

Attraction of general features and intervention effects in Japanese
Paul Hagstrom, Massachusetts Institute of Technology (hagstrom@mit.edu)
LSA New York, January 9, 1998.

1. Introduction

Apart from the fact that the verb comes last, the word order in Japanese is generally free. There are a few exceptions, however, and it is those exceptions which we will be concerned with here. There are four types of words involved in the exceptions we will examine. They are (1) words emphasized with the suffix *-koso*, (2) *wh*-question words like *nani*, meaning ‘who’, (3) *naze*, meaning ‘why’, and (4) “negative polarity items” (or “NPI’s”). The contrast between the grammatical (4a) and the deviant (4b) illustrates that nouns with the *-sika* suffix are NPI’s, only licensed in the context of negation.

- (1) John-**koso** LGB-o yonda
John-**emph** LGB-acc read
‘John read LGB.’
- (2) John-ga **nani**-o katta no?
John-nom **what**-acc bought Q
‘What did John buy?’
- (3) John-ga LGB-o **naze** katta no?
John-nom LGB-acc **why** bought Q
‘Why did John buy LGB?’
- (4) a. John-ga LGB-**sika** yoma-**nai**.
John-nom LGB-**only**_{NPI} read-**neg**
‘John read only LGB.’
b. * John-ga LGB-**sika** yonda
John-nom LGB-**only**_{NPI} read
‘John read *sika* LGB.’

We will proceed by enumerating the restrictions on word order, then looking at individual properties of each type of word to ascertain their initial and final structural positions. Armed with this information, we can then proceed to the outline of an analysis which explains the observed properties and restrictions.

1.1. Data: Ordering restrictions

The ordering restriction can be stated concisely as in (5): *-koso* must precede *wh*-words, which must precede *naze* ‘why’, which must precede NPI’s. This ordering is transitive, meaning that each of the subparts, listed in (6), is also true. The evidence for each sub-restriction is given in the pairs in (7-12). To give one example, the restriction (6a) that *-koso* must precede *wh*-words is demonstrated by the examples in (7). In (7a), *-koso* comes first and the result is grammatical, while in (7b), the *wh*-word (*nani* ‘what’) comes first and the result is deviant.

- (5) *-koso* << *wh*-words << *naze* << NPI (“<<” means ‘must precede’)

- (6) a. *-koso* << *wh*-words (Tanaka in progress 2.3.3)
 b. *-koso* << *naze* (consultants)
 c. *-koso* << NPI (Tanaka in progress 2.3.3)
 d. *wh*-words << *naze* (Saito 1994)
 e. *wh*-words << NPI (Takahashi 1990)
 f. *naze* << NPI (Tanaka 1997)
- (7) a. John-**koso nani**-o yonda no?
 John-**emph what**-acc read Q
 ‘What did John read?’ *-koso* << *wh*-words (Tanaka in progress 2.3.3)
 b. ?* **Nani**-o John-**koso** yonda no?
what-acc John-**emph** read Q
 (‘What did John read?’)
- (8) a. Hanako-**koso naze** LGB-o yonda no?
 Hanako-**emph why** LGB-acc read Q
 ‘Why did Hanako read LGB?’ *-koso* << *naze*
 (Hidekazu Tanaka (p.c.),
 Kazuko Yatsushiro (p.c.),
 Shigeru Miyagawa (p.c.))
 b. ?* **Naze** Hanako-**koso** LGB-o yonda no?
why Hanako-**emph** LGB-acc read Q
 ‘Why did Hanako read LGB?’
- (9) a. John-**koso** LGB-**sika** yoma-nai.
 John-**emph** LGB-**only**_{NPI} read-neg
 ‘John reads only LGB.’ *-koso* << NPI
 (Tanaka in progress 2.3.3)
 b. ?* LGB-**sika** John-**koso** yoma-nai.
 LGB-**only**_{NPI} John-**emph** read-neg
 (‘John reads only LGB.’)
- (10) a. Kimi-wa **nani**-o **naze** katta no?
 you-top **what**-acc **why** bought Q
 ‘Why did you buy what?’ *wh* << *naze*
 (Saito 1994)
 b. * Kimi-wa **naze nani**-o katta no?
 you-top **why what**-acc bought Q
 (‘Why did you buy what?’)
- (11) a. * Hanako-**sika nani**-o yonde-nai no?
 Hanako-**only**_{NPI} **what**-acc read-neg Q
 (‘What did only Hanako read?’) *wh* << NPI
 (Takahashi 1990)
 b. **Nani**-o Hanako-**sika** yonde-nai no?
what-acc Hanako-**only**_{NPI} read-neg Q
 ‘What did only Hanako read?’
- (12) a. * Taroo-**sika naze** ko-nai no?
 Taroo-**only**_{NPI} **why** come-neg Q
 (‘Why does only Taroo come?’) *naze* << NPI
 (Tanaka 1997)
 b. **Naze** Taroo-**sika** ko-nai no?
Why Taroo-**only**_{NPI} come-neg Q
 ‘Why does only Taroo come?’

1.2. Data: Island sensitivity

Having established the ordering constraints between these elements, we now turn to look at their behavior inside islands. Specifically, we see in (13) that many of these words are disallowed inside complex noun phrases. In (13a), *-koso* appears inside a complex noun phrase and the result is ungrammatical. In (13b), we see the same is true for *-sika* NPI's, and in (13c), for *naze*. Complex noun phrases are recognized as islands for movement, so we take (13) as an indication that *-koso*, *naze*, and NPI's are related, by movement, to some position outside of the complex noun phrase. Interestingly, *wh*-phrases, as in (14), are *not* barred from appearing inside a complex noun phrase. Since we interpreted (13) as indicating movement, we take (14) to show that *wh*-phrases like *dare* 'who' are *not* related by movement to any position outside the island.¹

- (13) a. * Mary-ga [[John-**koso** katta] hon]-o nakusita (Tanaka in progress 5.3.1)
Mary-nom John-**emph** bought book-acc lost
(‘Mary lost the book that John bought’)
- b. * Taroo-ga [[Hanako-**sika** katta] hon]-o yoma-nai (koto) (Tanaka 1997)
Taroo-nom Hanako-**only**_{NPI} bought book-acc read-neg
(‘Taroo read a book which only Hanako bought.’)
- c. * Kimi-wa [[kare-ga **naze** kai-ta] hon]-o yomi-masi-ta ka? (Nishigauchi 1990)
You-top he-nom **why** wrote book-acc read-did-Q
(‘You read a book that he wrote why?’)
- (14) Kimi-wa [[**dare**-ga kaita] hon]-o yomi-masi-ta-**ka** (Nishigauchi 1990)
You-top **who**-nom wrote book-acc read-Q
‘*Who did you read books that *t* wrote?’

1.3. Data: Overt position and the interpretation of adverbs

The last set of data we will discuss before starting the analysis is evidence for the overt structural position of these elements. Certain adverbs, like *quickly*, can take on one of two different meanings. The first, which we will refer to as the *process* reading, qualifies the action itself. The process reading of *quickly* is that in *She read the book quickly*, meaning ‘rapidly.’ The *event* reading of *quickly* means ‘after little delay,’ and is available in *She quickly read the book*. On this reading, though she may have taken a long time to actually *read* the book, she commenced without delay. We follow Travis (1988) in taking the two meanings to indicate differences in the structural position of the adverb. Specifically, we assume that the process reading is *only* available when the adverb is attached low, at the VP level.

The adverb *subayaku*, meaning ‘quickly’ in Japanese, normally has both process and event readings. The pair in (15) shows that the adverb can appear on either side of the object, with both readings available in both cases.

¹ The behavior with respect to *wh*-islands is slightly different. Watanabe (1992) demonstrates that *wh*-words in Japanese do appear to show *wh*-island effects, and I follow him in supposing that *wh*-words do involve some movement, but not from the position of the visible *wh*-word; rather, there is movement of something else (e.g., a phonologically null operator) from a position high enough to be outside a complex noun phrase (explaining the lack of sensitivity to complex noun phrase islands together with the sensitivity to *wh*-islands; see also Tsai (1994) for discussion). This will not bear directly on the specific issues discussed in this paper.

- (15) a. Taroo-ga **subayaku** LGB-o yonda
 Taroo-nom **quickly** LGB-acc read
 ‘Taroo quickly read LGB.’ [process, event]
- b. Taroo-ga LGB-o **subayaku** yonda
 Taroo-nom LGB-acc **quickly** read
 ‘Taroo quickly read LGB.’ [process, ?event]

Interestingly, in the context of NPI’s, the ambiguity almost completely disappears. In (16a), where the adverb follows the NPI, the event reading becomes difficult to get. More important is the interpretation of (16b), where the adverb precedes the NPI. The sentence itself is reportedly fairly deviant, but to the extent that it is interpretable, it is interpretable *only* with the *event* reading. From the lack of a process reading, we can infer that the adverb is attached somewhere higher than VP, suggesting that an NPI reliably marks a VP-external position. We will take this as an argument that the NPI has overtly moved into its interpretation position in NegP.² Thus, an adverb to the left of an NPI is necessarily attached *higher* than NegP, well above VP, and is therefore unable to receive a process reading.

- (16) a. Taroo-ga LGB-**sika subayaku** yoma-**nai** (koto)
 Taroo-nom LGB-**only**_{NPI} **quickly** read-**neg**
 ‘Taroo read quickly only LGB.’ [process, ??event]
- b. ?? Taroo-ga **subayaku** LGB-**sika** yoma-**nai** (koto)
 Taroo-nom **quickly** LGB-**only**_{NPI} read-**neg**
 ‘Taroo quickly read only LGB.’ [*process, event]

The situation with *wh*-words is different, as we see by trying the same test in (17). The crucial case is (17b), which shows that even when the adverb precedes a *wh*-word, a process reading is available for the adverb. This means that the *wh*-word is *not* reliably marking a position high in the structure; in other words, neither the *wh*-word, nor the complex noun phrase island that contains it, is moving overtly out of its original, structurally low position.

- (17) a. Kimi-wa [[**dare**-ga kaita] hon]-o **subayaku** yomi-masi-ta-**ka**
 You-top **who**-nom wrote book-acc **quickly** read-**Q**
 ‘*Who did you read quickly books that *t* wrote?’ [process, event]
- b. Kimi-wa **subayaku** [[**dare**-ga kaita] hon]-o yomi-masi-ta-**ka**
 You-top **quickly who**-nom wrote book-acc read-**Q**
 ‘*Who did you read quickly books that *t* wrote?’ [process, event]

1.4. Data: Summary

We have now covered all of the data we will be concerned with, so let us take a moment to review what we’ve seen. First, we know that *-koso* must precede *wh*-words, which must precede *naze*, which must precede NPI’s. Second, we’ve seen that *-koso*, *naze*, and NPI’s *move*, as shown by their inability to be inside complex noun phrases, while *wh*-words do *not* move. Third, we’ve seen evidence from the availability of process readings for adverbs that NPI’s move overtly, while *wh*-words do not.

² See also Sohn (1995:22-25) for another argument for this view.

We can use this same strategy to account for other precedence restrictions. Just like *-koso* must precede *naze*, *-koso* must precede *wh*-words and NPI's. By the same logic, *wh*-words and NPI's also bear the F_{koso} feature attracted by K° . Put another way, all of these words carry the relevant feature, yet it is only *-koso* which can legitimately end up in KP. This means that the only well-formed structures will be those in which *-koso* is the closest of these words to KP when feature attraction occurs.

Carrying it a step further, we can use the same argument to derive the fact that *naze* must precede NPI's from the hypothesis that both NPI's and *naze* bear the F_{naze} feature that moves *naze* into YP. Thus, most of the ordering restrictions turn out to be a simple consequence of movement taking the *closest* feature.

There are two somewhat tangential yet noteworthy points worth mentioning here. First, we can show that for the mechanics of this analysis to work, F_{naze} and F_{koso} must be features distinct from one another. This can be shown by noting that *wh*-words must have one of them but must not have the other. Recall that we just derived the ordering restriction that *-koso* must precede *wh*-words from the fact that both share the F_{koso} feature, but only *-koso* is legitimately attracted to KP. Thus, *wh*-words must have the F_{koso} feature. However, by the same logic, we know that *wh*-words must *not* have the F_{naze} feature, because if *wh*-words bore F_{naze} , we would predict (wrongly) that *wh*-words must follow *naze*—when in fact they must precede *naze*. Thus, since *wh*-words *must* have F_{koso} and must not have F_{naze} , we can conclude that F_{koso} and F_{naze} are distinct features.

The second noteworthy point is that we can show that YP (the interpretation position related to *naze*) must dominate KP (the interpretation position related to *-koso*). We have proposed that K° attracts F_{koso} , while Y° attracts F_{naze} . This means that *naze*, which bears both F_{naze} and F_{koso} , can be attracted to either YP or KP, while *-koso*, which bears only the F_{koso} feature, can only be attracted to KP (and not to YP). Both YP and KP are presumed to be high in the structural hierarchy, above the surface position of an unscrambled subject. If we assume that cyclicity forces movement to lower projections to occur before movement to higher projections, we can deduce that YP must in fact dominate KP. This is so because if *naze* moves to YP before K° attracts F_{koso} , *naze* will always be closer than *-koso*, meaning that *-koso* cannot reach KP in any question containing *naze*, regardless of their order. That is, if KP dominated YP, the prediction would be that no question could be formed with both *naze* and *-koso*. With the reverse order of the functional projections, *naze* would move to YP only after the lower K° has attracted F_{koso} , leading to convergent derivations if *-koso* is closer to KP than *naze*, as desired.

I will conclude this section by listing explicitly what we have and have not accounted for in terms of feature intervention. We derived the fact that *-koso* must precede *wh*-words, *naze*, and NPI's by supposing that all bear the F_{koso} feature but that only *-koso* may legitimately wind up in KP. Likewise, we derived the fact that *naze* must precede NPI's by supposing that both carry the F_{naze} feature, yet only *naze* can legitimately move to YP. What we have *not* accounted for is the fact that *wh*-words must precede both *naze* and NPI's. Moreover, we cannot account for this restriction in terms of feature intervention. We concluded earlier that *wh*-words do not move; so, nothing attracts a *wh*-word, therefore there is no feature-attraction relation in the first place. The task for the next section, then, is to account for the two remaining cases.

- (23) Accounted for:
-koso << *wh*, *naze*, NPI (KP attracts for F_{koso} , shared by all)
naze << NPI (YP attracts for F_{naze} , shared by *naze* and NPI's)

Not accounted for:
wh << *naze*, NPI

2.2 Account: Binding restrictions on *wh*-phrases with respect to *naze* and NPI's

We start with the observation that a *wh*-question involves an operator-variable relationship, semantically. Given that we have determined that the overt *wh*-word is not moving, this relationship must be generated in some way other than movement. The view which we will adopt here, and one which has become increasingly common in the literature (see, e.g. Nishigauchi 1990, Cheng 1991, Aoun & Li 1993b), is that the *wh*-operator is base-generated elsewhere and binds the visible *wh*-word without recourse to movement. (24) is meant to illustrate this idea. What is important now is that there is a *binding* relation between a base-generated operator and the *wh*-word, a binding relation which seems to be disrupted by NPI's and by *naze*.

(24) [_{CP} *wh*-operator_i ... nani_i

Let us start with the fact that NPI's must not precede *wh*-words. Recall that we determined earlier that NPI's move overtly to their interpretation position, in NegP. This means that an NPI actually marks the edge of the scope domain of negation. We can thus restate the restriction that *wh*-words must precede NPI's as a restriction (25) that *wh*-words cannot be in the scope of negation.

(25) *Wh*-words are disallowed in the scope of negation (in the presence of NPI's).

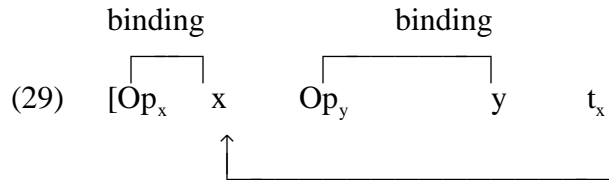
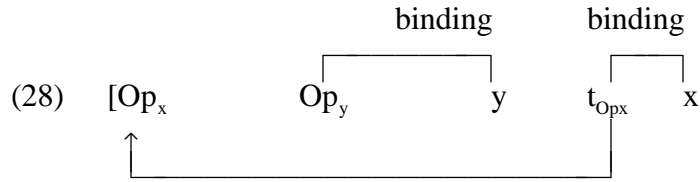
Consider the facts in (26) from Chinese. (26a) is a *wh*-question, with *shenme* 'what', as the *wh*-word. Notice that the very same word takes on an NPI meaning when it is in the scope of negation, as we see in (26b). If we suppose, as we have for Japanese, that a *wh*-word in Chinese is actually just a variable bound by an operator elsewhere in the structure, this tells us that negation is capable of binding such a variable. Given this, we can interpret (25) as indicating that something goes wrong when negation binds the *wh*-variable in Japanese.

(26) a. Zhangsan kandao **shenme**? (Aoun & Li 1993a)
Zhangsan saw **what**
'What did Zhangsan see?'

b. Ta **bu** xihuan **shenme**. (Aoun & Li 1993b)
he **not** like **what**
'He does not like anything.'

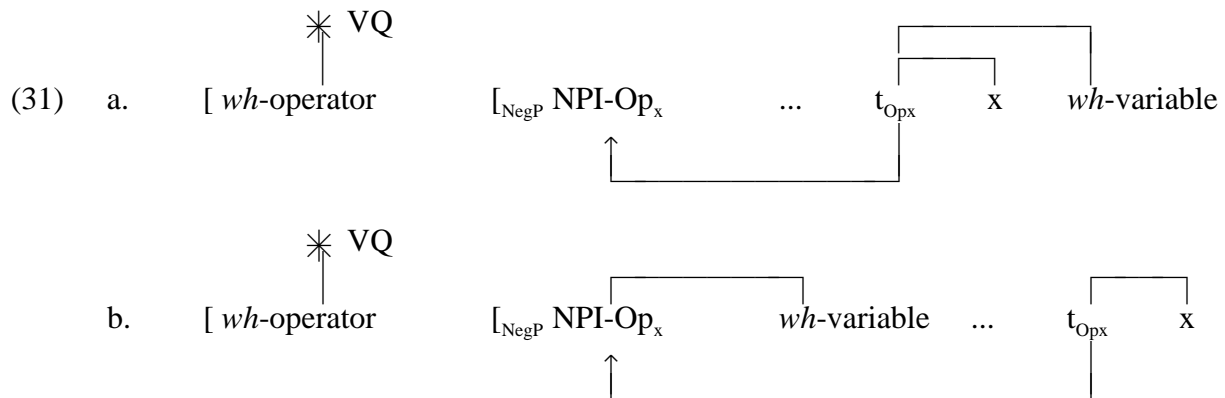
Before going into further detail, I should note precisely what assumptions I am making about movement and binding. First, I take the *wh*-operator to be an unselective binder (27), meaning that it binds all variables in its scope which are not bound by a closer operator. Second, when such an operator is moved, I assume that variables in the scope of its *base position* are still bound by the operator, as shown in (28). This will be important in the account of *naze* below. Third, when a variable is moved by local scrambling, it can be bound in its derived position, as in (29). This will be important in the account of NPI's below. Finally, a ban on vacuous quantification (30) will rule out any representation in which an operator has no unbound variables in its scope.

(27) A *wh*-operator is an *unselective operator*, binding all unbound variables in its scope.
An *unbound variable* is any variable which is not in the scope of a closer operator.

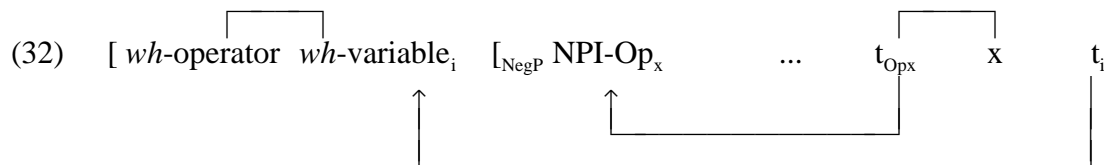


(30) A representation in which an operator has no unbound variables in its scope is ill-formed. (“Vacuous Quantification”)

Returning to the requirement that *wh*-words precede NPI’s, we are pursuing the idea that this follows from the ability of a NegP operator to bind a *wh*-variable in its scope. This idea is formalized in (31), which shows ill-formed cases in which a *wh*-word follows an NPI. Focus on (31a), where the NPI is base-generated above the *wh*-word. We take an NPI to consist of both a visible operator and a hidden variable, where the operator moves to NegP overtly. This operator (or its trace) can then bind any *wh*-variable in the scope of negation, leaving no unbound variables for the *wh*-operator to bind. The representation is then ruled out by vacuous quantification.



Scrambling the *wh*-word over the NPI, as in (32), solves the problem. Nothing now intervenes between the *wh*-operator and the *wh*-variable, and so both the *wh*-operator and the NPI-operator have a variable to bind.

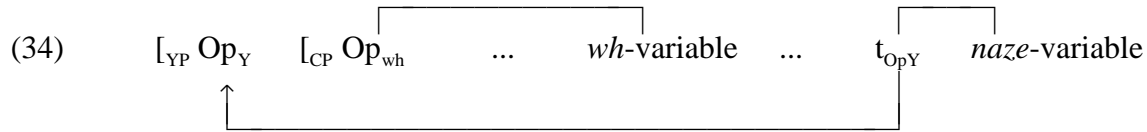


We can extend this explanation to the one constraint which has not yet been explained, namely the requirement that *wh*-words precede *naze*. The intuition we will follow is that a *wh*-word in the scope of *naze* is in some sense *bound* by *naze*, just as in the NPI case. This means

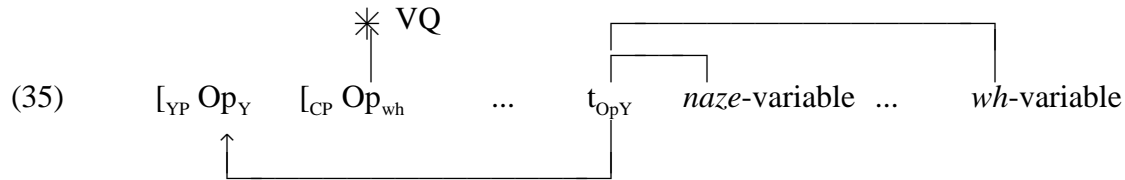
naze must also be composed of both an operator and a variable. Notice that this differentiates *naze* from other *wh*-words, since we have been viewing the other *wh*-words as just variables (33). The *naze*-operator cannot be interpreted in its base position, and so must move to its designated position, namely YP from our previous discussion. It is this movement which prevents *naze* from occurring inside movement islands, and it is this movement which is driven by attraction of the feature F_{naze} .

- (33) *nani* = x (wh-word a variable unselectively bound by wh-oper. elsewhere)
naze = [Op_{wh} x] (*naze* contains both wh-oper. and associated variable).

The good case is illustrated in (34), where the *wh*-word precedes *naze*. Here, the *naze*-operator moves to its designated interpretation position, and the *naze*-variable is bound by the trace of the operator. The *wh*-variable is correctly bound by the *wh*-operator in CP.



The ill-formed case where *naze* precedes the *wh*-variable is illustrated in (35). Here, the *wh*-operator in CP has no variable to bind, since both the *naze*-variable and the *wh*-variable are bound by a closer operator, the trace of the *naze*-operator.



2.3. Concise summary of the proposals³

At this point, I will quickly revisit what we have accounted for and how. Our main task was to explain the requirement that *-koso* must precede *wh*-words, which must precede *naze*, which must precede NPI's. This was done in two parts, one part based on interference in the feature-attraction process, and the second based on minimality of variable binding. For the first part, it was important that *-koso* and the *naze*-operator move to designated projections, KP and YP, for interpretation, and that this movement is accomplished by feature attraction. Specifically, K° attracts F_{koso} which moves *-koso*, and Y° attract F_{naze} , which moves the *naze*-operator. The ordering restrictions themselves stemmed from the fact that other words carry these features as well, and can thereby be erroneously moved if closer to the attractor. Specifically, the F_{koso} feature is borne by *naze*, *wh*-words, and NPI's as well as by *-koso*, and the F_{naze} feature is borne by NPI's as well as by *naze*. The two remaining restrictions were derived from minimality of variable binding; both NPI's and *naze* contain operators which can bind the *wh*-variable, so if a *wh*-variable is in the scope of these operators, it will leave the *wh*-operator without anything to bind. Finally, the story is consistent with the island effects showing that NPI's, *-koso*, and the *naze*-operator move, and the adverb construal data indicating that the NPI's move overtly.

³ This analysis shares several conclusions with both Cho (1997) and Richards (1997).

(36) Summary of proposals:

- a. *-koso* must be in the KP projection for interpretation
- b. *naze*-operator must be in the YP projection for interpretation
- c. K° attracts F_{koso} (to move *-koso*), Y° attracts F_{naze} (to move *naze*-operator).
- d. F_{koso} is borne by *-koso* and by *naze*, *wh*-words, and NPI's
- e. F_{naze} is borne by *naze*-operator and by NPI's
- f. *wh*-words are indefinite variables bound by a higher *wh*-operator (thus, no movement)
- g. *naze* contains both a *wh*-operator and a *wh*-variable.
- h. NPI's contain both an NPI-operator and a variable.
- i. NPI's move overtly into SpecNegP (where they must remain for interpretation).

Appendix A. “General features” F_{koso} , F_{naze}

One issue which has not been addressed is what the features which have been called “ F_{koso} ” and “ F_{naze} ” actually are. We have motivated their existence under these arbitrary labels, but under the assumption that they are actual features of the lexical items, whose presence we could independently motivate. In this appendix, I present a speculation about the identity of these “general features.”

F_{koso} , according to the analysis presented above, is shared by all of the elements discussed here; *wh*-words, *naze*, *-koso*, and NPI's. Of particular interest is the fact that it is shared by *wh*-words, since we have been supposing that these are just variables with very little structure. Suppose that F_{koso} is a feature carried by *variables*.

(37) **Guess:** F_{koso} is a feature carried by *variables*.

This explains F_{koso} 's presence on *wh*-words. As for *naze* and NPI's, we assumed that they carried an operator, but this also entails that they carry a variable, since otherwise they would incur violations of vacuous quantification. The proposal is actually that both *naze* and NPI's have a separable operator, which moves by itself to its interpretation position, leaving a variable part behind. This “variable part” will be what carries the F_{koso} feature in NPI's and in *naze*.

In the case of *-koso*, the “variable” is slightly more abstract; the basic semantic value of an assertion containing an emphasized phrase does not (necessarily) involve an operator-variable relationship. However, following Jackendoff (1972) as developed in Rooth (1992), emphasis induces a “contrast set”, which is formed by means of replacing the focused element by a variable. In this sense, *-koso* too could be expected to carry a “variable” feature.

One question which remains open is why it is this feature of variables, F_{koso} , which is attracted by K° . I will leave this open here, but it is worth pointing out that one might be able to argue that these words all share a “[+Focus]” feature. It is commonly supposed that *wh*-words are inherently focused, and Tanaka (1997) suggests that *-sika* NPI's in Japanese are focused (a plausible view, considering that it translates as ‘only’ in the context of negation). However, since all NPI's show the same ordering restrictions as *-sika* NPI's, it would be important to show that all NPI's can be considered to be focused (at least in Japanese).

As for the other “general feature,” F_{naze} , recall that we posited it on both *naze* and on NPI's. In the analysis given above, what these two things share is operatorhood. They both were seen to be capable to bind unbound variables in their scope, and the structure suggested above is that they have a “separable operator” which can move on its own, leaving the variable behind. Based on this, I speculate that F_{naze} is a feature that characterizes separable operators.

(38) **Guess:** F_{naze} is a feature of (separable) operators.

Appendix B. (Apparent?) variations in judgments concerning *naze*. A speculative proposal

The ordering data on which this analysis is based is not uncontroversial in the literature. In particular, Saito (1994:233) indicates that perhaps half of the speakers he consulted do not get an ordering contrast between *naze* and *wh*-words, and Miyagawa (1997) indicates that *naze* can appear grammatically either before or after an NPI. Both of these judgments run contrary to the facts assumed in the analysis (which were that *wh*-words must precede *naze* which must precede NPI's).

Starting with the interaction of *naze* and *wh*-words, I will follow a suggestion from Miyagawa (1997) and assume that the *naze...wh* order is *grammatical* (for all speakers), but only on a 'single pair' reading (as opposed to a pair-list reading). What this means is that for speakers who find *naze...wh* to be seriously degraded, the single pair reading is fairly inaccessible. This should be independently testable, but I have so far not done the relevant tests.

To fit this into the account being developed, I will suppose that there is a fundamental difference between the *naze* in a pair-list reading and the *naze* in a single pair reading. I will refer to the latter as *naze*_{SP}. Whether *naze*_{SP} can exist as the only operator in a sentence requires further investigation, but for the moment I assume that it can (but with a meaning hard to distinguish from that of *naze*). This item does *not* have a separable operator, meaning (accepting now the analysis from Appendix A) that *naze*_{SP} does not bear the F_{naze} feature. As such, it no longer shares any relevant features with NPI's, and therefore will not interact with NPI's in terms of ordering restrictions.

Nevertheless, I assume that some aspect of *naze*_{SP} must take scope in a clause-level functional projection, say $Y_{SP}P$. This means that Y_{SP}° attracts a feature borne by *naze*_{SP} (but not by NPI's), causing *naze*_{SP} to move into $Y_{SP}P$ by the point of interpretation. Of course, *naze*_{SP} is still an operator in some sense; it must bind a variable. However, it does not have a *separable* operator; the operator-variable relation must hold between the moved *naze*_{SP} and its own trace. I will assume that a relation like this, generated by movement, is not unselective—that is, I suggest that when an operator-variable relation exists between something and its own trace, the operator binds only the trace, in a “selective” relationship. More concretely, I am proposing that *naze*_{SP} has features of *both* an operator and a variable, and when moved, the operator features in the derived position bind the variable features in the base position; however, as a result of the fact that the head and tail of the chain are identical, no variables outside the base position copy are bound by the operator features in the head of the movement chain. If true, this means that a *wh*-word (i.e. a variable) following *naze*_{SP} will remain unbound, unlike the situation where a *wh*-word follows *naze*. Thus, the order *naze*_{SP}...*wh* is grammatical (but, of course, only on the single pair reading, since it is *naze*_{SP} and not *naze* which is involved).

To summarize, the idea is that *naze*_{SP} (*naze* on a “single-pair” reading) bears a feature attracted by $Y_{SP}P$ and not shared by NPI's; the lack of common features explains the lack of ordering restrictions between *naze*_{SP} and NPI's. It is noncomplex, bearing both operator and variable features. For interpretability, *naze*_{SP} must move to $\bar{Y}_{SP}P$, where the operator feature binds the variable feature in the base-position copy (trace). Other variables (e.g., *wh*-words) in the structure cannot be bound by *naze*_{SP}, leading to the observed lack of ordering restrictions with respect to *wh*-words.

References

- Aoun, Joseph and Yen-hui Audrey Li (1993a). Wh-elements in situ: syntax or LF? *LI* 24(2):199–238.
- Aoun, Joseph and Yen-hui Audrey Li (1993b). On some differences between Chinese and Japanese wh-elements. *LI* 24(2):365–372.
- Cheng, Lisa Lai-Shen (1991). *On the typology of wh-questions*. Ph.D. dissertation, MIT.
- Cho, Eun (1997). Why, contrastive topic, and LF movement. Handout, Japanese/Korean Linguistics Conf. 8.

- Chomsky, Noam (1995). *The minimalist program*. Cambridge, MA: MIT Press.
- Hoji, Hajime (1985). *Logical form constraints and configurational structures in Japanese*. Ph.D. dissertation, University of Washington.
- Jackendoff, Ray (1972). *Semantic interpretation in generative grammar*. Cambridge, MA: MIT Press.
- Miyagawa, Shigeru (1997). On the nature of wh-scope. Ms., MIT.
- Nishigauchi, Taisuke (1990). *Quantification in the theory of grammar*. Dordrecht: Kluwer.
- Richards, Norvin (1997). *What moves where when in which language?* Ph.D. dissertation, MIT. Cambridge, MA: MIT Working Papers in Linguistics.
- Root, Mats (1992). A theory of focus interpretation. *Natural Language Semantics* 1:75–116.
- Saito, Mamoru (1994). Additional-wh effects and the adjunction site theory. *JEAL* 3:195–240.
- Sohn, Keun-Won (1995). *Negative polarity items, scope, and economy*. Ph.D. dissertation, University of Connecticut.
- Takahashi, Daiko (1990). Negative polarity, phrase structure, and the ECP. *English Linguistics* 7:129–146.
- Tanaka, Hidekazu (1997). Invisible movement in *sika-nai* and the linear crossing constraint. *JEAL* 4:143–188.
- Tanaka, Hidekazu (in progress). *Conditions on logical form derivations and representations*. Ph.D. dissertation, McGill University.
- Travis, Lisa (1988). The syntax of adverbs. *Proceedings of the IVth Workshop on Comparative German Syntax*. McGill Working Papers in Linguistics:
- Tsai, Wei-tien Dylan (1994). *On economizing the theory of A-bar dependencies*. Ph.D. dissertation, MIT. Cambridge, MA: MIT Working Papers in Linguistics.