

A Study of the Acquisition of Double Object Constructions by Japanese Learners of English: Overgeneration and Undergeneration

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1. Previous Studies

1.1. Previous Studies of First Language Acquisition

In English there is a syntactic structure called the double object construction like (1a,b).

- (1) a. John gave Mary flowers.
- b. Jack bought Diane flowers.

In linguistic theories verbs forming the double object construction are described as having a particular subcategorization frame¹ of [NP NP] (NP stands for noun phrase) and this description is employed to represent the double object construction as opposed to [NP PP] (PP stands for prepositional phrase) frame which represents the construction with a prepositional phrase. It is widely acknowledged that most of the verbs with [NP NP] construction have semantically almost identical [NP PP] counterparts.² Sentences (1a) and (1b) have the counterparts of (2a) and (2b), respectively:

- (2) a. John gave flowers to Mary.
- b. Jack bought flowers for Diane.

Unlike the case of verbs with [NP NP] construction, those with [NP PP] construction does not always possess a [NP NP] counterpart. This is illustrated in (3a)–(4b):

- (3) a. John donated the money to the hospital
- b. *John donated the hospital the money.
- (4) a. Jack obtained the book for Diane.
- b. *Jack obtained Diane the book.

This lack of [NP NP] counterparts for some verbs raises a problem in first language (L1) acquisition theory which assumes language acquisition through the exclusive input of positive evidence,³ i.e. a manifestation of a particular form in linguistic input.

In the case of double object constructions an adequate acquisition theory has to account for the process through which acquirers come to realize the ungrammaticality of sentences like (3b) and (4b) without the input of negative evidence, namely, the information that these sentences are not acceptable as a target form. Children have to acquire the distinction between the verbs with [NP NP] and [NP PP] frames and those with the [NP PP] frame alone without being informed that which verbs belong to the latter which do not have the [NP NP] frame.

Regarding this point, Baker (1979) proposed a piecemeal lexical acquisition model to solve the problem. According to his theory children are innately constrained and pick up the subcategorization frames of each verb one by one without making any generalization. If this process does take place, acquisition theory will not suffer from

the lack of negative evidence. All children have to do is to wait for the manifestation of a particular subcategorization frame for each in the positive evidence in the linguistic input. As it turned out, however, Baker's proposal was refuted by Mazurkewich and White (1984) with the evidence that children do make overgeneralization errors to extend ungrammatical [NP NP] frames to verbs without it.

Further explanations of overgeneralization are advanced in which various proposals have been put forth from different theoretical bases. The first group is referred to as preemption. Whereas there are some subdivisions under this categorization,⁴ the fundamental concept shared by all those different views is, as Bowerman (1987:450) succinctly defines it, "When children formulate overly general rules, they eventually give up overgeneralized forms if they are consistently faced with positive evidence for other forms expressing the same meanings".

In the case of double object constructions, the erroneous [NP NP] frame will be eliminated eventually without negative evidence if children keep hearing only the [NP PP] frame for the verb in question. Preemption is a powerful model for the acquisition of double object constructions, which is a rule of lexical property and satisfies the requirement that a conventional counterpart exists for the verb and a large amount of input is provided to acquirers.

An alternative approach is what Pinker (1987) refers to as the "Criteria Approach" proposed by Mazurkewich and White (1984). This approach postulates that children start with the acquisition of the subcategorization frame from the positive evidence but soon overgeneralize this to other verbs and produce unacceptable double object sentences. Finally they gradually acquire the necessary criteria imposed on double object constructions. Their criteria are twofold. One is morphological which says that the verbs with [NP NP] frames are monosyllabic or are bisyllabic with the stress on the initial syllable (Green 1974, Stowell 1981). For example, consider the following contrasting pairs: *give/donate, tell/report, build/construct*. The former monosyllabic verbs in each pair have the double object [NP NP] frame whereas the latter bisyllabic with latter stress do not.

The other is the semantic constraint on the indirect object which states that the indirect object has to have the θ -role⁵ PROSPECTIVE POSSESSOR of the direct object (Goldsmith 1980). The following illustrate the case:

- (5) a. John drove a car for Mary.
b. *John drove Mary a car.
- (6) a. Fred opened the door for Lucy.
b. *Fred opened Lucy the door.

Sentences (5b) and (6b) do not imply that *Mary* and *Lucy*, in the sense of "prospective", will not possess the *car* and the *door*, respectively. This is crucially linked with the semantics of the verbs; verbs with the sense of transfer of possession assign PROSPECTIVE POSSESSOR θ -role to the indirect object in the [NP NP] construction.

So far the distinction of the two types of verbs in terms of double object constructions has been well accounted for. However, one may notice that there are some exceptions in the criteria, especially in the morphological criterion. Bowerman (1987, 1988) takes

up such exceptional verbs to argue against the Criteria Approach. She posits two types of exceptions, i.e. positive exceptions and negative exceptions and claims that the latter causes serious difficulty. Positive exceptions are those which do not meet the condition but have the [NP NP] frame. They are represented by such verbs as *allow*, *assign*, *permit* and so on. They are not problematic since children can assimilate exceptional [NP NP] frame from the positive input. On the contrary negative exceptions fulfill the requirement but do not have [NP NP] frames. They are *whisper*, *shout*, and rather controversial *choose*. Once these verbs fall into the trap of overgeneralization, it is by no means possible to eliminate the [NP NP] frame on the basis of the criteria approach.

1.2. Previous Studies of Second Language Acquisition

Second language (L2) acquisition studies are concerned mainly with the acquisition order and syntactic markedness, overgeneralization of double object constructions and to a lesser extent the relationship between the acceptability of the construction and the types of prepositional phrase of the [NP PP] frame. Mazurkewich (1984, 1985) has maintained that the construction of [NP PP] is less marked⁶ than [NP NP] following the principle of Universal Grammar (Chomsky 1981) and this markedness was reflected in the acquisition order. That is, the [NP PP] frame was acquired earlier than the [NP NP] frame by French and Eskimo learners of English. Mazurkewich claims that this did not stem from the transfer from the native language since Eskimo language has quite different characteristics from English, like lack of prepositions and relatively free word order. The earlier acquisition of the [NP PP] is also confirmed by Le Compagnon (1984) and Hawkins (1987) with French learners of English. As for Japanese learners of English, Tanaka (1987) reports that they tend to choose the [NP PP] frame rather than the [NP NP] frame in forming a sentence using the verb *give*, which Tanaka attributes to the crosslinguistic influence of the correspondence between the Japanese particle *ni* and the English preposition *to*.

Another concern on the acquisition of the double object construction is the distinction between the verbs with the double object [NP NP] frame and those without the [NP PP] frame. As pointed out above the latter type verbs are often regarded by children acquiring L1 as belonging to the former group through overgeneralization. Mazurkewich (1984) reports overgeneralization errors by French learners and Eskimo learners. The problem in this vein is also pursued by Le Compagnon (1984) and Hawkins (1987). Le Compagnon investigated French learners of English and found that the subjects showed overgeneralization errors which seem to have resulted from the transfer of their native language French. That is, they tended to assume the ungrammatical [NP NP] frame when the indirect object was a pronoun which is related to the influence of French cliticization⁷ that places the indirect object pronoun in front of the verb to avoid the end position in a sentence.

On the other hand, Hawkins' (1987) study has revealed that the overgeneralization errors by French learners were not limited to the sentences with a pronominal indirect object. They made the same type of errors with the sentences with a full-noun indirect object as well. Yet, Hawkins acknowledges Le Compagnon's view on the relationship

between a pronominal indirect object and higher acceptability of the [NP NP] frame. Mazurkewich (1984, 1985) reports that tendency is observed with native speakers of English as in (7b) (Mazurkewich 1984:102) and she ascribes this to the effect of cliticization.

- (7) a. *Karen repeated Robert the answer.
b. ?Karen repeated him the answer.

Along the same lines Celce-Murcia and Larsen-Freeman (1983:242) point out that the otherwise unacceptable sentence becomes acceptable when the indirect object is phonologically reduced as in (8b):

- (8) a. *I sent him it.
b. I sent 'im it.

Since these phenomena are not so much the manifestation of transfer from L1 features as a feature internal to English language itself, it will not be unreasonable to assume that Japanese learners may also demonstrate a similar tendency if they can employ phonological reduction which is often at play in reading pronouns.

Researches on semantic aspects of the acquisition of double object constructions have centered on the relationship between the acceptability of double object [NP NP] constructions and the preposition assumed to be taken in the [NP PP] counterpart. In this regard Mazurkewich (1984) and Hawkins (1987) have obtained the experimental results which indicate that double object verbs with *to* in [NP PP] frames were more likely to be accepted as having the double object [NP NP] frame than those with *for*. Mazurkewich suggests that this difference may be caused by the different semantic θ -roles assigned to the two prepositional phrases. That is, *to* is associated with the θ -role GOAL and *for* with BENEFICIARY and hence the latter is harder for the learners to associate with the θ -role PROSPECTIVE POSSESSOR when a prepositional phrase in [NP PP] frames turns into a noun phrase in [NP NP] frames.

To summarize, we have the following findings in L1 and L2 acquisition researches of double object constructions. L1 speakers overgeneralize the double object constructions to non-double object verbs but eventually they attain the necessary distinction between double object verbs and non-double object verbs and they acquire the semantic constraint prior to the morphological constraint. L2 speakers similarly make overgeneralization errors and contrary to L1 speakers they usually fail to master the necessary distinction of verbs. In addition L2 speakers tend to accept more *to*-verbs than *for*-verbs as double object verbs. Finally both L1 and L2 speakers are inclined to assign higher acceptability to double object constructions when the indirect object is a pronoun compared with a full-noun.

With these observations in mind the following study on the acquisition of double object constructions was carried out with Japanese learners of English. The order of acquisition between the [NP PP] frame and [NP NP] frame was not of our concern because it was confirmed with Japanese learners that the former was acquired earlier than the latter (Tanaka 1987).

2. The Study

2.1. Purposes and Procedures

(a) Purposes

The present study aims to clarify the validity of the following hypotheses:

- 1) Like other L2 learners Japanese learners will not make a distinction between the verbs with double object [NP NP] frames and those without.
- 2) *To*-verbs will be given higher acceptability than *for*-verbs as having [NP NP] frames since the θ -role GOAL assigned to *to* is more directly associated with the PROSPECTIVE POSSESSOR θ -role than the θ -role BENEFICIARY assigned to *for*.
- 3) Verbs evidently violating the semantic constraint will be rejected as verbs with the double object [NP NP] frames.
- 4) Sentences with a pronominal indirect object will be judged as more acceptable compared with those with a full-noun indirect object if Japanese learners operate phonological reduction.

(b) Subjects

The subjects who participated the present study consisted of 30 English-major sophomore college students.

(c) Materials

The verbs employed in this test are classified into the following five groups:

Verbs with [NP NP] frame: *to*-verbs: sell, send, teach, tell, throw

for-verbs: build, buy, choose, cook, play

Verbs without [NP NP] frame: *to*-verbs: explain, present, report, return, suggest

for-verbs: collect, select, construct, design, discover

Verbs violating the semantic constraint: answer, drive, open, paint, wash

(d) Procedures

The subjects were required to judge the acceptability of twenty five sentences with the double object [NP NP] frame using the verbs above. They performed the judgment twice. The first test consisted of the sentences with the full-noun indirect object. At the same time they were asked to write the preposition they thought of when they rewrote the sentences in those with the [NP PP] frame. This task was adopted to see if the subjects' choice of preposition had any bearing on the acceptability. The second test was conducted immediately after the first test. The sentences of the second test were the same as those of the first with the exception of the type of indirect objects, i.e. a pronoun instead of a full-noun. The orders of the sentences were changed between the first test and the second. Example sentences are given in (9a,b), with the order of the first test example and the second test example.

(9) a. The artist designed Sue a new dress.

b. The artist designed her a new dress.

The test was administered during a regular class on June 23 in 1988. There was no time constraint imposed on the subjects and they did the judgment at their own pace. It took about fifteen minutes for all the subjects to finish the test.

2.2. Results and Discussion

The results of the tests are given in table 1. Figures in the columns of *First judgment* and *Second judgment* indicate the number of "acceptable" judgments given to each verb. Mean scores and standard deviation for statistical analyses are also displayed in the table.

Table 1. Results of the acceptability judgment tests

	<i>to</i> -verbs	First judgment	Second judgment	<i>for</i> -verbs	First judgment	Second judgment
alternating verbs	<i>sell</i>	16	21	<i>build</i>	7	6
	<i>send</i>	26	30	<i>buy</i>	16	20
	<i>teach</i>	28	28	<i>choose</i>	9	15
	<i>tell</i>	29	30	<i>cook</i>	12	12
	<i>throw</i>	17	21	<i>play</i>	4	6
		$\bar{X}=23.2$ SD=6.2			$\bar{X}=9.6$ SD=4.6	
nonalternating verbs	<i>explain</i>	22	24	<i>collect</i>	4	3
	<i>present</i>	22	23	<i>select</i>	13	14
	<i>report</i>	20	23	<i>construct</i>	6	6
	<i>return</i>	18	26	<i>design</i>	18	20
	<i>suggest</i>	20	25	<i>discover</i>	2	1
		$\bar{X}=20.4$ SD=1.7			$\bar{X}=8.6$ SD=6.7	
	$\bar{X}=21.8$ SD=4.5			$\bar{X}=9.1$ SD=5.4		
		verbs violating the semantic constraint		<i>answer</i>	3	1
				<i>drive</i>	0	0
				<i>open</i>	2	2
				<i>paint</i>	0	3
				<i>wash</i>	1	2

Hypothesis 1

It was found that learners did not make a significant distinction between the two types of verbs, namely, verbs with [NP NP] frames and verbs without. The result of a *t*-test was non-significant between the acceptabilities of the two types of *to*-verbs, namely, *sell*, *send*, *teach*, *tell* and *throw*; and *explain*, *present*, *report*, *return*, and *suggest* ($t'(4)=0.97, p>.10$). The same was true for *for*-verbs, namely, there was no significant difference in the acceptability between two types of verbs: *build*, *buy*, *choose*, *cook* and *play*; and *collect*, *select*, *construct*, *design*, and *discover* ($t(8)=0.27, p>.10$).

These results indicate that the learners made overgeneralization errors of double object [NP NP] frames with non-double object verbs. Unlike children acquiring English as L1 who go through the overgeneralization stage but accomplish the distinction ultimately, our subjects, probably categorized as being at the intermediate level, have not acquired the distinction. This fact brings us to the tentative conclusion that the acquisition process of the double object constructions in L1 is not at play in the second language acquisition

at least at the level of our subjects.

Let us first consider the quality of linguistic input of L1 and L2 learning. L1 acquisition assumes that children acquire their mother tongue without negative input, i.e., the information what forms are not allowed in the target form. Whereas, the picture is somewhat different in the L2 acquisition process. L2 learners, in a formal setting in particular, are very likely to receive negative input. It is most typically given in the form of correction. Thus the qualitative input condition seems better in L2 learning than that of L1 acquisition. Then it seems that we should seek the cause in other conditions.

Two other factors can conceivably account for the results, namely, the difference of the learning mechanisms between L1 and L2 learners and the quantitative difference of input in the two acquisition processes. The first possibility implies that the L1 acquisition mechanisms suggested in various approaches, such as the conservative lexicalist approach, preemption and the Criteria Approach, do not play a role in L2 acquisition since there is something missing in L2 learners, which prevents them following the L1 acquisition process. This is a plausible account but it is far from clear what that "something" is so far.⁸ As for the Criteria Approach it may be that L2 learners are relatively weak in awareness of the morphological formation of words and hence fail to recognize the relation between the morphological structure and the distinction of the verbs. Yet other areas are still not accounted for.

Let us now turn to the quantitative difference of input between L1 and L2. This is to say that L2 learners receive an insufficient amount of input, i.e. input below the level at which proper acquisition of the double object constructions cannot occur (cf. Schachter 1984: Note 4). This account works well with the failure of preemption; second language learners are not consistently faced with other forms expressing the same meaning because of the paucity of linguistic input in the L2 environment.

Hypothesis 2

As regards Hypothesis 2, it has been found that the subjects showed the tendency to accept more *to*-verbs as taking the double object [NP NP] frame than *for*-verbs ($t(18)=5.66, p<.01$). It should be noted that this cannot be ascribable to the relative unfamiliarity of the form [NP NP] for *for*-verbs since there is a marked difference between the *to*-verbs and *for*-verbs without the [NP NP] frame. The subjects cannot have encountered the [NP NP] frame for *to*-verbs any more than for *for*-verbs. Notice that the classification employed here is on the basis of the preposition that each verb originally takes, not the choice the learners made. Hence the re-classification according to the subjects' preposition choice was attempted and this is displayed in Table 2. The mean and the standard deviation of the re-classification is given in Table 3. In the tables ○ indicates "acceptable" judgments and × indicates "unacceptable" judgments.

Table 2. Number of responses for each verb according to preposition selection

<i>to</i> -verbs	judgment	Preposition Selection		<i>for</i> -verbs	judgment	Preposition Selection	
		<i>to</i>	<i>for</i>			<i>to</i>	<i>for</i>
<i>sell</i>	○	15	1	<i>build</i>	○	0	7
	×	11	3		×	1	22
<i>send</i>	○	25	1	<i>buy</i>	○	3	13
	×	4	0		×	3	11
<i>teach</i>	○	25	3	<i>choose</i>	○	2	7
	×	2	0		×	2	19
<i>tell</i>	○	28	1	<i>cook</i>	○	1	11
	×	1	0		×	0	18
<i>throw</i>	○	17	0	<i>play</i>	○	0	4
	×	13	0		×	0	26
<i>explain</i>	○	22	0	<i>collect</i>	○	0	4
	×	7	1		×	2	24
<i>present</i>	○	18	4	<i>select</i>	○	2	11
	×	2	6		×	2	15
<i>report</i>	○	18	2	<i>construct</i>	○	1	5
	×	10	0		×	3	21
<i>return</i>	○	18	0	<i>design</i>	○	1	17
	×	12	0		×	1	11
<i>suggest</i>	○	20	0	<i>discover</i>	○	0	2
	×	10	0		×	4	24

Table 3. Mean scores and standard deviation of acceptability judgments of verbs according to the learners' hypothesis of verb selection

Preposition selection for <i>to</i>			Preposition selection for <i>for</i>		
Judgment	Mean	SD	Judgment	Mean	SD
○	$\bar{X}=10.80$	SD=10.5	○	$\bar{X}=4.65$	SD=4.9
×	$\bar{X}=4.50$	SD=3.2	×	$\bar{X}=10.05$	SD=10.1

The result of a *t*-test presented a significant difference of the "acceptable" judgments between the *to*-verbs and *for*-verbs the subjects hypothesized ($t'(9)=2.37, p<.05$). This result brings us to conclude that *to*-verbs are more likely to be accepted as having the double object [NP NP] frame than *for*-verbs.

Considering the stricter critical level of the original classification of *to*- and *for*-verbs than that in accordance with learners' hypothesis, it may well be that the meaning of the verbs rather than the choice of preposition itself affected the acceptability of the [NP NP] frame for each verb. In other words the semantic property of transfer of possession had an influence on the degree with which θ -role PROSPECTIVE POSSESSOR is assigned to the indirect object. *To*-verbs have a more direct sense of transfer of possession than *for*-verbs.

Finally discussion will be necessary for the generation of double object constructions incorporating the result of Hypothesis 1. Hypothesis 1 concerns overgeneralization errors

of non-double object verbs and it was confirmed with our subjects. This can very well apply to *to*-verbs for their overall acceptability was high whether they were double object verbs or not. This will be the case of overgeneration of the unacceptable target forms and thus regarded as overgeneralization of a particular linguistic feature in its true sense. On the other hand in the case of *for*-verbs, it is true that the acceptabilities between double object verbs and non-double object verbs displayed no significant differences but as clear from Table 1, the overall acceptability of these verbs is below fifty percent regardless of the types the verbs belong to. Thus this case will be interpreted as undergeneration of the acceptable forms and for this reason the term overgeneralization should be interpreted in an attenuated sense.

Hypothesis 3

Hypothesis 3 concerns the recognition of the unavailability of the θ -role PROSPECTIVE POSSESSOR of the indirect object. As is clear from Table 1, the subjects rejected the [NP NP] frame for the verbs violating the semantic condition; *answer, drive, open, paint,* and *wash*. Interestingly, this result accords with the first language acquisition process. That is, as Mazurkewich and White (1984) report L1 learning children acquire the semantic condition of PROSPECTIVE POSSESSOR earlier than the morphological condition. It may be that the semantic condition is more noticeable than the morphological formation of verbs and hence it is easier for both L1 learners and L2 learners to acquire. Another possibility is the effect of formal instruction of the category of double object verbs. It is usually described that verbs allowing the double object construction are "giving verbs", i.e. verbs with some sense of "giving" the direct object to the indirect object. Our subjects may have adequately recognized the unavailability of this condition with the verbs employed here. Taking into account the results of Hypothesis 2 and the present hypothesis, we may determine that the semantic condition functions better in rejecting the acceptability of double object constructions than promoting it.

Hypothesis 4

Hypothesis 4 concerns the effect of pronominalization of the indirect object on the acceptability of [NP NP] construction. The result of a Sign test was not significant for each verb with the only exception of *return* ($z=2.21, p<.05$) and thus hypothesis 4 was rejected. It is tempting to presume that the lack of pronominalization effect was attributable to the minimal interval between the two tests. However, a similar result was obtained in another test conducted later with different subjects in which two groups of subjects took one test each, the full-noun type test and the pronoun test, respectively. Therefore it can be concluded that the acceptability of [NP NP] constructions do not change whether the indirect object is a full-noun or a pronoun. This result may have stemmed from the subjects' insensitivity to the phonological feature of the indirect object pronoun, namely phonological reduction which frequently takes place with pronouns.

3. Conclusions

The results of the present study will be summarized as follows.

First, the subjects did not make a significant distinction between the verbs with the [NP NP] frame and those without it. It is proposed that this is due to the paucity of linguistic input of the relevant structures and thus the proposed acquisition mechanisms of the L1 acquisition did not come into play under the current input poor condition in Japan.

Second, *to*-verbs were assigned more acceptability than *for*-verbs. This is re-interpreted as the undergeneration of the [NP NP] frame for *for*-verbs whose semantic property of transfer of possession is difficult to recognize.

Third, our subjects rejected the double object constructions with the verbs violating the semantic constraint of PROSPECTIVE POSSESSOR. This is ascribable to their awareness of the semantics of the verbs. That is, those verbs do not involve the sense of transfer of possession which is crucially associated with the notion PROSPECTIVE POSSESSOR.

Fourth, the acceptability of the [NP NP] construction was not enhanced significantly when the indirect object changed from a full-noun to a pronoun, although this is a general tendency among French learners of English and English native speakers. This is hardly a negative tendency since the unacceptable [NP NP] frame was not judged to be acceptable even in the context where the indirect object was a pronoun.

Let us next discuss the pedagogical implications drawn from the results. The unavailability of sufficient input and the lack of L1 acquisition mechanisms in L2 acquisition necessitate some preventive measure against overgeneralization errors. At the same time, the problem of undergeneration with *for*-verbs demands a means to enhance the generation of double object constructions with these verbs. One possible way will be to provide learners with linguistic conditions on the double object construction in the form of explicit instruction.

The condition of the morphological constraint will be straightforward since it is a binary distinction between monosyllabic verbs or bisyllabic verbs with an initial stress and other verbs. One may counter that there are a handful of exceptions in this constraint as discussed in Section 1.1. I consider, however, that there is more benefit than harm in providing the constraint to prevent overly generalized rules and that we can deal with exceptions, pernicious negative exceptions in particular, by giving learners negative input which is accessible in formal L2 instruction.

As regards the problem of undergeneration, having learners aware of the semantic condition may do the trick. Yet, it must be acknowledged that there is some obscurity in the definition of the PROSPECTIVE POSSESSOR. Learners' recognition of the condition is reflected in the test results with low acceptability of *for*-verbs which is connected to the semantic property of BENEFICIARY. The varied acceptability suggests that there is a cline of the acceptability of double object constructions in terms of the semantic property of each verb (cf. Hawkins 1978).

Presumably acquisition of the semantic condition will proceed in the analogous way to lexical diffusion as suggested by Hawkins (1987) from the most prototypical verbs such as *give* to the more peripheral groups. Therefore the presentation of the semantic condition should proceed from the prototypical to the marginal area and help learners clearly recognize

the sense of PROSPECTIVE POSSESSOR in a systematic way.

The efficacy of the instruction of these conditions, however, should be rendered to empirical evidence.

Notes

1. The subcategorization frame is a context of categories of verb phrase in which individual verbs appear (Chomsky 1965).
2. Tanaka (1987) deals with some [NP NP] constructions without the [NP PP] counterpart.
3. This assumption is grounded on the research by Brown and Hanlon (1970).
4. They are the "Unique Entry" principle (Pinker 1984), the "Principle of Contrast" (Clark 1987), the Uniqueness Principle (Wexler cited in Roeper et al. (1983)) or "competition" (MacWhinney 1987).
5. θ -roles are semantic information of NPs determined in their relation with verbs in a sentence (Radford 1988).
6. According to Mazurkewich (1984, 1985) the markedness is postulated according to the following three linguistic features. First, the number of verbs with the [NP PP] frame is far larger than those with the [NP NP] frame and thus the [NP PP] construction is the more commonly observed unmarked structure. Second, the [NP NP] construction is usually written into the [NP PP] construction but the reverse is not always the case. Third, abstract Case assignment (Chomsky 1981) is performed more elegantly with the [NP PP] construction than the [NP NP] construction. For example, in *Bruce sent a letter to Nancy*. NPs *a letter* and *Nancy* receive a Case from the adjacent *sent* and *to*, respectively. However, in *Bruce sent Nancy a letter* the second NP *a letter* is faced with a theoretical problem since it is not adjacent to any Case assigners (for the solution of this problem see Stowell 1981).
7. An example is *Il m'explique la règle* (He explains the rule to me).
8. One possible candidate is the "one-to-one principle" which is claimed to be held between a form and its semantic notion in the L1 acquisition process (cf. Wexler cited in Roeper et al. 1983). Yet, Andersen (1984) presents empirical evidence which supports the existence of this principle in L2 acquisition.

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