Defective φ-features and Binding of *Zibun* in Non-argument Positions[*]

Terue Nakato

University of Tokyo

1. Introduction

Within the Government and Binding framework (e.g. Chomsky (1981)), the distribution and the interpretation of anaphoric expressions are explained by the Binding Conditions, which refer to types of arguments classified by two features [±anaphororic] and [±pronominal].[1]   Based on cross-linguistic variations, on the other hand, Reinhart & Reuland (1993) reformulate the theory of binding as the conditions on 'reflexivity' of predicates.[2] Recent studies on children's acquisition of anaphoric expressions (e.g. Philip & Coopmans (1996), Hamann, Kowalski, & Philip (1997), Avrutin & Cunningham (1997)) show that this 'reflexivity' theory of binding is preferable.[3]

Under the 'reflexivity' theory, the binding conditions regulate relations of anaphoric expressions in argument positions to their antecedents.   The properties of anaphoric expressions in non-argument positions are outside of the domain of the binding conditions, and therefore the following questions need to be addressed if certain regularity is observed in relations between anaphoric expressions in non-argument positions and their antecedents. (i) How does the grammar regulate their relations?   More specifically, is the observed regularity related to any principles/operations in the syntactic component?   (ii) What do children have to learn to attain fully adult-like knowledge about such regularity?

---

[1] The Binding Conditions:
(i)   a. An anaphor is bound in its governing category.
      b. A pronominal is free in its governing category.
      c. An R-expression is free.
[2] The conditions and the definitions are given as follows (cf. Reinhart and Reuland (1993: 678)).
(i)   a. A reflexive-marked syntactic predicate is reflexive.
      b. A reflexive semantic predicate is reflexive-marked.
(ii) a. A predicate is reflexive, iff two of its arguments are coindexed.
      b. A predicate (formed of P) is reflexive-marked iff either P is lexically reflexive or one of P's arguments is a SELF anaphor.
[3] The 'reflexivity' theory of binding needs to be reformulated and modified for some conceptual and empirical reasons. See Lidz (2000, 2001), Reuland (2001, 2005), Nakato (2001).

It is well known that the Japanese anaphoric expression *zibun* shows selective properties with respect to its antecedent, even when it occurs in non-argument positions. As (1) shows, *zibun* in non-argument positions, as well as *zibun* in argument positions, allows both local and long-distance antecedents but it requires the antecedent to c-command it (the c-command requirement) and to be in the subject position (the subject orientation).

(1) a.   [John$_i$-no   otouto]$_j$-wa   Bill$_k$-ni   [zibun$_{*i/j/*k}$-no   syasin]-o   mise-ta
       John-Gen   brother-Top   Bill-Dat   ZIBUN-Gen   picture-Acc   show-Past
       'John's brother showed his picture to Bill.'

    b.   [John$_i$-no   otouto]$_j$-wa   zibun$_{*i/j}$-o   bengo-si-ta
       John-Gen   brother-Top   ZIBUN-Acc   defend-Past
       'John's brother defended himself.'

    c.   [John$_i$-no   otouto]$_j$-wa   [Bill$_k$-ga   zibun$_{*i/j/k}$-o   bengo-suru-darou] -to
       John-Gen   brother-Top   Bill-Nom   ZIBUN-Acc   defend-   -Comp
       omo-tta
       think-Past
       'John's brother thought that Bill would defend him/himself.'

Given such properties, the following questions arise: (i) Are these two properties of *zibun* (the c-command requirement and the subject orientation) related to syntactic principles/ operations? (ii) What do Japanese children have to learn before they come to use *zibun* in a fully adult-like way?

Aikawa (1993) attributes the fact that *zibun* has the two properties in question, to its defective nature: *zibun* lacks full-specification of φ-features and this forces *zibun* to be in a syntactic relation with AGR, which results in the two properties. Given that all the syntactic operations/principles are provided by UG and that children need not learn them, her approach gives the following prediction for the acquisition of *zibun*: all that Japanese children have to learn about *zibun* is its defective nature. They need not learn any conditions specific to *zibun*, such as 'the antecedent of *zibun* must c-command it' and 'the antecedent of *zibun* must be the subject,' since these two properties are obtained as a result of syntactic operations. Thus, we expect the correlation between children's knowledge of the defective nature of *zibun* and their obedience to the c-command requirement and the subject orientation. In this paper, I will show that this prediction is not supported from the viewpoint of language acquisition: the experimental evidence shows that children as old as five or six fail to obey the c-command requirement and the subject orientation (cf. Takahashi (2000)) and the evidence from natural speech suggests that children as young as two seem to know the defective nature of *zibun*.
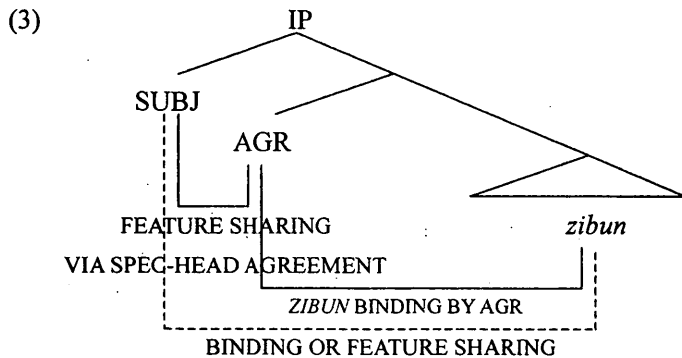
2. Binding of *Zibun* by AGR

As (2) shows, *zibun* is unspecified for the person and gender features.

(2) a. Boku$_i$/Kare$_j$/Kanozyo$_k$-wa   kinou   zibun$_{i/j/k}$-no   heya-o

       I/He/She-Top   yesterday   ZIBUN-Gen   room-Acc

       souzi-si-ta

       clean-Past

       'I/He/She cleaned my/his/her room yesterday.'

   b. Kimi$_i$-wa   kinou   zibun$_i$-no   heya-o   souzi-si-ta   no

       You-Top   yesterday   ZIBUN-Gen   room-Acc   clean-Past   Q

       'Did you clean your room yesterday?'

Aikawa (1993) assumes that an anaphoric expression without full-specification of ϕ-features has to be bound to AGR to receive ϕ-features. The relation between the subject and *zibun* is indirectly established, as a result of the binding of *zibun* by AGR and the Spec-Head agreement between AGR and the subject, after which AGR shares ϕ-features with the subject.[4, 5]

---

[4] Aikawa (1993) distinguishes BINDING and COREFERENCE. When the subject is QRed, the subject, AGR and *zibun* are co-indexed and this results in the BINDING of *zibun* by the c-commanding subject. Even when the subject is not QRed, the subject and *zibun* can share the ϕ-features of the subject due to the binding relation between AGR and *zibun*, resulting in the COREFERENCE between *zibun* and the c-commanding subject antecedent.

[5] After Chomsky's (1995) proposal that syntax obeys the inclusiveness condition, indices are no longer morphosyntactic objects. Then, one's task is to reformulate any theory that resorts to indices. Reuland (2001, 2005) reformulates the theory of binding within the framework of the Minimalist Program. He assumes that SE-anaphors, which lack full-specification of ϕ-features, have unvalued ϕ-features [uϕ] and enter into checking/agree relation with T, which also has unvalued ϕ-features [uϕ] and enters into checking/agree relation with the external argument EA. Under this view, the c-command requirement and the subject orientation follow as a result of the probe-goal relations between T and the SE-anaphor, and between the EA and T. In Reuland's (2001, 2005) term, *zibun* has [uϕ] and *zibun*-BINDING results when its [uϕ] is valued by the EA thorough the checking/agreement. Reuland's approach also gives the same kind of prediction as Aikawa's (1993), and we again face the same problem with respect to the acquisition of *zibun*.

(3)

```
                           IP
             _____/_____
         SUBJ  _____/_____
           |     AGR                  \
           | __/ |                     \
           |_|   |          _____/_____
       FEATURE SHARING              :        zibun
    VIA SPEC-HEAD AGREEMENT              |
        |           ZIBUN BINDING BY AGR |
        |_____|
            BINDING OR FEATURE SHARING
```

Under this approach, both of the c-command requirement and the subject orientation need not be stated as such in the grammar. They follow from the defective nature of *zibun* and the syntactic operations: an anaphoric expression without full ϕ-feature specification is automatically bound to AGR to receive interpretation, and AGR enters into the Spec-Head agreement with the subject, independently of the presence of an anaphoric expression.

3. Defective Nature of *Zibun*, C-command Requirement and Subject Orientation in Child Grammar

3.1 Experimental Evidence

Aikawa's (1993) approach predicts that children never fail to choose an appropriate antecedent for *zibun* once they have learned the defective nature of *zibun*. The c-command requirement and the subject orientation follow from the syntactic operations, which are provided by UG, and the defective nature of *zibun*. The following experimental evidence provided by Takahashi (2000), however, shows that this prediction is not borne out.

Takahashi (2000) investigates Japanese children's interpretation of *zibun*. The results of her investigation show that children at the age of five or six fail to choose an appropriate antecedent for *zibun* in non-argument positions. In all the trials, 9 out of the 16 children under investigation allow *zibun* in non-argument positions to take the antecedent which does not c-command it (*Mimī* in (4)) and 11 out of the 16 children allow *zibun* to take the non-subject antecedent (*Toramaru* in (4)).

(4) [Mimī$_i$-no Mama]$_j$-wa Toramaru$_k$-ni [zibun$_{*i/j/*k}$-no kēki]-o watasi-te-ru kana?
     Mimī-Gen mother-Top Toramaru-Dat ZIBUN-Gen cake-Acc give-Prog Q
     'Is Mimī's mother giving her cake to Toramaru?'
                              (Takahashi (2000:170-171) with slight modifications)

142

It is possible that those children who can not choose an appropriate antecedent have not learned the defective nature of *zibun* yet. They, however, allow *zibun* to take both the female antecedent (*Mimī* in (4)) and the male antecedent (*Toramaru* in (4)) and this indicates that φ-features of *zibun* are not fully specified in child grammar: at least, the gender feature remains unspecified. With respect to the number and person features, we cannot say anything from the results because the potential antecedents in the test sentences are limited to third person, singular ones.

3.2   Evidence from Natural Speech

The experimental results summarized above do not provide clear evidence that *zibun* is unspecified for φ-features other than the gender feature in child grammar. The following examples attested in natural speech show that even a two-year-old child uses *zibun* as the expression which lacks the specification of the person feature, though his use of *zibun* is limited to an emphatic one, which occurs in an adjunct position.[6, 7]

In (5), the child uses *zibun* to refer to the first person entity, the child himself.[8]

(5) a.   %exp: AMO fetches a book , about trains
   *AMO: n ?
   *AKI: kore ne .
   %act: takes the book
   *AKI: koko ne # Akityan **zibun** de kaiteta .
     '(I) wrote this by myself.'
   %act: turning pages
   *AMO: zibun de ?
   *AKI: sou .
   *AKI: Otoutyan to Akityan .
         (Miyata (1995: AKI 38) with slight modifications)
  b.   *AMO: Akityan mo sinbun yomu ?
   *AKI: iya .
   %act: looking at picture book (looking for Wally)
   *AMO: tyotto sinbun wa muzukasii kara ?
   *AKI: un .

---

[6] One may argue that *zibun* in emphatic use is different from that used as an anaphor or a pronoun. We do not take this position unless we obtain strong evidence from language acquisition.
[7] The child uses *zibun* only to refer to the singular entity as adults do. This indicates that it does not take so long before children attain fully adult-like knowledge about φ-feature specification of *zibun*.
[8] The translations of the utterances are my own.

143

```
*AMO:    sou ne .
%act:    taking a book
*AMO:    saisyo kara yomou ka ?
%act:    turns pages
*AKI:    **zibun** de yomu .
         '(I will) read it by myself.'
%act:    turns pages back to the page he looked at before
*AMO:    zibun de yomu no ?
*AKI:    un .
```

<div align="right">(Miyata (1995: AKI 44) with slight modifications)</div>

The child also uses *zibun* to refer to the third person entities (*kaeru*, a toy frog, in (6) and *Rētyan*, his brother, in (7)).

```
(6)      *AKI:    Akityan ne # kore ne , Sūze no kaeru .
         *AMO:    un .
         *AKI:    doko osu no ?
         %exp:    to make the frog jump
         *AMO:    koko maite kara yaranai to .
         *AKI:    kou .
         %act:    makes the frog walk on AMO's arm
         *AMO:    koko ?
         *AMO:    nobotte ?
         %act:    makes the frog walk on her arm.
         *AKI:    &tSijau   [: tigau]   .
         *AKI:    **zibun** de .
                  '(Make the frog walk) by itself.'
         *AMO:    zibun de ?
         *AKI:    un
         *AMO:    kaeru wa zibun de ikenai mon
```

<div align="right">(Miyata (1995: AKI 38) with slight modifications)</div>

```
(7)  a.  *AMO:    o#netu ga aru kara ne o#isya-san ni nominasai yo tte iwareta no ne .
         *AMO:    Rētyan, o#kusuri da yo .
         *AKI:    **zibun** de .[9]
                  '(Let Rē drink it) by himself.' / '(Drink it) by yourself, (Rē).'
```

---

[9] In this utterance, the child may use *zibun* in the imperative sentence to refer to the second person entity.

%exp: Rē comes to AMO and tries to take the bottle

*AMO: zibun de nomu no ?

*AKI: un .

<div align="right">(Miyata (1995: AKI 40) with slight modifications)</div>

b. %exp: Aki beating tambourine

   *AMO: sousou .

   *AKI: nani , Okāsan ?

   *AMO: ato nani ga atta kke ?

   *AKI: kore ga .

   %act: takes trumpet

   *AMO: zyouzu ?

   %act: makes play the glove doll trumpet

   *AKI: un [=! laughing].

   *AMO: <kondo wa> [/] kondo wa nani ga ī kanā ?

   *AMO: a Rētyan wa mokkin suru no kanā ?

   %act: gives Rē the xylophone

   *AKI: **zibun** de tataita ?

    'Did (Rē) play (it) by himself?'

<div align="right">(Miyata (1995: AKI 46) with slight modifications)</div>

These examples and the experimental evidence provided in the previous section indicate that just learning the defective nature of *zibun* is not enough for children to use *zibun* in a fully adult-like way.

4. Summary

In this paper, we focused on the two properties of *zibun* which seem to be related to syntactic principles/operations: the c-command requirement and the subject orientation. Under Aikawa's (1993) approach, these two properties are taken as a result of the two syntactic operations; the binding of *zibun* by AGR and the Spec-Head agreement between AGR and the subject. This approach predicts the correlation between children's knowledge of the defective nature of *zibun* and their obedience to the c-command requirement and the subject orientation. This prediction, however, is not borne out. A child as young as two shows the knowledge of the defective nature of·*zibun*, but children as old as five/six wrongly allow *zibun* to take the antecedent which does not c-command it or the one which is not in the subject position.

This leaves us two possibilities. The first possibility is that the children's wrong

responses might be just experimental artifacts.[10]   The second possibility is that the c-command requirement and the subject orientation are not related to the syntactic principles/operations but rather they are derivatives of some interpretative process in the discourse component.[11]   Further investigation is required to settle the issue and we would like to leave it open.

References

Aikawa, Takako (1993) *Reflexivity in Japanese and LF Analysis of* Zibun *Binding*, *MITOPL* 4.

Avrutin, Sergey and Jennifer Cunningham (1997) "Children and Reflexivity," *BUCLD* 21, 13-23.

Chomsky, Noam (1981) *Lectures on Government and Binding*, Foris, Dordrecht.

Chomsky, Noam (1995) *The Minimalist Program*, MIT Press, Cambridge, Mass.

Chomsky, Noam (2001) "Derivation by Phase," *Ken Hale: A Life in Language*, ed. by Michael Kenstowicz, 1-52, MIT Press, Cambridge, Mass.

Hamman, Cornelia, Odette Kowalski, and William Philip (1997) "The French 'Delay of Princple B' Effect," *BUCLD* 21, 205-219.

Lidz, Jeffrey (2000) "Anti-antilocality," *Syntax and Semantics* 33: *Long-Distance Reflexives*, ed. by Peter Cole, Gabriella Hermon, and C.-T. James Huang, 227-254.

Lidz, Jeffrey (2001) "Condition R," *LI* 32, 123-140.

MacWhinney, Brian (1995) *The CHILDES Project: Tools for Analyzing Talk*, 2nd ed., Hillsdale NJ, Lawrence Erlbaum Association.

Mazuka, Reiko and Barbara Lust (1994) "When is an Anaphor Not an Anaphor?" *Syntactic Theory and First Language Acquisition: Cross-Linguistic Perspectives Vol.2, Binding, Dependencies, and Learnability*, 145-175, Lawrence Erlbaum Associates, Hove, UK.

Miyata, Susanne (1995) "The Aki Corpus – Longitudinal Speech Data of Japanese Boy Aged 1.6 – 2.12 –," *Bulletin of Aichi Shukutoku Junior College* 34, 183-191.

Nakato, Terue (2001) "Remarks on Anaphoric Expressions," *Linguistic Research: Working Papers in English Linguistics* 18, 181-194, The University of Tokyo English Linguistics Association.

Oshima-Takane, Yuriko and Brian MacWhinney (1998) *CHILDES Manual for Japanese*, 2nd

---

[10]   Otsu (1999) reports that children as young as three obey the subject orientation.

[11]   Mazuka and Lust (1994) observe that children tend to resist *zibun* in argument positions: in their experiment which requires children to imitate stimulus sentences, children often replace *zibun* in argument positions by its emphatic use of *zibun-de*.   They argue that the properties of *zibun* are outside of the domain of the Binding Theory.

146

ed., McGill University/Chukyo University.

Otsu, Yukio (1999) "First Language Acquisition," *The Handbook of Japanese Linguistics*, ed. by Natsuko Tsujimura, 378-397, Blackwell, Malden, Mass.

Philip, William and Peter Coopmans (1996) "The Role of Referentiality in the Acquisition of Pronominal Anaphora," *NELS* 26, 241-255.

Reinhart, Tanya and Eric Reuland (1993) "Reflexivity," *LI* 24, 657-720.

Reuland, Eric (2001) "Primitives of Binding," *LI* 32, 439-492.

Reuland, Eric (2005) "Agreeing to Bind," *Organizing Grammar: Studies in Honor of Henk van Riemsdijk*, ed. by Hans Broekhuis, Norbert Corver, Riny Huibregts, Ursula Kleinhenz, and Jan Koster, 505-513, Mouton de Gruyter, Berlin/New York.

Takahashi, Mari (2000) "Children's Acquisition of the Long-distance Property of Anaphor *Zibun* in Japanese," *Annual Report: Grant-in-Aid Scientific Research, Ministry of Education, Science, Sports and Culture*, 168-175.