

The Acquisition of Japanese Focus Particles: *dake* (only) and *mo* (also)

Kazumi Matsuoka¹, Nobuhiro Miyoshi², Koji Hoshi¹, Masanobu Ueda³, Izumi Yabu³, Miki Hirata³

¹Keio University, ²Asahikawa Medical College, ³Hokkaido University

The acquisition of semantic interpretation for adverbs such as *only*, *also*, *even* should be a challenge for young children, since it requires combining information from multiple sub-modules of language: syntax, semantics, and pragmatics. In addition, there is a cross-linguistic difference in how the possible alternative sets are determined. This paper presents novel findings from an experimental investigation of the acquisition of focus particles *dake* (only) and *mo* (also) in Japanese. Given that characterizing the nature of the syntactic-semantic interface is one of the important issues in the generative-based acquisition study, the focus phenomenon is a reasonable topic to investigate. The current study provides important empirical data for the syntactic theory of focus items.

1. Japanese Focus Particles

The interpretation of *too/also* in English is not necessarily determined syntactically. In the following examples, the interpretation of the adverb *also* varies, even though it appears in the same syntactic position in both sentences.

- (1) a. John also introduced [Bill]_F to Sue
(There is someone other than Bill, whom John introduced to Sue.)
b. John also introduced Bill to [Sue]_F
(There is someone other than Sue, to whom John introduced Bill.)

(Rooth 1996)

On the other hand, the range of the alternative set in the interpretation of *mo* is syntactically determined, as demonstrated in the following examples:

- (2) Subject+*mo*: Yusuke-**mo** jitensha-o kat-ta
Yusuke-also bicycle-ACC buy-PAST
'Yusuke also bought a bicycle (in addition to other people).'

- (3) Object+*mo*: Yusuke-ga jitensha-**mo** kat-ta
Yusuke-NOM bicycle-also buy-PAST
'Yusuke bought a bicycle, too (in addition to other belongings).'

The particle *dake* (only) behaves similarly to *only* in English; as indicated in the English

gloss in (4) and (5) below, *dake* is typically associated with the noun phrase immediately preceding it.

- (4) Subject+*dake*: Yusuke-**dake** jitensha-o kat-ta
 Yusuke-only bicycle-ACC buy-PAST
 ‘Only Yusuke bought a bicycle.’
- (5) Object+*dake*: Yusuke-ga jitensha-**dake** kat-ta
 Yusuke-NOM bicycle-only buy-PAST
 ‘Yusuke bought only a bicycle.’

Following Aoyagi (1999), the focus particle *mo* is referred to as a K-particle, while *dake* is an F-particle (see Teramura 1991 and references cited therein for a discussion of the traditional classification of the two types of focus particles in Japanese linguistics). It is widely assumed in Japanese syntactic literature that the association between focus particles and the focused items is established by covert or overt movement. Considering the scope interaction between negation and *mo*, as well as the crossing effect with an NPI and a *wh*-phrase, Hasegawa (2005) argues that *mo* phrases undergo overt movement to the Spec of TP. Aoyagi (1999) argues that the association of DP and K/F-particles is licensed by covert movement of the focus particles to a head of different functional projections (T for K-particles, *v* for F-particles)¹. On the other hand, Hoshi (2005) claims that the distribution of K- and F-particles can be captured in the same projection (FocP), though the K-particle can be the Focus head, while the phrase containing the F-particle and the focused element moves overtly to the Spec of FocP.

Wherever the landing site of the focus particles and their associated focused items is, there should be no difference between the focused subject and the focused object. Nevertheless, it has been observed in recent language acquisition research that a group of young, Japanese-speaking children exhibits a subject-object asymmetry in their interpretation of sentences that includes focus particles. Endo (2004) reported that a group of Japanese children gave a non-adult response, in which *dake* was always associated with the object, regardless of its syntactic position. She did not observe any ‘subject-only’ responses.

However, the relationship between the number of non-adult responses and age was inconsistent in Endo’s study. Furthermore, some of her test sentences included both *dake*

¹ For a different minimalist approach to focus particles, see Sano (2001a, b) and references cited therein.

and the Nominative Case-particle *ga*. (6) is a representative example:

- (6) Taroo-dake-ga ringo-o tabe-ta.
Taroo-only-NOM apple-ACC eat-PAST
'Only Taroo ate an apple.'

The sentence-initial Nominative NP often induces the 'exhaustive listing' reading in a simple clause. Hence, we predict that if the experiment is appropriately designed, a different picture would emerge. To verify the prediction, a study was conducted to see if Endo's results could be replicated. Considering that the semantic contribution of the particle *mo* (also) is similar to that of *dake* (only), in that both of them can be associated with focused materials, we also conducted separate sessions with sentences which included *mo*.

2. Subjects and Method

A total of 120 Japanese-speaking children from Sapporo and Osaka (4;7-6;10, mean: 5;10) participated between September 2004 and February 2005 (62 in the *dake* session, 58 in the *mo* session). The Truth-Value Judgment task (Crain and Thornton 1998, Matsuoka et al. 2005) was conducted in a quiet room of the day-care center or kindergarten that they normally attend. Test sentences with *dake* did not appear with any Case particles, so that they did not induce the 'exhaustive listing' reading. Moreover, each target sentence began with the phrase '*kono ohanashi de wa* (in this story)'. This was done to control the strong preference among Japanese speakers to place the topic marker (*wa*) at the beginning of a simple sentence². The following is an example:

- (7) kono ohanashi de wa, omawarisan-ga kyoryu-dake nade-mashi-ta.
this story in TOP policeman-NOM dinosaur-only pat-POL-PAST³
'In this story, the policeman patted only the dinosaur.'

There were three tokens of each of the 'subject+focus particle (*mo/dake*)' and the 'object+focus particle (*mo/dake*)' (see Appendix for the complete list of the test sentences and fillers). Stories and fillers were ordered in such a way that more than one story of the same type was not presented consecutively. The majority of the children participated in either the *dake* or *mo* sessions, but not both.

² We are indebted to Satoshi Oku for suggesting this to us.

³ TOP: Topic, NOM: nominative, ACC: accusative, PERS: personalizer, POL:polite, DIM: diminutive

3. Results

Three children did not complete the session (one for the *mo* experiment, two for the *dake* experiment). Results of the two experiments are summarized below:

Chart 1: Number of Adult-like Responses (*mo*)

Subjects Total: 57	Mean age	Subject + <i>mo</i>	Object + <i>mo</i>
Adult-like (N:11)	6;1	88% (29/33)	82% (27/ 33)
All-Yes (N:44)	5;10	8% (10/132)	8% (10/132)
Subject Orientation (N:2)	5;7	67% (4/6)	17% (1/6)
Object Orientation (N:0)	n.a.	n.a.	n.a.

Chart 2: Number of Adult-like Responses (*dake*)

Subjects Total: 60	Mean age	Subject + <i>dake</i>	Object + <i>dake</i>
Adult-like (N:29)	5;11	94% (82/87)	91% (79/87)
All-Yes (N:12)	5;5	14% (5/36)	8% (3/36)
Subject Orientation (N:18)	5;10	91% (49/54)	24% (13/54)
Object Orientation (N:1)	5;9	33% (1/3)	100% (3/3)

We found a very different pattern from what Endo reported. First, children's non-adult responses decreased as the age of the subjects increased, both with *dake* and *mo* (from 100% to 81% for *mo*, from 56% to 36% for *dake*). Moreover, both for *dake* and *mo*, we found a larger number of subject-only responses. In the case of *dake*, the subject-orientated group accounts for 30% of the subjects (N: 18, mean age: 5;10), while there is only one participant who consistently gave the object-oriented responses (age 5;9).

At the same time, children treated *dake* and *mo* differently: 17% (11 out of 57) of the *mo* subjects (mean age: 6;4) gave adult-like responses (as shown in Chart 1), while 48% (29 out of 60) of the *dake* subjects (mean:5;11) gave adult-like responses (as shown in Chart 2).

4. Discussion

Children's response patterns indicate that those two focus items (*mo* and *dake*)

actually have different syntactic-semantic properties, which provides support to the claim that *mo* and *dake* have different syntactic derivations. At the same time, though, the existence of the subject- and the object-oriented responses⁴ given to *mo* and *dake*, consistently observed in previous studies and the current study, suggest the possibility that human grammar treats the two types of focus items in a similar fashion as well. Namely, our data possibly provide support for Hoshi's (2005) argument that the distribution of K- and F-particles is captured by postulating the FocP.

The non adult-like response patterns reported in our study are not language-specific phenomena; very similar patterns have been observed with English-speaking children. Crain et al. (1993) investigated young children's interpretation of sentences which contain *only*. See the following examples:

- (8) Only the bird is holding a flag
- (9) The bird is holding only a flag

For (8) to be true, there should be no other character (other than the bird) who is holding a flag. On the other hand, for children to accept (9) as true, the bird should be holding nothing other than a flag.

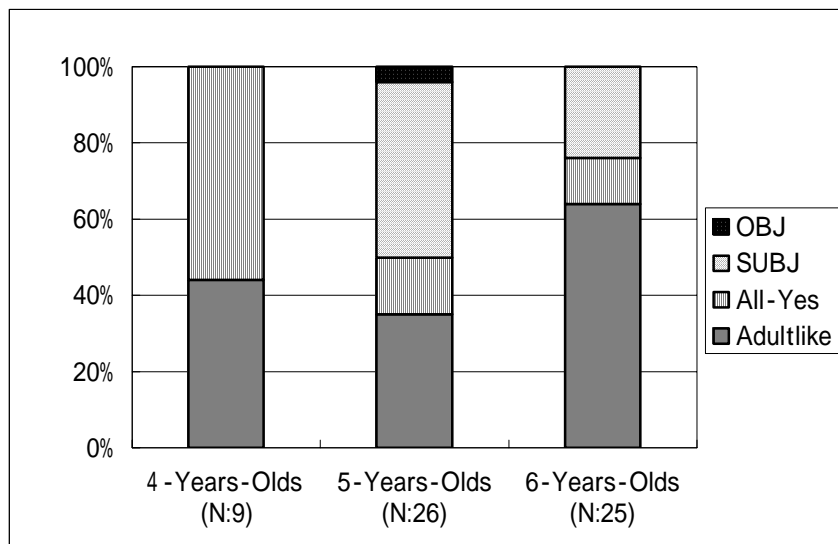
Crain et al. reported that young children gave either the subject-only (mean age: 4;8) or an object-only (mean age: 5;0) interpretation of *only*, regardless of its syntactic position. The subject-only group of children always associated *only* with the subject for both sentences (8) and (9); the object-only group interpreted *only* as if it were associated with the object in both sentences. The response patterns obtained in the current studies, as well as Endo (2004) and Matsuoka (2004), match the patterns reported in children's non adult-like interpretation of *only*. This strongly implies that both subject-oriented and object-oriented interpretations of focus items are universally allowed options in language development.

Our results, however, differed from those reported by Endo; unlike Endo's subjects, a group of children gave the subject-oriented responses. Actually, they outnumbered the children who gave the object-oriented responses. As discussed in Section 1, Endo's test sentences contained the Case particles (*ga* and *o*). Hoshi and Miyoshi (2005) argued that sentences which contain both *dake* and a Case particle are syntactically derived in a different fashion from sentences with *dake* not followed by any Case particle. The different response patterns observed in Endo's and our studies might provide empirical support to their analysis. A follow-up study is in progress to address the issue.

⁴ Matsuoka (2004) reported that a group of children of similar ages gave the object-oriented responses to sentences that included *mo*. Based on her observations, we assume that all four response patterns are observable both in the case of *dake* and *mo*.

There is an indication of a possible developmental path in the following graph, which shows the ratio of the four response patterns in the *dake* part of the experiment, with the children divided into three age groups (4, 5, and 6-year-olds).

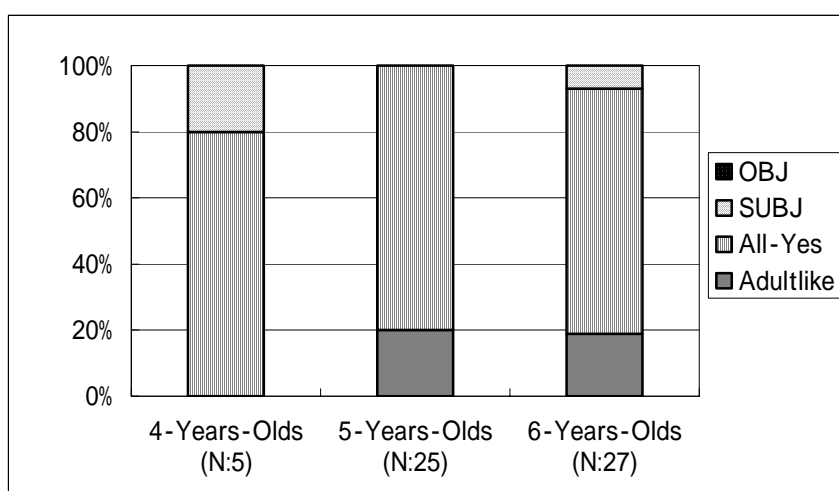
Graph 1: Response Pattern by Age (*dake*)



Children start with the grammar which allows focus items to be associated with either of the subject or the object (the ‘All-YES’ pattern). Then a group of children go through either the subject-oriented or the object-oriented stage, before giving the adult-like responses.

The pattern is very different in the case of *mo*, as shown in the following graph:

Graph 2: Response Patterns by Age (*mo*)



Even though adult-like responses can be seen in older children (5-6 years olds), there seems to be no clear indication that the likelihood of this response increases with age. There are

very few children who gave the subject- or object- oriented responses, either. The all-YES pattern persists throughout the three age groups. Obviously, interpreting the association of focus with *mo* is more challenging than *dake* to young children⁵.

It is unlikely that those six-year-olds were not able to comprehend the additive meaning of *mo*. The following is a summary of the appearance of the focus items from the CHILDES database (MacWhinney 2000).

Chart 3: First Occurrence of Focus Particles

	<i>dake</i> ⁶	<i>mo</i> ⁷
AKI (Miyata 2004)	2;7;26	2;3;26
RYO (Miyata 2004)	2;5;1	2;2;29
TAI (Miyata 2004)	2;1;30	1;6;04
TARO (Hamasaki 2004)	3;2;3	2;11;11
JUN (Ishii 2004)	2;6	2;2;20
SUMIHARE (Noji, et al. 2004)	2;2	2;2

At a glance, we can see that *mo* appears earlier than *dake*. Except for TARO, who seemed to have taken longer to start using both focus particles, the first productive occurrence of *mo* is observed between 1;6–2;3, while the first occurrence of *dake* is between 2;1–2;7. An important observation here is that children’s spontaneous usage of *mo* and *dake* starts at the early stage of language development. This means that the non-adult interpretations of focus particles of 4 to 6-year-olds are not simply the result of delayed acquisition of the items in question.

It is not clear which of the subject- or the object-oriented interpretation is the ‘standard’ or ‘dominant’ path in children’s language development. However, there is an

⁵ The difference observed here could be related to the fact that the K-particle controls the felicity of the sentence, while the F-particle changes the truth-value of the sentence (Diane Lillo-Martin, p.c.) For example, sentence (2), repeated below, seems to be awkward (but not false), even if there is no one other than Yusuke who has a bicycle.

(2) Yusuke-mo jitensha-o kat-ta
 Yusuke-also bicycle-ACC buy-PAST
 ‘Yusuke also bought a bicycle (in addition to other people)’

⁶ *Dake* in ‘*kore dake*’ or ‘*kon dake*’ could be interpreted either as focus (i.e. ‘only this’) or amount (i.e. ‘about this much’). For that reason, those phrases were excluded from our analysis.

⁷ The ages are when children uttered *mo* with more than one type of DP in the same file. Namely, we excluded the files in which the child used *mo* with the same DP repeatedly (e.g. ‘*koko mo.*’ ‘*Akichan mo.*’)

indication that the subject-orientated responses could be the dominant option. Hüttner et al. (2004) noted that German-speaking children (2;11-7;8) performed better with interpreting the stressed *auch* (an equivalent to English *also*), as opposed to the unstressed *auch*. Interestingly, the stressed *auch* induces subject-oriented interpretation.

- (10) a. Max will AUCH Boot fahren.
Max wants to go by boat like other people go by boat.
b. Max will auch Boot fahren.
In addition of other vehicles Max want to go by boat.

Hüttner et al. (2004)

Hüttner et al. interpreted the data differently to argue that children acquire the stressed *auch* earlier than the unstressed one. However, this seems to contradict the finding that young Dutch-speaking children (Mean age 5;5) have difficulty using prosodic information to interpret sentences with *alleen* (an equivalent to English *only*) (Szendrői 2003). Gualmini et al. (2003) also reported that contrastive stress did not reliably act as a cue for children (mean age: 4;9;26) to interpret possibly ambiguous English sentences that include *only*. An alternative account of Hüttner et al's data is that children ignored the contrastive stress and assigned the subject-oriented interpretation more often.

5. Summary

Focus items *mo* and *dake* in Japanese show different syntactic behavior, which led Japanese researchers to classify them into two different categories: K-particle (*mo*) and F-particle (*dake*). Nevertheless, our research showed that young Japanese-speaking children go through a similar developmental path as they learn the focus items of different types. The path does not seem to be completely uniform, though: when children interpret sentences which include a focus item, one group of children assigned the subject-oriented interpretation, while the other exhibited the object-oriented interpretation.

The focus phenomenon is an exception to the general observation in children's language development: comprehension precedes production. Hence, investigating the developmental sequence of the acquisition of focus items will provide important insights into the nature of the innate knowledge of language.

Acknowledgements

We appreciate children, teachers, and parents at Barato Mary Kindergarten, Chuo Day Care Center, Itakano Day Care Center, Kamenomori Kindergarten, Kumanoda Day Care Center, Senri Hijiri Kindergarten, and Toyonaka Hozumi Day Care Center. Diane Lillo-Martin and Satoshi Oku provided insightful comments. John Helwig provided editorial help. The research reported here is supported by Japan Society for the Promotion of Science Grant-in-Aid for Scientific Research (B) 16320062 (principal investigator: Kazumi Matsuoka). All errors are our own.

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Appendix: Sentences used in experiments

Note: Each target sentence began with the same phrase ‘*kono ohanashi de wa* (in this story)’. This was done to control the strong preference of Japanese speakers to place the topic marker (*wa*) at the beginning of a bare sentence.

(NOM: nominative, ACC: accusative, PERS: personalizer, POL:polite, DIM: diminutive)

Subject+*mo*

1. hiyoko-san-mo taoru-o hoshi-mashi-ta.
chick-PERS-also towel-ACC dry-POL-PAST
‘The chick also dried a towel (in addition to someone else).’
2. onnanoko-mo tsukue-o kai-mashi-ta.
girl-also desk-ACC buy-POL-PAST
‘The girl also bought a desk (in addition to someone else).’
3. Niwatori-san-mo osara-o arai-mashi-ta.
chicken-PERS-also dish-ACC wash-POL-PAST
‘The chicken also washed a dish (in addition to someone else).’

Object+*mo*

1. kauboi-ga ushi-mo tsukamae-mashi-ta.
cowboy-NOM cow-also catch-POL-PAST
‘The cowboy caught a cow, too (in addition to other things which he caught).’
2. otokonoko-ga isu-mo hakobi-mashi-ta.
boy-NOM chair-also carry-POL-PAST
‘The boy carried a chair, too (in addition to other things which he bought).’
3. anpanman-ga ninjin-mo nage-mashi-ta.
Anpanman-NOM carrot-also throw-POL-PAST
‘Anpanman threw a carrot, too (in addition to other things which he threw).’

Subject+*dake*

1. kuma-san-dake kori-o hakobi-mashi-ta.
bear-PERS-only ice-ACC carry-POL-PAST
‘Only the bear carried the ice.’
2. Minnie-chan-dake inu-o fuki-mashi-ta.
Minnie-DIM-only dog-ACC wipe-to-dry-POL-PAST
‘Only Minnie dried the dog.’
3. kobito-san-dake kuruma-o hippari-mashi-ta.
dwarf-PERS-only car-ACC pull-POL-PAST

‘Only the dwarf pulled the car.’

Object+*dake*

1. osaru-san-ga sofutokurimu-dake tabe-mashi-ta.
monkey-PERS-NOM soft ice cream-only eat-POL-PAST
‘The monkey ate only the ice cream.’
2. omawarisan-ga kyoryu-dake nade-mashi-ta.
policeman-NOM dinosaur-only pat-POL-PAST
‘The policeman patted only the dinosaur.’
3. ojiisan-ga osara-dake tsutsumi-mashi-ta.
grandpa-NOM plate-only wrap-POL-PAST
‘Grandpa wrapped only the plate.’

Filler sentences

1. otokonoko-ga baketsu-o kaburi-mashi-ta.
boy-NOM bucket-ACC wear-POL-PAST
‘The boy put on the bucket (on his head).’
2. hitsuji-san-ga kaigara-o hiroi-mashi-ta.
sheep-PERS-NOM seashell-ACC picked-up-POL-PAST
‘The sheet picked up the seashell.’
3. zo-san-ga torakku-o oshi-mashi-ta.
elephant-NOM truck-ACC push-POL-PAST
‘The elephant pushed the truck.’
4. kuma-san-ga appurupai-o tsukuri-mashi-ta.
bear-PERS-NOM apple pie-ACC make-POL-PAST
‘The bear made the apple pie.’