

## Early Acquisition of Animacy Agreement in Japanese\*

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### 1. Introduction

It is widely believed that Japanese is a language which exhibits virtually no agreement phenomenon at all. Yet, there is a single pair of verbs which alternate depending on the property of their nominative phrases: The locational verbs *aru* (inanimate) and *iru* (animate) agree in animacy with their nominative phrases, as illustrated in (1).

- (1) a. Kooen-ni kodomo-ga / \* isi-ga iru.  
*park-DAT child-NOM stone-NOM be-AN(IMATE)*  
'The child/The stone is in the park.'
- b. Kooen-ni \* kodomo-ga / isi-ga aru.  
*park-DAT child-NOM stone-NOM be-IN(ANIMATE)*  
'The child/The stone is in the park.'

In this study, I investigate whether young Japanese-learning children are sensitive to this pattern of animacy alternation. The results of my transcript analysis demonstrate that children exhibit correct animacy agreement from the earliest observable stages. This finding suggests that very early acquisition of agreement, observed in a variety of "rich" agreement languages, holds even for the acquisition of agreement in Japanese, which is a language with extremely poor agreement.

### 2. The Syntax of Animacy Agreement in Japanese

#### 2.1. Major Properties of Animacy Agreement in Japanese

In Japanese, the locational verbs *aru* (inanimate) and *iru* (animate) are the only pair of verbs which alternate depending on the animacy classification of their nominative phrases. Both *aru* and *iru* express two distinct types of meanings which are

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equivalent to those expressed by *have* and *be* in English. In the examples in (2), a locative-existential meaning is encoded, and in the examples in (3), a possessive meaning is encoded.

(2) Locative-existential meaning:

- a. Kooen-ni kodomo-ga iru.  
*park-DAT child-NOM be-AN*  
 'The child is in the park.'
- b. Kooen-ni isi-ga aru.  
*park-DAT stone-NOM be-IN*  
 'The stone is in the park.'

(3) Possessive meaning:

- a. Taroo-ni kodomo-ga iru.  
*Taroo-DAT child-NOM have-AN*  
 'Taroo has a child.'
- b. Taroo-ni okane-ga aru.  
*Taroo-DAT money-NOM have-IN*  
 'Taroo has money.'

A detailed syntactic analysis of this locational verb alternation by Kishimoto (2000) argues that, despite their apparent similarity, the sentences in (2) and those in (3) differ in the transitivity of their verbs: When the verbs *aru* and *iru* carry locative-existential meanings, they are used as intransitive predicates, and when these verbs express possessive meanings, they are used as transitive predicates. This means that while a locative-existential construction as in (2) has the nominative phrase as its subject, a possessive construction as in (3) has the dative phrase as its subject, giving rise to the structures shown in (4).

- (4) a. Locative-existential meaning: DAT (adjunct) – NOM (subject) – V  
 b. Possessive meaning: DAT (subject) – NOM (object) – V

Kishimoto (2000) provides a variety of evidence that lends support to the structural difference illustrated above. One piece of evidence comes from the reflexive binding of *zibun* 'self'. This anaphor can take a subject as its antecedent, but not an object.

- (5) Taroo<sub>1</sub>-ga Hanako<sub>2</sub>-o zibun<sub>1/\*2</sub>-no heya-de sikatta.  
*Taroo-NOM Hanako-ACC self-GEN room-in scolded*  
 'Taroo scolded Hanako in his own room.'

In a locative-existential sentence like (6), the nominative phrase serves as the antecedent of *zibun*. On the other hand, in a possessive sentence like (7), the reflexive *zibun* can only take the dative phrase as its antecedent.

- (6) Taroo<sub>1</sub>-ga zibun<sub>1</sub>-no heya-ni iru.  
*Taroo-NOM sel-GEN room-in be-AN*  
 'Taroo is in his own room.'
- (7) a. Taroo<sub>1</sub>-ni zibun<sub>1</sub>-no okane-ga aru.  
*Taroo-NOM sel-GEN money-NOM have-IN*  
 'Taroo has his own money.'
- b. \* Zibun<sub>1</sub>-no tomodati-ni kodomo<sub>1</sub>-ga iru.  
*self-GEN friend-DAT child-NOM have-AN*  
 'A friend of himself has a child.'

This contrast suggests that while the subject of a locative-existential sentence is the nominative phrase, that of a possessive sentence is the dative phrase, as shown in (4).

Another important difference between locative-existential and possessive sentences is that there is a discrepancy in their patterns of agreement: In a locative-existential construction, animacy agreement is obligatory, while in a possessive construction, the possibility of agreement differs depending on the choice of verb. With the possessive verb *iru*, the nominative phrase must be animate as shown in (9a), while with the possessive verb *aru*, the nominative can be either animate or inanimate, as illustrated in (9b).<sup>1</sup> This optionality observed with the possessive *aru* constitutes a crucial piece of evidence that the alternation between *aru* and *iru* is not semantically-based: If *aru* and *iru* were to semantically select an inanimate and animate nominative phrase respectively, there should be no contrast between the locative-existential use of *aru* and the possessive use of the same verb.

- (8) Locative-existential meaning:
- a. Kooen-ni kodomo-ga / \* isi-ga iru.  
*park-DAT child-NOM stone-NOM be-AN*  
 'The child/The stone is in the park.'
- b. Kooen-ni \* kodomo-ga / isi-ga aru.  
*park-DAT child-NOM stone-NOM be-IN*  
 'The child/The stone is in the park.'

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1. An earlier treatment of locational verbs by Kuno (1973) and Shibatani (1978) claims that the apparent *iru* version of a possessive sentence should be construed as a locative-existential construction. However, Kishimoto (2000) presents evidence for the existence of the transitive version of the possessive *iru*. For example, in (i), *zibun* can only take the dative phrase as its antecedent regardless of the choice of the verb, showing that the verb *iru* is used as a transitive verb.

- (i) a. Taroo<sub>1</sub>-ni-mo zibun<sub>1</sub>-no kodomo-ga aru / iru.  
*Taroo-DAT-also self-GEN child-NOM have-IN have-AN*  
 'Taroo also has his own child.'
- b. \* Zibun<sub>1</sub>-no tomodati-ni-mo kodomo<sub>1</sub>-ga aru / iru.  
*self-GEN friend-DAT-also child-NOM have-IN have-AN*  
 'His<sub>1</sub> own friend also has a child<sub>1</sub>.'

(9) Possessive meaning:<sup>2</sup>

- a. Taroo-ni kodomo-ga / \* okane-ga iru.  
*Taroo-DAT child-NOM money-NOM have-AN*  
 ‘Taroo has a child/money.’
- b. Taroo-ni kodomo-ga / okane-ga aru.  
*Taroo-DAT child-NOM money-NOM have-IN*  
 ‘Taroo has a child/money.’

To summarize so far, the target for the animacy agreement in Japanese is distributed over two types of arguments, namely the subjects of locative-existential verbs and the objects of possessive verbs. In addition, there is an asymmetry in the pattern of agreement. The locative-existential verbs must agree in animacy with their nominative phrases. In contrast, while the possessive verb *iru* shows obligatory agreement, animacy agreement is not forced when *aru* is selected.

## 2.2. Kishimoto’s (2000) Object Agreement Analysis

Kishimoto (2000) proposed that the peculiar behavior of animacy agreement in Japanese follows straightforwardly if we assume that this locative verb alternation is a variant of object agreement, sensitive to the gender (i.e. animacy) class of nominative phrases. According to him, the observation that the targets for the agreement are distributed over subjects and objects can be explained on the assumption that the locational verb alternation is solely triggered by underlying objects.

Under Kishimoto’s (2000) analysis, the divergence in the behavior of the verbs *aru* and *iru* stems from the difference in the strength of a D-feature of the light verb *v*. More specifically, the light verb *v* associated with *iru* has a strong D-feature that overtly attract its nominative phrase to its specifier position, which is an underlying object, while the light verb *v* associated with *aru* has a weak D-feature, which does not require movement of its underlying object. Kishimoto postulates that animacy agreement is established through the specifier-head agreement between the light verb and the nominative phrase. The relevant derivations are illustrated below.

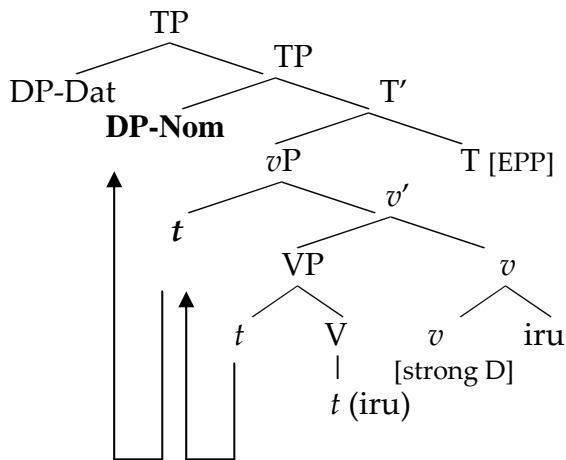
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2. Given that agreement is obligatory for the possessive *iru* but not for the possessive *aru*, both *aru* and *iru* can be used to express a possessive meaning when the nominative phrase is an animate noun.

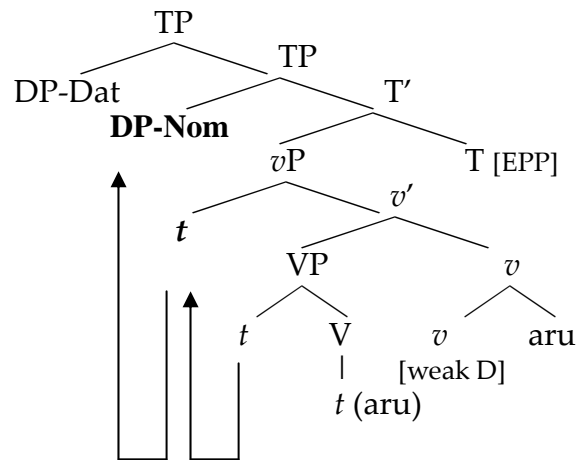
- (i) Taroo-ni-wa kodomo-ga iru / aru.  
*Taroo-DAT-TOP child-NOM have-AN have-IN*  
 ‘Taroo has a child.’

(10) Locative-existential sentences:

a. *iru*



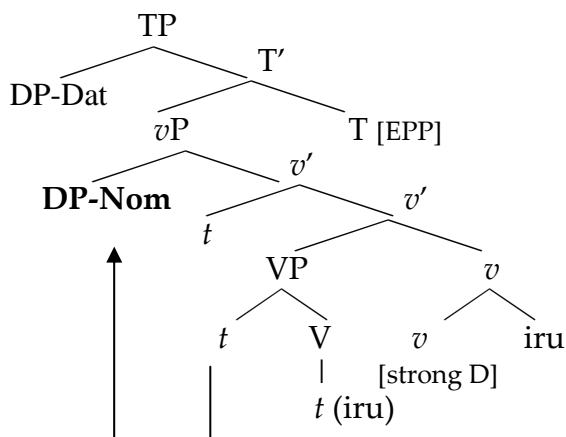
b. *aru*



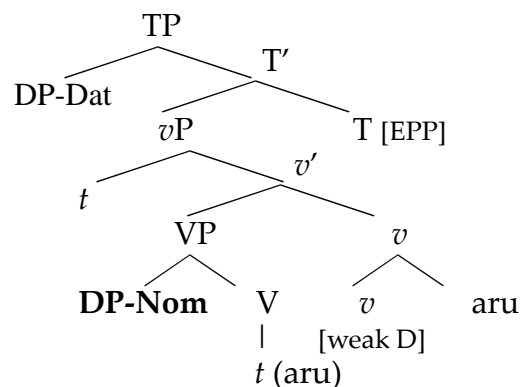
In the case of the locative-existential construction, the light verb in (10a), where *iru* is used, has a strong D-feature, and hence the nominative object within VP is overtly attracted to [Spec, *v*] and checks its agreement features, resulting in animacy agreement. The nominative phrase is further moved to [Spec, T] to satisfy the EPP feature on T. On the other hand, in (10b), the light verb associated with *aru* has a weak D-feature, which does not induce overt raising of the nominative phrase. Yet, T has an EPP feature, which requires the nominative object to move overtly to its specifier position. As a consequence, the nominative phrase undergoes overt movement to [Spec, *v*] on its way to [Spec, T] in exactly the same way as in (10a).

(11) Possessive sentences:

a. *iru*



b. *aru*



In the case of the possessive construction, the light verb associated with the possessive *iru* in (11a) has a strong D-feature and attracts the nominative object to its specifier, yielding animacy agreement. In contrast, the light verb associated with the possessive *aru* in (11b) has a weak D-feature, which does not require overt raising of

the nominative phrase. The formal features on the nominative phrase are checked after Spell-Out, and hence animacy agreement is not reflected in its PF representation. Thus, the possessive verb *aru* can tolerate both animate and inanimate nominative objects.

In sum, under Kishimoto's (2000) analysis, animacy agreement in Japanese is an instance of object agreement mediated by the light verb *v*. Overt object shift is mandatory with *iru*, but not with *aru*, and instantiation of agreement is contingent upon whether or not the nominative phrase is overtly moved to the specifier position of the light verb.

### 3. Agreement in Child Languages

One of the striking findings from the recent cross-linguistic investigations of child languages is that children acquire specific morphosyntactic properties of the target language at an extremely early age. They immediately converge on the adult grammar in the domain of verb-second phenomenon, null arguments, and even in the domain of agreement. For example, in the acquisition of "rich" agreement languages, agreement errors are under 5%, as shown in Table 1 (Hyams 2002:231). This pervasive property of the acquisition process is referred to as *Early Morphosyntactic Convergence* (EMC; Hoekstra & Hyams 1998, Hyams 2002).<sup>3</sup>

Child	Language	Age	# utterances	% error	Source
Simone	German	1;07-2;08	1732	1	Clausen & Penke 1992
Martina	Italian	1;08-2;07	478	1.6	Guasti 1994
Diana	Italian	1;10-2;06	610	1.5	Guasti 1994
Guglielmo	Italian	2;02-2;07	201	3.3	Guasti 1994
Claudia	Italian	1;04-2;04	1410	3	Pizzuto & Caselli 1992
Francesco	Italian	1;05-2;10	1264	2	Pizzuto & Caselli 1992
Marco	Italian	1;05-3;00	415	4	Pizzuto & Caselli 1992
Marti	Cat/Span	1;9-2;05	178	0.56	Torrens 1992
Josep	Cat/Span	1;09-2;06	136	3	Torrens 1992
Gisela	Catalan	1;10-2;06	81	1.2	Torrens 1992
Guillem	Catalan	1;09-2;06	129	2.3	Torrens 1992

Table 1: Percentage of subject-verb agreement errors in early language (Hyams 2002)

Yet, as we can see, the evidence for EMC so far comes mainly from the acquisition of "rich" agreement languages such as Italian, Catalan, and Spanish. Then, a question arises as to whether EMC holds even for the acquisition of a language with extremely poor agreement. To answer this question, the next section presents the results of my transcript analysis that aims to determine whether

3. See also Wexler (1998) for a related proposal of Very Early Knowledge of Inflection (VEKI).

Japanese-learning children exhibit correct animacy agreement from the earliest observable stages.

#### 4. Animacy Agreement in Child Japanese: Transcript Analysis

##### 4.1. Subjects and Method

In order to determine whether the acquisition of animacy agreement in Japanese falls under EMC, I analyzed three longitudinal corpora from the CHILDES database (MacWhinney 2000), which provide a total sample of more than 67,000 lines of child speech.

<i>Child</i>	<i>Age</i>	<i># of child utterances</i>	<i>Collected by</i>
Aki	1;05 - 3;00	22,026	Miyata (2004a)
Ryo	1;04 - 3;00	11,408	Miyata (2004b)
Tai	1;05 - 3;01	34,440	Miyata (2004c)

Table 2: Japanese Corpora Analyzed

The CLAN program Combo, together with a file that contains present- and past-tense forms of *aru* and *iru*, was used to identify potentially relevant child utterances, which were then searched by hand and checked against the original transcripts to exclude imitations, repetitions, and formulaic routines. When the nominative phrase was a null pronominal in the child utterance, I determined its animacy status by analyzing its context (more specifically, preceding utterances).

##### 4.2. Results

The results were as follows. The first clear use of *aru/iru* appeared at the age of 2(years);01(month) in Aki corpus, at 1;10 in Ryo corpus, and at 1;05 in Tai corpus. Virtually all instances of *aru* and *iru* in children's speech were locative-existential constructions, which require obligatory agreement as illustrated in (8), repeated here as (12).

(12) Locative-existential meaning:

- a. Kooen-ni kodomo-ga / \* isi-ga iru.  
*park-DAT child-NOM stone-NOM be-AN*  
 'The child/The stone is in the park.'
- b. Kooen-ni \* kodomo-ga / isi-ga aru.  
*park-DAT child-NOM stone-NOM be-IN*  
 'The child/The stone is in the park.'

Then, if children have adult-like knowledge of agreement, both *aru* and *iru* should necessarily match in animacy with the nominative phrase. As shown in Tables 3-5, this expectation is in fact borne out. Across children, agreement errors are around or under 5% (0.053% for Aki, 0.016% for Ryo, 0.031% for Tai), which precisely coincides with the results obtained from the acquisition of “rich” agreement languages shown in Table 1. A sample of children’s actual utterances is given in (13)-(15).

		Nominative Phrase	
		inanimate	animate
Verbs	<i>aru</i>	148	9
	<i>iru</i>	1	31

( $p < .0001$  by two-tailed Fisher Exact Test)

Table 3: The number of *aru/iru* in Aki corpus

		Nominative Phrase	
		inanimate	animate
Verbs	<i>aru</i>	105	0
	<i>iru</i>	2	17

( $p < .0001$  by two-tailed Fisher Exact Test)

Table 4: The number of *aru/iru* in Ryo corpus

		Nominative Phrase	
		inanimate	animate
Verbs	<i>aru</i>	258	4
	<i>iru</i>	6	59

( $p < .0001$  by two-tailed Fisher Exact Test)

Table 5: The number of *aru/iru* in Tai corpus

(13) Examples from Aki corpus:

- a. \*CHI: umi-ga aru yo. (aki25.cha)  
*sea-NOM be-INExcl*  
 ‘There is a sea.’
- b. \*CHI: minna doko-ni iru no? (aki44.cha)  
*everyone where-at be-AN Q*  
 ‘Where is everyone?’

(14) Examples from Ryo corpus:

- a. \*CHI: densha-mo aru . (r20216.cha)  
*train-also be-IN*  
 ‘There is also a train.’
- b. \*CHI: usagi ita? (r20223.cha)  
*rabbit be-AN*  
 ‘Was there a rabbit?’





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