Otagai[*]

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[Other than *Postscript in 2006* at the very end, what follows is a reproduction of "*Otagai*," which was written and circulated in 1997 (version 2.2.4), except for the correction of obvious errors of non-substance.]

1. Introduction

It is widely, and in fact almost universally, assumed in the recent generative grammatical works, that *otagai* in Japanese is a reciprocal anaphor corresponding to English *each other*, hence a local anaphor. The distribution of *otagai* and "its antecedent," as analyzed under this assumption, has been used in various works as a probe into the nature of Scrambling, the applicability of Binding Theory to Japanese, the nature of reciprocity in natural language, the status of the subject(s) in Japanese, etc.[1] In this paper, I will argue for the following, contrary to this widely-held view.

(1)   Proposals
   a.   The internal structure of *otagai* is $[_{NP} \, pro \, [_N \, otagai \,]]$[2]
   b.   What has been considered as the anaphoric relation between *otagai* and "its antecedent" must be understood as that between the *pro* in $[_{NP} \, pro \, [_N \, otagai \,]]$ and the antecedent of *pro*.

Given these proposals, we predict the following:

(2)   a.   The antecedent of *pro* in [*pro* [*otagai*]] need not be in the local domain of the latter; see section 2.1.
   b.   The antecedent of *pro* in [*pro* [*otagai*]] need not c-command *pro* as long as the relevant referential association is that of coreference; see section 2.2.
   c.   Split antecedence is possible for *pro* in [*pro* [*otagai*]]; see section 2.3.
   d.   Familiar Weak Crossover (WCO) effects are observed when bound variable anaphora is at stake; see section 2.4.
   e.   WCO effects are observed in the sloppy identity context; see section 2.5.

In section 2, I will provide the relevant empirical materials that confirm all these predictions, thereby supporting the thesis that *otagai* is not a (local) anaphor. The postulation of *pro* in $[_{NP} \, pro \, [_N \, otagai \,]]$ will be motivated in section 3 by the absence of Principle B effects when bound variable anaphora is at stake. It should be noted that *otagai* in many of the examples to be supplied below appears in an "argument position" where, according to Pollard and Sag (1992), "exempt anaphors" are not allowed.[3]

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[*]   Parts of what follows have been presented in various forms since the spring of 1993, including several syntax courses at USC and the Stanford University Linguistics Colloquium, May, 1995. I would like to acknowledge my gratitude to the audiences there and elsewhere. (Acknowledgment to be completed.)

[1]   Cf. Yang (1994), Kitagawa (1986), Nishigauchi (1992), Saito (1992), Miyagawa (1997) and many others.

[2]   By *pro* I mean a phonetically empty argument, leaving aside the questions in (i) in this paper.

(i) a. whether it is $[_{N(P)} \, ec \,]$ or $[_{D(P)} \, ec \,]$, the question that is tied to whether Japanese nominal phrases are NPs or DPs.

   b. whether it has the binding-theoretic [+pronominal] feature.

The proposed structure $[_{NP} \, pro \, [_N \, otagai]]$ can be translated in terms of the DP analysis of the Japanese nominal phrases, without any consequences, as far as the materials in this paper are concerned. But see Hoji (1995a), where it is argued that the empty argument is $[_{N(P)} \, ec \,]$ and that it does not have the binding-theoretic [+pronominal] feature.

[3]   For many of the examples with "exempt anaphors" provided in Pollard and Sag (1992), we can construct analogous Japanese examples with *otagai*. Some of the examples with *otagai*, however, do not have their *each other* analogues; see for example the split antecedence cases in section 2.3. In this paper, I will not discuss in any depth the distributional similarities and differences between "exempt anaphors" of Pollard and Sag (1992) and *otagai* (i.e. *[pro [otagai]]*), or whether and how the distributional

Before we start the main discussion, some remarks are in order regarding the reciprocal interpretation associated with *otagai*. Despite the common assumption made in the recent generative works, the reciprocal interpretation is not obligatory for *otagai*.[4] Consider (3), for example.

(3)   [John to Bill]$_1$-ga   hissi-ni-natte [pro_1 otagai]-o   urikonde ita   (koto)
        John and Bill-NOM very hard   -ACC was promoting (fact)
        '[each of John and Bill]$_1$ was promoting himself$_1$ with utmost enthusiasm'

The sentence form in (3) is compatible with the situation described by the English sentence under it. Examples like (4) also illustrate that *otagai* need not yield a reciprocal interpretation.

(4)   [Yamada-san to Suzuki-san]$_1$-wa [pro_1 otagai]-ga (sorezore) Pari-ni dekakeru koto-ni natta.
        'As for [Yamada and Suzuki]$_1$, it has turned out that they$_1$ (each) will go to Paris.'

Examples such as (3), (4) and other examples to be provided below, which are quite easy to construct, indicate that the semantics of *otagai*, which I do not spell out in this paper, has the effect that the [pro_1 *otagai]* in (5), for example, can be understood, in principle, as corresponding to any of (6).

(5)   [John and Bill]$_1$ V ... [pro_1 otagai] ...

(6)   a. [John and Bill] V ... [John and Bill] ... ("group reading")
        b. John V ... Bill ... and ... Bill V ... John ...("crossing reading")
        c. John V ... John ... and ...Bill V ... Bill ... ("parallel reading")

In what follows, the nature of the reciprocal interpretation associated with *otagai*, and how it arises, will not be addressed. I will be only concerned with the structural relations between *otagai*, more precisely *pro* in [*pro* [*otagai*]], and its antecedent.[5]

2. Predictions borne out

In this section, we will observe that the five predictions recorded in (2) are all borne out.

2.1. Locality

That *otagai* need not have its antecedent in its local domain is illustrated by examples like (7).[6]

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properties that they share can be characterized in a principled manner.

[4]   In fact, the typical dictionary definitions of *otagai* do not have reference to reciprocity. (There are no entries for *otagai* in these dictionaries. *Otagai* is formed by attaching the prefix *o* to *tagai* and the meaning and the distribution of *otagai* and *tagai* are quite similar, although not completely identical. In fact, *otagai* is used in example sentences under the entry of *tagai*. I thus conclude that it is safe to assume that the dictionary definitions of *tagai* are meant to cover *otagai* as well.)

    The Sanseido Japanese Language Dictionary 4th Edition (1972, p. 770), for example, gives (i) each individual (each thing) that has a relationship (to that (which is under discussion-HH)) (In many cases it refers to two people (things).) and (ii) a situation in which the same holds, in some respect, of the two (or more) people (or things) that are related. (These are my translations of (i) *(Sore-ni) kankei-o motu hitori hitori (hitotu hitotu). (hutari (hutatu no monogoto) nituite yuu bawai-ga ooi)* and (ii) *Kankei aru hutari (izyoo) no monogoto-ga aru ten-de onazi de aru yoosu.*)

    Koozien (1955, p. 1355) gives (i) both of the two opposing parties. In particular, oneself and the other. (ii) the fact that both are the same. (These are my translations of (i) *Aitaisuru hutatu no mono no soohoo. Tokuni zibun to aite to.* (ii) *Soohoo-ga dooyoo-de aru koto.*)

[5]   Hence, the translations provided for sentences containing *otagai* in this paper must be understood not as representing their linguistic meanings but as indicating, not necessarily exhaustively, what situations are compatible with the sentence under discussion.

[6]   We can make one or the other "reading" more salient. Suppose John and Bill have been hating each other and they are both in love with Mary. Uttered in such a context, the strongly preferred "reading" for (ia) is the "parallel reading" and that for (ib) is the "crossing reading."

(i)   a.   [John to Bill]$_1$-wa [$_{CP}$ Mary-ga [pro_1 otagai]-ni horeteiru to] omotte yorokonde iru
             '[each of John and Bill]$_1$ is rejoicing, thinking that Mary is in love with him$_1$'
        b.   [John to Bill]$_1$-wa [$_{CP}$ Mary-ga [pro_1 otagai]-ni horeteiru to] omotte gakkari site iru
             '[each of John and Bill] is deeply disappointed, thinking that Mary is in love with the other'
Similarly, (iia) has a strong tendency to be taken as corresponding to the "parallel reading," and (iib) to the "crossing reading."
(ii)   a.   [John to Bill]$_1$-wa hitobanzyuu [pro_1 [otagai]]-no minoue-banasi-o sita
             John and Bill-TOP all night long   otagai-GEN life story-ACC did

(7) a. [John to Bill]$_1$-wa [$_{CP}$ Mary-ga [pro_1 otagai]-ni horeteiru to] omoikonde-i-ta
[John and Bill]-TOP [Mary-NOM [otagai-DAT is-in-love that] believed
'[each of John and Bill] believed that Mary was in love with the other.'
'[each of John and Bill]$_1$ believed that Mary was in love with him$_1$.'

b. [John to Bill]$_1$-wa [Chomsky-ga naze [pro_1 otagai]-o suisensita no ka]
[John and Bill]-TOP [Chomsky-NOM why otagai-ACC recommended Q]
wakaranakatta
did not understand
'[each of John and Bill] did not understand why Chomsky had recommended the other.'
'[each of John and Bill]$_1$ had no idea why Chomsky had recommended him$_1$.'
'[John and Bill]$_1$ had no idea why Chomsky has recommended them$_1$'

2.2. C-command

Examples like (8) show that the antecedent of *pro* in [*pro* [*otagai*]] need not c-command *pro* as long as the relevant referential association is that of coreference, as is independently pointed out in Kuno and Kim (1994).

(8) a. [[pro_1 otagai]-no koibito]-ga [John to Bill]$_1$-o yuuwaku-sita
otagai-GEN lover-NOM [John and Bill]-ACC seduced
(to yuu uwasa-ga matizyuu-no wadai-ni natte ita)
'(The rumor that) each other$_1$'s lovers seduced [John and Bill]$_1$ (had become a hot topic of the town.)'

b. [[pro_1 otagai]-no koibito]-ga [John to Bill]$_1$-ni iiyotta (koto)
otagai-GEN lover-NOM [John and Bill]-DAT tried-to-seduce (fact)
'John's lover tried to seduce Bill, and Bill's lover tried to seduce John.'

2.3. Split antecedence

That split antecedence is allowed between *pro* and its antecedents is illustrated by (9).

(9) a. Ieyasu$_1$-wa Nobunaga$_2$-ni [Singen-ga sin-e-ba [pro_{1+2} otagai]-no ryoodo-ga
Ieyasu-TOP Nobunaga-DAT [Shingen-NOM die-if otagai-GEN territory-NOM
sibaraku-wa antai-da to] tuge-ta
for-a-while safe-be that] told
'Ieyasu$_1$ told Nobunaga$_2$ that, if Shingen dies, their$_{1+2}$ territories will be safe for a while'

b. Ieyasu$_1$-wa Nobunaga$_2$-ni [Singen-ga [pro_{1+2} otagai]-o hometeita to] tuge-ta
Ieyasu-TOP Nobunaga-DAT [Shingen-NOM otagai-ACC was praising that] told
'Ieyasu$_1$ told Nobunaga$_2$ that Nobunaka was praising them$_{1+2}$'

Split antecedence is not limited to cases of coreference, as indicated by (10).

(10) a. [subete-no Kyuusyuu-no daimyoo]$_1$-ga [Sikoku-no dokoka-no daimyoo]$_2$-ni
all-GEN Kyusyu-GEN war-lord-NOM Shikoku-GEN some-place-GEN war-lord-DAT
[Singen-ga sin-e-ba [pro_{1+2} otagai]-no ryoodo-ga sibaraku-wa antai-da to]
[Shingen-NOM die-if otagai-GEN territory-NOM for-a-while safe-be that]
tuge ta (koto)
told (fact)
'[every feudal king in Kyuusyuu]$_1$ told [a feudal king of some place in Shikoku]$_2$ that, if Shingen dies, their$_{1+2}$ (respective) territories will be safe for a while'

b. [subete-no Kyuusyuu-no daimyoo]$_1$-ga [Sikoku-no dokoka-no daimyoo]$_2$-ni
all-GEN Kyusyu-GEN war-lord-NOM Shikoku-GEN some-place-GEN war-lord-DAT

'[John and Bill] each revealed their respective life stories all night long'
(due to Hiro Oshita (p.c. 3/94))

b. [John to Bill]$_1$-wa hitobanzyuu [pro_1 [otagai]]-no minoue-banasi-o kiita
John and Bill-TOP all night long otagai-GEN life story-ACC listened to
'[John and Bill] heard each other's respective life stories all night long'

[Singen-ga [pro_{1+2} otagai]-o   hometeita   to]   tuge-ta (koto)
[Shingen-NOM   otagai-ACC was praising that] told   (fact)
'[every feudal king in Kyusyu]$_1$ told [a feudal king of some place in Shikoku]$_2$ that Shingen was praising them$_{1+2}$'

The relevant reading in (10a), for example, is that for each feudal king in Kyuusyuu x there is a feudal king of some place in Shikoku y such that x told y that if Shingen dies x and y's territories will be safe for a while. This is an instance of so-called split-binding; see Lasnik (1989, Appendix).

2.4. Weak Crossover effects

I have argued that in sentences with *otagai* the relevant relation is between *pro* in [*pro* [*otagai*]] and the "antecedent" of *pro*. In section 2.2 we have seen that *pro* in [*pro* [*otagai*]] (hence *otagai*) need not be c-commanded by its "antecedent," if the relevant relation is that of coreference. Now consider (11).

(11)   (Watasi-wa) [kanari-no kazu-no   nihonzin huuhu]$_1$-ga [pro_1 otagai]-no
        (I-TOP)   a good number-GEN Japanese couple-NOM   -GEN
        (katute no) onsi-o   batoo suru   (no-o   mita)
        (former)   teacher-ACC harshly criticize (COMP-ACC saw)
        '(I saw) [a good number of Japanese couples]$_1$ harshly criticize their$_1$ (former) teachers].'

The relevant reading is that it is true for a good number of Japanese couples that, for each couple, I saw the husband x and the wife y harshly criticize the former teachers of x and y. Confining ourselves to such readings, the embedded clause of (11) can be understood as corresponding to any of (12).

(12)   For a good number of couples, it is true of each of the couples that
    a. the husband x and the wife y harshly criticized x and y's shared teacher(s) of the past
    b. the husband x harshly criticized the wife y's former teacher(s), and the wife y harshly criticized the husband x's former teacher(s)
    c. the husband x harshly criticized x's former teacher(s), and the wife y harshly criticized y's former teacher(s)

Given that the relevant readings here are instances of bound variable anaphora, we predict that they become unavailable in a typical Weak Crossover configuration. Such indeed seems to be the case.

(13)   *(Watasi-wa) [[pro_1 otagai]-no (katute no) onsi]-ga   [kanari-no kazu-no
         I-TOP   -GEN (former)   teacher-NOM a good number-GEN
        nihonzin huuhu]$_1$-o batoo suru   (no-o mita)
        Japanese couple-ACC harshly criticize (COMP-ACC saw)
        '(I saw) their$_1$ (former) teachers harshly criticize [a good number of Japanese couples]$_1$.'

The embedded clause of (13) seems to fail to yield the interpretation corresponding to (14).[7]

(14)   For a good number of couples, it is true of each of the couples that
    a. [the husband x and the wife y]'s shared teacher(s) harshly criticized x and y
    b. the husband x's former teacher(s) harshly criticized the wife y and the wife y 's former teacher(s) harshly criticized the husband x's former teacher(s)
    c. the husband x's former teacher(s) harshly criticized x and the wife y 's former teacher(s) harshly criticized y

As we have seen earlier, if coreference, rather than bound variable anaphora, is at stake, the c-command is not a necessary condition for the relevant reading to obtain. The same point is illustrated below.

(15) a. (Watasi-wa) [[pro_1 otagai]-no (katute no) onsi]-ga [John to Mary]$_1$-o batoo suru (no-o mita)
         '(I saw) their$_1$ (former) teachers harshly criticize [John and Mary]$_1$.'
    b. ?(Watasi-wa) [[pro_1 otagai]-no (katute no) onsi]-ga [sono nihonzin huuhu]$_1$-o batoo suru (no-o mita)
         '(I saw) their$_1$ (former) teachers harshly criticize [that Japanese couple]$_1$.'

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[7]   The degree of the unavailability of the bound reading seems to vary to some extent, depending upon which "reading" is considered. But I suppress the issues pertaining to such variations here.

Recall that split antecedence is possible between *pro* in [*pro* [*otagai*]] and its antecedents. In section 2.3, we have seen an instance of split coreference and an instance of split binding, so to speak. Along the lines of the preceding discussion in this section, we predict that split coreference continues to be possible even when *pro* in [*pro* [*otagai*]] is not c-commanded by its antecedents but split binding becomes unavailable when the relevant c-command relation fails to obtain. These predictions are also borne out, as the following examples illustrate.

(16) [*pro*$_{1+2}$ otagai]-no atarasii kooti-ga John$_1$-ni Mary$_2$-o syookaisita (sono sikata-ga hendatta koto-ga gakkoozyuu-no uwasa-ni natte iru)
'(the fact that the way in which) their$_{1+2}$ new coach introduced Mary$_2$ to John$_1$ (was strange has become a hot topic of conversation all over the school)'

(17) [subete no dansi gakusei]$_1$-ga [zyosi gakusei-no dareka]$_2$-ni [*pro*$_{1+2}$ otagai]-no atarasii kooti-o syookaisita (sono sikata-ga hendatta koto-ga gakkoozyuu-no uwasa-ni natte iru)
'(the fact that the way in which) every male student$_1$ introduced to some female student$_2$ their$_{1+2}$ new coach (was strange has become a hot topic of conversation all over the school)'

(18) *[*pro*$_{1+2}$ otagai]-no atarasii kooti-ga [subete no dansi gakusei]$_1$-ni [zyosi gakusei-no dareka]$_2$-o syookaisita (sono sikata-ga hendatta koto-ga gakkoozyuu-no uwasa-ni natte iru)
'(the fact that the way in which) their$_{1+2}$ new coach introduced to every male student$_1$ some female student$_2$ (was strange has become a hot topic of conversation all over the school)'[8]

2.5. Weak Crossover effects in the sloppy identity context

It is argued in Hoji (1995b) that the comparative ellipsis construction in Japanese provides a syntactic context in which genuine sloppy identity readings can obtain. It is observed there that examples like (19) allow the sloppy reading.

(19) [John to Bill]-ni yori mo saki ni sensei-ga [Mike to Sam]-ni [*pro* otagai]-no atarasii roommate-o syookaisita (koto)

'the teacher introduced to [Mike and Sam] their new roommate earlier than to [John and Bill]' ([ok]sloppy reading)

(19) can thus be understood as corresponding to (20), for example.

(20) the time at which the teacher introduced to Mike Sam's new roommate and the teacher introduced to Sam Mike's new roommate was before the time at which the teacher introduced to John Bill's new roommate and the teacher introduced Bill John's new roommate

Note that in (19) *pro* in [*pro* [*otagai*]] is c-commanded by [*Mike to Sam*]. Given the assumption that the availability of the sloppy identity readings is subject to the same c-command condition as that of bound variable anaphora,[9] the absence of the sloppy reading in (21) is as expected.[10]

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8   The English translation here is meant to remind the reader that the *ni*-marked argument c-commands the *o*-marked argument in (16)-(18).

9   This assumption, while it seems more or less standard, is not uncontroversial. Fiengo and May (1994), for example, argues against it; see also Hoji (1996a, 1996b) and the references there as well as the references in Fiengo and May (1994).

10   For concreteness, I assume, as in Hoji (1995b), that *John to Bill-ni yori* 'than John and Bill' in (19) and (21) is represented as

in [CP [NP *John to Bill*]-*ni* [C' [IP *ec*] [C *yori*]], before the LF copying operation takes place, along the lines of Pesetsky's (1982) analysis of Gapping. After the relevant raising of *Mike to Sam-ni* 'Mike and Sam-DAT' and other operations have taken place, a structure like (though not necessarily exactly as) [IP λ*x* [IP...*x* ... [*pro otagai*] ...]] will be created in the derivation of the structure in

(19). This will be copied onto the empty IP in [CP [NP *John to Bill*]-*ni* [C' [IP *ec*] [C *yori*]]], yielding [CP [NP *John to Bill*]-*ni* [C' [IP λ*x* [IP...*x* ... [*pro otagai*] ...]] [C *yori*]]], in which *pro* is c-commanded by *x*.; see footnotes 5 and 7 of Hoji (1995b). In the case of

(21), on the other hand, the resulting structure will be [CP [NP *John to Bill*]-*ni* [C' [IP λ*x* [IP...[*pro otagai*] ...*x* ...]] [C *yori*]]], in which *pro* is not c-commanded by *x*. Nothing hinges, however, on the choice of the exact analysis of the comparative ellipsis construction in Japanese here as long as the relevant difference in terms of c-command can be captured; see footnote 5 of Hoji (1995b).

(21)   [John to Bill]-ni yori mo saki ni [*pro* otagai]-no koibito-ga [Mike to Sam]-ni iiyotta (koto)
'their lovers tried to seduce [Mike and Sam] earlier than [John and Bill]' (*sloppy reading)

(21) cannot seem to have an interpretation corresponding to (22), despite the fact that (23) does allow the interpretation corresponding to (24).

(22)   the time at which Sam's lover tried to seduce Mike and Mike's lover tried to seduce Sam was before the time at which John's lover tried to seduce Bill and Bill's lover tried to seduce John

(23)   [*pro*$_1$ otagai]-no koibito-ga [Mike to Sam]$_1$-ni iiyotta (koto)
'their$_1$ lovers tried to seduce [Mike and Sam]$_1$'

(24)   Sam's lover tried to seduce Mike and Mike's lover tried to seduce Sam

3. The Postulation of *pro* in [*pro* [*otagai*]]

The empirical materials presented above are compatible with an alternative analysis of *otagai*, according to which *otagai* is simply a pronominal. *Otagai* as analyzed as such is expected to have all the properties that we have discussed in the preceding section: it does not require its antecedent to be in its local domain, or in a position c-commanding it; it allows split antecedence; but when bound variable anaphora is at stake, then the failure of the c-command results in the unavailability of the relevant readings.

Although one may argue that examples like (3), repeated below without *pro*, would be incorrectly ruled out under such an analysis by Principle B of Binding Theory, it is observed in Hoji (1995a) that Principle B effects are not observed in Japanese when the relevant referential association is that of coreference, as illustrated in (25).[11]

(3)   [John to Bill]$_1$-ga   hissi-ni-natte [otagai]$_1$-o   urikonde ita (koto)
John and Bill-NOM very hard   -ACC was promoting
'[each of John and Bill]$_1$ was promoting himself$_1$ with utmost enthusiasm (as in a competition)'

(25)   John$_i$-ga kare$_1$-o urikondeita
'John$_1$ was promoting him$_1$'

Hence the availability of the referential association between the subject NP and *otagai* in examples like (3) does not constitute evidence for the [*pro* [*otagai*]] analysis.

The consideration of cases of bound variable anaphora, however, does provide us with evidence that *otagai* cannot be analyzed simply as a pronominal. As pointed out in Hoji (1995a), when bound variable anaphora is at stake, we do observe Principle B effects even in Japanese.

(26) a.   *[Toyota to Nissan]$_1$-ga   (hissi-ni-natte) soko$_1$-o urikondeita
     Toyota and Nissan-NOM (very hard)   it-ACC was promoting
(no   wa   sensyuu-no   kaigi-de   da)
(COMP TOP last week-GEN meeting-at be)
'(It was at the meeting last week that) [each of Toyota and Nissan]$_1$ was promoting it$_1$ with utmost enthusiasm.'

   b.   *[kanari-no kazu-no kaisya]$_1$-ga (hissi-ni-natte) soko$_1$-o urikondeita (no wa sensyuu no kaigi-de da)
'(It was at the meeting last week that) [each of [a good number of companies]]$_1$ was promoting it$_1$ with utmost enthusiasm.'

   c.   *[Toyota sae]$_1$-ga (hissi-ni-natte) soko$_1$-o urikondeita (no wa sensyuu no kaigi-de da)
'(It was at the meeting last week that) [even Toyota]$_1$ was promoting it$_1$ with utmost enthusiasm.'

The examples in (26) are to be compared with those in (27) below, where the relevant binding is not local.

(27) a.   [Toyota to Nissan]$_1$-ga   (hissi-ni-natte) soko$_1$-no kogaisya-o   urikondeita
     Toyota and Nissan-NOM (very hard)   it-GEN   subsidiary-ACC was promoting
(no wa sensyuu no kaigi-de da)
'(It was at the meeting last week that) [each of Toyota and Nissan]$_1$ was promoting it$_1$'s subsidiary with utmost enthusiasm.'

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11   If *otagai* is a pronominal, (i) may be a structurally more accurate translation of (3).

(i)   [John and Bill]$_1$ were promoting them$_1$ with utmost enthusiasm.

b. [kanari-no kazu-no kaisya]$_1$-ga (hissi-ni-natte) soko$_1$-no kogaisya-o urikondeita (no wa sensyuu no kaigi-de da)
'(It was at the meeting last week that) [each of [a good number of companies]]$_1$ was promoting it$_1$'s subsidiary with utmost enthusiasm.'

c. [Toyota sae]$_1$-ga (hissi-ni-natte) soko$_1$-no kogaisya-o urikondeita (no wa sensyuu no kaigi-de da)
'(It was at the meeting last week that) [even Toyota]$_1$ was promoting it$_1$'s subsidiary with utmost enthusiasm.'

Now, consider the examples in (28).

(28) a. [sono nihonzin huuhu to kono Amerikazin huuhu]$_1$-ga
that   Japanese couple and this American   couple-NOM
(hissi-ni-natte) [otagai]$_1$-o   urikonde ita
(very hard)   -ACC was promoting
(no wa sensyuu-no kaigi-de da)
(it was at the meeting last week)
'(It was at the meeting last week that) [each of [that Japanese couple and this American couple]]$_1$ was promoting otagai$_1$ with utmost enthusiasm.'

b. [kanari-no kazu-no huuhu]$_1$-ga (hissi-ni-natte) otagai$_1$-o urikondeita (no wa sensyuu no kaigi-de da)
'(It was at the meeting last week that) [each of [a good number of couples]]$_1$ was promoting otagai$_1$ with utmost enthusiasm.'

c. [kono huuhu sae]$_1$-ga (hissi-ni-natte) otagai$_1$-o urikondeita (no wa sensyuu no kaigi-de da)
'(It was at the meeting last week that) [even this couple]$_1$ was promoting otagai$_1$ with utmost enthusiasm.'

Crucially, the bound variable readings, i.e. the distributive readings, are possible here. For example, (28a) can have an interpretation corresponding to (29); and (28b) to (30).[12]

(29)   It is true of that Japanese couple as well as of this American couple that
a.   the husband x and the wife y were promoting x and y
b.   the husband x was promoting the wife y, and y was promoting x.
c.   the husband x was promoting x, and the wife y was promoting y

(30)   For a good number of couples, it is true of each of those couples that
a.   the husband x and the wife y were promoting x and y
b.   the husband x was promoting the wife y, and y was promoting x.
c.   the husband x was promoting x, and the wife y was promoting y

Principle B effects are observed when bound variable anaphora is at stake, as indicated in (26). The availability of the bound readings in (28), therefore, clearly indicates that what is "bound" by the quantificational subject in (28) is NOT *otagai* itself. For if it were, Principle B violations would ensue. If what is "bound" by the quantificational subject is *pro* in [*pro* [*otagai*]] , the binding is not local. Hence Principle B violations are not predicted, correctly. The postulation of *pro* in [*pro* [*otagai*]] is thus motivated by the absence of Principle B effects when bound variable anaphora is at stake as in (28).

4. Conclusion

I have argued:

(1) a. The internal structure of *otagai* is [$_{NP}$ *pro* [$_N$ *otagai*]]
b. What has been considered as the anaphoric relation between *otagai* and "its antecedent" must be understood as that between the *pro* in [$_{NP}$ *pro* [$_N$ *otagai*]] and the antecedent of *pro*.

The thesis that *otagai* is not a (local) anaphor has been supported by a number of empirical considerations as given in section 2. The postulation of *pro* in [$_{NP}$ *pro* [$_N$ *otagai*]] has been motivated by the absence of Principle B effects when

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[12]   Recall that the relevant bound readings are possible only when *pro* in *[pro [otagai]]* is c-commanded by its antecedent, unlike the cases of coreference; see section 2.4.

bound variable anaphora is at stake.[13]

One may argue that *otagai* is ambiguous and can be analyzed either as [$_{NP}$ *pro* [$_N$ *otagai*]] or as a local anaphor. The empirical materials discussed above are compatible with such an analysis, since "*otagai* that is locally bound" may be either the local anaphor *otagai* or [$_{NP}$ *pro* [$_N$ *otagai*]] , satisfying the Binding Theory either way. But to the extent that there is no syntactic environment in which the local anaphor *otagai* can appear but [$_{NP}$ *pro* [$_N$ *otagai*]] cannot, such an analysis has no empirical motivation for it. It then remains to be seen whether and how the postulation of the existence of the local anaphor *otagai* (in addition to something like [$_{NP}$ *pro* [$_N$ *otagai*]] , whose existence we have been led to accept) could be conceptually motivated.[14]

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[13]   Given the proposed analysis of *otagai* , one may raise the following question. If the relevant relation is between *pro* in *[pro [otagai]]* and its antecedent, what could be the account of the status of (i), in contrast to (ii)?

(i)   *[pro_1 [otagai]]-ga [John to Bill]$_1$-o suisensita
              'They$_1$ recommended [John and Bill]$_1$'
(ii)   a.   [kare$_1$-no [titioya]]-ga John$_1$-o suisensita
              'his$_1$ father recommended John$_1$'
          b.   [pro_1 [titioya]]-ga John$_1$-o suisensita
              'his$_1$ father recommended John$_1$'

I want to suggest that the status of (i) is due to the same condition that is responsible for the status of (iii), which I have been calling, following Huang (1988), Condition D, i.e. the universal part of Condition C in Lasnik (1989).

(iii)   a.   *he$_1$ recommended John$_1$'s student

          b.   *kare$_1$-ga John$_1$-no gakusei-o suisensita (koto)
              'he$_1$ recommended John$_1$'s student'

In Hoji (1990), it is pointed out that the effects of Condition D can be made weaker if there is an antecedent for the "dependent term" (*he* and *kare* in (iii)) in a position where it is not c-commanded by the "dependent term." Thus speakers find examples in (iv) and (v) to be significantly improved over (iii).

(iv)   a.   ?John$_1$'s mother does not tell us why he$_1$ had recommended John$_1$'s student

          b.   *?/??John$_1$ does not tell us why he$_1$ had recommended John$_1$'s student

(v)   a.   John$_1$-no hahaoya-ga [naze kare$_1$-ga John$_1$-no gakusei-o suisensita ka] iwanai (koto)
              'John$_1$'s mother does not tell (us) why he$_1$ had recommended John$_1$'s student'
          b.   John$_1$-ga [naze kare$_1$-ga John$_1$-no gakusei-o suisensita ka] iwanai (koto)
              'John$_1$ does not tell (us) why he$_1$ had recommended John$_1$'s student'
Now, (i) too seems to improve in the same way, as indicated below.
(vi)   [John to Bill]$_1$-ga [naze [pro_1 [otagai]]-ga [John to Bill]$_1$-o suisensita ka] kakusite iru (koto)
              '[John and Bill]$_1$ are hiding why they$_1$ had recommended [John and Bill]$_1$'

To substantiate this suggestion, we need to articulate how Condition D is to be formulated so as to correctly apply to (i) and not to (ii). Since such a task is beyond the scope of this paper, however, I only note two relevant points here. First, under some appropriate analysis of the semantics of *otagai*, the value of *[pro$_1$ [otagai]]* in (i) may be understood to be the same as that of *[John to Bill]$_1$*, while the value of *[pro$_1$ [titioya]]* in (ii) cannot be understood to be the same as *John$_1$*. Second, there is independent evidence that Principle B of Binding Theory and Condition D do not apply at the same "level" and that the former applies at LF while the latter "applies" at a later stage; cf. Hoji (1995a).

[14]   One possible conceptual argument for it would be that the existence in Japanese of a local anaphor *otagai* makes the grammar of Japanese more in line with what might be expected of any human language, under the assumption that any human language must have an overt local anaphor.

The assessment of such an argument requires some degree of articulation of what primitive feature(s) underlie(s) the defining properties of a local anaphor. (I do not address a possible conceptual argument for postulating the existence of the local reciprocal anaphor *otagai*, since what primitive feature(s) underlie(s) the defining properties of a reciprocal is substantially less clear; see Heim et al. (1991) and Dalrymple et al. (1994) among others.) Suppose that some formal agreement feature(s) underlie(s) the defining properties of a local anaphor; cf. Lebeaux (1983) and Chomsky (1986, p. 175f). If Japanese does not have any formal agreement features, as advocated in Fukui (1986) (and also in effect in Kuroda (1988), as it is reinterpreted in Hoji (1996c)), then it would come as no surprise that Japanese does not have local anaphors. Given this line of reasoning, the absence of local anaphors in Japanese is as expected as the lack of the local disjointness effects in (i), in contrast to (ii), which is attributed in Hoji (1995a, 1996b) to the presence in English and the absence in Japanese of formal agreement features.

(i)   soko$_1$-ga soko$_1$-o suisensita (koto)
              'it$_1$ recommended it$_1$'

(ii)   *it$_1$ recommended it$_1$

Appendix

Given the conclusion reached in the main text, one might wonder how one is to understand the empirical bases that have been put forth in the literature for the view that *otagai* is a local anaphor. In this Appendix, I will address this question.

The contrast in (31), in particular the status of (31b), has been taken as evidence that *otagai* must be c-commanded by its antecedent (or more precisely, must be A-bound).[15]

(31) a. (Saito's (1992) (12b))
   [Karera$_1$-ga [otagai$_1$-o   hihansita]] (koto)
   they-NOM   each other-ACC criticized   fact
   'They$_1$ criticized each other$_1$'

   b. (Saito's (1992) (13b))
   ?*[[Otagai$_1$-no   sensei]-ga [karera$_1$-o hihansita]] (koto)
      each other-GEN teacher-NOM they-ACC criticized   fact
   'Each other's$_1$ teachers criticized them$_1$'

The claim that the antecedent of *otagai* must be in the local domain of the latter (in the sense of the Specified Subject Condition effects) has been based on the alleged status of examples like (32).

(32)   (taken from Ishii (1989), apparently cited from Yang (1983))
   *karera$_1$-ga [Mary-ga otagai$_1$-o aisiteiru to] it-ta
   'they$_1$ said that Mary loves each other$_1$'

In the discussion in the main text, we have seen examples in which *pro* of [*pro* [*otagai*]] and its antecedent can be referentially related despite the fact that [*pro* [*otagai*]] and its antecedent are in exactly the same structural relations as in (31b) and (32). The relevant examples are repeated here.

(8) a. [*pro*$_1$ otagai]-no koibito-ga [John to Bill]$_1$-o yuuwaku sita (to yuu uwasa-ga matizyuu-no wadai-ni natte ita)
   '(The rumor that) each other$_1$'s lovers seduced [John and Bill]$_1$ (had become a hot topic of the town.'

   b. [*pro*$_1$ otagai]-no koibito-ga [John to Bill]$_1$-ni iiyotta (koto)
   'John's lover tried to seduce Bill, and Bill's lover tried to seduce John.'

(7) a. [John to Bill]$_1$-wa [$_{IP}$ Mary-ga [*pro*$_1$ otagai]-ni horeteiru to] omoikonde ita
   '[each of John and Bill] believed that Mary was in love with the other.'
   '[each of John and Bill]$_1$ believed that Mary was in love with him$_1$.'

   b. [John to Bill]$_1$-wa [Chomsky-ga naze [*pro*$_1$ otagai]-o suisensita no ka] wakaranakatta
   '[each of John and Bill] did not understand why Chomsky had recommended the other.'
   '[each of John and Bill]$_1$ had no idea why Chomsky had recommended him$_1$.'
   '[John and Bill]$_1$ had no idea why Chomsky has recommended them$_1$'

Suppose, as I have argued above, that *otagai* is NOT an anaphor and that what was considered in the literature to be the relation of anaphor binding can in fact be a coreferential relation between *pro* in [*pro* [*otagai*]] and its antecedent. It is then not surprising if the availability of the relevant coreferential relation (which involves an empty argument) is affected by various lexico-semantic, pragmatic (as well as structural) factors, such as they relate to notions like salience. In fact, when the coreference between *pro* in [*pro* [*otagai*]] and its antecedent seems restricted, as in (33) below, the coreference between *pro* in [*pro* [*titioya*]] '[*pro* father]' (and other kinship terms) and its antecedent in (34) below also seems restricted in the same way.

(33)   [John to Bill]$_2$-ga [[Mary to Sue]$_1$-ga [*pro*$_{1/*2}$ otagai]-o aisiteiru to] it-ta (koto)
   '[John and Bill]$_2$ said that [Mary and Sue]$_1$ loves them$_{1/*2}$'

We are then led to conclude that the so-called local anaphor *zibunzisin* in Japanese is not a local anaphor either. The relevant empirical materials many of which are of the same sort as those discussed in this paper with respect to *otagai*, including Appendix below, do support this conclusion, although the presentation of such materials is not included in this work.

[15]   Saito (1992, footnote 6) attributes to Yang (1984), Ueda (1984), and Kitagawa (1986) the observation that *otagai* exhibits the Specified Subject Condition effect and has the binding properties of an anaphor.

(34)   Jane$_2$-ga [Mary$_1$-ga [$pro_{1/*2}$ titioya]-o aisiteiru to] it-ta (koto)
        'Jane$_2$ said that Mary$_1$ loves her$_{1/*2}$ father'

(33) and (34) are equally degraded with the long-distance association.

    The examples in (35a) and (35b) contrast with (33) and (34), and allow the long-distance association, despite the fact that all of these examples have exactly the same structural properties in the relevant respects.

(35)   a.   [John to Bill]$_2$-ga [[Mary to Sue]$_1$-ga [$pro_{1/2}$ otagai]-o yuuwaku siteiru to] omoikondeita (koto)
              '[John and Bill]$_2$ believed that [Mary and Sue]$_1$ was seducing them$_{1/2}$'

        b.   Jane$_2$-ga [Mary$_1$-ga [$pro_{1/2}$ titioya]-o yuuwaku siteiru to] omoikondeita (koto)
              'Jane$_2$ believed that Mary$_1$ was seducing her$_{1/2}$ father'

The long-distance association in (35a) becomes even more readily available if the embedded plural NP subject is replaced by a singular term.

(36)   [John to Bill]$_2$-ga [Sue$_1$-ga [pro_2 otagai]-o yuuwaku siteiru to] omoikondeita (koto)
        '[John and Bill]$_2$ believed that Sue$_1$ was seducing them$_2$'

    Now consider the example in (37).

(37)   *?[pro_1 otagai]-no koibito-ga [John to Bill]$_1$-no kooti-o yuuwakusita (koto)
        'their$_1$ lovers seduced [John and Bill]$_1$'s coach(es)'

In (37), the relevant referential association seems difficult to obtain, in contrast to (8), repeated here again.

(8)   a.   [pro_1 otagai]-no koibito-ga [John to Bill]$_1$-o yuuwaku sita (to yuu uwasa-ga matizyuu-no wadai-ni natte ita)
              '(The rumor that) each other$_1$'s lovers seduced [John and Bill]$_1$ (had become a hot topic of the town.'

        b.   [pro_1 otagai]-no koibito-ga [John to Bill]$_1$-ni iiyotta (koto)
              'John's lover tried to seduce Bill, and Bill's lover tried to seduce John.'

The contrast between (37) and (8) can be duplicated in the examples in which a kinship term has replaced *otagai*, as indicated in (38) and (39).

(38)   *?[pro_1 titioya]-no aizin-ga John$_1$-no kooti-o yuuwakusita (koto)
        'his$_1$ father's lover seduced John$_1$'s coach'

(39)   a.   [pro_1 titioya]-no koibito-ga John$_1$-o yuuwaku sita (to yuu uwasa-ga matizyuu-no wadai-ni natte ita)
              '(The rumor that) his$_1$ father's lover seduced John$_1$ (had become a hot topic of the town.'

        b.   [pro_1 titioya]-no koibito-ga John$_1$-ni iiyotta (koto)
              'his$_1$ father's lover tried to seduce John$_1$'

Thus, whatever is wrong with (37) must be wrong with (38) as well.[16]

    The examples in (40) also seem degraded with the relevant reading.

(40)   a.   *?[John to Bill]$_1$-no koibito-ga [pro_1 otagai]-o yuuwaku sita (koto)
              '[John and Bill]$_1$'s lovers seduced them$_1$'

        b.   *[John to Bill]$_1$-no koibito-ga [pro_1 otagai]-no kooti-o yuuwakusita (koto)
              '[John and Bill]$_1$'s lovers seduced their$_1$ coach(es)'

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[16]   If one finds the referential association in (i) to be difficult to obtain at all, I predict that one will also find that in (ii) to be equally difficult.
(i)   [pro_1 otagai]-no sensei-ga [John to Bill]$_1$-o hihansita (koto)
           'their$_1$ teachers criticized [John and Bill]$_1$'
(ii)   [pro_1 titioya]-no sensei-ga John$_1$-o hihansita (koto)
           'his$_1$ father's teacher criticized John$_1$'

Many speakers including this author find both (i) and (ii) (and in fact (31b) as well) to be acceptable with the relevant referential association.

Consider the kinship term analogues of (40) given in (41).

(41) a. *?John$_1$-no koibito-ga [*pro*$_1$ titioya]-o yuuwaku sita (koto)
'John$_1$'s lovers seduced his$_1$ father'

b. *John$_1$-no koibito-ga [*pro*$_1$ titioya]-no kooti-o yuuwakusita (koto)
'John$_1$'s lovers seduced his$_1$ father's coach(es)'

As indicated, the examples in (41) have the same status as (40).

Given the view that the degraded status of (37) and (40) is due to some non-syntactic factors, we expect that we can construct examples of the same structures as (37) and (40) that are more or less acceptable, by choosing appropriate lexical items. This is precisely what happens, as indicated by the examples in (42).

(42) a. [*pro*$_1$ otagai]-no kooti-ga (siai zenya-ni) [John to Bill]$_1$-no kozinteki na mondai-o (hoodoozin-ni) bakurosita (koto)
'their$_1$ coaches announced (to the press) [John and Bill]$_1$'s personal problems (on the night before the bout)'

b. ?(ziko-no ato-de) [John to Bill]$_1$-no zyoosi-ga [*pro*$_1$ otagai]-o mimatta (koto)
'(after the accident) [John and Bill]$_1$'s bosses went to see them$_1$ (in the hospital(s)'

c. (siai-ga semette kita aru hi) [John to Bill]$_1$-no kooti-ga [*pro*$_1$ otagai]-no rensyuu aite-o yamiutisita (koto)
'(when the day of the bout approached) [John and Bill]$_1$'s coaches assaulted their$_1$ sparring partners'

Given the parallelism between the *otagai* examples and their kinship term analogues, we expect that, just as we can make more or less acceptable examples with *otagai* such as (42), so we can make more or less acceptable examples with a kinship term. The expectation is confirmed as illustrated by examples such as (43).[17]

(43) a. [*pro*$_1$ titioya]-no aizin-ga (kekkonsiki no zenzitu-ni) John$_1$-no kozinteki na mondai-o hoodoozin-ni bakurosita (koto)
'his$_1$ father's lover announced (to the press) John$_1$'s personal problems (on the day before the marriage)'

b. ?(ziko-no ato-de) John$_1$-no zyoosi-ga [*pro*$_1$ titioya]-ni mimai-no denwa-o kaketa (koto)
'(after the accident) John$_1$'s boss gave his$_1$ father a call of concern'

c. (oyako taiketu-ga sematta aru hi) John$_1$-no kooti-ga [*pro*$_1$ titioya]-no rensyuu aite-o yamiutisita (koto)
'(when the day of the bout between the son and the father approached) John$_1$'s coach assaulted his$_1$ father's sparring partner'

We are thus led to conclude that the examples cited in the literature as evidence that *otagai* is a local anaphor is a small subset of those in which the referential association between *pro* in [*pro* [*otagai*]] and its antecedent cannot be easily established for reasons that we do not fully understand, but clearly for reasons that are not purely structural, as the paradigms given above indicate.

It has been argued that word order change affects the "binding possibility" for the anaphor *otagai*. Thus Saito (1992, p. 75) notes that (31b), repeated here, improves if the object is scrambled over the subject, as in (44) below.

(31) b. (Saito's (1992) (13b))
?*[[Otagai$_1$-no   sensei]-ga [karera$_1$-o hihansita]] (koto)
   each other-GEN teacher-NOM they-ACC criticized   fact
'Each other's$_1$ teachers criticized them$_1$'

(44)   (Saito's (1992) (14b))
?[Karera-o$_1$ [[otagai$_1$-no   sensei]-ga [t_1 hihansita]]] (koto)
  they-ACC   each other-GEN teacher-NOM   criticized
'Them$_1$, each other's$_1$ teachers criticized t_1'

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[17]   The parallelism between (42) and (43) seems to continue to obtain when we consider their quantificational analogues. But the relevant empirical discussion is not provided here since it would involve some nontrivial complications, such as having to do with so-called Spec-binding, among other things. Despite the striking parallelism between [*pro* [*otagai*]] and [*pro* [*titioya*]] that we have observed, we would not be surprised to find cases in which the parallelism breaks down, insofar as the semantico-functional properties associated with *otagai* are not exactly the same as those associated with *titioya*.

Given the preceding discussion in this Appendix, one may suspect that, in the terms of the present analysis, word order change does affect the coreference possibility between *pro* and its antecedent not only in the case of [*pro* [*otagai*]] but also in the case of [*pro* [*titioya*]]. This is in fact the case, as illustrated below.

(45) a.   *?[*pro*$_1$ otagai]-no atarasii sensei-ga (Mary-ni) [John to Bill]$_1$-o syookaisita (koto)

'their$_1$ new teachers introduced [John and Bill]$_1$ (to Mary)'

  b.   [John to Bill]$_1$-o [*pro*$_1$ otagai]-no atarasii sensei-ga (Mary-ni) <u>ec</u>$_1$ syookaisita (koto)

'their$_1$ new teachers introduced [John and Bill]$_1$ (to Mary)'

(46) a.   *?[*pro*$_1$ titioya]-no atarasii sensei-ga (Mary-ni) John$_1$-o syookaisita (koto)

'[his$_1$ father]'s new teacher introduced John$_1$ (to Mary)'

  b.   John$_1$-o [*pro*$_1$ titioya]-no atarasii sensei-ga (Mary-ni) <u>ec</u>$_1$ syookaisita (koto)

'[his$_1$ father]'s new teacher introduced John$_1$ (to Mary)'

Just as we detect improvement in (45b) over (45a), so we also detect improvement in (46b) over (46a).

Earlier we have observed that the coreference is possible between *pro* in [*pro* [*otagai*]] and its antecedent in precisely the same structural configurations as in (45a) (and (31b)). This strongly suggests that the relevant relation in (45) is not that of anaphor-binding but that of coreference. But if the relevant relation is that of coreference between *pro* in [*pro* [*otagai*]] and its antecedent, the improvement seen in (45b) cannot be evidence for the A-positionhood of the "landing site of scrambling." It must have more to do with notions such as salience, and this is supported by the parallelism observed between (45) and (46) (as well as other examples given above.) The discussion in this Appendix then indicates that one of the two empirical motivations for (optionally) treating (clause-internal) Scrambling as an instance of A-movement, namely, the one based on the "binding of *otagai*," is unsound.[18]

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[18]   The discussion in Ueyama (1997) reveals that the other empirical basis for the claim that (clause-internal) Scrambling can be an A-movement (i.e. the one that is based on the absence of Weak Crossover effects), as it has been accepted in the literature, must also be subjected to serious reexamination.

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I have been advocating the view in the preceding pages at least since the spring of 1993. Most of the empirical materials are contained in "*Otagai*," presented at the 16th West Coast Conference on Formal Linguistics, University of Washington, March 2, 1997 and "Movement and Dependency: On the Landing Site of Scrambling," presented at the Stanford University Linguistics Colloquium, May 26, 1995. Some of the arguments are introduced in Ueyama 1998, and Hoji 2003. One might wonder why the hypothesis that has been falsified quite clearly and blatantly has continued to be used in a crucial way in many of the works even up to the present time. The reason, I believe, has to do with the lack of understanding on the part of many practitioners of the significance of *negative predictions* and *falsification* in linguistic science, which is addressed to some extent, but admittedly insufficiently in Hoji 2003.

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