Recent work by Chomsky (2000, 2001a, b) is concerned with derivation of syntactic objects in a phase-by-phase manner. With CP and vP as phases, such phase-by-phase derivation forces movement to apply successive-cyclically, landing at intermediate Spec positions of vP and CP, though “traces” of such intermediate steps are mostly invisible. This paper shows that focus particles in Japanese present phonologically visible evidence for successive-cyclic, or phase-by-phase, application of movement: occurrence of a focus particle may be phonologically spelled out not only in its “base” position but also in its derived positions, positions predicted by Chomsky’s view of CP and vP as phases, namely in [Spec, C] or [Spec, v].

Keywords: Agree, focus particle, scope, successive cyclicity, phase, spell-out

1. Introduction

This paper argues that focus particle construction in Japanese presents properties of movement that are best captured in terms of successive-cyclic, or phase-by-phase, derivation of syntactic objects as proposed by Chomsky (2000, 2001a, b). Although long-distance scope of a focus particle in situ suggests treatment in terms of covert, or LF, movement, analogous to covert wh-movement in wh-in-situ languages like Chinese...
and Japanese, this paper claims that "covert" movement of a focus particle in situ can, in apparent contradiction to its covertness, be overt in that traces of its movement may be phonologically spelled out in the peripheral positions of what Chomsky (2000, 2001a) takes to be phases, namely CP and vP.

To support the claim, two focus particles will be subjected to careful scrutiny: demo in section 2, sae in section 3. Section 2 examines properties of "demo of exemplification," a focus particle that is used in a way similar to a certain use of say in English (section 2.1) but, perhaps unlike its English analogue, presents long-distance agreement and subject-object asymmetry indicative of movement (sections 2.2 and 2.3). After introducing some evidence presented in the literature for successive-cyclic application of wh-movement (section 2.4), this paper shows that demo presents what can only be taken as a phonological reflex of successive-cyclic movement (section 2.5). The paper goes on to suggest that the successive cyclicity is forced on demo by a locality condition like Chomsky's Phase-Impenetrability Condition (section 2.6), and examine somewhat complicated cases where an occurrence of demo is ambiguous both in terms of its modal interpretation and its derivation (section 2.7).

Section 3 shows that much the same argument as given to demo applies to sae 'even.' The particle may take long-distance scope, subject to the familiar subject-object asymmetry characteristic of movement (section 3.1). It may also be pronounced in different places at a time, in positions that are linked by movement, a phenomenon which again points to successive-cyclic movement (section 3.2). Such multiple pronunciation often leads to awkwardness, which appears to be attributed to some nonsyntactic, or even extra-grammatical, conditions (section 3.3). Section 4 makes concluding remarks.

2. Demo

2.1. Introductory Remarks

The focus particle demo in Japanese mainly has two uses: one is to express "unexpectedness," similar to English even:

(1) Ken-wa onnanoko-to-demo kenkashita.
  Ken-Top girls-with-even quarreled
  'Ken quarreled even with girls.'

Here while Ken's quarrel itself may not be unexpected to the speaker,
that it is girls that he quarrels with is unexpected and surprising; this is what *demo* of unexpectedness is doing by attaching to the complement of the verb.

The other use, which may be termed "*demo* of exemplification," is for giving some tentative example to suggest the speaker’s indeterminate attitude toward it:

(2) Ochikonde-iru Ken-wa koibito-to-demo despondent-be Ken-Top girlfriend-with-SAY kenkashita-nichigainai. quarreled-must

‘Ken, who is despondent, must have quarreled, SAY with his girlfriend.’

Here the speaker, seeing Ken being despondent, infers that he must have quarreled with someone, and he or she tentatively assumes that it is his girlfriend that Ken quarreled with, because that would explain his present state. As the English gloss SAY in (2) indicates, this use of *demo* bears some resemblance to the use of *say* in English for mentioning something as an example. (Capitalization of the gloss is intended to suggest that *demo* and *say* in the relevant sense are similar but not the same.) To see the similarity between the relevant uses of *demo* and *say*, let us observe some English examples; (3) and (4) are taken from Sinclair et al. (1987: 1289) and from Sinclair et al. (1995: 1478), respectively:

(3) a. Compare, say, a Michelangelo painting with a Van Gogh.
b. Is it possible to book the ferry, say, on Saturday [...]?

(4) ... let’s look at a different biological system, say, an acorn.

Here we see *say* appearing in imperative or interrogative sentences. *Demo* of exemplification in Japanese also is used in similar contexts:

(5) a. Ocha-demo nom-e!
    tea-SAY drink-Imp
    ‘Drink, SAY tea!’
b. Ocha-demo nomu-ka?
    tea-SAY drink-Q
    ‘Will you (or Shall we) drink, SAY tea?’
c. Ocha-demo nom-oo.
    tea-SAY drink-will
    ‘Let’s (or I will) drink, SAY tea.’

Note that imperative or interrogative sentences are concerned with modality. In fact, *demo* of exemplification cannot be used in an objec-
tive statement that does not end with a modal element. Thus in (2), \( demo \) is licensed by the presence of the epistemic modal \( \textit{nichigainai} \) ‘must’ at the end of the sentence, and leaving this modal out results either in unacceptability or impossibility of the exemplification construal:

\[(6) (*) \text{Ochikonde-iru Ken-wa koibito-to-demo kenkashita.}\]

\[
\text{despondent-be Ken-Top girlfriend-with-SAY quarreled}
\]

‘Ken, despondent, quarreled {even/*SAY} with his girlfriend.’

Without a modal licenser, \( demo \) in (6) is unacceptable as an exemplification use, or else must be taken as an instance of the same unexpectedness use as illustrated in (1) (a construal somewhat unnatural in this context). Returning to (5), it is because \( demo \) is construed with the sentence-final modal element, imperative \( e \) in (5a), interrogative \( ka \) in (5b), and intentional \( oo \) in (5c), that the particle is legitimate in its exemplification use.

Hereafter we will only be concerned with the exemplification use; any acceptability judgment of the examples to follow containing \( demo \) should be taken as concerning this use of the particle. Accordingly, any reference to \( demo \) should be taken as reference to its exemplification use.

2.2. Agreement between \( Demo \) and Its Licenser

The observation just made concerning \( demo \) is well-known in the literature of Japanese grammar (see Moriyama (1998), Masuoka (2000: Ch. 18) and references cited therein). However, the nature of the syntactic relation between \( demo \) and its licensing modal seems to have largely escaped linguists’ attention. Note first of all that the relation may be long-distance across a clausal boundary, as observed in Masuoka (2000: Ch. 18) and Sano (2001b). This is illustrated in the following, where curly brackets indicate that one of the expressions demarcated by the slash must appear; the adverbial \( \textit{kitto} \) ‘surely’ is added in (7) to make the sequence of utterances more natural (though its absence does not affect grammaticality):

\[(7) \text{Yoko-ga okotte-iru. Kitto Ken-ga [kanojo-ga sofa-ni Yoko-Nom angry-is surely Ken-Nom she-Nom sofa-on uisukii-demo koboshita to] itta-{noda/nodaroo/nichigainai}. whisky-SAY spilled C said-must}
\]

‘Yoko is angry. Surely it must be that Ken said that she
spilled, SAY whisky on the sofa.’

(8) Ken-wa [Yoko-ga sofa-ni uisukii-demo koboshita no]-o
Ken-Top Yoko-Nom sofa-on whisky-SAY spilled C-Acc
mita-{noda/nodaroo/nichigainai}.
saw-must
‘It must be that Ken saw Yoko spill, SAY whisky on the sofa.’

Here demo appears in the embedded clause indicated by square brackets, but its occurrence is licensed by the matrix modal noda, nodaroo, or nichigainai in curly brackets (all translated as epistemic ‘must,’ ignoring their differences). That modal predicates like these are indeed functioning as the licensers of demo is shown by the unacceptability that results from omission of such modals, as in the following (to be compared with (8)):

(9) *Ken-wa [Yoko-ga sofa-ni uisukii-demo koboshita no]-o
Ken-Top Yoko-Nom sofa-on whisky-SAY spilled C-Acc
mita.
saw
‘Ken saw Yoko spill, SAY whisky on the sofa.’

Furthermore, compare (7) with (10) below:

(10) Ken-wa [kanojo-ga sofa-ni uisukii-demo koboshita-noda to]
Ken-Top she-Nom sofa-on whisky-SAY spilled-M C
itta.
said
‘Ken said that it must be that she spilled, SAY whisky on
the sofa.’

Here no modal predicate appears in the matrix clause, but occurrence of demo in the embedded clause is licensed by occurrence of the modal noda (simply glossed in (10) as M) in the same clause. That is, while demo is licensed long-distance in (7), it is licensed short-distance by a clause-mate modal in (10). Furthermore, occurrence of demo in (7) (and in (8)), by being licensed by the matrix modal expressing the speaker’s mental attitude at the time of utterance (see Nakau (1992: 5; 1994: 46)), is also functioning as a modal expressing a mental attitude of the same speaker at the same utterance time (his or her indeterminate attitude at that time concerning what is focused by demo). In contrast, occurrence of demo in (10), by being licensed by the embedded modal expressing a mental attitude on the part of Ken (the referent of the matrix subject) and not the speaker, is also functioning as a modal
expressing a mental attitude of his own. In a nutshell, demo assumes the modality of its licenser and expresses the same person’s mental attitude as expressed by its licenser.

The observation just made suggests some kind of agreement relation between demo and its licenser. Suppose that demo enters the derivation with features [+Ind(eterminate), uM(odal)], namely positively valued indeterminate feature [Ind] and unvalued (hence uninterpretable) modal feature [M]. The value of [M] of demo is determined by occurrence of a modal predicate (in a position that satisfies certain conditions, c-command among them). If an appropriate modal predicate is present in an appropriate position, it values [uM] of demo, under Agree in the sense of Chomsky (2001a): [uM] of demo matches the positively valued [+M] of the licensing modal, becoming [+M] under Agree. If there is no such modal predicate, [uM] of demo remains unvalued and uninterpretable, causing the derivation to crash.

Possibly, the licensing modal predicate, which is inherently [+M] and always enters the derivation with this feature, also has the option of entering the derivation with unvalued [uInd], which may then be valued positive under Agree with [+Ind] of demo. If so, this approximates to Chomsky’s system of agreement, in which both goal and probe must be active (namely must have uninterpretable, unvalued features) for Agree to apply (Chomsky (2001a: 6)). See section 2.7 for implementation of this idea. In any case, the assumption that demo enters the derivation with [uM] as well as [+Ind] nicely distinguishes the particle from an expression like (ka) {nanika/dareka} ‘(or) something/someone,’ which is like demo in indicating indeterminacy but unlike it in not requiring a licensing modal predicate (observation due to Moriyama (1998)):

   Ken-Top dumpling-SAY ate(-must)
   ‘(It must be that) Ken ate, SAY Chinese meat dumplings.’

b. Ken-wa gyooza-ka nanika tabeta(-nichigainai).
   Ken-Top dumpling-or something ate(-must)
   ‘(It must be that) Ken ate Chinese meat dumplings or something.’

In (11b), occurrence of the parenthesized modal is optional, unlike in (11a). Assuming that an expression like (ka) nanika, which probably shares with demo the interpretable feature [+Ind], does not (or at least need not) enter the derivation with uninterpretable [uM], occurrence of
this expression without a modal predicate is accounted for.

2.3. Subject-Object Asymmetry

Difficulty in sentence processing apart, it is even possible for demo to be separated from its licenser by more than one clausal boundary, as observed in Sano (2001b). (Thanks to Toshinobu Mogi for suggesting the use of yuka ‘floor’ and pankuzu ‘crumbs’ to make the examples more natural.)

(12)  a. Yoko-wa [Ken-ni [yuka-ni pankuzu-demo koboshita Yoko-Top Ken-by floor-on crumbs-SAY spilled no]-o mirareta to] kanchigaishita-nodaroo. C-Acc was-seen C misunderstood-M ‘Yoko must have misunderstood (or have had the mistaken idea) that she was seen to spill, SAY crumbs on the floor by Ken.’

b. Yoko-wa [Ken-ga [kanojo-ga yuka-ni pankuzu-demo Yoko-Top Ken-Nom she-Nom floor-on crumbs-SAY koboshita no]-o mita to] kanchigaishita-nodaroo. spilled C-Acc saw C misunderstood-M ‘Yoko must have misunderstood (or have had the mistaken idea) that Ken saw her spill, SAY crumbs on the floor.’

While (12b) is more difficult to process than (12a), demo in the most deeply embedded clause in both sentences is licensed long-distance by the matrix modal predicate nodaroo, entering agreement relation with it. For one thing, absence of the modal predicate would leave demo unlicensed, resulting in unacceptability. For another, demo expresses a mental attitude of the speaker, not Yoko (nor, of course, Ken); it assumes the modality of its licenser, just as in (7) and (8)—via Agree, on our assumption.

Long-distance dependency is often described in terms of movement. Thus just as the wh-phrase nani(-o) ‘what(-Acc)’ in (13) below is related to the matrix interrogative Q by movement of some relevant features associated with the former to some position associated with the latter, it is natural to assume that the demo-phrase in sentences like (12) is related to its licensing modal by analogous movement.

(13)  Yoko-wa [Ken-ni [yuka-ni nani-o koboshita no CP1]-o Yoko-Top Ken-by floor-on what-Acc spilled C-Acc
mirareta to \( CP_2 \) kanchigaishita-no?
was-seen C misunderstood-Q
(Lit.) ‘What did Yoko misunderstand that she was seen to spill on the floor by Ken?’

In fact, apart from the analogy with \( wh \)-movement, there is independent evidence suggesting that agreement relation between \( demo \) and its licenser is mediated by movement. It has been well known since the 1980s that long-distance movement, overt or covert, displays subject-object asymmetry (Chomsky (1981), Kayne (1984), among many others). The relation between \( demo \) and its licenser is no exception. With short-distance agreement, we see little or no subject-object asymmetry:

(14) Kono sofa-wa sake-kusai.
this sofa-Top saki-smell
‘This sofa smells of alcohol.’

surely Yoko-Nom whisky-SAY spilled-M
‘Surely it must be that Yoko spilled, SAY whisky.’
b. Kitto (yopparai-no) Yoko-demo sake-o
surely lush-Gen Yoko-SAY saki-SAY
koboshita-nodaroo.
spilled-M
‘Surely it must be that, SAY Yoko (who is a lush), spilled saki.’

In (14a), \( demo \) attaches to the object, and in (14b), to the subject. Both sentences are acceptable as continuation of the preceding utterance. (Some speakers might find (14b) somewhat awkward, but it seems tolerable.) With long-distance agreement, however, the familiar subject-object asymmetry shows up; compare (7) and (8) with (15) and (16), respectively:

(15) Yoko-ga okotte-iru. *Kitto Ken-ga [(yopparai-no) Yoko-Nom angry-is surely Ken-Nom lush-Gen
kanojo-demo sofa-ni uisukii-o koboshita to]
she-SAY sofa-on whisky-Acc spilled C
itta-{noda/nodaroo/nichigainai}.
said-M
‘Yoko is angry. Surely it must be that Ken said that, SAY she (who is a lush), spilled whisky on the sofa.’
(16) *Ken-wa [(yopparai-no) Yoko-demo sofa-ni uisukii-o Ken-Top lush-Gen Yoko-SAY sofa-on whisky-Acc koboshita no]-o mita-{noda/nodaroo/nichigainai}.
spilled C-Acc saw-M
'It must be that Ken saw, SAY Yoko (who is a lush), spill whisky on the sofa.'

Note that the unacceptability of (15) and (16) does not seem to be simply due to the clause-peripherality of the demo-phrase; putting the subject demo-phrase in a clause-internal position via scrambling has little effect on the degree of acceptability:

(17) Yoko-ga okotte-iru. *Kitto Ken-ga [sofa-ni uisukii-o Yoko-Nom angry-is surely Ken-Nom sofa-on whisky-Acc (yopparai-no) kanojo-demo koboshita to] lush-Gen she-SAY spilled C itta-{noda/nodaroo/nichigainai}.
said-M
'Yoko is angry. Surely it must be that Ken said that, SAY she (who is a lush), spilled whisky on the sofa.'

(18) *Ken-wa [sofa-ni uisukii-o (yopparai-no) Yoko-demo Ken-Top sofa-on whisky-Acc lush-Gen Yoko-SAY koboshita no]-o mita-{noda/nodaroo/nichigainai}.
spilled C-Acc saw-M
'It must be that Ken saw, SAY Yoko (who is a lush), spill whisky on the sofa.'

The subject-object asymmetry seems to be a real phenomenon, and we conclude that demo and its licensing modal enter agreement relation via covert movement, subject to whatever constraint on movement it may be that accounts for the asymmetry.

2.4. Phonologically Overt Evidence for Successive-Cyclic Wh-Movement

Long-distance movement is usually taken to apply successive-cyclically. In fact, in the recent minimalist literature, movement in general operates phase-by-phase, where phases are either CP or vP (Chomsky (2000, 2001a, b)). Ignoring Spec of vP as a possible landing site for the phase-by-phase operation of wh-movement, the relevant formal features associated with the wh-phrase nani in (13) move first to the Spec of the innermost CP, CP₁, and then to the Spec of the intermediate CP, CP₂, before finally landing on the Spec of the matrix CP headed by the
interrogative Q. Some languages provide phonologically overt evidence that a *wh*-phrase lands at Specs of lower C’s before being associated with a higher C that triggers *wh*-movement: for example, the partial movement construction in languages like German, Romani and Malay (McDaniel (1989), Cheng (2000), Cole and Hermon (2000), among many others). The following is an example of the German partial movement construction, taken from Beck (1996: 4):

(19) Was glaubt Luise [wen Karl gesehen hat]?  
    what believes Luise whom Karl seen has  
    ‘Who does Luise believe that Karl saw?’

Here the *wh*-phrase that takes matrix scope, *wen* ‘whom,’ does not occupy the Spec of the matrix CP; instead, it occupies the Spec of the embedded CP in brackets. What occupies the matrix [Spec, C] is an invariant *was* ‘what,’ which functions as the interrogative scope marker of the *wh*-phrase that would otherwise occupy that [Spec, C]. The interpretation of (19) is therefore the same as that of the following long extraction, or “full movement,” example (also taken from Beck (1996: 5)), where *wen* overtly moves to the matrix [Spec, C] position that *was* occupies in (19):

(20) Wen glaubt Luise [daß Karl gesehen hat]?  
    whom believes Luise that Karl seen has  
    ‘Who does Luise believe that Karl saw?’

Cheng (2000) claims that the partial movement construction in a language like German involves successive-cyclic movement of a *wh*-feature, leaving copies at each embedded CP; in (19) a *wh*-feature is moved successive-cyclically from the embedded [Spec, C] to the matrix [Spec, C]. This analysis suggests that both (19) and (20) involve successive-cyclic *wh*-movement, but the *wh*-phrase is pronounced in the intermediate [Spec, C] in the partial movement example (19) and in the matrix [Spec, C] in the full movement example (20).

While the partial movement construction (in adult German) shows the relevant *wh*-phrase only at the initial position of a subordinate clause and not at the initial position of a superordinate clause it takes scope over, English-speaking children’s long-distance *wh*-questions sometimes show the relevant *wh*-phrase occurring at both positions, thus providing rather direct visible evidence for successive-cyclic application of *wh*-movement:

(21) who do you think [CP who [IP the cat chased t]]  
    (Thornton (1995: 140))
In fact, McDaniel et al. (1995) report that some dialects of German and Romani have a construction analogous to (21), which they call "wh-copying construction."

In Japanese, no phonologically overt evidence for successive-cyclic application of wh-movement has been presented. This is in a sense natural, because Japanese is a wh-in-situ language, with no phonologically visible wh-movement in the first place (with a possible exception of the wh-phrase movement case discussed by Takahashi (1993)). But this leaves us with a question as to whether there is any evidence for successive cyclicity in constructions other than wh-interrogatives in Japanese. We will see that the construction involving demo (and sae ‘even’ to be discussed in section 3) indeed provides phonologically visible evidence for successive cyclic application of movement.

2.5. Phonologically Overt Evidence for Successive-Cyclic Demo-Movement

Just as there may be multiple occurrences of a wh-phrase in a single/nonmultiple wh-question in certain languages, there can be multiple occurrences of what appears to be one and the same demo in a sentence with a single licensor, as in the following:

(22) Yoko-ga okotte-iru. Kitto Ken-ga [kanojo-ga sofa-ni Yoko-Nom angry-is surely Ken-Nom she-Nom sofa-on uisukii-demo1 koboshita to]-demo2 itta-nodaroo.

‘Yoko is angry. Surely it must be that Ken said, SAY that she spilled, SAY whisky on the sofa.’

(23) Ken-wa [Yoko-ga sofa-ni uisukii-demo1 koboshita Ken-Top Yoko-Nom sofa-on whisky-SAY spilled no]-demo2 mita-nodaroo.

‘It must be that Ken saw, SAY that Yoko spilled, SAY whisky on the sofa.’

(22) and (23) crucially differ from (7) and (8), respectively, in having additional occurrence of demo to the right of the C-headed clause in brackets that already contains demo. It is important to observe that the two occurrences of demo, embedded demo1 and matrix demo2, agree with the same licensor, namely the matrix modal predicate (here noda-roo, simply glossed as M). This is so, not simply because there is no other potential licenser in the sentence. More importantly, demo1 and
demo₂ must be agreeing with the matrix modal because they both express the speaker’s mental attitude at the time of utterance: that is, it is the speaker, and not Ken, who is responsible for the use of demo₁, in the same way that he or she is responsible for the use of demo₂.

There are in principle two ways to generate multiple occurrences of demo, or, in general, a lexical item LI. One is to “base-generate” each occurrence of LI in place, by Pure Merge in the sense of Chomsky (2000). The other is to form a chain of identical LI’s, or occurrences of a single LI (Chomsky (2000: 114), by movement of LI after its pure-merger in its base position; usually, either the head or the tail of the chain is its only pronounced member (carries the phonological features of LI), but in certain cases a medial element is also pronounced, resulting in multiple pronunciation of LI at different places, as in the wh-copying construction (see (21)). In the former, pure-merger generation of multiple occurrences of LI, each occurrence is an independent selection from the lexicon; in the latter, movement (or Form-Chain) generation, LI is selected from the lexicon only once, but occurs in different places under the copy theory of movement (see Chomsky (2000: 114–115), Nunes (2004)).

Consider the possibility that the two occurrences of demo in (22) and (23) are the result of pure-merger generation. In this case demo₁ and demo₂ are independent selections from the lexicon, the former pure-merged with the embedded object uisukii ‘whisky’ and the latter with the bracketed clause. Note that it is not impossible for a single modal predicate to license more than one occurrence of demo, although the result may be somewhat awkward ((24b) due to an anonymous EL reviewer):

(24) a. Kitto Yoko-demo sofa-ni uisukii-demo surely Yoko-SAY sofa-on whisky-SAY koboshita-nodaroo. spilled-M ‘Surely it must be that, SAY Yoko spilled, SAY whisky on the sofa.’ (Cf. (14))
b. Taro-ga, nattoo-demo yuushoku-ni Taro-Nom fermented-soybeans-SAY supper-for yuujin-to-demo tabeta-nichigainai. friend-with-SAY ate-must ‘It must be that Taro ate, SAY fermented soybeans for supper, SAY with a friend of his.’
In (24) the two occurrences of *demo* must have been independently pure-merged with their sister constituent and agree with the same licenser, the sentence-final modal predicate. In the same way, one might conjecture that the two occurrences of *demo* in (22) and (23) are the result of independent applications of Pure Merge, agreeing with the same matrix modal predicate.

Notice that the two occurrences of *demo* in (24) do not c-command each other (so that they cannot be related by movement), and each focuses a constituent that is not contained in the constituent focused by the other. In (22) and (23), however, *demo*₁ and its focused constituent is contained in the bracketed clausal constituent that *demo*₂ is combined with, so *demo*₁ is c-commanded by *demo*₂. As discussed in Sano (1988, 2001a), the scope of one focus particle generally cannot extend across another that c-commands it. To see this, consider first an example like (25):

(25) Isha-wa Yoko-ni [chooshoku-ni yasai-dake taberu
doctork-top Yoko-dAt breakfast-fOr vegetable-Only eat
koto]-o yurushita.
C-Acc allowed
‘The doctor allowed Yoko to eat only vegetables for breakfast.’

In (25), the scope of the focus particle *dake* ‘only’ can either be within the embedded clause in brackets or over the matrix clause. The embedded scope reading says that the doctor allowed Yoko not to eat anything but vegetables for breakfast; the matrix scope reading says that the doctor did not allow Yoko to eat anything but vegetables for breakfast. With addition of another focus particle to the right of the bracketed clause, however, *dake* within this clause cannot extend its scope over the matrix clause:

(26) Isha-wa Yoko-ni [chooshoku-ni yasai-dake taberu
doctork-top Yoko-dAt breakfast-fOr vegetable-Only eat
koto]-sae yurushita.
C-even allowed
‘The doctor allowed Yoko even to eat only vegetables for breakfast.’

In (26), the focus particle *sae* ‘even,’ attaching to the embedded clause, restricts the scope of *dake* within the clause, so that the sentence lacks the ambiguity of the sort seen in (25) and is only interpreted as saying that the doctor even allowed Yoko not to eat anything but vegetables for breakfast.
breakfast. This “scope-confining effect” (dubbed “focus-island effect” in Sano (2001a)) is also produced with demo in place of sae:

(27) Isha-wa Yoko-ni [chooshoku-ni yasai-dake taberu
doctor-Top Yoko-Dat breakfast-for vegetable-only eat
koto]-demo yurushita-nodaroo.
C-SAY allowed-M
‘It must be that the doctor allowed Yoko, SAY to eat only
vegetables for breakfast.’

In (27) dake cannot take matrix scope across demo but must take embedded scope.

The same effect as seen above is also observed in sentences parallel to (8)/(23):

(28) a. Ken-wa [Yoko-ga sofa-ni uisukii-dake koboshita
Ken-Top Yoko-Nom sofa-on whisky-only spilled
no]-o mita.
C-Acc saw
‘Ken saw Yoko spill only whisky on the sofa.’

b. Ken-wa [Yoko-ga sofa-ni uisukii-dake koboshita
Ken-Top Yoko-Nom sofa-on whisky-only spilled
no]-demo mita-nodaroo.
C-SAY saw-must
(Lit.) ‘It must be that Ken saw, SAY that Yoko spilled
only whisky on the sofa.’

In (28a), dake may take embedded or matrix scope. According to the embedded scope reading, what Ken saw is Yoko spill only whisky on the sofa, a situation which may be somewhat unnatural. The matrix scope reading, on the other hand, says that Ken did not see Yoko spill anything but whisky on the sofa. (The difference between embedded and matrix scope may be more evident with a negative implicative verb like minogasu ‘fail-to-see’ as the matrix predicate.) Such matrix, or long-distance, scope across the boundary of a complement clause is blocked by occurrence of demo attaching to the clause, so that the scope of dake in (28b) must be confined within the embedded clause, resulting in the somewhat unnatural embedded scope reading. Because of scope-confining effect of this sort, unacceptability results if we interchange the positions of the two focus particles in (28b), as in (29):

(29)?*Ken-wa [Yoko-ga sofa-ni uisukii-demo koboshita
Ken-Top Yoko-Nom sofa-on whisky-SAY spilled
no]-dake mita-nodaroo.
C-only saw-must
(Lit.) ‘It must be that Ken saw only that Yoko spilled, SAY whisky on the sofa.’

Here demo in the embedded clause must be licensed by the matrix modal predicate, but this is blocked by occurrence of dake in the intervening position.

Obviously, two focus particles appearing in (26), (27), (28b) or (29), being distinct lexical items, are independently selected from the lexicon and pure-merged with their sister constituents. Turning to (22) and (23), if demo1 and demo2 were independently base-generated in place by Pure Merge in the same way as the two focus particles in sentences like (26)–(29) are, then demo1 would not be able to take the same matrix scope as demo2 to agree with the same matrix modal predicate; rather, it would have to be scope-confined, by the presence of demo2, within the embedded clause that lacks its licenser, and would be left unlicensed in just the same way as demo in (29). Since demo1 is actually licensed by or agrees with the same modal predicate that also licenses demo2 in apparent violation of the scope-confining effect, the two occurrences of demo must be a product of something other than the operation of Pure Merge applying to each. The natural conclusion is that they are a product of movement forming a chain of occurrences of a single demo. By parity of reasoning, we conclude that three occurrences of demo in sentences like (30) below, obtained from (12), are members of a chain formed by movement:

(30) a. Yoko-wa [Ken-ni [yuka-ni pankuzu-demo1 koboshita
Yoko-Top Ken-by floor-on crumbs-SAY spilled
no]-demo2 mirareta to]-demo3 kanchigaishita-nodaroo.
C-SAY was-seen C-SAY misunderstood-M
(Lit.) ‘Yoko must have misunderstood (or had the mistaken idea), SAY3 that she was seen, SAY2 to spill, SAY1 crumbs on the floor by Ken.’

b. Yoko-wa [Ken-ga [kanojo-ga yuka-ni pankuzu-demo1
Yoko-Top Ken-Nom she-Nom floor-on crumbs-SAY
koboshita no]-demo2 mita to]-demo3
spilled C-SAY saw C-SAY
kanchigaishita-nodaroo.
misunderstood-M
(Lit.) ‘Yoko must have misunderstood (or had the mis-
taken idea), \textit{SAY}_3 that Ken saw, \textit{SAY}_2 that she spilled, \textit{SAY}_1 crumbs on the floor.'

Note again that no one other than the speaker is responsible for any utterance of \textit{demo} in (30) in just the same way as in (12); every one of its occurrences is licensed by the matrix modal predicate.

Since \textit{demo}_2 and \textit{demo}_3 in (22), (23) and (30) occur in a position adjacent to the C head of a complement clause, we assume that they occupy [Spec, C], extending the idea of Tonoike (1991, 1995) (see the second paragraph of note 1). Combining this assumption with the conclusion reached above, it naturally follows that \textit{demo} first merges with a constituent that it focuses (\textit{uisukii} in (22)/(23), \textit{pankuzu} in (30)), and then moves, successive-cyclically, from that focus-marking position to a Spec position of every CP (and vP; see below) which it takes scope over, until it enters into a local agreement relation with a modal that licenses its occurrence.\footnote{Movement of \textit{demo} to a “Spec” position may be misleading, if \textit{demo} (and focus particles in general) is a minimal, X0, category, rather than a maximal XP category which Spec positions generally host. However, if a focus particle is an instance of “minor” functional heads in the sense of Rothstein (1991) that do not project category features, then it is both minimal and maximal under the relational interpretation of minimal and maximal projections (Muysken (1982)). Its movement to Spec therefore counts as XP movement, and its occurrence there is also an XP (since it does not project). We are basically assuming the bare phrase structure theory proposed by Chomsky (1995a, b), and any reference to notions like phrase, head, Spec, etc., is for expository convenience only, along with notations like XP. See Chomsky (1995a: 402-403, 1995b: 249), where movement of a clitic is analyzed as having both X0 and XP movement properties.}

Specifically, the multiple occurrence of \textit{demo} in (22), (23) and (30) is the phonological spell-out of a single \textit{demo}, or the phonological reflex of successive-cyclic application of \textit{demo}-movement.

\textbf{2.6. Phase-Impenetrability Condition and Positions of Spell-Out}

Arguably, the locality of grammar may not be so stern as to require

\textit{If movement of a focus particle to the right of C is movement to its Spec, then Japanese phrase structure must be such that Spec of X may be to the right of X. See Sano (1986), where it is suggested that Japanese is essentially a specifier-final language and (focus/question) particles like \textit{mo} ‘also’ and \textit{ka} ‘or’ may occupy the Spec of such categories as C, I and P. Tonoike (1991, 1995) independently argues for the Spec-finality of the language, claiming that focus particles in Japanese may occupy specifier positions, although he does not deal with \textit{demo} and is concerned with base-generation of focus particles in specifier positions rather than with their occurrence there as a result of movement.}
that *demo move closest to its licensing modal, say to the Spec of the phrase headed by the modal; after all, *demo is never spelled out in any position adjacent to the modal (a sequence like (*demo-)nodaroof(- *demo) is unacceptable with either occurrence of *demo), though this may well be due to a morphological reason. Probably, it only requires that demo be on the periphery of some “propositional” category nearest to its licenser, along the lines of Chomsky’s Phase-Impenetrability Condition (PIC), where phases are the closest syntactic counterparts to propositions, CPs or vPs (Chomsky (2000: 106)). For phase HP with head H within the smallest ZP phase in (31) (order irrelevant), PIC is stated as in (32), where the edge is the residue outside of H’, either specifiers or elements adjoined to HP:

\[
(31) \quad [ZP \ Z \ldots [HP \ \alpha \ [H' \ H \beta]]]
\]

\[
(32) \quad \text{The domain of } H \text{ is not accessible to operations at ZP; only } H \text{ and its edge are accessible to such operations.}
\]

(Chomsky (2001a: 14))

Suppose that the relevant phases are CPs but not vPs (we ignore the distinction between strong and weak phases; see Chomsky (2001a)). To take (22) and (23) as examples, whether the phrase headed by a modal predicate is a CP or is a complement to C (say a Modal Phrase), there is no phase intervening between the matrix modal predicate and the CP whose Spec is occupied by *demo2, which therefore can enter into agreement with the modal without violating PIC. Suppose vP is also a relevant phase. Then under PIC demo must move from the Spec of CP occupied by *demo2 in (22)/(23) still further, to the Spec of the matrix vP, for agreement with the modal. In fact, with vP as well as CP a phase, movement from the position occupied by *demo1 to the position of *demo2 must also be through the Spec of vP in the embedded clause. Phonological spell-out of *demo in [Spec, v] in fact seems possible, subject to morphological conditions on the phonological separation of v and Tense (among them, one requiring something akin to do-support in English\(^2\)). If we assume, following essentially Tonoike (1991), that a focus particle occupies [Spec, v] in the VP (actually vP) focaliza-

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\(^2\) See Kageyama (1993: 257f.), Miyagawa (2001: 305), among others, for the view that Japanese has a rule like “do-support/insertion” (one responsible for the appearance of shita ‘did’ in examples like (33)–(36)); for a contrary view, see Hirata (2004), who argues that the verb allegedly inserted to support the tense morpheme that is otherwise stranded is really the morpho-phonetic realization of v.
tion construction, the following are instances of phonological spell-out of every occurrence of *demo* in [Spec, v] and [Spec, C]:

(33) Yoko-ga okotte-iru. Kitto Ken-ga [kanojo-ga sofa-ni Yoko-Nom angry-is surely Ken-Nom she-Nom sofa-on uisukii-demo₁ koboshi-demo₂ shita to]-demo₃ ii-demo₄ whisky-SAY spill-SAY did C-SAY say-SAY shita-nodaroo.
did-M
(Lit.) ‘Yoko is angry. Surely it must be that Ken did, SAY₄ say, SAY₃ that she did, SAY₂ spill, SAY₁ whisky on the sofa.’

(34) Ken-wa [Yoko-ga sofa-ni uisukii-demo₁ koboshi-demo₂ Ken-Top Yoko-Nom sofa-on whisky-SAY spill-SAY shita no]-demo₃ mi-demo₄ shita-nodaroo.
did C-SAY see-SAY did-M
(Lit.) ‘It must be that Ken did, SAY₄ see, SAY₃ that Yoko did, SAY₂ spill, SAY₁ whisky on the sofa.’

These examples are admittedly rather awkward, but this may well be, at least in part, due to the multiple VP/vP focalization structure forced by phonological spell-out of *demo* in two [Spec, v] positions; awkwardness reduces with suppression of one of the two pronounced occurrences of *demo* in [Spec, v] and accompanying suppression of its associated VP/vP focalization structure, as in the following (see also the latter half of section 3.3):

whisky-SAY spill-SAY did C-SAY said-M
(Lit.) ‘Yoko is angry. Surely it must be that Ken said, SAY₃ that she did, SAY₂ spill, SAY₁ whisky on the sofa.’

(36) Ken-wa [Yoko-ga sofa-ni uisukii-demo₁ koboshita Ken-Top Yoko-Nom sofa-on whisky-SAY spilled no]-demo₂ mi-demo₃ shita-nodaroo.
C-SAY see-SAY did-M
(Lit.) ‘It must be that Ken did, SAY₃ see, SAY₂ that Yoko spilled, SAY₁ whisky on the sofa.’

Optionality of the spell-out of *demo*, at least in its derived, Spec positions, raises the question of whether occurrence of *demo* in its base position under pure merger with its focused material requires its phono-
logical spell-out. Consider in this regard an example like the following, which should be compared with (8) and (23):

(37) Ken-wa [Yoko-ga sofa-ni uisukii-o koboshita no]-demo
Ken-Top Yoko-Nom sofa-on whisky-Acc spilled C-SAY
mita-nodaroo.

saw-must

(Lit.) 'It must be that Ken saw, SAY that Yoko spilled whisky on the sofa.'

Here we see demo occurring to the right of the head C (=no) of the bracketed clause but nowhere else. The question is, can this occurrence of demo be the phonological spell-out of demo initially merged with some constituent α of the clause and then moved to the Spec of C=no, with the occurrence of demo in its base position not spelled out? Simply put, can there be a derivation for (37) in which there is a silent trace of demo to the right of α? Restricting α to the three arguments of the embedded verb, Yoko(-ga), sofa-ni, and uisukii(-o), the silent trace would correspond to one of the three parenthesized demo’s in the following:

(38) Ken-wa [Yoko(-demo_1) sofa-ni(-demo_2) uisukii(-demo_3)]
Ken-Top Yoko(-SAY) sofa-on(-SAY) whisky(-SAY)
koboshita no]-demo_4 mita-nodaroo

spilled C-SAY saw-must

(Lit.) 'It must be that Ken saw, SAY that(, SAY) Yoko spill(, SAY) whisky(, SAY) on the sofa.'

The example (37) in fact allows an interpretation analogous to the one obtained by movement of demo from the position of demo_3 in (38), namely the reading synonymous with (8), especially if uisukii in (37) is stressed and other materials in the embedded clause destressed. Likewise, putting stress on sofa and destressing other materials in the embedded clause, (37) allows an interpretation that would be obtained by movement of demo from the position of demo_2 in (38). However, recall from section 2.3 that long-distance movement of demo from an embedded subject position is impossible, as shown by the unacceptability of an example like (16). Therefore, if demo in (37) had been moved from inside the embedded clause, it could only have been moved from a nonsubject position, and the sentence should not have a reading that would be obtained by (illicit) movement of demo from the position of demo_1 in (38). Actually, however, (37) does allow such a reading, with stress on Yoko and deaccentuation of other materials in the clause.
This reading of (37) therefore must be the result of demo pure-merged with the no-headed clause and associated with the focused subject by the rule of association with focus (Jackendoff (1972), Rooth (1985)). The same association-with-focus rule derives the reading of (37) where a nonsubject argument, sofa-ni or uisukii, is focus-associated with demo, without assuming movement of the latter from the position of demo\textsubscript{2} or demo\textsubscript{3} in (38). I conclude, though tentatively, that demo in an example like (37) occupies its position because it is base-generated there by Pure Merge and not because it has been moved from inside the embedded clause. As a correlate, I conclude, again tentatively, that while phonological spell-out of demo in a derived position is optional, its spell-out in its base position is obligatory.

2.7. Modal and Derivational Ambiguity of Demo

Consider again (7) and (10), repeated below as (39) and (40), respectively:

whisky-SAY spilled C said-M
‘Yoko is angry. Surely it must be that Ken said that she spilled, SAY whisky on the sofa.’

(40) Ken-wa [kanojo-ga sofa-ni uisukii-demo koboshita-noda to]
Ken-Top she-Nom sofa-on whisky-SAY spilled-M C
itta.
said.
‘Ken said that it must be that she spilled, SAY whisky on the sofa.’

As noted in section 2.2, demo in (39) agrees with the matrix modal nodaroo to express the same person’s mental attitude as expressed by the matrix modal predicate, namely the speaker’s, while demo in (40) agrees with the embedded modal noda to express the same person’s mental attitude as expressed by the embedded modal, namely Ken’s. Now consider what happens if both the matrix and the embedded clauses have a modal predicate that qualifies as a licenser of demo in the embedded clause, as in the following.

(41) Yoko-ga okotte-iru. Kitto Ken-ga [kanojo-ga sofa-ni Yoko-Nom angry-is surely Ken-Nom she-Nom sofa-on
uisukii-demo koboshita-noda to] itta-nodaroo.
whisky-SAY spilled-M C said-M
‘Yoko is angry. Surely it must be that Ken said that she must have spilled, SAY whisky on the sofa.’

Here the interpretation of demo is ambiguous. It can be taken to express either Ken’s mental attitude or (if the embedded modal noda is deaccented) the speaker’s. That is, demo may enter into agreement either with the embedded or the matrix modal predicate; put differently, it may take embedded or matrix scope. This can be implemented by the agreement mechanism suggested in section 2.2, in combination with Chomsky’s (2001a) system of agreement whereby both goal and probe must be active (namely must have uninterpretable, unvalued features) for Agree to apply. Thus assume, as suggested in the last paragraph of section 2.2, that a modal predicate, which is inherently [+M] and obligatorily enters the derivation with this feature, has the option of entering the derivation with the unvalued feature [uInd]. If this option is exercised, the unvalued feature must be valued by something for the derivation to converge. Suppose that the embedded modal predicate noda in (41) exercises this option, entering the derivation with [+M, uInd]. Then demo, which always enters the derivation with [uM, +Ind], enters into agreement relation with noda, valuing the uninterpretable modal feature of its own and the uninterpretable indeterminate feature of noda. Suppose instead that the matrix modal nodaroo (but not the embedded modal noda) enters the derivation with [+M, uInd]. Then demo, after moving to the Spec of the embedded CP (and then on to the Spec of the matrix vP, if vP is also a phase), enters into agreement with this matrix modal, valuing the relevant features. In this way the ambiguity of demo in scope or in modal interpretation in (41) is accounted for in terms of agreement (which the movement operation may have as one of its components; see Chomsky (2000, 2001a, b)).

Essentially the same account carries over to the following, differing from (41) in the additional occurrence of demo to the right of the bracketed clause:

whisky-SAY spilled-M C-SAY said-M
‘Yoko is angry. Surely it must be that Ken said, SAY that she must have spilled, SAY whisky on the sofa.’
Just like (41), the embedded occurrence of *demo* is ambiguous with regard to whose mental attitude it expresses, namely with regard to which of the two modal predicates it agrees with. If it agrees with the embedded modal *noda*, it expresses a mental attitude of Ken’s. In this case the matrix occurrence of *demo* must have been independently base-generated in place by Pure Merge and agree with the matrix modal predicate *nodaroo* to express a mental attitude of the speaker’s. Both the embedded and the matrix modal predicate must have entered the derivation with [+M, uInd]. If the embedded occurrence of *demo* as well as its matrix occurrence is taken to express a mental attitude of the speaker’s, then the two are members of a chain formed by movement, and they are the phonological spell-out of a single *demo*, or the phonological reflex of movement from the embedded position to the matrix position. The matrix but not the embedded modal predicate has entered the derivation with [uInd] as well as with [+M], in this case. In brief, the matrix occurrence of *demo* in (42) may be the product of Pure Merge or of movement, and the modal interpretation of the embedded occurrence of *demo* differs accordingly.

3. Extension to Sae ‘even’

3.1. Long-Distance Scope of Sae

The analysis of multiple occurrence of *demo* proposed in this paper can be extended to apply to other focus particles. We will just suggest extension to *sae* ‘even.’ Consider first the following:

(43) Ken-wa [musuko-ga ukarikkonai shiken-ni-sae Ken-Top son-Nom impossible-to-pass exam-Dat-even ukatta no]-o yorokonda.
passed C-Acc was-glad
‘Ken was glad that his son passed even an exam impossible to pass.’

Here pragmatically the most natural reading of *sae* is its embedded scope reading. *Sae*, like English *even*, induces what is called a scalar implicature, and the scalar implicature of the embedded scope reading of *sae*, phrased in terms of noteworthiness following Herburger’s (2000) analysis of *even*, is that Ken’s son’s passing an exam that is impossible to pass is more noteworthy than his passing any other exam. In certain contexts, semantic and/or pragmatic coherency may force *sae* occurring in an embedded clause to be interpreted with matrix scope, as
in the following:

(44) Ken-wa [musuko-ga ukarikkonai shiken-ni-sae ochita no]-o kuyashigatta.
Ken-Top son-Nom impossible-to-pass exam-Dat-even failed C-Acc regretted
‘Ken regretted that his son failed even an exam impossible to pass.’

Since Ken’s son’s failing an exam impossible to pass cannot be noteworthy but rather only natural, the embedded scope reading of sae is semantically incoherent. The particle must therefore take matrix scope, which induces a semantically coherent scalar implicature such that Ken’s regretting his son’s failing an exam impossible to pass is more noteworthy than his regretting his son’s failing any other exam.\(^3\)

There is evidence indicating that this sort of long-distance scope of sae is obtained by movement. The evidence again comes from the subject-object asymmetry characteristic of long-distance movement. With short-distance scope there is no such asymmetry, and the subject in a simplex sentence can be focused by sae (cf. (14b)):

(45) Bakana musuko-sae shiken-ni ukatta.
dumb son-even exam-Dat passed
‘Even the dumb son passed the exam.’

However, sae attaching to an embedded subject cannot take matrix scope. Thus while (46) below is semantically coherent with short-distance, embedded scope of sae, examples like (46a, b) are not, with semantic coherency requiring the impossible long-distance, matrix scope of sae:

(46) Ken-wa [bakana musuko-sae shiken-ni ukatta no]-o yorokonda.
Ken-Top dumb son-even exam-Dat passed C-Acc was-glad
‘Ken was glad that even his dumb son passed the exam.’

(47) a. *Ken-wa [bakana musuko-sae shiken-ni ochita no]-o
Ken-Top dumb son-even exam-Dat failed C-Acc

\(^3\) Yagi (1991, 1997) claims that the scope of sae does not extend beyond the minimal (tensed) clause containing it. I am skeptical about this claim, in view of an example like (44). See Aoyagi (1994), Sano (2001a, c, d).
kuyashigatta.
regretted
‘Ken regretted that even his dumb son failed the exam.’
b. *Ken-wa [shiken-ni bakana musuko-sae ochita no]-o
Ken-Top exam-Dat dumb son-even failed C-Acc
kuyashigatta.
regretted
‘Ken regretted that even his dumb son failed the exam.’

(47a) is parallel to (15) and (16), and (47b), to (17) and (18).

3.2. Multiple Occurrence of Sae as Evidence for Successive Cyclicality

If (long-distance) scope of sae is obtained by movement, multiple occurrence of the particle in an example like the following is phonologically overt evidence for its successive cyclicality:

(48) Ken-wa [musuko-ga ukarikkonai shiken-ni-sae ochita
Ken-Top son-Nom impossible-to-pass exam-Dat-even failed
no]-sae kuyashigatta.
C-even regretted
(Lit.) ‘Ken regretted even that his son failed even an exam
impossible to pass.’

At least one of the arguments we used above for multiple occurrence of demo as a result of movement rather than Pure Merge carries over here to show that the two occurrences of sae in (48) are members of a chain formed by movement. If the two were independently base-generated in place by Pure Merge, then since one is c-commanded by the other, the scope-confining effect would show up. (48) should therefore be as incoherent as examples like the following, where the scope of sae in the embedded clause is confined in that clause by the focus particle dake or demo attaching to the clause:

(49) a. *Ken-wa [musuko-ga ukarikkonai shiken-ni-sae
Ken-Top son-Nom impossible-to-pass exam-Dat-even
ochita no]-dake kuyashigatta.
failed C-only regretted
‘Ken regretted only that his son failed even an exam
impossible to pass.’

b. *Ken-wa [musuko-ga ukarikkonai shiken-ni-sae
Ken-Top son-Nom impossible-to-pass exam-Dat-even
ochita no]-demo kuyashigatte iru-nodaroo.
failed C-SAY regretting is-M
'It must be that Ken regrets, SAY that his son failed even an exam impossible to pass.'

The examples in (49) are incoherent for just the same reason as the embedded scope reading of sae in (44) is incoherent (or simply, for the same reason as the embedded sentence musuko-ga ukarikkonai shiken-ni-sae ochita '(his) son failed even an exam impossible to pass'). Crucially, (48) does not have this sort of incoherency; it just sounds awkward or wordy. (We will return to its awkwardness below.) We conclude that sae in the embedded clause in (48) is not scopally restricted to that clause but has the same scope as sae attaching to the clause, namely matrix scope, and that this is effected by movement forming a chain with the two occurrences of sae as members. In other words, the matrix occurrence of sae in (48) is a phonological reflex of successive-cyclic sae-movement that also has applied, though "covertly," to sae in (44) (in its matrix scope reading).\(^4\)

It is important to distinguish occurrences of sae in (48) from ones in an example like the following, obtained from (43) by adding sae to the no-headed clause:

\[
(50) \text{Ken-wa} \ [\text{musuko-ga ukarikkonai} \ \text{shiken-ni-sae} \\
\text{ken-Top son-Nom impossible-to-pass exam-Dat-even} \\
\text{ukatta no] sae yorokonda.} \\
\text{passed C-even was-glad} \\
\text{‘Ken was glad even that his son passed even an exam impossible to pass.’}
\]

Here the most natural interpretation is the one where each of the two occurrences of sae takes different scope, with its embedded occurrence taking embedded scope and its matrix occurrence taking matrix scope. In this case they are independent selections from the lexicon, base-generated in place by Pure Merge. The scope of the embedded occurrence is restricted by the matrix occurrence in accordance with the scope-confining effect.

3.3. Multiple Spell-Out and Its Attendant Awkwardness

Sae can also take matrix scope across more than one clausal bound-

\(^4\) For sentences comparable to (48) with the higher occurrence of sae replaced by mo, see Sano (2000, 2001d), where it is claimed that sae may be linked to mo by movement.
ary. To see this, consider first an example like the following:

(51) Ken-wa honno sukoshi-no osake-sae

Ken-Top only a-little-Gen sake-even

{*nonda/nomanakatta}.

drunk/drink-Neg-Past

‘Ken {*drank/didn’t drink} even a little saki.’

The semantics of the modifier honno sukoshi-no ‘(only) a little’ in combination with its modified nominal sake ‘saki’ as the object of the verb nom ‘drink’ requires sae in this context to go with the negated predicate nomanakatta ‘didn’t drink’ rather than with the affirmative nonda ‘drank’ for a natural scalar implicature; Ken’s drinking a little saki is hardly more noteworthy than his drinking a lot of saki, while his not drinking even a little saki may well be more noteworthy than his not drinking much saki. Note in passing that the modifier does not always require sae to go with a negative; an affirmative sentence like the following perfectly makes sense:

(52) Ken-wa honno sukoshi-no (osake-no) nioi-sae

Ken-Top only a-little-Gen sake-Gen smell-even

kagiwaketa.

distinguished

‘Ken perceived even a little smell (of saki).’

Consider now (53) below, in which the affirmative version of (51) is embedded, mutatis mutandis. (The adverbial neru mae-ni ‘before going to bed’ modifying the embedded predicate is added at the beginning of the embedded clause to ensure that the object that sae attaches to is syntactically within the clause.)

(53) Kangofu-wa Ken-ni [neru mae-ni honno sukoshi-no

nurse-Top Ken-Dat sleep before-at only a-little-Gen

osake-sae nomu koto]-o {*yurushita/yurusanakatta/kinjita}.

saki-even drink C-Acc allowed/didn’t allow/forbade

‘The nurse {*allowed/didn’t allow/forbade} Ken to drink

even a little saki before going to bed.’

Again the presence of the modifier honno sukoshi-no ‘(only) a little’ requires sae to go with a negative predicate like yurusanakatta ‘didn’t allow’ or kinjita ‘forbade,’ but this time across a clausal boundary. In other words, sae in the embedded clause takes matrix, long-distance scope to be interpreted with the matrix (negative) predicate. Difficulty in sentence processing apart, it is even possible to further embed sae to take long-distance scope across two clausal boundaries:
(54) Isha-wa [kangofu-ga Ken-ni [neru mae-ni honno doctor-Top nurse-Nom Ken-Dat sleep before-at only sukoshi-no osake-sae nomu koto]-o yurusu koto]-o kinjita. a-little-Gen saki-even drink C-Acc allow C-Acc forbade (Lit.) ‘The doctor forbade that the nurse allow Ken to drink even a little saki before going to bed.’

Here again sae, because of the modifier of the object it attaches to, must take matrix scope to be interpreted with the predicate kinjita ‘forbade’ for a coherent scalar implicature. If this long-distance scope is obtained by successive-cyclic application of sae-movement, as we are claiming, then we expect phonological spell-out of sae in one landing site or another to be possible, and we find a paradigm such as the following, where judgment indications are relative, not absolute:

(55)  
a. ??Isha-wa [kangofu-ga Ken-ni [neru mae-ni honno doctor-Top nurse-Nom Ken-Dat sleep before-at only sukoshi-no osake-sae\textsubscript{1} nomu koto]-sae\textsubscript{2} yurusu koto]-o a-little-Gen saki-even drink C-even allow C-Acc kinjita. 
forbade
(Lit.) ‘The doctor forbade that the nurse allow Ken event\textsubscript{2} to drink even\textsubscript{1} a little saki before going to bed.’

b. ???Isha-wa [kangofu-ga Ken-ni [neru mae-ni honno doctor-Top nurse-Nom Ken-Dat sleep before-at only sukoshi-no osake-sae\textsubscript{1} nomu koto]-sae\textsubscript{2} yurusu
a-little-Gen saki-even drink C-even allow koto]-sae\textsubscript{3} kinjita. C-even forbade
(Lit.) ‘The doctor forbade even\textsubscript{3} that the nurse allow Ken even\textsubscript{2} to drink even\textsubscript{1} a little saki before going to bed.’

c. (?)Isha-wa [kangofu-ga Ken-ni [neru mae-ni honno doctor-Top nurse-Nom Ken-Dat sleep before-at only sukoshi-no osake-sae\textsubscript{1} nomu koto]-o yurusu koto]-sae\textsubscript{3} a-little-Gen saki-even drink C-Acc allow C-even kinjita. 
forbade
(Lit.) ‘The doctor forbade even\textsubscript{3} that the nurse allow Ken to drink even\textsubscript{1} a little saki before going to bed.’

These examples are awkward to varying degrees, but it seems that none
of them has semantic incoherency of the kind observed in the affirmative version of (51), indicating that the most deeply embedded occurrence of sae is properly linked to the matrix predicate (or "licenser") by forming a chain with other occurrences, visible or invisible, under successive-cyclic movement.

As long as the relative judgment indications with question marks in (55) are reliable (which is far from obvious), they suggest a constraint to the effect that two phonologically spelled-out occurrences of a single focus particle are preferably to be separated as far as possible, with their separation by a single intervening predicate giving a worse result than by more than one. This constraint will account for the awkwardness of (48), ignored above, and also apply, though perhaps in a somewhat weaker form, to possible awkwardness of multiple pronunciation of a single demo at different places. The same constraint may also be responsible for the awkwardness of an example like the following:

(56) ?Ken-wa honno suki-shi-no osake-sae nomi-sae
Ken-Top only a-little-Gen saki-even drink-even
shinakatta.
do-Neg-Past
(Lit.) ‘Ken didn’t even drink even a little saki.’

This example is derived by cyclic application of sae-movement, with the occurrence of sae in its derived position, [Spec, v], phonologically spelled out as well as its occurrence in its base position. It remains unclear, however, why there should be such a constraint (if it exists) on the phonological distance between the pronounced occurrences of a focus particle.

The difficulty in sentence processing also clouds the issue. Decreasing processing difficulty seems to reduce awkwardness of even three phonologically spelled-out occurrences of sae in a multiple embedding context: for example, (57) below sounds less awkward than (55b), although the judgment is again delicate.

(57) ??Kangofu-wa [[Ken-ni [neru mae-ni honno suki-shi-no nurse-Top Ken-Dat sleep before-at only a-little-Gen osake-sae₁ nomu koto]-sae₂ yurusu koto]-sae₃ shinakatta.
saki-even drink C-even allow C-even do-Neg-Past
(Lit.) ‘The nurse didn’t even allow Ken even to drink even a little saki before going to bed.’

Apart from the possible phonological constraint noted, more than one pronounced occurrence of sae (or demo) that our theory characterizes as
members of a chain formed by movement may be awkward due to some performance principle of least effort to the following effect (reminiscent of Gricean conversational maxims):

(58) **(Performance) Principle of Least Effort**
Do not pronounce more than necessary. Specifically, avoid repetition of identical elements unless it contributes to something.

"Identical elements" relevant here are occurrences of a single element constituting members of a chain. It is hard to determine what counts as "contribution," but pronunciation of nontail members of a focus particle chain could in principle contribute to signaling long-distance scope of the focus particle, or else to giving "additional emphasis" of some sort. Note that the example (50), where the two occurrences of sae are most naturally taken to be independent selections from the lexicon, does not sound repetitious or too emphatic in the way a parallel example like (48) involving multiple pronunciation of a single sae does.

4. Concluding Remarks

In this paper, we have argued for successive-cyclic, or phase-by-phase, application of movement operations, by examining syntactic and semantic properties of two focus particles in Japanese, demo and sae. We have presented the simplest and most direct evidence possible for successive cyclicity: "traces" of a moved element created by its landing at such positions as are predicted by successive cyclicity or phase-by-phase derivation of syntactic objects, can be phonologically visible. These potentially spelled-out positions are, or at least include, [Spec, C] and [Spec, v], thus supporting Chomsky's (2000, 2001a) idea of CP and vP as phases.

We have also shown that, using demo for illustration, movement of a focus particle crucially involves establishment of a local agreement relation between the particle and its licenser. The locality is required by something like Chomsky's Phase-Impenetrability Condition, and the agreement relation seems to be established between elements with uninterpretable features, along the lines of Chomsky's system of agreement (Chomsky (2001a)).

5 See Sano (2001d) for agreement involved in sae.
To the best of my knowledge, phonologically overt evidence for successive cyclicity presented in the literature has been limited either to such indirect phenomena as agreement, inversion and quantifier float (Kayne (1989), Kayne and Pollock (1978), Henry (1995), McCloskey (2000), among others), or else to *wh*-phrases in intermediate [Spec, C] positions: “medial” *wh*-phrases as discussed by Thornton (1995), McDaniel et al. (1995) and others (see (21)), and partially moved *wh*-phrases in the partial movement construction (see (19)). This paper has explored an entirely new field of investigation for successive cyclicity: movement of focus particles, particles sometimes visible in [Spec, C], sometimes in [Spec, v], and, perhaps always visible in situ (see the discussion concerning (37)). Of theoretical relevance is the possibility, pace Chomsky (2001b), that not only [Spec, C] but also [Spec, v] may be the final landing site of a moved element, as suggested by examples like (33), (34), (36) and (56).

An important question left dangling is what grammatical principles determine which elements of a chain are phonologically spelled out. Note, however, that this is not a problem particular to focus particles in Japanese, but one of a more general nature. For example, no satisfactory or comprehensive answer has yet been given to the question as to what principles or parameters determine which element of a chain created by *wh*-movement is phonologically spelled out (see Groat and O’Neill (1996), Pesetsky (2000), Nunes (2004), among others, for relevant discussions). Such principles or parameters must distinguish the English type languages where the head of a *wh*-chain is spelled out, the Japanese or Chinese type languages where the tail is spelled out, the German type partial movement construction where the medial is spelled out, and the *wh*-copying construction observed in some child English and some dialects of German and Romani, where everything but the tail is spelled out. If the argument presented in this paper is on the right track, the focus particle construction in Japanese presents the strongest possible evidence for the copy theory of movement, with every member of a focus particle chain phonologically detectable, subject to surface, perhaps extra-grammatical, conditions.
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