Is There a Syntactical Difference in Japanese Language Learning Between Adults and Children?

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要旨

日本語学習に於いて統語上大人と子供に相違はあるか

幼年期における第二言語学習は、大人のそれに優るといわれている。英語を母国語とする米国人日本語学習者、大人33人、子供26人の日本語の作文を特に前置詞、「は、が、に、で」に焦点を当て統語上いかなる相違があるのか考察してみた。その結果習得過程において大人は文の順序、子供は前置詞の文型により束縛されており、それはまた、意味機能と談話機能によるところがあることが判明した。即ちその両機能が言語の転移過程に影響を及ぼしたといえる。更にその過程状況によると子供の方が大人より最終的に優れていることが隠喩された。

1. Introduction

Numerous studies have been conducted that compare adults and children in Second Language Acquisition. One particular area of concern is the particle and prepositional aspects of syntax. Assuming that children are different from adults, the hypothesis proposed here is that there is a difference in the syntactic process between children and adults with respect to particles and prepositions. Language transfer plays a substantial role in the process and outcome of L2 acquisition, and transfer affects an L2 learner's internal grammar.

This discussion will focus on research dealing with the acquisition of Japanese by American adults and children whose native language is English and who share the same cultural background. Therefore, there are no other major linguistic or cultural differences to influence this study. The materials used in the study are 57 beginning Japanese writing samples: 11 by college students who started learning Japanese in college, 20 by high school students who started learning Japanese in high school, and 26 by Japanese immersion fourth graders who started learning Japanese in a partial immersion program in the first grade. To make the background of the subjects as similar as possible, a few persons with native speakers of Japanese in their households were eliminated from the study. College students and high school students are treated as adults, and Japanese immersion students (henceforth JIS) are treated as children.

The structure of the argument will be as follows: In chapter 2, I will briefly summarize Japanese case particles of grammatical relations and meanings, which are the topic of this investigation. The focus will be on only a part of the case particles and one adverbial particle: *wa, ga, ni*, and *de*. In chapter 3, I will consider common assumptions about the differences between adults and children as second language learners. These hypotheses will show that adults do not have the same kind of interlanguage (IL) as children. A closer look will be taken at IL at the processing level, with direct implications for transfer issues. Specifically, syntactic versus semantic/pragmatic strategies will be discussed. In chapter 4, if we can assume that there is a difference between adult and child learners, then what would account for such a difference? I hope to present proof that adults and children process and acquire languages in different ways, analyzing the writing samples with respect to particles and prepositions. In chapter 5, I will conclude with a few pedagogical suggestions.

2. Case Markers / Particles in Japanese

Japanese particles for a native-speaker include 10 case particles, 12 conjunction particles, 16 adverbial particles, and 11 sentence-final particles. Since the targeted subjects for this research are non-native speakers of Japanese, the focus will be on only some of the case particles: the nominative *ga*; the dative *ni* and *de*; and one adverbial particle, the accusative *wa*, in contrast to the subject *wa*. (In all example sentences, certain words are underlined to indicate emphasis or point out something of special significance. * indicates an ungrammatical sentence.)

[1] The wa-marked subjects VS. ga-marked subjects

(a) Ken-wa oyogimasu.
'Ken swims.' (but Taro does not swim.)
'Ken swims.' (and Ken walks and Ken runs.)
(b) Ken-ga oypogimasu.
'Ken swims.'

The particle *wa* is not only a case marker but also an adverbial particle. Tamamura (1995) concludes that it is a kind of adverbial particle, but there is no definition yet. Therefore, I simply take *wa* to be a particle as in (1a). The ga-marked subjects can refer

only to 'Ken' as in (1b). The particle *wa* can refer to 'Ken' when compared with somebody, or emphasize 'swims', depending on the situations; a proper understanding requires semantic/pragmatic strategies. The ga-marked subjects emphasize the subjects themselves.

[2] The ga-marked subjects VS. ga-marked objects

(a) Ken-ga sukidesu.
'Ken likes.'
(b) Ken-wa ringo-ga sukidesu.
'Ken likes an apple.' (but not a peach, or Taro likes a peach.)
*(c) Ken-ga ringo-ga sukidesu.
'Ken likes an apple.'

The ga-marked subjects can refer only to 'Ken' as in (2a). Sentence (2b) already has a wa-marked subject. *Ringo* "an apple", as a non-animate noun, cannot be the subject of the verb sukidesu "likes". Therefore, the ga-marked ringo "an apple" is an object in sentence (2b). Ga-marked words emphasize the fact that they are objects. Consequently, *ringo* is the most important information in sentence (2b). This demonstrates the semantic/pragmatic differences which are dependent on the placement of Japanese particles. There is one simple rule of *ga*: the same particle cannot be put next itself twice, such as in sentence (2c).

[3] The ni-marked objects VS. de-marked objects

(a) Ken-wa ringo-o koko-**ni** okimasu.
'Ken puts an apple in here.'
(b) Ken-wa ringo-o koko-**de** tabemasu.
'Ken eats an apple in here.'
(c) Koko-ni meeting-no heya-**ga** arimasu.
'There is a meeting room in here.'
(d) Koko-de meeting-**ga** arimasu.
'There is a meeting in here.'
*(e) hon-ga tsukue-no ue-**de** arimasu.
'The book is on the desk.'
*(f) inu-ga tsukue-no ue-**ni** asobimasu.
'A dog plays on the desk.'

Sentences (3a) and (3b) are not interchangeable because the locative expression is semantically selected by a verb along with an object, and the sentence formed usually states that the object occupies the place. Sentences (3c) and (3d) are also not interchangeable because they are constrained by the NP of *ga* object. This has to do with Chomsky's theory of the Canonical Structural Realization (CSR)[1]. According to this theory, the CSR of a semantic category, "goal", for example, is NP, because this is the syntactic category in which it is most often expressed. Also, the CSR of "patient" and "agent" is also NP. For our purposes, the CSR of place is PP in the case of English, whereas it is NP in the case of Japanese (Nakamura 1989). The correspondence relationships between semantic and syntactic categories are not universally by certain syntactic categories.

When place is used as a locative complement, the NP is followed by *ni*. When a place is used as a locative modifier, the NP is followed by *de*. (see the ungrammatical sentences (3e) and (3f) above.) The semantic variation of verbs is therefore taken into consideration: for example, Japanese speakers distinguish between dynamic verbs like *tabemasu* "eat" and static verbs like *arimasu* "be".

[4] The wa-marked subjects VS. wa-marked objests

(a) Ken-wa ringo-o tabemasu.
'Ken eats an apple.' (but Taro eats a banana.)
(b) Ken-wa ringo-wa tabemasu.
'Ken eats an apple.' (but he does not eat a banana.)

The particle *wa* can refer to 'Ken,' when compared to somebody as in (4a), or emphasize the verb "eats," depending on the situation as in (4b). The selection requires semantic/pragmatic strategies. The adverbial particle *wa* is used for comparison of objects. This is the only case in which the homophonous particles can be put next each other. The particle *ga* (see [2]), on the other hand, only emphasizes either the subject or the object, but not both at the same time within a sentence. This is because it would make it difficult for an interlocutor to realize the most important point in the sentence. On the other hand, if the homophonous particles *wa* are put next each other, there emphasis on the *wa*-marked object, but not the *wa*-marked subject.

"Today, it is widely assumed that notions such as subject and object are syntactic and have no meaning of its(sic) own. Put differently, case-markers themselves do not add any meaning to an NP they attach to" (Nakamura 1989: 73). These are only a sample of Japanese particles. In short, the placement of Japanese particles ultimately depends on the semantic/pragmatics elements present within a given sentence.

3. The Differences Between Adult and Child Second Languange Learners

The phenomenon of the tortoise and the hare: There are varying theories as to how children acquire grammar compared to adults. What kind of IL differences, then, can we find between adult and children learners of Japanese? English uses a syntax-centered strategy rather than a semantic/pragmatic strategy. "English is a rigid SVO language, with a minimum of inflectional verb morphology and no grammatical case markings" (Lehmann 1978:355 in Harrington 1987). Japanese, on the other hand, uses a semantic/pragmatic-centered strategy which is stronger than its syntactic strategy (Sasaki 1990). Lehmann (1978: 355 in Harrington 1987) states "Japanese is an SOV language, rigid in the respect that a verb is required in the sentence-final position." Harrington (1987: 356) states "While (S)OV is the other most commonly occurring, the OSV and SV orders are also possible." For example:

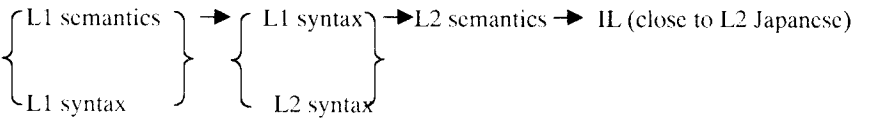
[5]	English	I eat an apple. (SVO)		
	Japanese	watashi-wa ringo-o tabemasu. I-subject apple-object eat	'I eat an apple.'	(SOV)
		ringo-o watashi-wa tabemasu. apple-object I-subject eat		(OSV)
		watashi-wa tabemasu. I-subject eat		(SV)

At this point, I assume that the difference in learning processes between adults and children is similar to the proverbial phenomenon of the tortoise and the hare. Their general acquisitional processes are different. The JIS have the semantic cues of their L1 first and then gain access to the syntactic cues of L1 language processing (Mazuka and Lust 1990). After access to syntactic/semantic cues for L1, the JIS are then able to access both L1 and L2 syntax simultaneously. Then they finally have access to L2 semantics. Adults, on the

other hand, have L1 syntax first and then access L2 semantics, creating an IL which is close to Japanese at first. Their relative lack of syntactic ability in comparison to the JIS, however, leads to a state of IL fossilization. Their final L2 abilities end up being inferior to those of the JIS. Chart [6] below shows this process:

[6] Stages of L2 Acquisition

JIS-tortoise: parallel process for L1 and L2



implication for L2

L2 syntax → L2 semantics

Adults-hare: tandem process for L1 and L2

L1 syntax → L2 semantics → IL (close to L2 Japanese) →

L2 synatx (syntactic order) → L1 or fossilization

implication for L2

L2 semantics → L2 syntax

According to Sasaki (1991), post puberty JFL (Japanese as a foreign language) adult learners comprehended English word strings by syntactic cues, while they understood Japanese word strings chiefly by lexical-semantic cues at early stages of L2 (also see Mazuka and Lust 1990). Since Japanese is apt to rely more on semantic/pragmatic cues, the IL of adults is initially close to Japanese in a semantic sense.

The semantic knowledge of the JIS, however, grows more gradually in a naturalistic environment. They learn first how to correctly make acceptable segments within a sentence, and then move on to completely grammatical sentences. For example, in [7] we see errors made by the JIS subjects.

[7]	*(a) watashi-wa	ringo-ga	yasumijikan-de	tabemasu.
	I	an apple	recess	eat
	wa-marked subject	ga-marked object	de-marked object	
	(b) watashi-wa	ringo-o	yasumijikan-ni	tabemasu.

I	an apple	recess	eat
wa-marked subject	o-marked object	ni-marked object	

'I eat an apple during recess.'

If a string such as *wa*, *ga*, and *de*, conforms to the rules of a language, such as those for the relationships between Japanese subjects and objects, then no matter how incomprehensible, or odd it is, it is grammatical. Therefore sentence (7a) is ungrammatical as a sentence but contains grammatical segments. Sentence (7b) is a grammatical sentence for sentence (7a). Each segment of Japanese is constrained by the semantic cues as I explained in section 2. The JIS have a better understanding of the ways the particles work as a result of their greater familiarity with universals. Sentence (7a) is not grammatically acceptable, but is pragmatically understandable.

In [8], we see an example made by the adult learners of Japanese:

[8] *(a) koko yasai hoka no ga arimasu.
here vegetables other there are
ga-marked

'There is a vegetable in another place.' or 'There are other vegetables in here.'

(b) koko-ni hoka no yasai-ga arimasu.
in here other vegetables there are
ga-marked

'There are other vegetables in here.'

Sentence (8a) is not grammatical, but this is not because of an L1 transfer, or an L2 semantic strategy. Sentence (8b) is a grammatical sentence for sentence (8a). The *no* indicates the connection with the NP "vegetables." The word "other" already includes a meaning *no*. English syntax requires noun modifiers to come before those nouns. In other words, if in English the adjective "other" modifies the noun "vegetables", it must precede the noun it modifies in a proper sentence. For example: "Jim gave Tom the blue car." / * "Jim gave Tom the cat blue." Therefore, the adults here misused the semantic/pragmatics cues of "other" without a transfer of L1 syntax into L2 syntax-SOV order. The one evidence of L1 transfer, therefore, is that adults treat "vegetables" as a subject noun only, without knowing the meaning of "other". It is not only semantically non-acceptable, but also pragmatically less understandable because of two different possible meanings. This example indicates the fossilization of both L1 syntax and L2 semantics in the IL process.

Thus, 'syntactic transfer' can be defined as a process which occurs whenever a particular arrangement from L1 sentences reappears in IL behavior. Crucially, after the semantic/pragmatic breakdown, there is a difference between adults and children regarding syntactic transfer. The JIS, as tortoises, became close to the L2's IL, while the adults as hares stray off the universal path. I have demonstrated a sort of semantic/syntactic language transfer here. The answer to the question concerning IL difference between adults and children is that there is a processing difference as I described in [6].

In summary, there is an IL processing difference between adults and children with respect to Japanese particles and prepositions. This complex of language transfer variables has to do with syntactic and semantic/pragmatic strategies. The adults use L2 semantics first and then use L2 syntax in a tandem process. On the other hand, the JIS use L2 syntax first and then use L2 semantics naturally in parallel process.

4. The Reason for the Process Difference of Adults and Children

What is the reason for the difference between adult and child L2 acquisition as found in section 3? It is now possible to view the creation of IL as a process referring to L2 input as well as a process of selectively using L1 knowledge.

The JIS unconsciously process word strings for segments of sentences only, so long as they perceive them to be possible fragments, and regardless of whether they are making grammatical or semantically acceptable sentences. On the other hand, adults attempt to process a word string according to "meta-linguistic" strategies in a sentence rather than the automatic linguistic processing that the JIS have from the natural input of L2 in daily life. Adults have a bigger picture than the JIS in terms of semantic understanding.

Sasaki (1990: 63) mentions, on the positive side, the advantage for adult learners: "As adult foreign language learners via formal classroom instruction generally have a stronger meta-awareness about their target language performance than do L1 speakers, they might be in a better position to resort to some kinds of meta-linguistic devices." There is, though, no evidence that adults arrive at a better position in terms of ultimate attainment.

Word order form and particle form: What causes these processes? The JIS applying universal operating principles will acquire the different word orders allowed in a sequence that reflects the regularity and explicitness of the syntactic system of an L2. Boswell (1993) claims that word order is the innately essential cue for acquiring syntax; the advantage that children demonstrate in early acquisition of syntactic variation is due to the ease of processing regular and obligatory inflectional cues-the 'local cues' of Slobin (1982, in Boswell 1993). In this case the Japanese particles serve as cues. The local cues are operated by the universal principles of primary language acquisition as possibly innate constraints that operate only during the critical period (Boswell 1993; MacWhinney 1983; in Boswell 1993).

There is a definition problem whenever researchers want to talk about the variable of "puberty" in relation to second language acquisition. At what age, exactly, can we say that this process takes place? Some authors seem to vary widely in their definitions.

Strozer (1994) claims that no child undergoes puberty before the age of six. Considering that the JIS of this study started to learn Japanese as a second language at age six or seven, I consider them to be "pre-puberty" L2 learners. The children, however, may already have passed the critical period (CP) of L1 at this stage, according to the critical period hypothesis claimed by White and Genesee (1996): left hemispheric specialization for language processing is present at birth and complete by the age five. The majority of researchers, however, claim that the CP does not end by age five, and is fully active for a number of years longer.

For the purposes of this study, the concepts of CP and puberty are different. The exact hypotheses of language development during puberty, and that of a critical period for this development, are beyond the scope of this study.

If the L2 of JIS is operating before or during the CP, then it relies on the acquisition and retention of syntactic categories (local cues) more effectively than word order (Slobin 1982, in Boswell 1993). Thus, sentences containing particles embody operating universals of syntax rather than following a strict word order of format.

In [9], both sentences (a), made by an adult, and (c), produced by one of the JIS, are ungrammatical. Sentences (9b) and (9d) are grammatical.

[9] *(a) ski-o shimashita. ski-o sukidesu. (adult)
(b) ski-o shimashita. ski-wa sukidesu.
'I skied. I like skiing.'
*(c) watashi-wa ringo-o sukidesu. (JIS)
(d) watashi-wa ringo-ga sukidesu.
'I like an apple.'

The adult seems to be constrained by the word order form instead of the particle form. The child is constrained by the particle form instead of the word order. This subject knows both *o* as in (10a) and *ga* as in (10b) in syntactical form. For example:

[10] (a) (watashi-wa) ringo-o tabemasu. 'I eat an apple.'
(b) (watashi-wa) inu-ga sukidesu. 'I like a dog.'

Here the child is constrained by animate and non-animate nouns as semantic cues which indicate Japanese particle concepts. These are selected by verbal instead of word order cues as NPs, including *watashi-wa* 'I' as NP. It is thought that children initially learn single words for each referent, creating a mutually-exclusive mapping of words and concepts across two languages, rather than using both codes for the same referent, a process which emerges at a later stage (Volterra and Taeschner 1972 in Boswell 1993).

The next examples, (11a) and (11c), are all written by the same adult. Sentence (11b) is a grammatical sentence for sentence (11a).

[11] *(a) doyoobi-no ichinichijuu-ni shukudai-o shimashita. (adult)
Saturday's all day homework did
ni-marked o-marked
(b) doyoobi(-ni) ichinichijuu shukudai-o shimashita.
Saturday's all day homework did
(ni-marked) o-marked
'I did my homework on Saturday all day.'
(c) doyoobi-ni shukudai-o shimashita. (adult)
'I did my homework on Saturday.'

Sentence (11a) is ungrammatical both as a sentence and within each of its segments. It also makes no sense semantically. Here there is no L1 transfer in terms of the unnecessary particle *ni* in *ichinichi-ni*. Rather, the subject is constrained by NP format: that is, noun plus particle in each segment. This pattern does sometimes make for the

correct sentence, as in sentence (11c). The adult, therefore, is constrained by the word order form.

The next examples are from one of the JIS:

[12] *(a) watashi-wa gakkou-ni shukudai-o shimashita. (JIS)
I to school homework did
ni-marked o-marked
(b) watashi-wa gakkou-de shukudai-o shimashita.
I at school homework did
de-marked o-marked
'I did my homework <u>at</u> school.'
(c) watashi-wa gakkou-ni ikimasu. (JIS)
I to school go
ni-marked
'I go <u>to</u> school.'

Sentence (12a) is ungrammatical as a sentence, but each of its segments is grammatical. It is not, however, semantically acceptable. Sentence (12b) is a grammatical sentence for sentence (12a). In this instance, the child is constrained by L1 transfer- that is, his understanding of the English prepositions 'at' as in (12b) and 'to' as in (12a and 12c). He knows the meaning "school" not only as a noun but also as a place object. Here is a clear example of transfer from L1 syntax and L2 syntax, with interference from L2 semantic patterns.

The next example was made by another adult:

[13] *(a) asa to yuugata-no renshuu-o shimashita. (adult)
morning and afternoon's practice did.
(b) asa to yuugata-ni renshuu-o shimashita.
morning and afternoon in practice did
'I practiced it in the morning and afternoon.'

This subject is constrained by all nouns as NP: noun plus particle. For example, we see *asa* "morning" marked with *to*; *yuugata* "afternoon" marked with *no*; and *renshuu* "practice" marked with *o* as in (13a). This is not a case of an L1 syntactic transfer. In English it is not acceptable to say "afternoon practice" in this sense. Sentence (13b) is a grammatical sentence for sentence (13a).

The different strategies, therefore, of adults and children can be summarized as such: adults try to use maximum mapping of syntactic NP word-order rules to meaning, while children try to use only minimal mapping of particle forms to meaning. The syntactic analysis presented here contrasts sentences containing particles following each noun with sentences that rely more heavily on word order. The particles are predicted to be easier for the JIS to learn because they do not require processing the entire sentence to determine grammatical function. If the simple mapping of form to meaning is operative, the JIS fit this mapping based on the phenomenon of the tortoise and hare as in [6]: L2 syntax (form)⟶ L2 semantic (meaning). The answer to the question concerning their varying speed and success in L2 acquisition has to do with forces at work behind IL development. These can be effectively summarized by the words "word order" for adults, and "particles" for the JIS. These are the particular bases which help these groups to acquire an L2 in their respective manners.

In summary, these data lead to the conclusion that adult learners prefer to rely on the pattern of word orders in both their L1 and L2, rather than on the particle forms. The latter require more semantic than syntactic cues to correlate L1 and L2 meanings.

5. Discussion and Conclusion

In this paper, I have tried to show that there is a syntactic processing difference between children and adults with respect to particles and prepositions. The data for this study provide evidence which clarify the nature of language processing. Results indicate that there is a processing difference between L2 acquisition for adults and that of the JIS. Adults are constrained by word order forms, and the JIS are constrained by particle forms. A semantic/pragmatic variable can affect the surface syntactic acquisition order in both the L1 and IL, and thus affect the language transfer process. Transfer in the IL indicates that there is deep-structure grammatical transfer with respect *o* particles. A central claim is that adult learners regularly compare what they produce in IL with a perceived target, setting up interlingual identification. However, learners of L2 in general must have a means to identify which features of the L2 'resemble' features of their L1 in the process of transfer. Learners such as the JIS, however, receive meaning from natural input without unconsciously comparing their production of IL. The JIS spend less effort than adults in

the IL process. Kinoshita (1994) claims, however, that it is ambiguous how natural L2 input by the JIS and metalinguistic input of L2 by adults are processed and stored in the brain. The connections between UG and other faculties are still ambiguous.

Selinker (1992: 209) claims that "The cessation of IL learning, often far from TL norms, is often shown by the failure of learners to acquire a feature where a particular TL feature is expected. Such failures in the Nemser, Briere and Selinker studies which were 'unexpected' appear to be good candidates for permanent fossilization." Forms such as word order and particles of perception are one of the bases for language transfer approaches; they may also, on the other hand, serve as factors for temporary or even permanent cessation of learning. This is assuming the validity of the cross-linguistic identification presented throughout this study.

There is a high possibility of fossilization for the adult learners who use the process of meaning to form because there is less access to semantic strategies; that is, L1 English obeys more syntactical cues and the L2 syntax demonstrates a weakness for semantics. Furthermore, there is less inter-linguistic processing by adults in terms of the L1 syntax to L2 semantics during early stages of IL. "It is a general law in SLA that when two processes work in tandem, there is a greater chance for stabilization of forms leading to possible fossilization" (Selinker 1994: 262). However, there is the claim regarding the JIS by Anderson (1983, in Selinker 1992: 213): "The learner's developing knowledge of the L2, i.e. earlier IL stages, has to be considered a source of language transfer, whether transfer is considered as a process or as a constraint." The first language transfer evidenced by the JIS will occur when L1 syntax and L2 syntax are combined. If the JIS receive the wrong input by an incorrect combination of transfer, such as L1 syntax and L2 semantics, there is a possibility for the beginning of fossilized interlingual identifications. On the other hand, if the two processes of adult learners work in a parallel, rather than tandem fashion, then there is the possibility of non-fossilization. Parallel paths, however, have to cross somewhere in the process of L2 acquisition (see Selinker 1994).

Cross-linguistic examination of processing strategies, contrasting: L1 and L2 processing strategies for individuals; modality effects on syntactic cues and strategies (e.g. the modality of writing), the role of semantic cases in processing; and the effects of inputs on strategy change are only a few of the potential topics. In the study above there was a

difference between the acquisition processes of adults and those of children. The difference between adults and children was significant in terms of both acquisition and understanding. The next question to address is: What is the difference between particle rules and word order rules for L2 learners in long-term periods, in terms of the rates at which they are forgotten (see Boswell 1993)? Continued attempts to apply the principles of universals in second language acquisition, for these and other topics, are needed for the future.

Note:

1. If a verb (or other head) s-selects "semantic selection" a semantic category C, then it c-selects ("categorial selection," NP, PP, etc...) a syntactic category that is the "canonical structural realization of C" (CSR(c)) (Chomsky 1986: 87).

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