The Effect of 'Only' on Quantifier Scope: The *Dake* Blocking Effect*

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1. Introduction

In this paper I investigate the effect of the Japanese 'only' word *dake* on quantifier scope. Consider the DP in (1), which has a plural posessor 'Taro and Hanako.' (1) has two distinct interpretations: *a collective reading* referring to a set of dogs (perhaps singular), each of which are owned by Taro and Hanako jointly, and *a distributive reading* referring to a set of dogs which are owned by either Taro or Hanako or both. In example (2) I added the 'only' word *dake* to the posessor. With the addition of *dake*, there is now only one reading: a collective reading where all dogs in the extension each belong to both Taro and Hanako.

(1) **Plural posessors can have distributive interpretation:**
tarō to hanako-no inu-o mi-ta
Taro and Hanako-GEN dog-ACC see-PAST
✓'I saw Taro and Hanako's dog(s)'
✓'I saw Taro's dog(s) and Hanako's dog(s)'

(2) ***Dake* blocks distributive reading of possessors:**
tarō to hanako-**dake**-no inu-o mi-ta
Taro and Hanako-DAKE-GEN dog-ACC see-PAST
✓'I saw the dog(s) that belong only to Taro and Hanako.'
* 'I saw the dog(s) that belong only to Taro and the dog(s) that belong only to Hanako.'

The interpretation of utterances with 'only' words such as *dake* involves the computation of various alternatives. For example, the utterance *Taro only likes [dogs]*$_F$ with focus-marking (F-marking) on *dogs* communicates not only that Taro likes dogs, but also that other relevant alternatives such as 'Taro likes cats' or 'Taro likes parrots' are false (Horn, 1969).

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In this paper I argue that the process of alternative computation itself is the source of the striking contrast in (1–2). In particular, I introduce the "*Dake* Blocking Effect" which states that a quantifier which is the semantic focus of DAKE cannot take wide scope with respect to the semantic scope of DAKE.[1]

I begin in the next section by introducing the *Dake* Blocking Effect and motivating it through discussion of a variety of examples involving *dake* and the plural 'Taro and Hanako.' In §3 I explain the effect as a more general artifact of the process of focus alternative computation à la Rooth (1985, 1992). In §4 I present novel data from the stacking of two 'only's in Japanese (*dake* and *shika*) on the same constituent and derive their truth conditions compositionally using the *Dake* Blocking Effect. I conclude in §5.

2. The *Dake* Blocking Effect

In order to understand the contrast in examples (1–2), I begin by considering the source of the collective and distributive readings in (1). The two readings in (1) correspond to two different interpretations of the DP 'Taro and Hanako' with two different scopes. I assume 'Taro and Hanako' has two possible interpretations: the plural individual Taro $\oplus$ Hanako (type *e*) and the boolean plural generalized quantifier λP . P(T) $\wedge$ P(H) (type *et,t*), which I will notate Taro + Hanako$_{et,t}$. In both interpretations of (1), the DP in question is interpreted as the maximal set of dogs which are owned by its possessor. The plural individual T $\oplus$ H can be interpreted directly as the possessor, under the maximality operator MAX, to yield the collective reading. The boolean generalized quantifier, on the other hand, must QR to a position above MAX and yields the distributive reading.

(3) a. **collective reading:** MAX > Taro $\oplus$ Hanako$_e$
[[(1)]] = I saw MAX{ x | x is owned by Taro $\oplus$ Hanako and x dog}

b. **distributive reading:** Taro + Hanako$_{e,et}$ > MAX (via QR of 'Taro and Hanako')
[[(1)]] = For y in {T, H}, λy . I saw MAX{ x | x is owned by y and x dog }
= I saw MAX{ x | x is owned by Taro and x dog } $\wedge$
I saw MAX{ x | x is owned by Hanako and x dog }

[1] I indicate the overt pronounciation of the 'only' word with *dake* in italics and the position of the interpretation of the associated exclusivity operator with DAKE in smallcaps. I do this in order to stay agnostic regarding the relationship between these two positions. See Futagi (2004) and the references therein for a variety of approaches.

We can now describe the effect in example (2) as the intervening *dake* blocking the generalized quantifier Taro + Hanako$_{e,et}$ from QRing to its higher scope position. I argue that this is an instance of the *Dake* Blocking Effect which is the subject of this paper:

(4) **The *Dake* Blocking Effect:**
A quantifier Q that is the semantic focus of DAKE cannot take wide scope with respect to the semantic scope of DAKE. Thus if α > DAKE, * Q > α.

To explain the contrast in (1–2) using the *Dake* Blocking Effect, however, we must first establish the semantic scope of DAKE in (2). As a constituent-adjoined 'only' word, the actual scope of this exclusivity operator is not clear from its pronounced position. The scope possibilities of DAKE are dependent on the particular postposition or case marker that is also on the argument hosting *dake* (Kuno and Monane, 1979; Shoji, 1986; Harada and Noguchi, 1992; Futagi, 2004).

Example (5) shows *dake* on a genitive-marked possessor in a sentence with the sentential modal 'can' *-eru*. The sentential modal takes scope over the DP's maximality operator MAX, so there are three candidate scope relations to check. However, only one reading is available:

(5) ***Dake* in possessor takes narrow scope:**[2]

tarō-**dake-no**	inu-to	asob-**eru**
Taro-DAKE-GEN	dog-with	play-can
✓ 'I can play with the dog(s) that only belong to [Taro]$_F$.'		can > MAX > DAKE
* 'I am able to play with just [Taro]$_F$'s dog(s).'		* can > DAKE > MAX
* 'I can only play with [Taro]$_F$'s dog(s).'		* DAKE > can > MAX

The interpretation of (5) involves the computation of the maximal set of dogs such that each are owned by only Taro; thus MAX > DAKE when *dake* is within the possessor. Example (5) shows us that *dake* on a possessor is interpreted very low: not only does DAKE not outscope the sentential modal, DAKE cannot even outscope the DP's maximality operator.

Now recall our original example (2), repeated below, where the possessor is the plural 'Taro and Hanako.' If 'Taro and Hanako' were the generalized quantifier Taro + Hanako$_{et,e}$ and able to scope over MAX, we would yield a distributive reading. However, this reading is not available.

[2] Note that in English, "can only" is interpreted as ONLY > can. Therefore in translations of ONLY > can scope readings, I use the English expression "can only."

(2) ***Dake* blocks distributive reading of possessors:**

tarō to hanako-**dake**-no inu-o mi-ta

Taro and Hanako-DAKE-GEN dog-ACC see-PAST

✓ 'I saw the dog(s) that belong only to Taro and Hanako.' MAX > DAKE > T⊕ H

* 'I saw the dog(s) that belong only to Taro and the dog(s) that belong only to Hanako.' * T+H > MAX > DAKE

We know from (5) that, with *dake* on a possessor, the scope relation MAX > DAKE is fixed. Recall that the distributive reading requires QR of Taro + Hanako$_{et,t}$ to a position above MAX. However, if the F-marked quantifier Taro + Hanako$_{et,t}$ outscopes MAX, it would also outscope DAKE, which is banned by the *Dake* Blocking Effect. The collective interpretation, on the other hand, utilizes the plural individual Taro ⊕ Hanako$_e$ which does not require any QR step. Thus the *Dake* Blocking Effect blocks only the distributive reading in (2).

To further motivate the *Dake* Blocking Effect, I will show that the scope ceiling imposed on the F-marked quantifier correlates with the scope of DAKE. This evidence will come from an inspection of *dake* on a different type of argument: one with the comitative postposition 'with' *to*. When *dake* is in this position, DAKE can be interpreted above sentential modals such as 'can' *-eru*, even though the modal c-commands the overt exponent *dake*. Moreover, the relative positions of *dake* and the postposition also matter: the wide-scope interpretation of DAKE is obligatory with *to-dake* order (6a) but optional with *dake-to* order (6b).

(6) **Interpretations of *dake* with comitative *to*:** (Futagi, 2004:1–2)

a. hanako-**to-dake** hanas-**eru**

Hanako-with-DAKE talk-can

✓ 'I can only talk to [Hanako]$_F$.' DAKE > can

* 'I can talk with [Hanako]$_F$ alone.' * can > DAKE

b. hanako-**dake-to** hanas-**eru**

Hanako-DAKE-with talk-can

✓ 'I can only talk with [Hanako]$_F$.' DAKE > can

✓ 'I can talk with [Hanako]$_F$ alone.' can > DAKE

The *Dake* Blocking Effect predicts that the higher scope of DAKE in (6) will make available higher scope positions for the F-marked quantifier. Example (7) shows a *to*-marked

argument with a plural DP ‘Taro and Hanako.’ In this sentence, ‘Taro and Hanako’ is able to scope over the sentential modal, but is still restricted from taking scope over DAKE.

(7) **A plural focus of *dake* that can scope over ‘can’:**

tarō to hanako-to-**dake** hanas-**eru**

Taro and Hanako-with-DAKE talk-can

✓ ‘I can only talk with [Taro and Hanako]$_F$.’ DAKE > can > T⊕H

✓ ‘I can talk with Taro, I can talk with Hanako, I cannot talk with anyone else.’ DAKE > T+H > can

* ‘I can only talk with Taro and I can only talk with Hanako.’ *T+H > DAKE > can

The empirical observations made in this section are as follows. When the scope of DAKE is itself limited to below other operators, as when within possessors (2), the scope of the plural is also limited to the same extent. When DAKE can independently scope above sentential operators as with comitative *to* (6), the plural can also take wider scope (7), but it is not unrestricted. Rather, the scope of the plural is consistently limited above by the scope of DAKE. This supports the characterization of the *Dake* Blocking Effect, repeated here:

(4) **The *Dake* Blocking Effect:**

A quantifier Q which is in the semantic focus of *dake* cannot take wide scope with respect to the semantic scope of DAKE. Thus if α > DAKE, * Q > α.

I now turn to an explanation of this effect based on a general principle of focus interpretation.

3. Explaining the *Dake* Blocking Effect through general principles of focus interpretation

In the previous section I showed that the *Dake* Blocking Effect is a constraint against F-marked quantifiers taking scope above the exclusivity operator DAKE. In this section I will sketch how this effect could be derived from more general constraints on focus interpretation itself. For a fuller treatment of this issue, see Erlewine (in preparation).

As an illustration, consider the interpretation of the simple example in (8). The evaluation of *only* requires consideration of a set of relevant alternatives, the construction of which is dictated by the choice of F-marking. In the Alternative Semantics framework of Rooth (1985, 1992), the focus alternatives are computed compositionally using the denotation function $[[\bullet]]^f$. Informally, $[[\alpha]]^f$ is a set which includes the ordinary semantic value $[[\alpha]]$ as well as the

denotations of α with its F-marked material replaced by other contextually-determined alternatives. Thus the relevant alternatives for (8) are all of the form 'John saw *x*' with contextually-determined alternatives to 'Mary' (9).

(8) John only saw $[\text{Mary}]_F$.

(9) $[[\text{John saw } [\text{Mary}]_F]]^f$ = {John saw Mary, John saw Bill, John saw Sue}

(10) $[[\text{ONLY } \alpha]]$ in $w_0 = \forall \varphi \in [[\alpha]]^f$. if $[[\alpha]]$ does not entail φ, $\varphi(w_0)$ is false

Following Horn (1969), the assertion of "ONLY α" is the conjunction of the negations of all alternatives which are not entailed by the ordinary semantic value (10).

Rooth (1992) argues that the alternatives considered by a focus-sensitive operator such as DAKE must satisfy the condition in (11). Intuitively, if this Focus Interpretation Principle in (11) is not satisfied, the assertion of ONLY computed as in (10) would be vacuous.

(11) **Focus Interpretation Principle (Rooth 1992)** (simplified):
If α is the complement of a focus-sensitive operator, the alternatives at α must include an alternative distinct from the ordinary semantic value of α.

Now consider what happens when an F-marked quantifier moves out of the scope of its associated focus-sensitive operator, *Op* (12). In order to interpret *Op*, we compute the focus semantic value of its complement $[[\alpha]]^f$. However, the F-marked quantifier has moved out of α. Assuming that traces cannot be F-marked themselves (Beaver and Clark, 2008; cf Erlewine, in progress),[3] α no longer contains any F-marking, so $[[\alpha]]^f$ will be the singleton set {[[α]]}, violating the Focus Interpretation Principle in (11).

(12) $[Q]_{F,i}$ *Op* $[_\alpha\ t_i\ ]$

This derives the restriction that F-marked quantifiers must not scope out of their associated focus operators.

[3] Beaver and Clark (2008) appeal to the fact that "by definition, extraction gaps cannot be prosodically prominent" (p. 172) to support this idea. However, as Aoun and Li (1991) argue, this constraint must apply at LF, casting doubt on this explanation in terms of the PF need to realize F-marking. On the other hand, an explanation appealing to the lack of semantic content in traces runs counter to contemporary Copy Theory approaches to the interpretation of chains. See Erlewine (in preparation) for discussion and an alternative explanation.

Let me demonstrate how this accounts for the Japanese data discussed above. Consider the first motivating example (2), repeated below, which has the plural 'Taro and Hanako' with *dake* as a genitive-marked possessor.

(2) ***Dake* blocks distributive reading of possessors:**

tarō to hanako-**dake**-no inu-o mi-ta
Taro and Hanako-DAKE-GEN dog-ACC see-PAST

✓ 'I saw the dog(s) that belong only to Taro and Hanako.' MAX > DAKE > T⊕H

* 'I saw the dog(s) that belong only to Taro and the dog(s) that belong only to Hanako.' * T+H > MAX > DAKE

First consider the collective interpretation which is available in (2). Recall that collective readings of the plural 'Taro and Hanako' use an interpretation of the plural as the plural individual Taro ⊕ Hanako$_e$, which can be interpreted *in situ*. As this F-marked quantifier stays within the scope of DAKE, the complement of DAKE will contain multiple focus alternatives, satisfying the Focus Interpretation Principle in (11).

Distributive readings come about through interpretation of 'Taro and Hanako' as the boolean plural generalized quantifier Taro + Hanako$_{et,t}$, which must QR to a higher position outside of the DP. We previously established that the DP's maximality operator MAX necessarily scopes over DAKE in (2). Thus the F-marked quantifier Taro + Hanako$_{et,t}$ cannot be in the complement of DAKE. As the trace of 'Taro and Hanako' cannot be F-marked, nothing is F-marked in the complement of DAKE. The alternatives at this position will then only include the ordinary semantic value, violating Rooth's Focus Interpretation Principle (11). This derives the ungrammaticality of the distributive reading in (2).

Now consider how this type of explanation applies to example (7), repeated below:

(7) **A plural focus of *dake* that can scope over 'can':**

tarō to hanako-to-**dake** hanas-**eru**
Taro and Hanako-with-DAKE talk-can

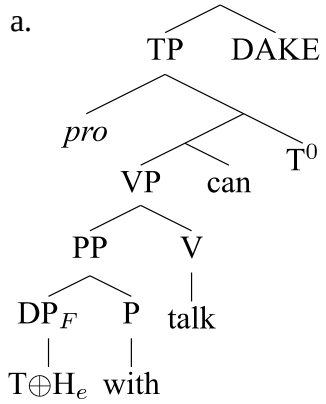
✓ 'I only can talk with [Taro and Hanako]$_F$.' DAKE > can > T⊕H

✓ 'I can talk with Taro, I can talk with Hanako, I cannot talk with anyone else.' DAKE > T+H > can

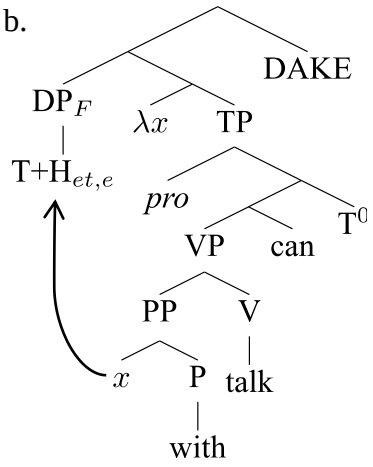
* 'I can only talk with Taro and I can only talk with Hanako.' * T+H > DAKE > can

In example (7) *dake* is on a *to*-marked argument with *to-dake* order, which yields obligatory DAKE > can scope. The DP 'Taro and Hanako' can be interpreted either as the plural individual Taro ⊕ Hanako$_e$, interpreted *in situ*, or can be the generalized quantifier Taro + Hanako$_{et,t}$. In the latter case, there are two possible positions to which it can QR: below or above the exclusivity operator DAKE. These three candidate LFs are illustrated below:

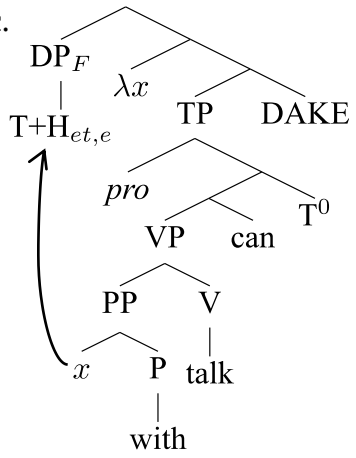
(13) a.



b.



c.



In (13a), the F-marked 'Taro and Hanako' is interpreted as the plural individual Taro ⊕ Hanako$_e$. This LF corresponds to the collective reading DAKE > can > T⊕ H. As the F-marked quantifier stays in the scope of DAKE, the complement of DAKE will have multiple alternatives and will satisfy the Focus Interpretation Principle. In (13b) 'Taro and Hanako' is interpreted as Taro + Hanako$_{et,e}$, which QRs to a position just below DAKE. Again, the complement of DAKE dominates an F-marked constituent, so the Focus Interpretation Principle will be satisfied. This yields the second reading with DAKE > T+H > can.

The LF in (13c) involves the generalized quantifier Taro + Hanako$_{et,e}$ QRing to the highest position possible, above DAKE. This structure would yield the third reading in (7), T+H > DAKE > can. However, the only F-marked constituent, 'Taro and Hanako,' has moved out of the scope of DAKE. As the trace position itself cannot be F-marked, the complement of DAKE will only have its one trivial focus semantic value, violating the Focus Interpretation Principle. This explains the unavailability of the third reading in (7).

The restriction observed here, in which the scopes of F-marked quantifiers are limited by the scope of their associating focus operator, has been observed previously for both overt and covert movement in other languages (Tancredi, 1990; Aoun and Li, 1991; Beaver and Clark, 2008) with the moniker "Principle of Lexical Association" (Tancredi, 1990). For example, overt movement of the F-marked constituent out of the scope of ONLY in (14) leads to ungrammaticality with the intended reading. In (15), we see that the addition of *only* blocks

every [boy]$_F$ from taking wide scope over the higher subject *someone*. This too can be explained using the same logic, as ONLY requires *every [boy]$_F$* to be interpreted in its scope.

(14) a. * [Who]$_{F,i}$ did Bill **only** see t_i?
Intended: 'which person is such that Bill only saw [him]$_F$?'

b. * [Mary]$_{F,i}$, John **only** saw t_i.
Intended: '(as for) Mary, John only saw [her]$_F$.'

(15) a. Someone wants to meet every boy.
✓ 'There's one person who wants to meet every boy.' ∃ > ∀
✓ 'For every boy *x*, there's someone who wants to meet *x*.' ∀ > ∃

b. Someone wants to **only** meet every [boy]$_F$.
✓ 'There's one person who wants to **only** meet every [boy]$_F$.' ∃ > ∀
* 'For every [boy]$_F$ *x*, there's someone who **only** wants to meet *x*.' * ∀ > ∃

Thus the *Dake* Blocking Effect documented here is an instance of a more general artifact of the process of focus interpretation itself. In the next section I will show a practical application of the *Dake* Blocking Effect: I present novel data from "stacked" 'only' constructions in Japanese, and show how the *Dake* Blocking Effect holds the key to their proper interpretation.

4. Interpreting stacked *dake-shika*

Japanese has another 'only' word: *shika.* Unlike *dake, shika* is an NPI and is pronounced outside of case markers and postpositions.[4]

(16) **Japanese "only" items: *dake* and *shika* (NPI)**

a. tarō to hanako-**dake**-to hanas-eru
Taro and Hanako-DAKE-with talk-can
✓ 'It's possible for me to talk to [Taro and Hanako]$_F$ (together) alone.' can > DAKE > T⊕ H
✓ 'I can only talk with [Taro and Hanako]$_F$.' DAKE > can > T⊕ H
✓ 'I can talk with Taro, I can talk with Hanako, I cannot talk with anyone else.' DAKE > T+H > can

[4] In this paper I assume the standard Horn (1967) semantics for the interpretation of both SHIKA and DAKE. See Yoshimura (2007) and references therein for pragmatic (and possibly semantic) differences between SHIKA and DAKE.

b. tarō to hanako-to-**shika** hanas-e-nai
Taro and Hanako-with-SHIKA talk-can-NEG
✓ 'I can only talk with [Taro and Hanako]$_F$.' SHIKA > can > T⊕ H
✓ 'I can talk with Taro, I can talk with Hanako, I cannot talk with anyone else.' SHIKA > T+H > can

(16a) is an example with *dake* on a *to*-marked argument with *dake-to* order. As shown previously (6b), *dake* in this position yields a scope ambiguity with respect to sentential modals: both can > DAKE and DAKE > can readings are possible. If can > DAKE, the *Dake* Blocking Effect requires 'Taro and Hanako' to stay low, so it must be interpreted *in situ* as Taro ⊕ Hanako$_e$. If DAKE > can, 'Taro and Hanako' can either be the plural individual Taro ⊕ Hanako$_e$ or it may be the boolean plural Taro + Hanako$_{et,t}$ and QR over the modal but not over DAKE. This results in the three possible readings of (16a).

In contrast, *shika* in (16b) must be pronounced with *to-shika* order. SHIKA obligatorily scopes over the modal 'can.' As with (16a), there are then two choices: 'Taro and Hanako' can be interpreted as the plural individual Taro ⊕ Hanako$_e$ under 'can' or can be the generalized quantifier Taro + Hanako$_{et,t}$ and QR over the modal but not over SHIKA. Thus the readings provided by (16b) are a proper subset of those available in (16a).

Note the following fact about the predicate "talk with": to "talk with Taro and Hanako" in a particular world and time necessarily entails "talk with Taro" and "talk with Hanako" in that world and time. The formula for the assertion of ONLY (10), repeated below, asserts that the alternatives which are not entailed by the ordinary semantic value are false. When computing ONLY > can > T⊕ H, the alternative 'can talk to T⊕ H' entails 'can talk to T' and 'can talk to H,' so ONLY will not assert their falsity. Thus ONLY > can > T⊕ H entails ONLY > T+H > can. However, the opposite is not true, so ONLY > can > T⊕ H is a strictly stronger reading than ONLY > T+H > can.[5]

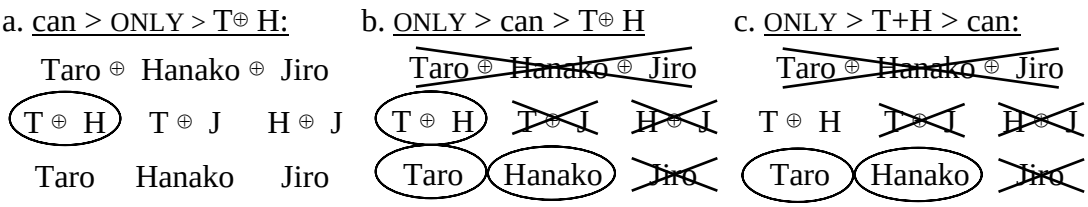
(10) [[ONLY α]] in w_0 = $\forall\varphi \in [[\alpha]]^f$. if [[α]] does not entail φ, φ(w_0) is false

[5] ONLY > T+H > can does not entail ONLY > can > T⊕ H. This is because the ONLY > T+H > can reading holds when there is a possible world in the modal base of 'can' where the speaker talks to Taro and one where the speaker talks to Hanako, but these possible worlds need not be the same. Thus there is no guarantee that there is a possible world in the modal base where the speaker talks to both Taro and Hanako.

The agnostocism of the ONLY > T+H > can reading as to whether the speaker can, in a single possible world, speak to both Taro and Hanako is reflected in this reading's entailment pattern in (17c).

The diagrams below aim to illustrate the three distinct readings made available in (16) by looking at their entailments. In each, I assume the relevant domain of atomic individuals is {Taro, Hanako, Jiro}. Circles indicate the speaker's asserted ability to speak with that particular combination of individuals and Xs indicate the speaker's asserted inability to speak with that combination of individuals.

(17) **Talking (in)abilities entailed by (16a) *dake* and (16b) *shika*:**



(16a) *dake* has readings (a), (b), and (c). (16b) *shika* only has readings (b) and (c).

Interestingly, *dake* and *shika* can be "stacked" onto the same argument. (This stacked 'only' is, like *shika*, an NPI.) The question is, what is the semantic contribution of this stacked 'only,' and can it be computed compositionally?

(18) **Japanese "stacked" 'only': *dake-shika* (NPI)**

tarō to hanako-**dake**-to-**shika** hanas-e-nai
Taro and Hanako-DAKE-with-SHIKA talk-can-NEG

? 'I can only talk with [Taro and Hanako]$_F$.' ONLY > can > T⊕ H

? 'I can talk with Taro, I can talk with Hanako, I cannot talk with anyone else.' ONLY > T+H > can

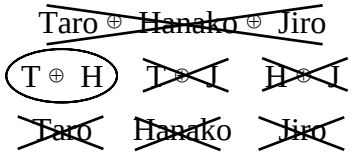
✓ 'Only with Taro and Hanako together is it possible for me to only talk to [them]$_F$.' SHIKA > can > DAKE > T⊕ H

The stacked *dake-shika* example in (18) has two types of readings. The first two are identical to the ONLY > can > T⊕ H and ONLY > T+H > can readings in (16), with entailment patterns as in (17b) and (17c). We know from (16) that *dake* can and *shika* must scope over the modal 'can.' These first two readings of *dake-shika* (18) come about when both SHIKA and DAKE take scope over the modal with no other scope-bearing item intervening between them. The two 'only's will then be redundant and simply be interpreted as one ONLY. The slight dispreference for these first two readings by some speakers may be attributed to the redundancy of using both *dake* and *shika* to express an assertion identical to a reading of the

utterances in (16) with only one 'only.'[6] They are, however, salient for other speakers,[7] making it often difficult to intuit the differences between *shika* and *dake-shika*.

But the third reading of (18) is a new reading, distinct from the readings made available by just *dake* or *shika* in (16). The diagram below illustrates the entailed abilities and inabilities of the speaker to speak with each precise set of individuals, in the same format as in (17).

(19) **Talking (in)abilities entailed by the third reading of (18) *dake-shika*:**



Compare the entailment pattern in (19) to the patterns in (17b) and (17c). This interpretation of (18) makes it clear that the particular combination of both Taro and Hanako is the only set of individuals that the speaker can talk to. That is, compared to (17b), the speaker of (18) explicitly asserts that they cannot speak to Taro alone or Hanako alone, either.

At first glance, this seems to involve an operation distinct from the interpretations of *dake* and *shika* studied here. All uses of *dake* and *shika* observed prior to this example intuitively exclude alternatives which do not contain the F-marked participants, but (19) explicitly excludes *subsets* of 'Taro and Hanako' as well.

The truth conditions and entailment patterns for this reading of (18) can in fact be computed compositionally, though, using the scope ranking SHIKA > can > DAKE > T⊕ H. In (20) below I present the compositional derivation of the entailments of this third reading of (18). For this demonstration, I again take {Taro, Hanako, Jiro} to be the relevant set of alternative atomic individuals and assume an LF as in (20a) for (18). I will use the Hornian ONLY meaning for both SHIKA and DAKE so for convenience we can think of (20a) as (20b).

I first compute the alternatives which will be considered by the higher ONLY, $[[\alpha]]^f$ (20c). Each of these alternatives are of the form 'can [I only talk to $[x]_F$]'. Following (10), repeated below, the assertion of [[(18)]] = [[ONLY α]] will assert that all alternatives in $[[\alpha]]^f$ which are not entailed by the ordinary semantic value 'can [I only talk to $[T\oplus H]_F$]' are false. The alternatives based on T⊕ H⊕ J, T⊕ J, H⊕ J, and J will of course all be asserted as false.

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[6] The same argument may also go for a stacked 'only' with postposition-*dake-shika* order, which is also available but degraded. As post-postposition *dake* obligatorily scopes high (6a), the resulting assertion will only have the two readings in (16) with wide-scope ONLY, just like the first two readings given for (19). As the same assertion can be communicated with only one 'only,' this alternative's marginal status could also be explained through a principle of economy.

[7] I thank Yasutada Sudo for bringing this judgment to my attention.

(20) **Computing the third reading of (18) *dake-shika*:**

a. (18) = SHIKA [$_{\alpha}$ can [DAKE [I talk to [T$^{\oplus}$ H]$_F$]]]

b. = ONLY [$_{\alpha}$ can [I only talk to [T$^{\oplus}$ H]$_F$]]

c. $[[\alpha]]^f$ = { can [I only talk to [T$^{\oplus}$ H$^{\oplus}$ J]$_F$], can [I only talk to [T$^{\oplus}$ H]$_F$],
can [I only talk to [T$^{\oplus}$ J]$_F$], can [I only talk to [H$^{\oplus}$ J]$_F$],
can [I only talk to [T]$_F$], can [I only talk to [H]$_F$]
can [I only talk to [J]$_F$] }

d. [[(18)]] = [[ONLY α]]
= ¬ can [I only talk to [T$^{\oplus}$ H$^{\oplus}$ J]$_F$] ∧ ¬ can [I only talk to [T$^{\oplus}$ J]$_F$] ∧
¬ can [I only talk to [H$^{\oplus}$ J]$_F$] ∧ ¬ can [I only talk to [T]$_F$] ∧
¬ can [I only talk to [H]$_F$] ∧ ¬ can [I only talk to [J]$_F$]
⟹T$^{\oplus}$ H$^{\oplus}$ J, T$^{\oplus}$ J, H$^{\oplus}$ J, T, H, J get Xs in (19)

e. (18) presupposes 'can [I only talk to [T$^{\oplus}$ H]$_F$]' ⟹T$^{\oplus}$ H gets a circle in (19)

(10) [[ONLY α]] in w_0 = ∀φ ∈$[[\alpha]]^f$. if [[α]] does not entail φ, φ(w_0) is false

Importantly, note that 'can [I only talk to [T$^{\oplus}$ H]$_F$]' also does not entail 'can [I only talk to [T]$_F$]' or 'can [I only talk to [H]$_F$].' This is because 'can [I only talk to [T$^{\oplus}$ H]$_F$]' is true if there is a possible world in the modal base where 'I only talk to [T$^{\oplus}$ H]$_F$' is true and 'I talk to T' and 'I talk to H' will also be true in this world, but that does not guarantee the existence of a possible world where 'I only talk to [T]$_F$' or 'I only talk to [H]$_F$' are true. Thus all alternatives which are not based on T$^{\oplus}$ H will be explicitly negated in the evaluation of [[(18)]] = [[ONLY α]] (20d), deriving the unique entailment pattern (19) obtained by the stacked 'only' construction (18).

In contrast, recall that in the evaluation of the ONLY > can > T$^{\oplus}$ H readings in (16), we used the fact that 'can talk to T$^{\oplus}$ H' entails 'can talk to T' and 'can talk to H,' so ONLY does not assert that 'can talk to T' or 'can talk to H' are false. As explained above, the corresponding entailments do not hold in the computation of (18) because of the addition of the lower ONLY (DAKE) in the alternatives being compared, resulting in the final assertion (20d) explicitly negating all these alternatives. In this way, we can give a compositional explanation for the truth conditions of this unique reading of (18) *dake-shika*.

Finally, recall that 'Taro and Hanako' can scope above 'can' in the SHIKA > T+H > can interpretations of (16b). We may then expect one more reading of (18) with the scope SHIKA > T+H > can > DAKE. This reading and its entailment pattern are given below:

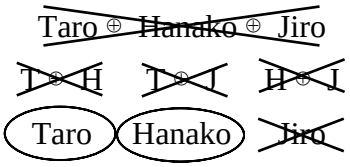
(18') **A nonexistent reading of (18) *dake-shika*:**

tarō to hanako-**dake**-to-**shika** hanas-e-nai

Taro and Hanako-DAKE-with-SHIKA talk-can-NEG

* 'I can talk to Taro alone, I can talk to Hanako alone, I cannot talk to anyone else alone.' *SHIKA > T+H > can > DAKE

(21) **Talking (in)abilities entailed by SHIKA > T+H > can > DAKE:**



The unavailability of this reading is predicted by the *Dake* Blocking Effect. Because the lower 'only' DAKE is also associating with 'Taro and Hanako,' the *Dake* Blocking Effect dictates that it must stay within the scope of DAKE. As the generalized quantifier Taro + Hanako$_{et,t}$ requires QRing to a higher position, 'Taro and Hanako' in (18) must be interpreted *in situ* as the plural individual Taro ⊕ Hanako$_e$, yielding the third reading in (18). Thus the *Dake* Blocking Effect plays a crucial role in determining the precise set of readings available in the *dake-shika* stacked 'only' constructions.

5. Conclusion

In this paper I presented novel data on the scopal interactions between quantifiers and the 'only' word *dake* in Japanese. The effect described, which I call the *Dake* Blocking Effect, forces F-marked quantifiers from taking wider scope than its associating DAKE. This constraint had been observed previously for other languages under the monicker "Principle of Lexical Association" (Tancredi, 1990; Aoun and Li 1993; Beaver and Clark 2008).

To motivate the *Dake* Blocking Effect, I discussed the possible interpretations of F-marked quantifiers associating with *dake*. Because *dake* is a constituent-adjoined 'only' whose interpreted scope varies depending on the type of argument to which it attaches, *dake* in two different environments were studied: in genitive-marked possessors and on comitative *to*-marked arguments. In either case, the F-marked quantifier is able to scope up to but not above the scope of the exclusivity operator DAKE, validating the *Dake* Blocking Effect as an empirical generalization.

In the final section of the paper I presented data from utterances which stack two 'only's, *dake* and *shika*, on the same argument. The description of these *dake-shika* utterances and their interpretations is, to my knowledge, a novel contribution of this paper. The semantic

contribution of *dake* in such constructions may seem surprising at first glance, but I showed that their interpretations are predicted when the *Dake* Blocking Effect is taken into account.

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