2) *kO'zi wa' Egaka'N ni' yUgata ikima'su.* (3) *e'miko wa' EkaiwaskU'ru ni' asat'te ikima'su.* (4) *e'miko wa' bizyutuka'N ni' ra'igetun i' ikima'su.* (5) *takao wa' Egaka'N ni' syUmatu ikima'su.* (6) *takao wa' kyOkai ni' akegata ikima'su.*; Stimulus B: (1) *e'miko wa' EkaiwaskU'ru ni' i'tu ikima'su ka'?* (2) *sore'dewa e'miko ga' bizyutuka'N ni' iku no' wa' i'tu de'su ka'?* (3) *takao wa' Egaka'N ni' i'tu ikima'su ka'?* (4) *sore'dewa takao ga' kyOkai ni' iku no' wa' i'tu de'su ka'?* (5) *kO'zi wa' do'ko ni' asat'te ikimasu'ka'?* (6) *sore'dewa kO'zi ga' yUgata iku no' wa' do'ko de'su ka'?* (7) *e'miko wa' do'ko ni' asat'te ikima'su ka'?* (8) *takao wa' do'ko ni' syUmatu ikima'su ka'?*

Session 4: Stimulus A: (1) *syO'zi wa' Uro'Ntya o' sa'Nbai tyUmonsimasi'ta.* (2) *syO'zi wa' ka'rubi o' goninmae tyUmonsimasi'ta.* (3) *ka'zuya wa' bI'ru o' sa'Nbai tyUmonsimasi'ta.* (4) *ka'zuya wa' aoriNgosa'wA o' yo'Nhai tyUmonsimasi'ta.* (5) *si'Niti wa' re'ba o' goninmae tyUmonsimasi'ta.* (6) *si'Niti wa' ta'Nsio o' yoninmae tyUmonsimasi'ta.*; Stimulus B: (1) *ka'zuya wa' bI'ru o' donokurai tyUmonsimasi'ta ka'?* (2) *sorede'wa ka'zuya ga' tyUmonsimasi'ta aoriNgosa'wA no' ryO' wa' donokurai de'su ka'?* (3) *si'Niti wa' re'ba o' donokurai tyUmonsimasi'ta ka'?* (4) *sorede'wa si'Niti ga' tyUmonsimasi'ta ta'Nsio no' ryO' wa' donokurai de'su ka'?* (5) *syO'zi wa' na'ni o' sa'Nbai tyUmonsimasi'ta ka'?* (6) *sorede'wa syO'zi ga' sa'Nninmae tyUmonsimasi'ta no' wa' na'N de'su ka'?* (7) *ka'zuya wa' na'ni o' sa'Nbai tyUmonsimasi'ta ka'?* (8) *si'Niti wa' na'ni o' goninmae tyUmonsimasi'ta ka'?*

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